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Proposed Residential Development
249-255 Richmond Road & 372 Tweedsmuir Avenue

Transportation Impact Assessment

Proposed Residential Development

249-255 Richmond Road & 372 Tweedsmuir Avenue

Transportation Impact Assessment

Prepared By:

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October 26, 2021
Revised: March 25, 2022
Revised: April 18, 2023
Revised: July 31, 2025

Novatech File: 121193
Ref: R-2021-124

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Engineers, Planners & Landscape Architects

July 31, 2025

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. W. 4th Floor
Ottawa, ON 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 (2017).

The original TIA in support of this development was submitted in October 2021, followed by two revised TIAs in March 2022 and April 2023.This revised TIA has been prepared to reflect changes in the site plan.

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

Yours truly,

NOVATECH

Mohammed Talha, M. Eng.
Engineering Intern | Transportation

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Table of Contents

Figures

Tables

Appendices

EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for the subject property at 249-255 Richmond Road and 372 Tweedsmuir Avenue located in Ward 15, Kitchissippi, in Ottawa. Currently, the site has an area of approximately 0.22 hectares (0.54 acres) and is occupied by a commercial retail building, a restaurant, and a single-family dwelling.

The subject site is surrounded by the following:

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

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

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 127 dwelling units, approximately 394 square metres of retail space and 212 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2026. 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 77 underground vehicle parking spaces. Additionally, 2 bicycle parking spaces will be provided at-grade near the Richmond Road building entrance, 30 will be provided within the building lobby and 128 will be provided within the underground parking garage. In total, 160 bicycle parking spaces will be provided.

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

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site-generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2026. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2026 and horizon year 2031.

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, 30 spaces will be provided within the building lobby, and 128 will be provided within the underground parking garage. In total, 160 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.
- Loading operations for the residential function of the building will take place along Tweedsmuir Avenue adjacent to the east entrance. A holding room is provided adjacent to the east entrance to facilitate a shorter unloading time, hold furniture etc. which limits the amount of time that the unloading vehicles is parked on Tweedsmuir Avenue. Loading for the commercial developments will occur on-street along Richmond Road.
- No changes to the existing signage are proposed along the subject site's frontage.

Parking

- The proposed vehicular parking spaces adhere to the requirements of the City's *Zoning By-law* (ZBL).
- Relief from the ZBL Exception 2900 is being sought for the minimum number of bicycle parking spaces that are required. A total of 160 bicycle parking spaces are proposed for the development, equating to a rate of approximately 1.25 spaces per unit.

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 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 13.2m behind the sidewalk and 8.7m 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 (condominium);
    - Unbundle parking cost from monthly rent (multi-family);
    - Provide a multimodal travel option information package to new residents;

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

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for the subject property at 249-255 Richmond Road and 372 Tweedsmuir Avenue located in Ward 15, Kitchissippi, in Ottawa. Currently, the site has an area of approximately 0.22 hectares (0.54 acres) and is occupied by a commercial retail building, a restaurant, and a single-family dwelling.

The subject site is surrounded by the following:

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

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

Figure 1: Study Area

1.2 Proposed Development

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

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

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 127 dwelling units, approximately 394 square metres of retail space and 212 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2026. 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 77 underground vehicle parking spaces. Additionally, 2 bicycle parking spaces will be provided at-grade near the Richmond Road building entrance, 30 will be provided within the building lobby and 128 will be provided within the underground parking garage. In total, 160 bicycle parking spaces will be provided.

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

1.3 Screening Form

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

- Trip Generation Trigger – The net traffic generated by the site development is anticipated to generate marginally over 60 person trips/peak hour; after discussion with City staff, it has been determined that further assessment is **not required** based on this trigger.

- Location Triggers – The proposed development is located within a 'Design Priority Area and/or Transit-Oriented Development Zone;' further assessment is **required** based on this trigger.

- Safety Triggers – The proposed development does not flag any safety triggers; further assessment is **not required** based on this trigger.

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

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

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

permitted on both sides of the road with a maximum 90-minute time restriction between 7:00AM and 7:00PM. The City of Ottawa's Official Plan does not identify any ROW protection on Richmond Road adjacent to the site.

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

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

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

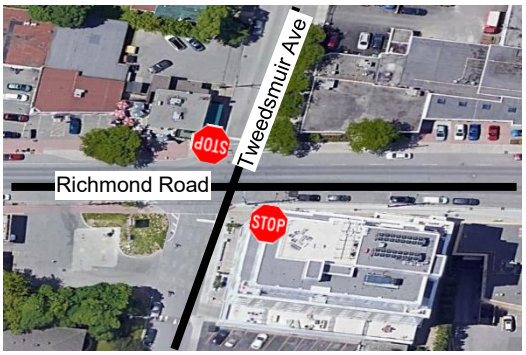
2.1.2 Study Area Intersections

Richmond Road/Athlone Avenue

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

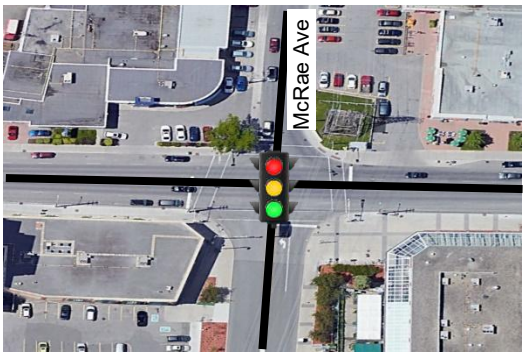
Richmond Road/Tweedsmuir Avenue

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



Richmond Road/McRae Road

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



2.1.3 Driveways

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

Richmond Road, North Side:

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

Richmond Road, South Side:

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

Tweedsmuir Avenue, North of Richmond Road:

- One driveway to businesses at the car dealership.
- 15 and 21 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.

Within the study area, Richmond Road is classified as a suggested bicycle route. Athlone Avenue, Tweedsmuir Avenue, and McRae Road do not have any cycling infrastructure (mixed traffic).

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.
- Tweedsmuir Avenue, north of Richmond Road has flex stakes along with Traffic Calmed Neighbourhood signage.

2.1.6 Transit

The Westboro Transit Station (a future Light Rail Transit station) is currently operating using temporary bus platforms on Scott Street at Athlone Avenue and Tweedsmuir Avenue, at a walking distance of approximately 300m from the subject site. This station currently services bus routes 57, 60, 61, 62, 63, 66, 67, 73, 74, 75, 81, 82, 87, 256, 261, 262, 263, 265, 266, 275, 277, and 279.

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
- 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
- Stop #7377: Services bus routes 81

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 #4870: Services bus route 11
- Stop #4876: Services bus routes 11

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

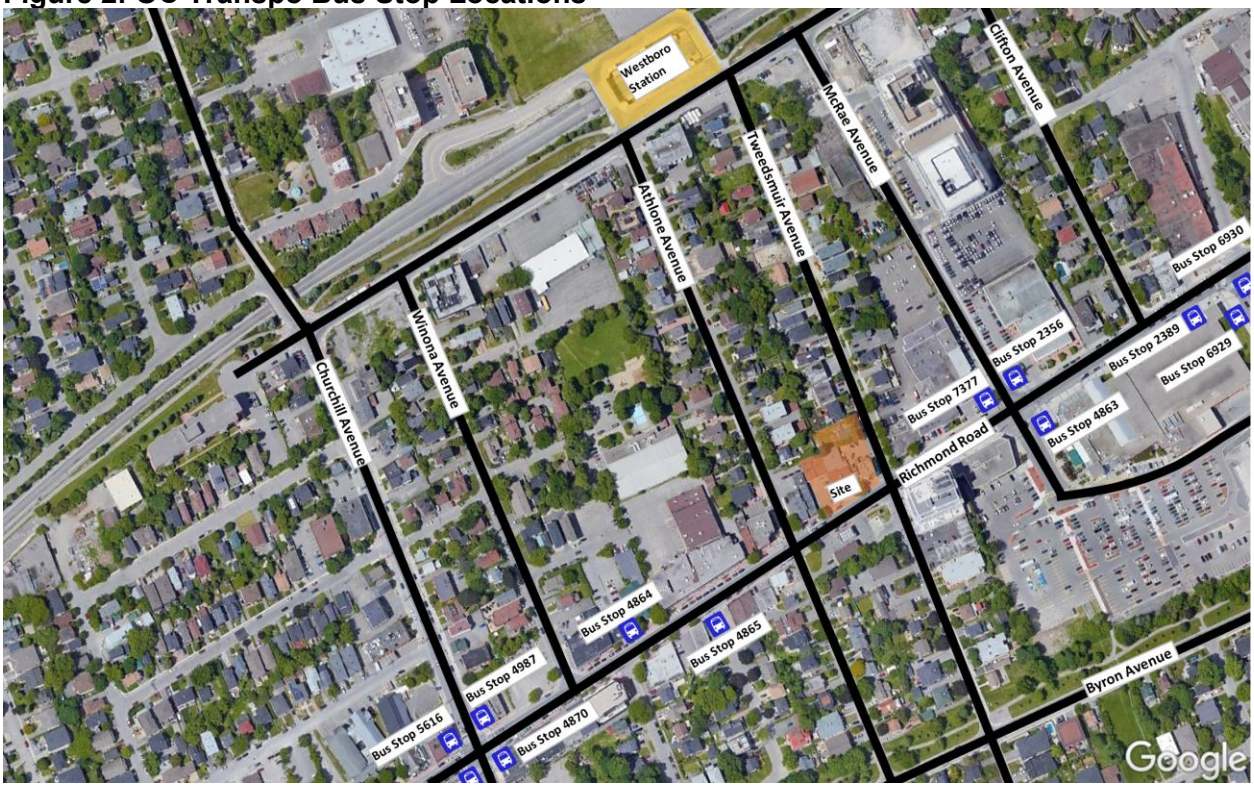


Table 1: OC Transpo Route Information

Route	From ↔ To	Frequency
11	Waller ↔ Bayshore	15–30 minutes headway depending on peak/off-peak hours, 7 days a week, all day service
51	Tunney's Pasture ↔ Britannia	30-minute headways, 7 days a week, all day service
57	Tunney's Pasture & N Rideau ↔ Carling Campus	15-minutes headway for buses starting from Bayshore Station and Tunney's Pasture Station, 15–30 minutes headway for buses starting from Carling Campus depending on peak/off-peak hours, 7 days a week, all day service
60	Cope / Terry Fox ↔ Tunney's Pasture	30-minutes headway, Mon-Fri, all day service
61	Stittsville ↔ Tunney's Pasture	15-30 minutes headway for buses starting from Terry Fox and Tunney's Pasture, 30-minutes headway for buses starting from Cardelrec-Goulbourn Complex, 7 days a week, all day service
62	Stittsville ↔ Tunney's Pasture	30-minutes headway, 7 days a week, all day service
63	Briarbrook ↔ Tunney's Pasture	15-30 minutes headway depending on peak/off-peak hours, 7 days a week, all day service
66	Innovation ↔ Tunney's Pasture	30-minutes headway, Mon-Fri, peak periods only
67	Terry Fox / Tunney's Pasture ↔ Cope	30-minutes headway, 7 days a week, all day service
73	Tunney's Pasture ↔ Fallowfield / Limebank	30-minutes headway, Mon-Fri, all day service
74	Tunney's Pasture ↔ Limebank	15-minutes headway, 7 days a week, all day service
75	Cambrian ↔ Tunney's Pasture	7-15 minutes headway, 7 days a week, all day service
81	Tunney's Pasture ↔ Bayshore	30-minutes headway, 7 days a week, all day service

Route	From ↔ To	Frequency
82	Tunney's Pasture / Lincoln Fields ↔ Baseline	30 minutes headway, 7 days per week, all day service
87	Tunney's Pasture ↔ Baseline	15 minutes headway, 7 days per week, all day service
256	Tunney's Pasture ↔ Bridlewood	30 minutes headway, Mon-Fri, peak periods only
261	Kimpton ↔ Tunney's Pasture	45-55 minutes headway, Mon-Fri, peak periods only
262	Tunney's Pasture ↔ West Ridge	30-50 minutes headway, Mon-Fri, peak periods only
263	Tunney's Pasture ↔ Richmond	60 minutes headway, Mon-Fri, peak periods only
265	Tunney's Pasture ↔ Terry Fox	30 minutes headway, Mon-Fri, peak periods only
266	Springbrook ↔ Tunney's Pasture	40-60 minutes headway, Mon-Fri, peak periods only
275	Half Moon Bay ↔ Tunney's Pasture	30 minutes headway, Mon-Fri, peak periods only
277	Tunney's Pasture ↔ Nepean Woods	30 minutes headway, Mon-Fri, peak periods only
279	Manotick ↔ Tunney's Pasture	60 minutes headway, Mon-Fri, peak periods only

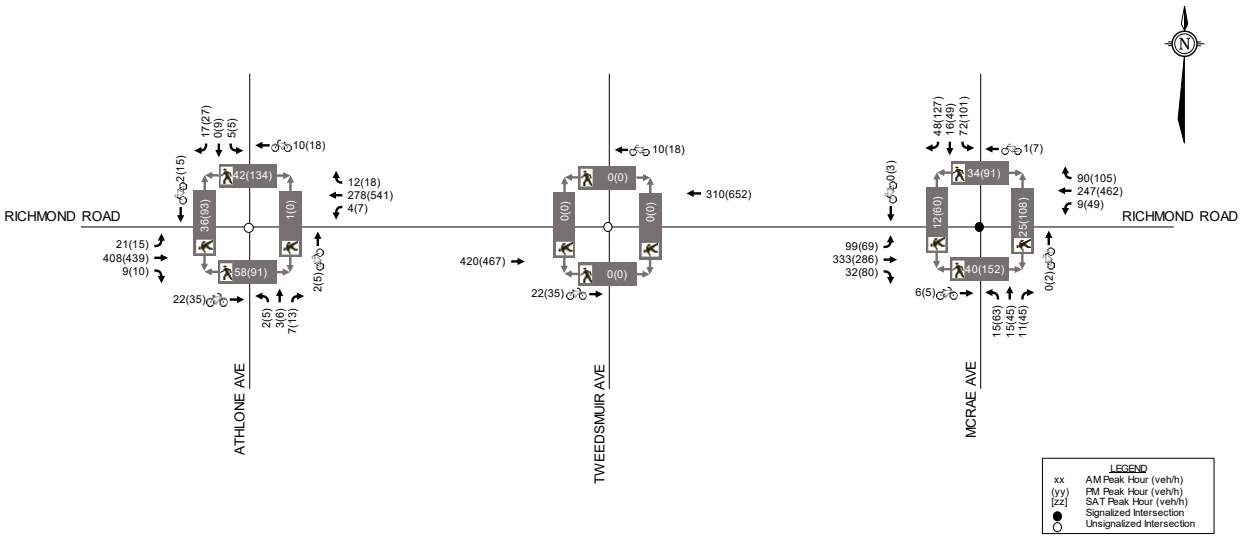
2.1.7 Existing Traffic Volumes

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

Context from 2013 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).

Context from Draft 2025 TMP Capital Infrastructure Plan (CIP)
Within the 2025 Draft 2025 TMP CIP, the Needs Based Transit Network Map, and the Priority Transit Network Map identify transit priority corridor along Richmond Road which may include dedicated bus lanes, queue jump lanes at intersections, transit priority signals, and changes to bus stop configurations. The locations and timelines for these improvements are currently not identified in the Draft TMP.

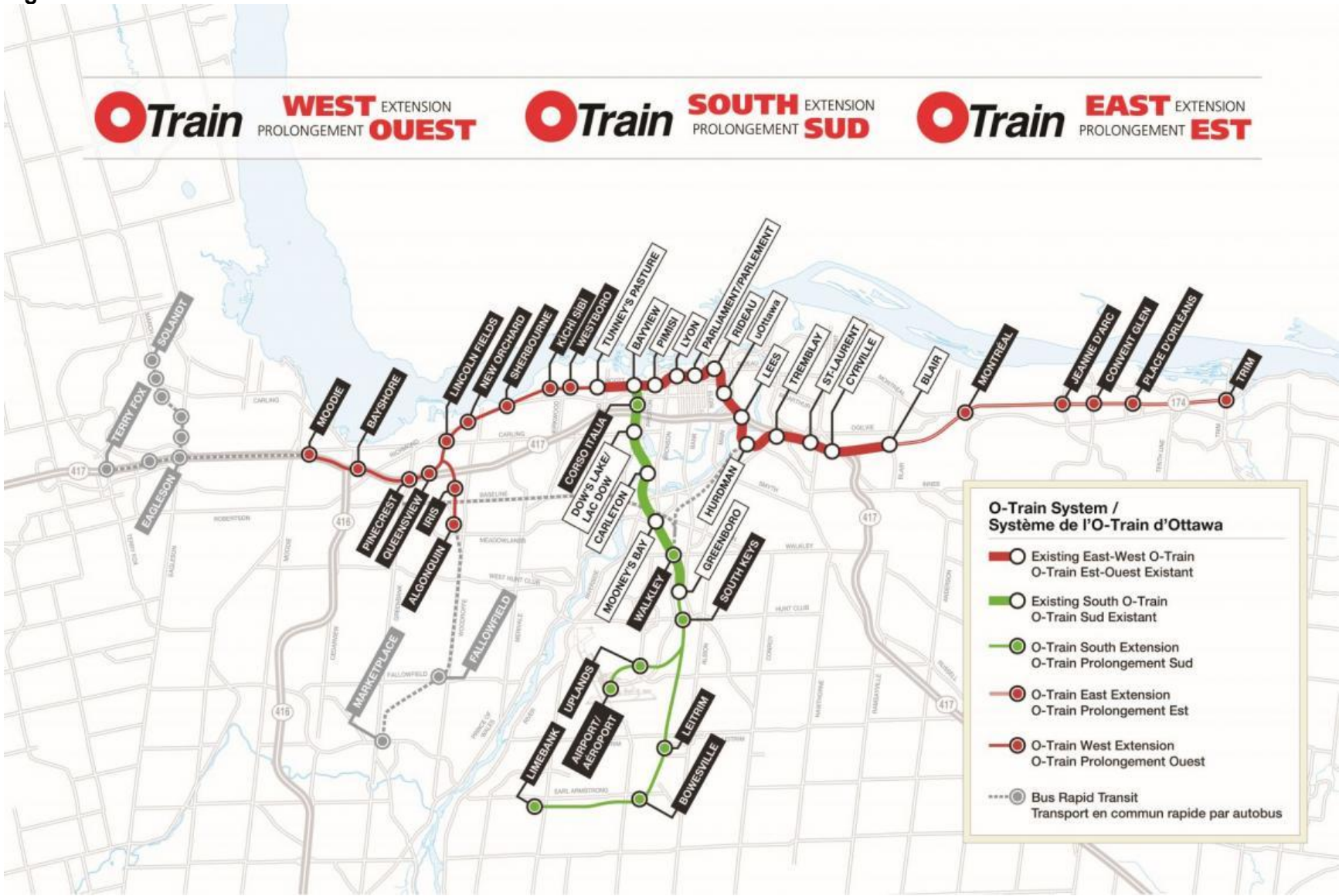
Active Transportation Projects New TMP Part -1
Within the City of Ottawa Transportation Master Plan's Active Transportation Projects, no planned projects are identified within the study area.

Integrated Renewal of Athlone, Lincoln, Edgewood and Eden Avenues (Planning Phase)
As part of the integrated renewal project, the city plans to do a full road reconstruction and street redesign to implement the 30kmph per the local residential street policy. The limits of the project include Athlone Avenue between Scott Street and Byron Avenue, Edgewood Avenue, Lincoln Avenue between Churchill Avenue North and Edgewood Avenue, and Eden Avenue between Lincoln Avenue and Richmond Road. The project is anticipated to start construction in fall 2027.

Integrated Renewal: Winona, Wilmont, Elmgrove and Picton
The City of Ottawa plans to replace watermains, and sanitary sewers on Wilmont Avenue along with other works on Winona, Elmgrove and Picton Avenue. As part of the renewal, the roads will be fully reconstructed with new asphalt, catch basins, concrete curbs and sidewalks. The project is also proposed to incorporate several new traffic calming features such as mid-block narrowings, speed humps and raised crosswalks to achieve an operating speed of 30 kmph.

LRT 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 2027. 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**.

Figure 4: LRT Phase 2 - Confederation Line Extension West



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 with 161 units, and reprogramming of the convent to include two restaurants, 5 residential units and amenity space.
- *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 1738m^2 space on ground floor for commercial units and approximately 184 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 residential building with 61 dwelling units.
- *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 with common underground parking lot with a total of 312 units and with 275 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.
- *320 McRae Avenue, 1976 Scott Street, and 315 Tweedsmuir Avenue:* mixed-use development with 297 residential units and 14,440ft^2 of retail land uses. This development was recently constructed.
- *403 Richmond Road and 389 Roosevelt Avenue:* nine-storey mixed-use building with 141 residential units and 5,283ft^2 of ground floor commercial space.
- *2050 Scott St, 2046 Scott St, 301 Ashton Ave, 299 Ashton Ave, 295 Ashton Ave:* thirty-storey residential building on a 3- and 6-storey podiums with approximately 353 units and 233m^2 of ground commercial/office.
- *2026 Scott St, 2020 Scott St, 2006 Scott St, 318 Athlone Ave, and 314 Athlone Ave:* forty-storey towers with a total of 856 dwelling units and approximately 3,207ft^2 of ground-floor commercial space.
- *1950 Scott St, 314 Clifton Rd, and 312 Clifton Rd:* twenty-two storey residential tower with a total of 244 dwellings and approximately 2,098ft^2 of ground-floor commercial space.

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 2026. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2026 and horizon year 2031.

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

Existing Trip Generation

Currently, the subject site is occupied by a retail building, and a high turnover restaurant, with a total gross floor area of approximately 11,000 square feet (approximated using aerial photography). Trips generated by the existing development has been estimated using the rates outlined in the *ITE Trip Generation Manual, 11th 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	5	3	*8*	14	17	*31*
High-Turnover Restaurant	932	4,000 ft^2	-	-	*0*	28	18	*46*
Total			**5**	**3**	***8***	**42**	**35**	***77***

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		**5**	**3**	***8***	**14**	**17**	***31***
Auto Driver	50%	3	2	*5*	7	9	*16*
Auto Passenger	15%	1	0	*1*	2	2	*4*
Transit	10%	0	0	*0*	1	2	*3*
Cyclist	5%	0	0	*0*	1	1	*2*
Pedestrian	20%	1	1	*2*	3	3	*6*
Restaurant Person Trips		**0**	**0**	***0***	**28**	**18**	***46***
Auto Driver	35%	-	-	*0*	10	6	*16*
Auto Passenger	10%	-	-	*0*	3	2	*5*
Transit	5%	-	-	*0*	1	1	*2*
Cyclist	5%	-	-	*0*	1	1	*2*
Pedestrian	45%	-	-	*0*	13	8	*21*

From the previous tables, the existing development is estimated to generate 8 person trips (including 5 vehicle trips) during the AM peak hour, and 77 person trips (including 32 vehicle trips during the PM peak hour.

Proposed Residential Trip Generation

The proposed redevelopment will include 127 residential units. Trips generated by the proposed residential units during the AM and PM peak period have been estimated using the recommended rates from the *2020 TRANS Trip Generation Manual*. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential in the Ottawa West Area. The directional split

between inbound and outbound trips are based on the blended splits presented in Table 9 of the report.

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

Table 6: Trips Generated by Proposed Residential Development

Land Use	TRANS Rate	Units	AM Peak Period (PPP)[1]			PM Peak Period (PPP)[1]		
			In	Out	Total	In	Out	Total
High-Rise Residential, Ottawa West	AM: 0.80 PM: 0.90	127 units	31	70	101	66	48	114

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		**31**	**70**	***101***	**66**	**48**	***114***
Auto Driver	25%	8	17	*25*	17	12	*29*
Auto Passenger	10%	3	7	*10*	7	5	*12*
Transit	40%	13	28	*41*	26	19	*45*
Cyclist	5%	2	3	*5*	3	2	*5*
Pedestrian	20%	6	14	*20*	13	10	*23*

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

Table 9: Proposed Residential Development – Peak Hour Person Trips

Travel Mode	Adjustment Factor		AM Peak Period			PM Peak Period		
	AM	PM	In	Out	Total	In	Out	Total
Residential Person Trips			**16**	**36**	***52***	**30**	**22**	***52***
Auto Driver	0.48	0.44	4	8	*12*	7	5	*12*
Auto Passenger	0.48	0.44	1	3	*4*	3	2	*5*
Transit	0.55	0.47	7	15	*22*	12	9	*21*
Cyclist	0.58	0.48	1	2	*3*	1	1	*2*
Pedestrian	0.58	0.52	3	8	*11*	7	5	*12*

From the previous tables, the proposed residential uses are estimated to generate 52 person trips (including 12 vehicle trips) during the AM peak hour, and 52 person trips (including 12 vehicle trips) during the PM peak hour.

Proposed Commercial Trip Generation

The proposed redevelopment will also include two retail units with a combined gross floor area of approximately 4,240 square feet and a restaurant with a gross floor area of approximately 2,282 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, 11th 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	4,240 ft^2	3	3	*6*	9	9	*18*
High-Turnover Restaurant	932	2,282 ft^2	15	13	*28*	17	10	*27*
		Total	**18**	**16**	***34***	**26**	**19**	***45***

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**	**3**	***6***	**9**	**9**	***18***
Auto Driver	50%	2	2	*4*	5	5	*10*
Auto Passenger	15%	0	0	*0*	1	1	*2*
Transit	10%	0	0	*0*	1	1	*2*
Cyclist	5%	0	0	*0*	0	0	*0*
Pedestrian	20%	1	1	*2*	2	2	*4*
Restaurant Person Trips		**15**	**13**	***28***	**17**	**10**	***27***
Auto Driver	35%	5	4	*9*	6	4	*10*
Auto Passenger	10%	1	1	*2*	2	1	*3*
Transit	5%	1	1	*2*	1	1	*2*
Cyclist	5%	1	1	*2*	1	0	*1*
Pedestrian	45%	7	6	*13*	7	4	*11*

Based on the previous table, the proposed commercial uses are projected to generate 34 person trips during the AM peak period and 45 person trips during the PM peak period. Of the trips generated, 13 and 20 are expected to be vehicle trips during the AM and PM peak periods, respectively.

Net Trip Generation

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

Table 12: Net Person Trip Generation

Travel Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Development						
Auto Driver	3	2	*5*	17	15	*32*
Auto Passenger	1	0	*1*	5	4	*9*
Transit	0	0	*0*	2	3	*5*
Cyclist	0	0	*0*	2	2	*4*
Pedestrian	1	1	*2*	16	11	*27*
Total	**5**	**3**	***8***	**42**	**35**	***77***
Proposed Development						
Auto Driver	11	14	*25*	18	14	*32*
Auto Passenger	2	4	*6*	6	4	*10*
Transit	8	16	*24*	14	11	*25*
Cyclist	2	3	*5*	2	1	*3*
Pedestrian	11	15	*26*	16	11	*27*
Total	**34**	**52**	***86***	**56**	**41**	***97***
Net Trips						
Auto Driver	8	12	*20*	1	-1	*0*
Auto Passenger	1	4	*5*	1	0	*1*
Transit	8	16	*24*	12	8	*20*
Cyclist	2	3	*5*	0	-1	*-1*
Pedestrian	10	14	*24*	0	0	*0*
Total	**29**	**49**	***78***	**14**	**6**	***20***

Based on the previous table, the vehicle trip generation for the proposed development is expected to increase by 20 vehicle trips during the AM peak hours and is anticipated to decrease by 0 vehicle trips during the PM peak hour. The proposed development is expected to generate an additional 24 and 20 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 the other study area developments is included in section 2.2

A review of traffic studies for the following study area developments suggests that the 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 with 161 units, and reprogramming of the convent to include two restaurants, 5 residential units and amenity space.
- *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 residential building with 61 dwelling units.
- *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.
- *1950 Scott St, 314 Clifton Rd, and 312 Clifton Rd:* twenty-two storey residential tower with a total of 244 dwellings and approximately 2,098ft^2 of ground-floor commercial space.

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 with common underground parking lot with a total of 312 units and with 275 parking spaces.
- *319-327 Richmond Road*: a nine-storey mixed-use building with 1738m^2 space on ground floor for commercial units and approximately 184 dwelling units on the upper storeys.
- *320 McRae Avenue, 1976 Scott Street, and 315 Tweedsmuir Avenue:* mixed-use development with 297 residential units and 14,440ft^2 of retail land uses. This development was recently constructed.

- *403 Richmond Road and 389 Roosevelt Avenue:* nine-storey mixed-use building with 141 residential units and 5,283ft^2 of ground floor commercial space.
- *2050 Scott St, 2046 Scott St, 301 Ashton Ave, 299 Ashton Ave, 295 Ashton Ave:* thirty-storey residential building on a 3- and 6-storey podiums with approximately 353 units and 233m^2 of ground commercial/office.
- *2026 Scott St, 2020 Scott St, 2006 Scott St, 318 Athlone Ave, and 314 Athlone Ave:* forty-storey towers with a total of 856 dwelling units and approximately 3,207ft^2 of ground-floor commercial space.

Excerpts of the transportation studies in support of the above developments area 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 2026 and 2031 are shown in **Figure 5** and **Figure 6** respectively.

Figure 5: 2026 Background Traffic Volumes

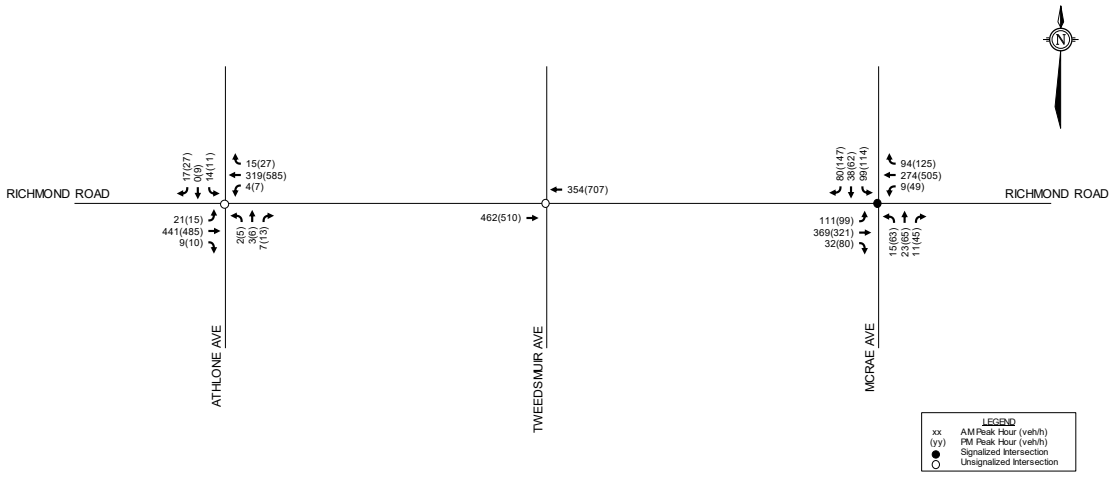
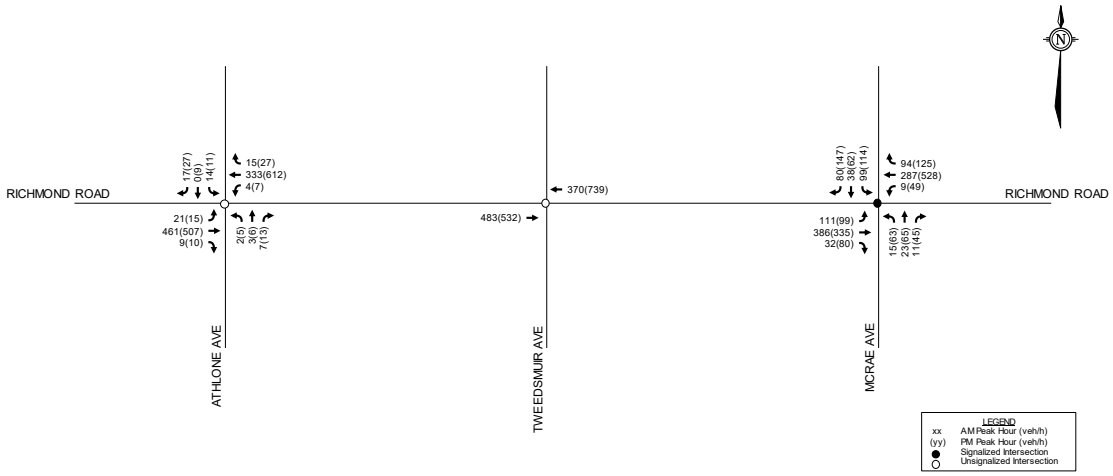


Figure 6: 2031 Background Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

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

Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance, 30 spaces will be provided within the building lobby, and 128 will be provided within the underground parking garage. In total, 160 bicycle parking spaces will be provided. Further review of the number of bicycle parking spaces is included in Section 4.2.

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 closest bus stops to the subject site along Richmond Road provide service to routes 11, 51, and 81.

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*:

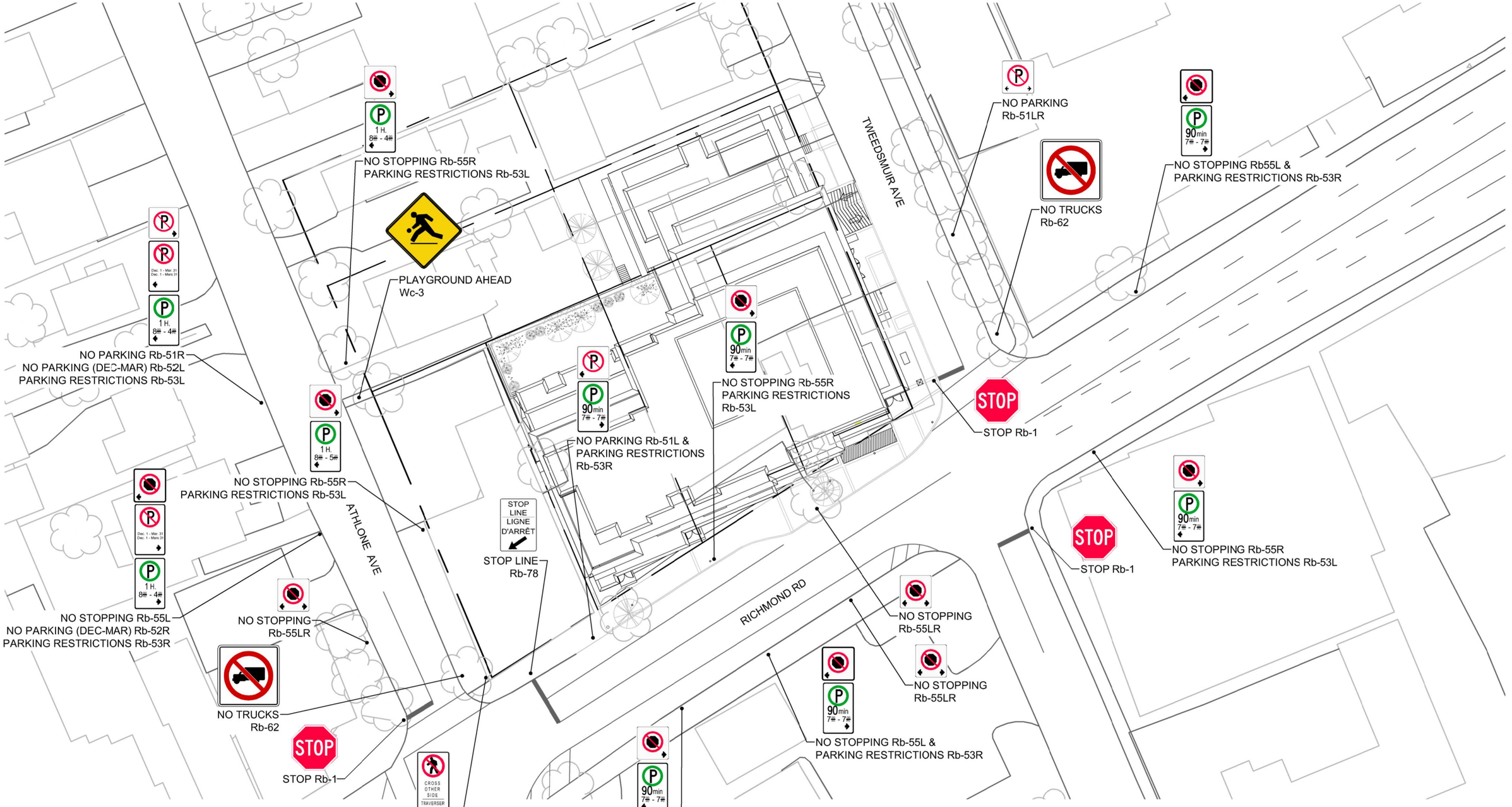
- Locate building close to the street, and do not locate parking areas between the street and building entrances.
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations.
- Locate building doors and windows to ensure visibility of pedestrians from the 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.

Loading operations for the residential function of the building will take place along Tweedsmuir Avenue adjacent to the east entrance. A holding room is provided adjacent to the east entrance to facilitate a shorter unloading time, hold furniture etc. which limits the amount of time that the unloading vehicles is parked on Tweedsmuir Avenue. Loading for the commercial developments will occur on-street along Richmond Road.

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.



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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

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4.2 Parking

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

Table 13: Minimum Parking Requirements

Land Use	Rate	Units/GFA	Required
Minimum Vehicle Parking			
Residential	Resident: 0.5 per dwelling, after the first 12 units	127 units	58
	Visitor: 0.1 per dwelling, after the first 12 units		12
Commercial	Retail: No parking required when GFA < 500 m^2	394 m^2	0
	Restaurant: No parking required when GFA < 350 m^2	212 m^2	0
		Minimum	**70**
		Provided	**77**
Maximum Vehicle Parking			
Residential	Resident + Visitor: 1.75 per dwelling	127 units	222
Commercial	Retail: 1 per 250 m^2 GFA	394 m^2	2
		Maximum	**203**
		Provided	**77**
Minimum Bicycle Parking			
Residential	Resident: 1.75 per dwelling[1]	127 units	222
Commercial	Retail & Restaurant: 1 per 250 m^2 GFA	606 m^2	2
		Minimum	**224**
		Provided	**160**

1. Per ZBL Exception 2900

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

Relief from the ZBL Exception 2900 is being sought for the minimum number of bicycle parking spaces that are required. A total of 160 bicycle parking spaces are proposed for the development, equating to a rate of approximately 1.25 spaces per unit.

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 Table

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	Suggested	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.

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 25m 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 8.2m with a grade of 1.0% from garage door to property line and 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 5.0m, before transitioning to a 13% grade. Within the first 9m of the property line the proposed grades are 1.0% for approximately 3.7m, and 5% for approximately 5.0m. By limiting the maximum grade to 5% for the first 9m and including a 1.4% slope for approximately 8.2m 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 13.2m behind the sidewalk and 8.7m 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 127 residential units. The unit breakdown is summarized as follows:

- Studio: 9 units;
- One Bedroom: 61 units;
- One Bedroom and Den: 21 units;
- Two Bedroom: 36 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 two and five vehicle trips two-way during the AM and PM peak hours respectively. However, as the proposed development is located in close proximity to the future Westboro LRT station 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);
- Unbundle parking cost from monthly rent (multi-family);
- Provide a multimodal travel option information package to new residents.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

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, 30 spaces will be provided within the building lobby, and 128 will be provided within the underground parking garage. In total, 160 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.

- Loading operations for the residential function of the building will take place along Tweedsmuir Avenue adjacent to the east entrance. A holding room is provided adjacent to the east entrance to facilitate a shorter unloading time, hold furniture etc. which limits the amount of time that the unloading vehicles is parked on Tweedsmuir Avenue. Loading for the commercial developments will occur on-street along Richmond Road.
- No changes to the existing signage are proposed along the subject site's frontage.

Parking

- The proposed vehicular parking spaces adhere to the requirements of the City's *Zoning By-law* (ZBL).
- Relief from the ZBL Exception 2900 is being sought for the minimum number of bicycle parking spaces that are required. A total of 160 bicycle parking spaces are proposed for the development, equating to a rate of approximately 1.25 spaces per unit.

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 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 13.2m behind the sidewalk and 8.7m 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 (condominium);
- Unbundle parking cost from purchase price (multi-family);
- Provide a multimodal travel option information package to new residents;

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

NOVATECH

Prepared by:

Mohammed Talha, M. Eng.
Engineering Intern | Transportation

Reviewed by:

Brad Byvelds, P. Eng.
Senior Project Manager | Transportation

Appendix A: Site Plan

3 SITE PLAN
1 : 150

MATERIAL LEGEND:

- TYP. BALLASTED ROOF
- TERRACE ROOF (PAVERS)
- BALCONIES
- PLANTERS

UNIT DISTRIBUTION SUMMARY

Level	Name	Count	Area
Level 1	One Bedroom	4	247.83 m²
Level 1	One Bedroom (BF)	1	62.80 m²
		5	310.62 m²
Level 2	One Bedroom	8	508.47 m²
Level 2	Studio	1	52.64 m²
Level 2	Two Bedroom	3	301.49 m²
		12	862.60 m²
Level 3	One Bedroom	10	633.62 m²
Level 3	One Bedroom + Den	4	318.80 m²
Level 3	Studio	1	42.36 m²
Level 3	Two Bedroom	4	383.76 m²
		19	1378.55 m²
Level 4	One Bedroom	10	639.32 m²
Level 4	One Bedroom + Den	4	318.80 m²
Level 4	Studio	1	42.46 m²
Level 4	Two Bedroom	4	385.27 m²
		19	1385.85 m²
Level 5	One Bedroom	6	384.39 m²
Level 5	One Bedroom + Den	4	318.80 m²
Level 5	Studio	1	42.44 m²
Level 5	Two Bedroom	6	561.11 m²
		17	1306.75 m²
Level 6	One Bedroom	8	508.25 m²
Level 6	One Bedroom + Den	4	318.80 m²
Level 6	Studio	1	42.38 m²
Level 6	Two Bedroom	4	374.70 m²
		17	1244.13 m²
Level 7	One Bedroom	4	258.14 m²
Level 7	One Bedroom + Den	4	318.80 m²
Level 7	Studio	1	42.38 m²
Level 7	Two Bedroom	6	594.97 m²
		15	1214.29 m²
Level 8	One Bedroom	5	366.75 m²
Level 8	One Bedroom + Den	1	81.03 m²
Level 8	Studio	1	39.19 m²
Level 8	Two Bedroom	5	487.01 m²
		12	973.97 m²
Level 9	One Bedroom	5	368.96 m²
Level 9	Studio	1	39.21 m²
Level 9	Two Bedroom	5	505.73 m²
		11	913.90 m²
Grand total: 127		127	9590.67 m²

AVERAGE GRADE CALCULATION

67.20
67.30
65.65
65.55
66.65
65.98
67.45

TOTAL: 66.54

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:	2181.2M^2
MAX BUILDING HEIGHT:	15.0M
BUILDING HEIGHT FROM AVG GRADE:	31.0M
AVERGAE GRADE:	66.37m (GEODETIC)
MAX FRONT YARD SETBACK:	2M
FRONT YARD SETBACK(RETAIL) (VARIES AT GRADE)	0M
FRONT YARD SETBACK (RESIDENTIAL)	2M
MIN. REAR YARD SETBACK:	7.5M
REAR YARD SETBACK (FORMER R4 ZONE):	1.2M
REAR YARD SETBACK (AMENITY AREAS):	0.07M
REAR YARD SETBACK (BUILDING ABOVE GRADE):	7.5M
MAX INTERIOR SIDE YARD SETBACK:	3M
INTERIOR SIDE YARD SETBACK (FORMER R4 ZONE):	7.5M
INTERIOR SIDE YARD SETBACK (TM ZONE):	0.135M
INTERIOR SIDE YARD SETBACK (WEST):	1.2M
MIN. CORNER YARD SETBACK (EAST):	3M
MIN. CORNER YARD SETBACK (ABOVE 15M):	2M
CORNER YARD SETBACK (EAST) PROVIDED:	0M
CORNER YARD SETBACK (ABOVE 15M) PROVIDED:	2.5M
MIN. DRIVEWAY AISLE WIDTH:	6.7M
DRIVEWAY AISLE WIDTH:	6M

DEVELOPMENT INFORMATION

PROPOSED:

GROUND FLOOR G.F.A. RETAIL:	611.10M^2
GROSS CONSTRUCTED AREA (EXCLUDED BELOW GRADE / MPH / TERRACES):	12756.44M^2
GROSS CONSTRUCTED AREA MECH. PENTHOUSE:	221.03M^2
GROSS CONSTRUCTED AREA P1:	2090.37M^2
GROSS CONSTRUCTED AREA P2:	2090.37M^2
PROPOSED # UNIT (RETAIL):	3 UNITS
PROPOSED # UNITS (RESIDENTIAL):	127 UNITS

PARKING REQUIREMENTS

MIN. RESIDENT PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT AFTER FIRST 12 UNITS)	0.5
MIN. VISITOR PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT AFTER FIRST 12 UNITS)	0.1
MIN. REQUIRED PARKING STALLS @ (127-12 = 115 X 0.5):	58
MIN. REQUIRED VISITOR PARKING STALLS @ (127-12 = 115 X 0.1 - 10%):	12
TOTAL PARKING REQUIRED:	70

PROPOSED PARKING

DRIVE AISLE WIDTH (RETAIL AND VISITOR PARKING SHARED)	6.0M
PINCH POINT IN GARAGE:	5.2M
PROPOSED RETAIL PARKING:	0
PROPOSED RESIDENTIAL PARKING:	65
PROPOSED VISITOR PARKING:	12
TOTAL OF PROPOSED PARKING (P1, P2):	77
ACCESSIBLE:	1
CONFORMING STALLS (2.6 X 5.2m):	38
CONFORMING SHORT CAR STALLS (2.4 X 4.6m MIN.):	32

PROPOSED BICYCLE PARKING

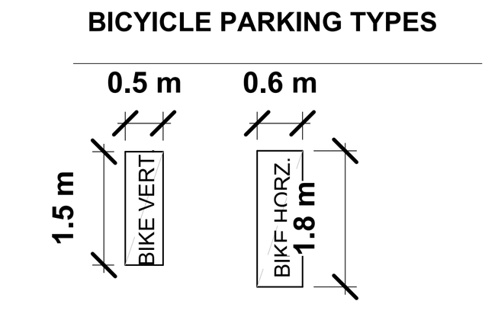
REQUIRED RETAIL BICYCLE PARKING:	2
REQUIRED RESIDENTIAL BICYCLE PARKING (@ 1.75/UNIT):	222
SUB-TOTAL OF REQUIRED BICYCLE PARKING:	224
PROVIDED RESIDENTIAL BICYCLE PARKING (@ 1.25 / UNIT)	158
PROVIDED RETAIL BICYCLE PARKING	2
TOTAL BICYCLE PARKING PROVIDED	160
BICYCLE PARKING PROVIDED (UNDERGROUND):	128
BICYCLE PARKING PROVIDED (LOBBY):	30
BICYCLE PARKING PROVIDED (EXTERIOR):	2
BICYCLE PARKING PROVIDED (TOTAL):	160

AMENITY AREA CALCULATIONS - PROPOSED

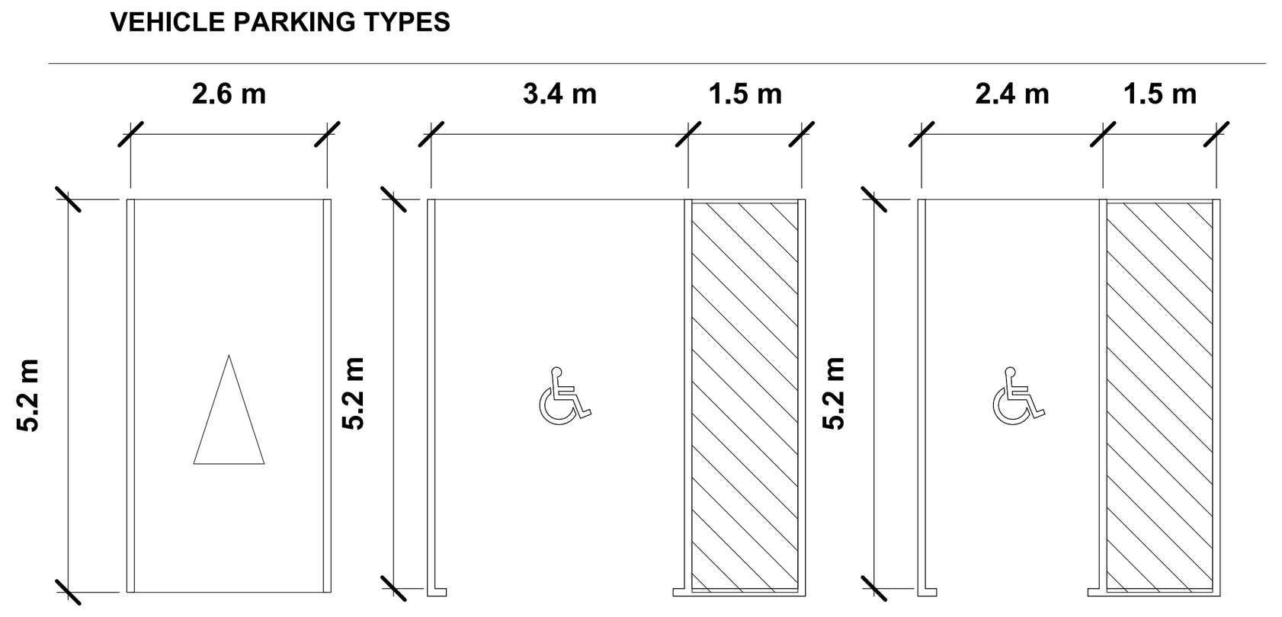
NOTE: CALCULATIONS DONE IN ACCORDANCE WITH CITY OF OTTAWA BY-LAW 2008-250, SECTION 137 - AMENITY AREA

RESIDENTIAL TOTAL REQUIRED AMENITY AREA (MIN.): (127 UNITS @ 6.0M^2/UNIT	762.0M^2
COMMUNAL AREA (MIN.): (50% OF REQ'D TOTAL AMENITY AREA)	381.0M^2
TOTAL RESIDENTIAL AMENITY AREA REQUIRED:	**762M^2**
TOTAL AMENITY AREA PROVIDED:	
BALCONY AREA (104 UNITS):	937.01M^2
INDOOR AMENITY AREA (COMMUNAL):	323.46M^2
OUTDOOR AMENITY AREA (COMMUNAL):	266.51M^2
TOTAL RESIDENTIAL AMENITY AREA PROVIDED:	**1,524.98M^2**
LANDSCAPED AREA REQUIRED:	NON MINIMUM
LANDSCAPED AREA PROVIDED:	400.00M^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):	7.4M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 SIDE YARD):	1.2M
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):	7.4M

BICYCLE PARKING TYPES



VEHICLE PARKING TYPES



NOTE: TYPICAL CONFORMING STALLS HIGHLIGHTED IN YELLOW ON PLANS. REMAINING STALLS ARE NON-CONFORMING.

YSTREET CAPITAL

3019 Carling Ave, Suite 201B,
Ottawa, K2K 2A3

1. **ALL SITE INFORMATION TAKEN FROM PLAN OF SURVEY AS PREPARED BY FARLEY, SMITH, AND DENIS OLS, DATED SEPTEMBER 10, 2020. PART OF LOT 4 AND ALL OF LOTS 5, 6 & 42. REGISTERED PLAN 263, CITY OF OTTAWA.**
2. REFER TO LANDSCAPE PLANS FOR SIDEWALK, DEMARCATION OF PEDESTRIAN CLEARWAY, PAVING, AND PLANTING STRATEGIES
3. ALL BUILDING SETBACKS AND STEPBACKS TO CONFORM TO THE ZONING AND HEIGHT SCHEDULE ATTACHED TO SITE PLAN SHEET A01.00
4. PERMITTED PROJECTION DECORATIVE CORNICE DETAIL OMITTED FROM SITE PLAN FOR CLARITY
5. PROJECTING CANOPIES @ GROUND LEVEL SUBJECT TO EASEMENT.

No.	DESCRIPTION	DATE	CHD
16	Updated Site Plan	2025-07-30	
15	Revised Parking - P1-P2	2025-07-14	
14	Issued to Consultants	2025-05-06	
13	Full Arch. Set	2025-04-17	
12	Schematic Design	2025.04.09	
7	Issued for SPA	2024.03.05	
6	Revised as per City Comments R2	2023.11.14	
5	Revised as per City Comments	2023.08.28	
3	Re-issued for Zoning Amendment	2023.04.14	
2	Re-issued for Zoning Amendment	2023.04.04	
1	Issued for Zoning Amendment	2023.04.03	

REVISIONS

CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY 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 03/05/2024

DRAWN SH

DATE 03/05/2024

CHECKED VPC

DATE PRINTED 2025-07-30 5:32:29 PM

VINCENT P. COLIZZA ARCHITECT INCORPORATED

249, 255 Richmond Road, 372 Tweedsmuir Avenue
Ottawa, ON

DWG. TITLE
Site Plan

SCALE
As indicated

PROJ. NO.
2219

DWG. NO.
A01.00

STREET CAPITAL
3019 Carling Ave, Suite 201B,
Ottawa, K2K 2A3

1. **ALL SITE INFORMATION TAKEN FROM PLAN OF SURVEY AS PREPARED BY FARLEY, SMITH, AND DENIS OLS, DATED SEPTEMBER 10, 2020. PART OF LOT 4 AND ALL OF LOTS 5, 6 & 42. REGISTERED PLAN 263, CITY OF OTTAWA.**
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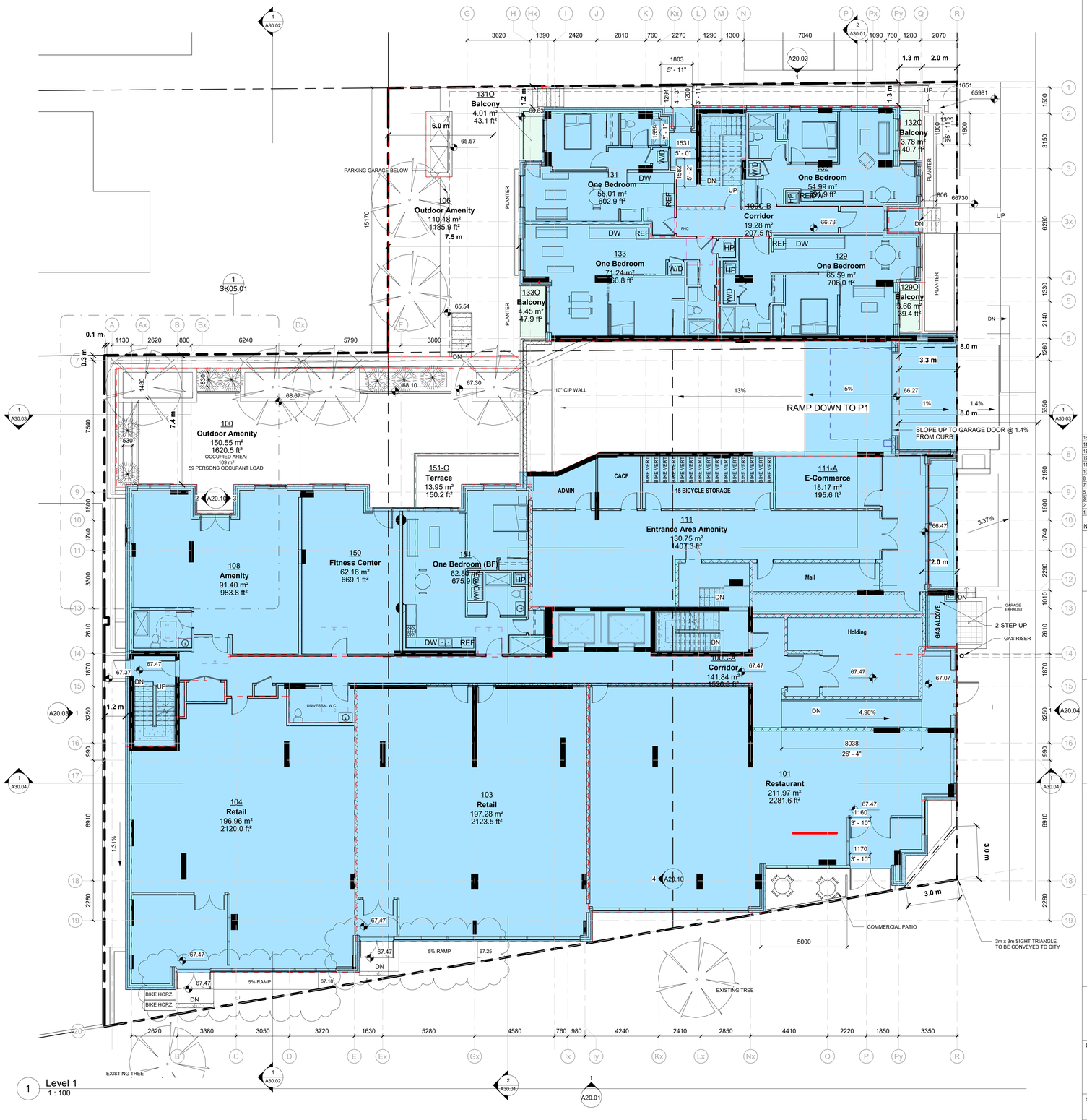
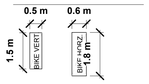
4. PERMITTED PROJECTION DECORATIVE CORNICE DETAIL OMITTED FROM SITE PLAN FOR CLARITY
5. PROJECTING CANOPIES @ GROUND LEVEL SUBJECT TO EASEMENT.

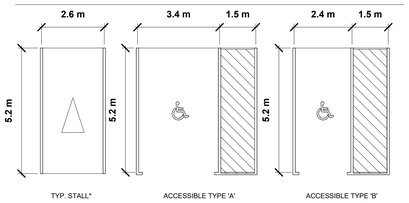


Level 1
1 : 100

BICYCLE PARKING TYPES



VEHICLE PARKING TYPES



***NOTE: TYPICAL CONFORMING STALLS HIGHLIGHTED IN YELLOW ON PLANS. REMAINING STALLS ARE NON-CONFORMING.**

Level 1 Area Summary

Level	Name	Number	Area Designation	Area (Sqm)	Area (Sqft)
Level 1	Amenity	108	Amenity	91.40 m²	983.78 ft²
Level 1	E-Commerce	111-A	Amenity	18.17 m²	195.63 ft²
Level 1	Entrance Area Amenity	111	Amenity	130.75 m²	1407.34 ft²
Level 1	Fitness Center	150	Amenity	62.16 m²	669.07 ft²
Amenity: 4				302.48 m²	3255.83 ft²
Level 1	Corridor	100C-A	Corridors	141.84 m²	1526.76 ft²
Level 1	Corridor	100C-B	Corridors	19.28 m²	207.55 ft²
Corridors: 2				161.12 m²	1734.31 ft²
Level 1	Outdoor Amenity	100	Outdoor Amenity	150.55 m²	1620.48 ft²
Level 1	Outdoor Amenity	106	Outdoor Amenity	110.18 m²	1185.94 ft²
Outdoor Amenity: 2				260.72 m²	2806.42 ft²
Level 1	Balcony	129O	Outdoor Private Amenity	3.66 m²	39.37 ft²
Level 1	Balcony	131O	Outdoor Private Amenity	4.01 m²	43.13 ft²
Level 1	Balcony	132O	Outdoor Private Amenity	3.78 m²	40.73 ft²
Level 1	Balcony	133O	Outdoor Private Amenity	4.45 m²	47.93 ft²
Level 1	Terrace	151-O	Outdoor Private Amenity	13.95 m²	150.20 ft²
Outdoor Private Amenity: 5				29.86 m²	321.36 ft²
Level 1	Restaurant	101	Retail	211.97 m²	2281.58 ft²
Level 1	Retail	103	Retail	197.28 m²	2123.48 ft²
Level 1	Retail	104	Retail	196.96 m²	2120.04 ft²
Retail: 3				606.20 m²	6525.10 ft²
Level 1	One Bedroom	129	Unit	65.59 m²	706.00 ft²
Level 1	One Bedroom	131	Unit	56.01 m²	602.90 ft²
Level 1	One Bedroom	132	Unit	54.99 m²	591.87 ft²
Level 1	One Bedroom	133	Unit	71.24 m²	766.80 ft²
Level 1	One Bedroom (BF)	151	Unit	62.80 m²	675.94 ft²
Unit: 5				310.62 m²	3343.50 ft²

No.	DESCRIPTION	DATE	CHD
16	Updated Site Plan	2025-07-30	
14	Issued to Consultants	2025-05-06	
13	Full Arch. Set	2025-04-17	
12	Schematic Design	2025.04.09	
11	Issued for Zoning Amendment	2025.03.31	
10	Setback & Height Review	2025.03.18	
8	Issued for Draft Review	2025.02.12	
7	Issued for SPA	2024.03.05	
5	Revised as per City Comments	2023.08.28	
3	Re-issued for Zoning Amendment	2023.04.14	
2	Re-issued for Zoning Amendment	2023.04.04	
1	Issued for Zoning Amendment	2023.04.03	

REVISIONS

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DO NOT SCALE THE DRAWINGS

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

DATE 03/24/2024

DRAWN SH

DATE 03/24/2024

CHECKED VPC

DATE PRINTED 2025-07-30 5:32:31 PM

VINCENT P. COLIZZA ARCHITECT INCORPORATED

249, 255 Richmond Road, 372 Tweedsmuir Avenue

Ottawa, ON

DWG. TITLE
Level 01 Floor Plan

SCALE As indicated

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	**High-Rise Residential with Ground-Floor Retail**
Development Size (units)	**127 dwellings**
Development Size (m^2)	**606 m^2 (6,523 ft^2) of retail or restaurant space**
Number of Accesses and Locations	**One proposed access to Tweedsmuir Avenue**
Phase of Development	**1**
Buildout Year	**2026**

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

2. Trip Generation Trigger

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

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 Maps

11

WALLER

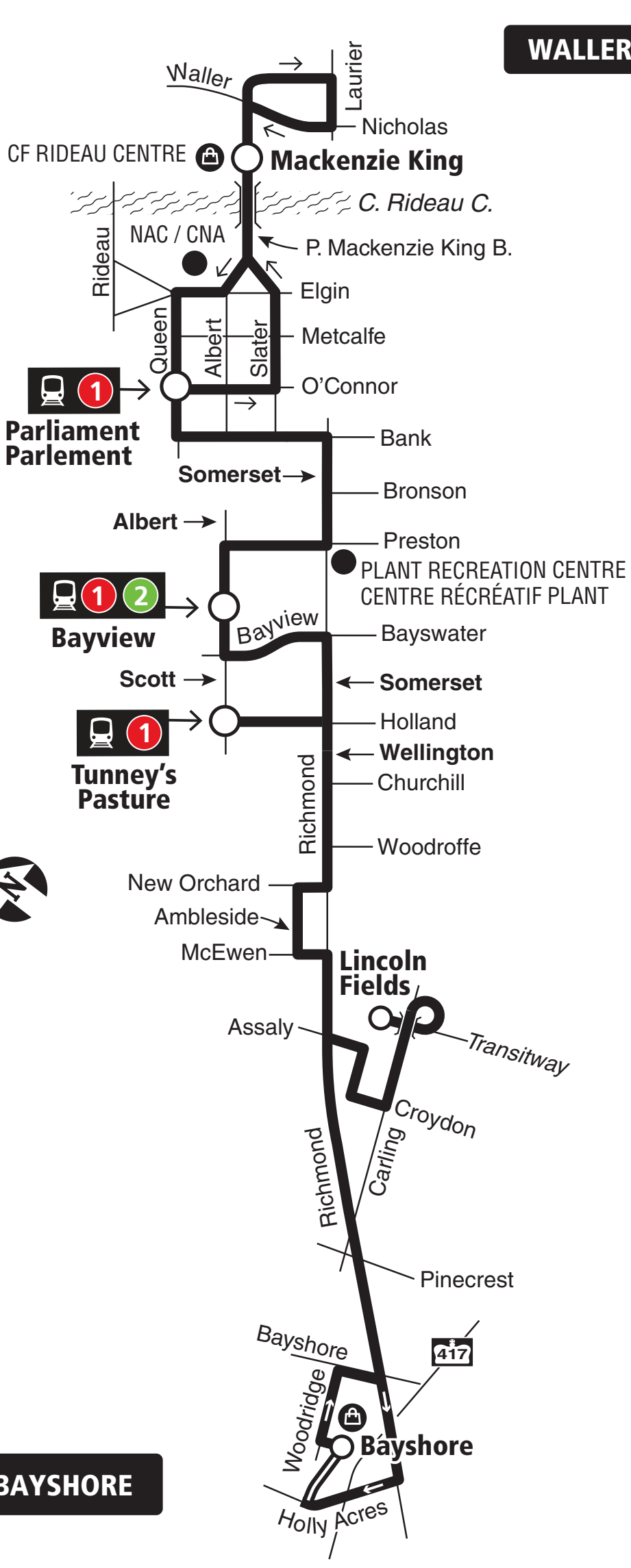
BAYSHORE

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



04.2025

Transitway & Station

Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

51

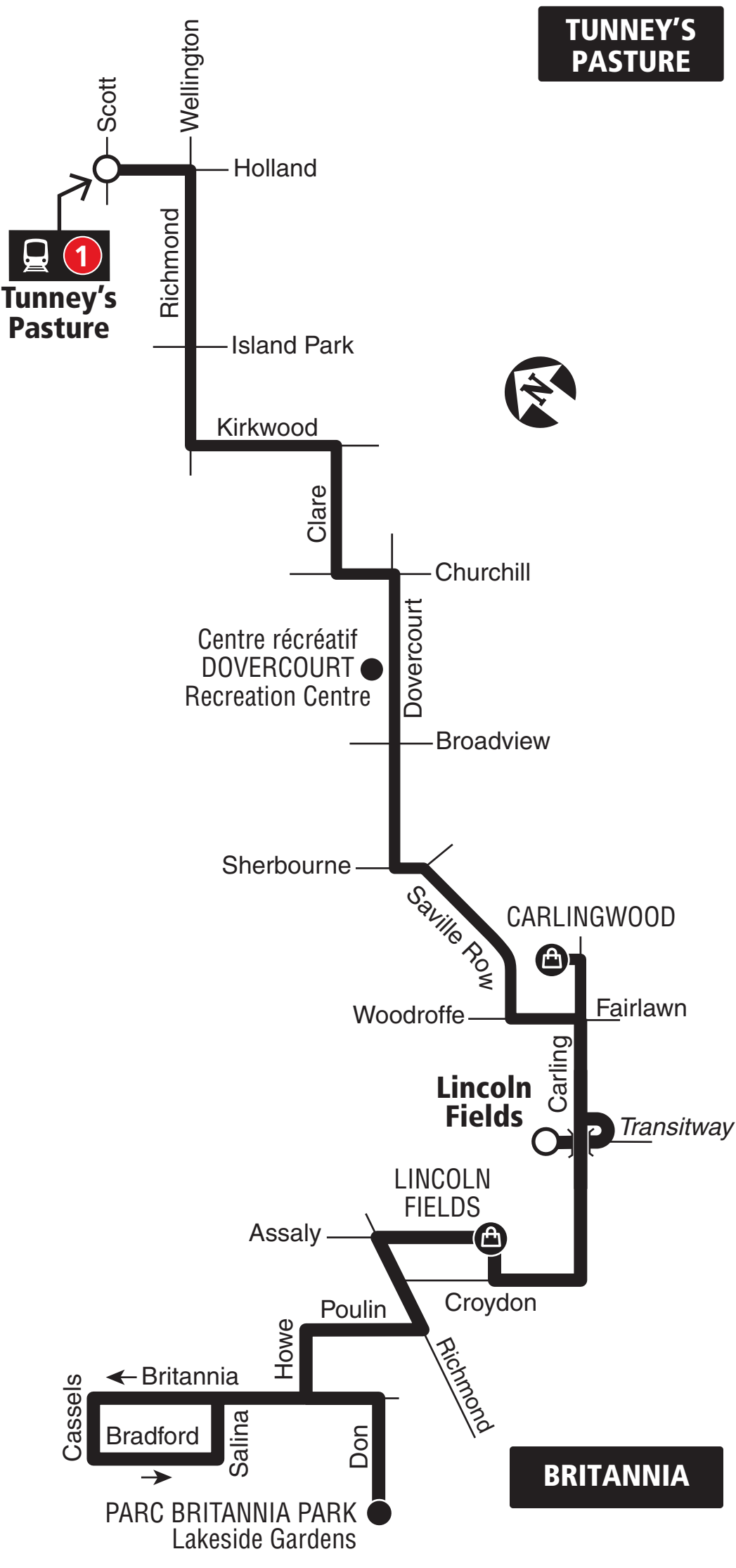
BRITANNIA
TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine

All day service

Service toute la journée



Station

Shopping Centre / Centre commercial

04.2025

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

57

Fréquent

CARLING CAMPUS
COMPLEXE CARLING
BAYSHORE

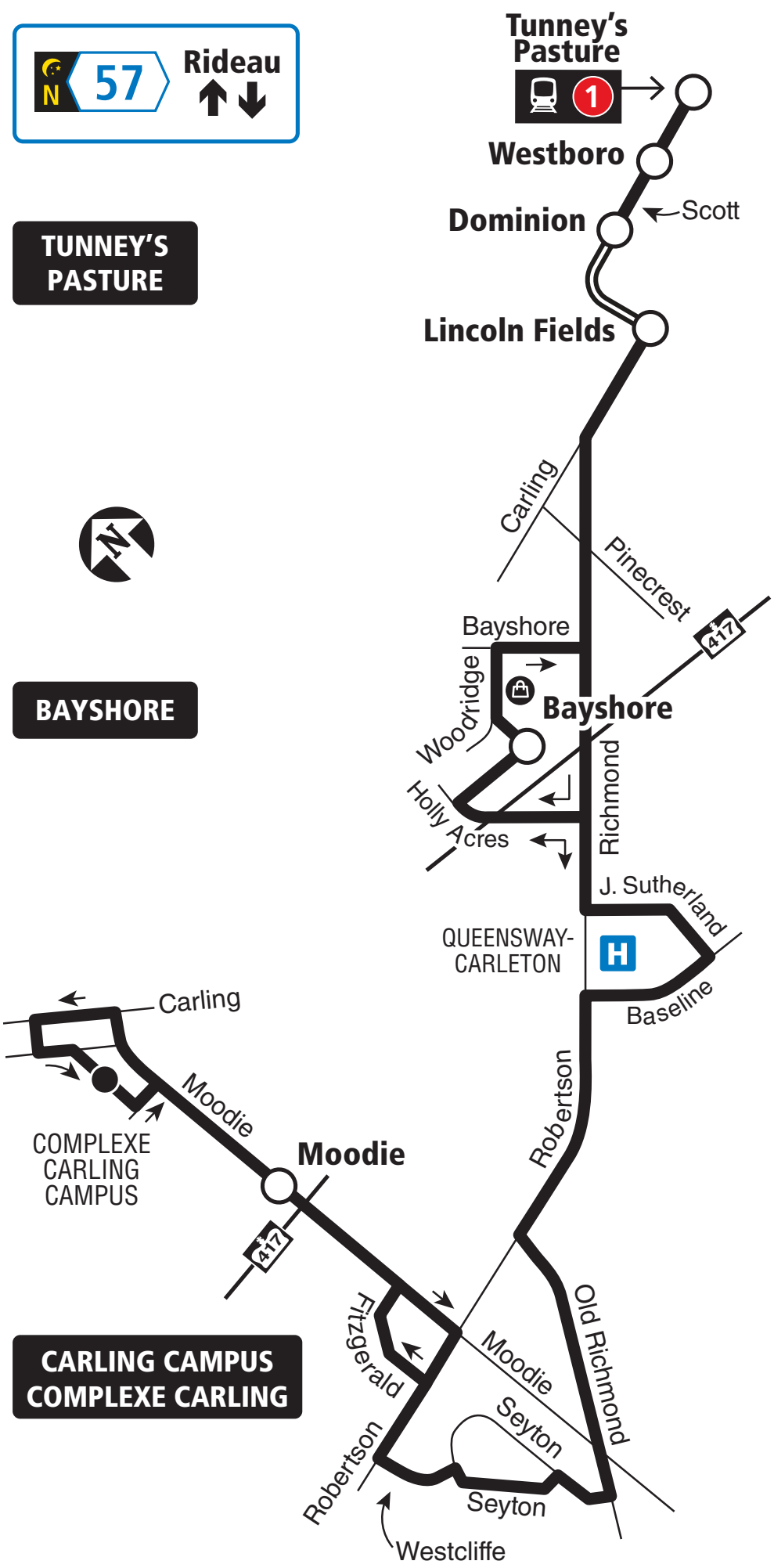
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

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

TUNNEY'S PASTURE

BAYSHORE



Transitway & Station

Shopping Centre / Centre commercial

04.2025

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.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

60

COPE

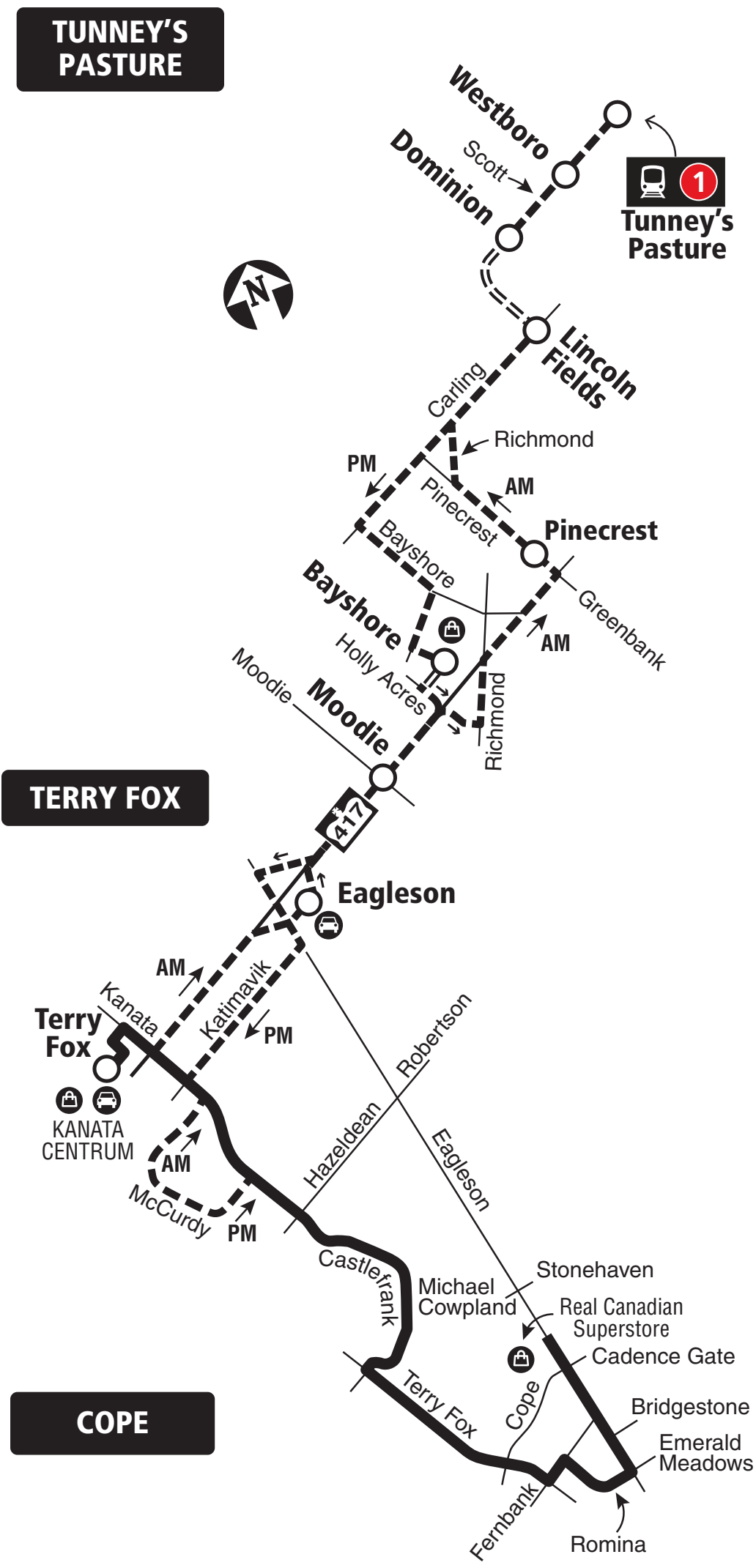
TERRY FOX
TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

All day service

Service toute la journée



04/2025

- Station
- Transitway
- Peak Periods Only / Périodes de pointe seulement
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

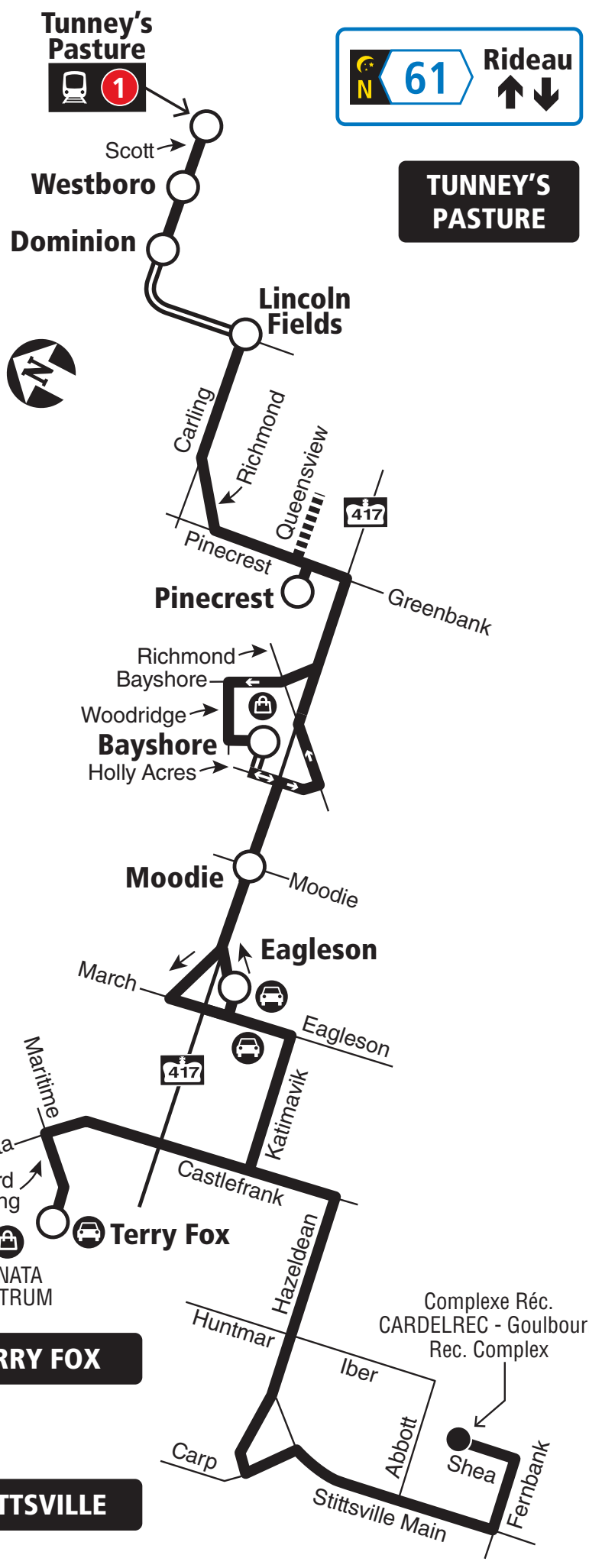
61

Fréquent

STITTSVILLE TERRY FOX
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



05/2025

- Transitway & Station
- Selected time periods / Périodes sélectionnées
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

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.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

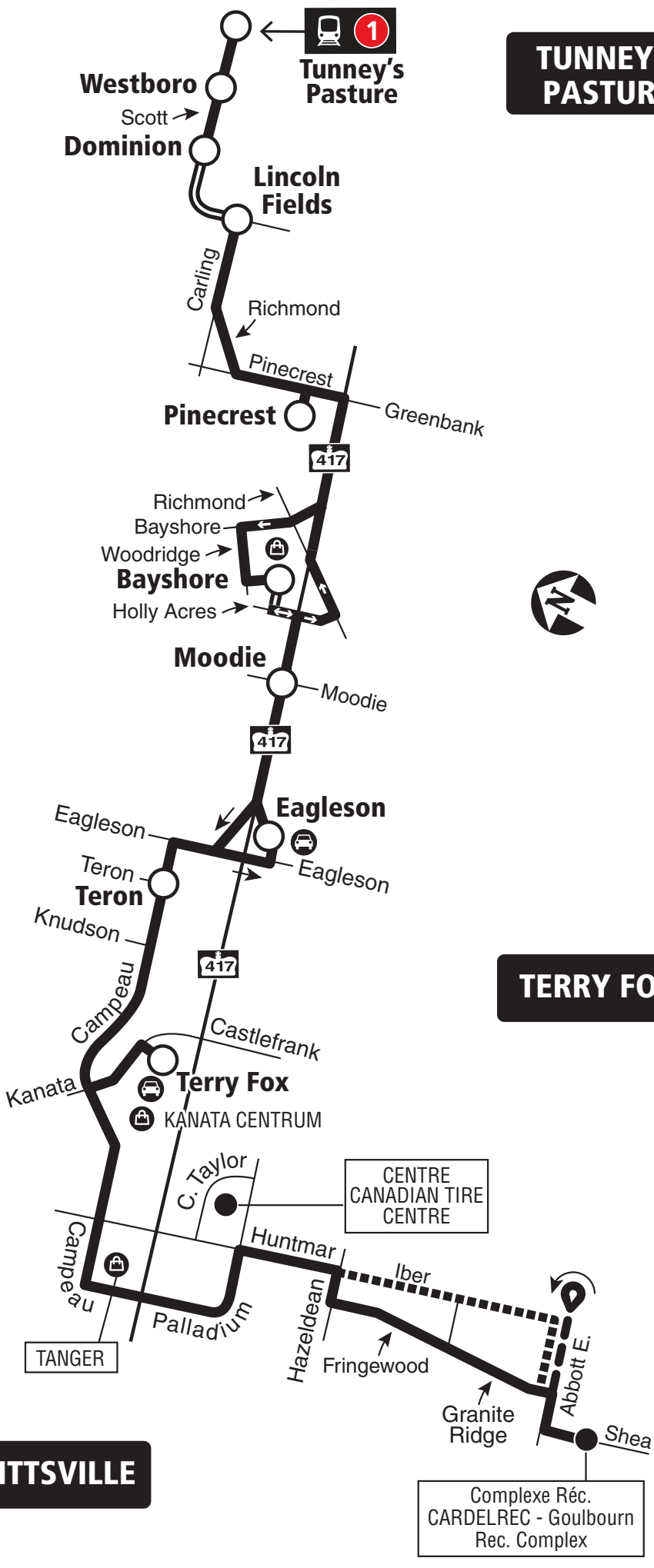
62

STITTSVILLE
TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04/2025

- 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.
- Saturday and Sunday / Samedi et dimanche
- Shopping Centre / Centre commercial
- Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

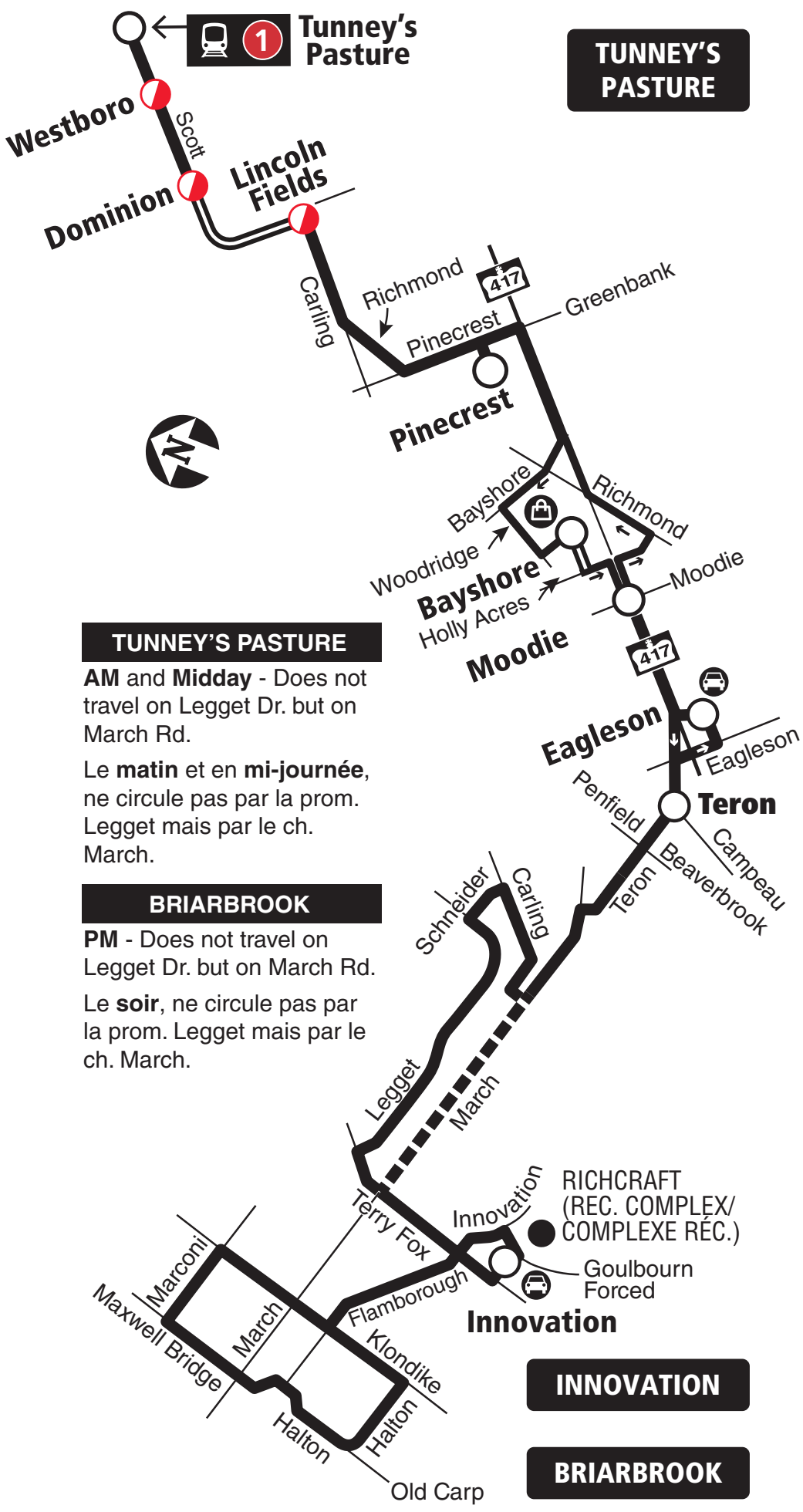
63

Fréquent

BRIARBROOK INNOVATION
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



TUNNEY'S PASTURE

AM and **Midday** - Does not travel on Legget Dr. but on March Rd.

Le **matin** et en **mi-journée**, ne circule pas par la prom. Legget mais par le ch. March.

BRIARBROOK

PM - Does not travel on Legget Dr. but on March Rd.

Le **soir**, ne circule pas par la prom. Legget mais par le ch. March.

2024

- Transitway & Station
- Eastbound: AM Off only - Westbound: Full Service
  Vers l'est AM: Débarquement seulement
  Vers l'ouest: Service complet
- Some trips / Certains trajets
- Shopping Centre / Centre commercial
- Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

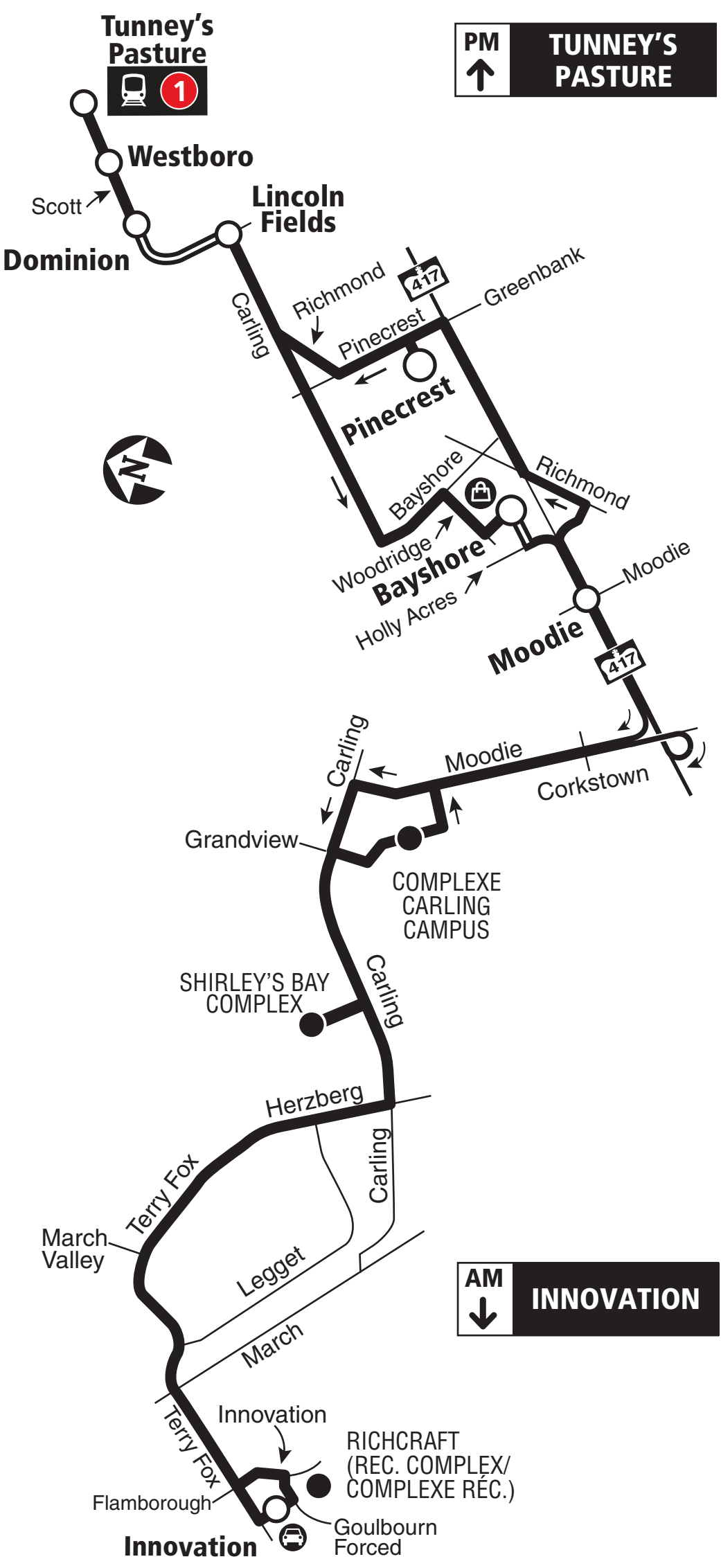
OC Transpo **octranspo.com**

66

INNOVATION
TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement



Transitway & Station

Shopping Centre / Centre commercial

Park & Ride / Parc relais

04/2025

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

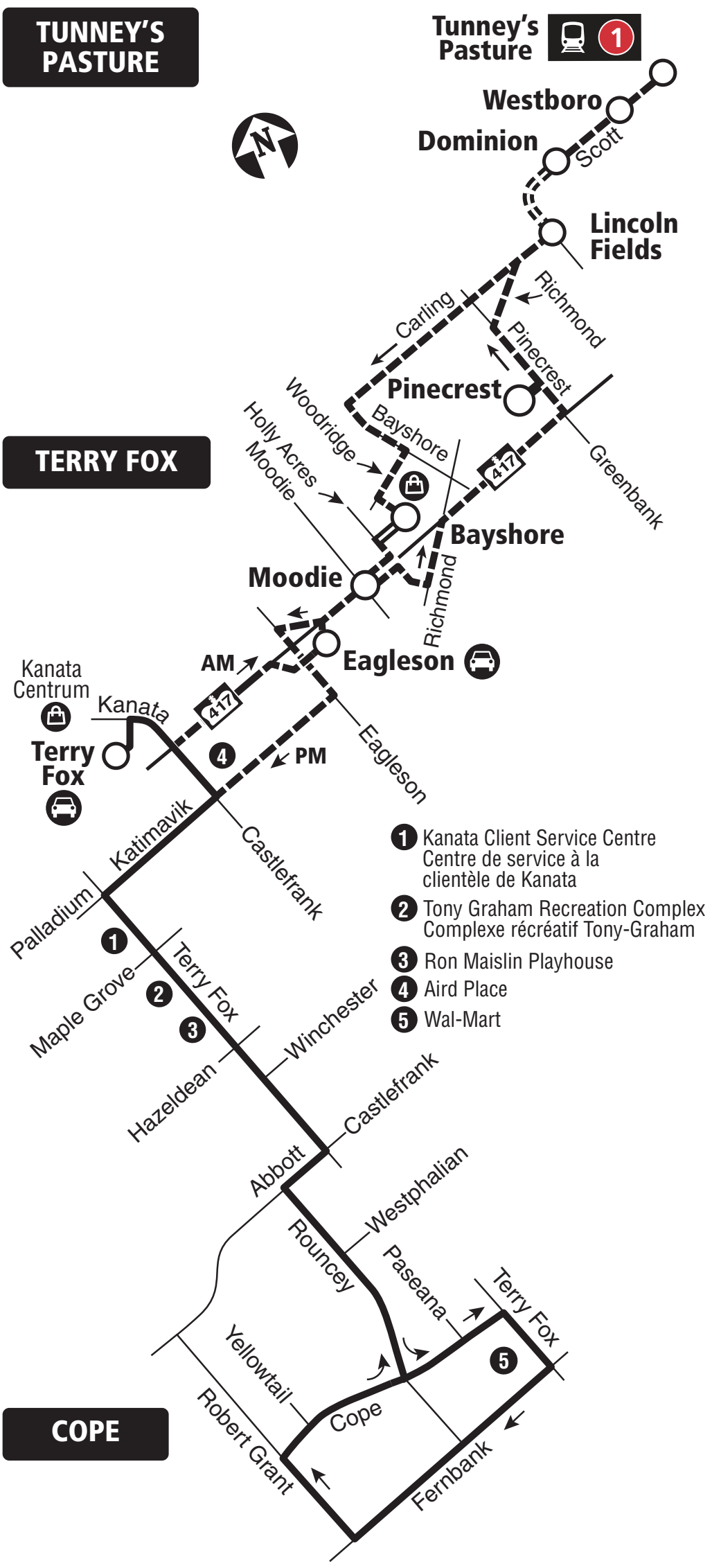
67

COPE

TERRY FOX
TUNNEY'S PASTURE

Local

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



2025.04

Transitway & Station

Peak Periods Only / Périodes de pointe seulement

Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

73

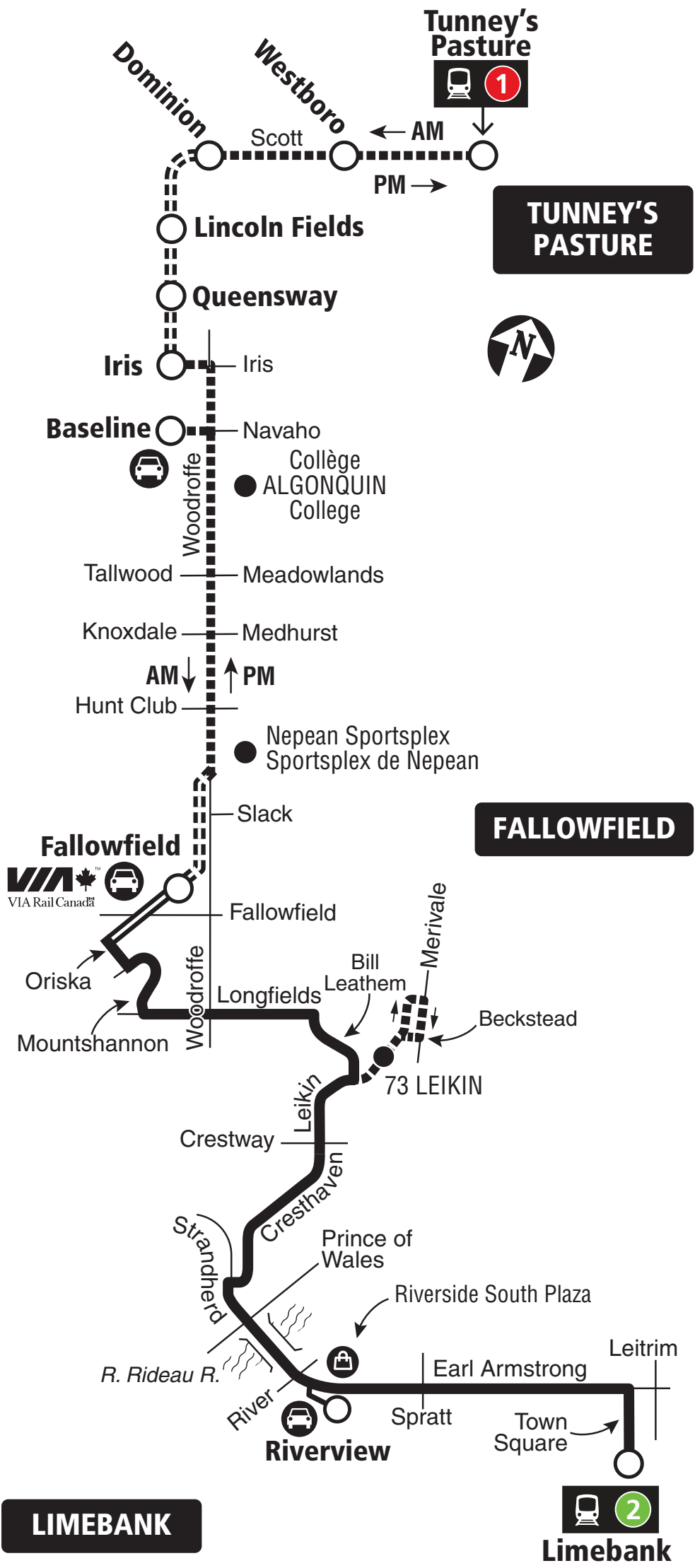
TUNNEY'S PASTURE
FALLOWFIELD
LIMEBANK

Local

Monday to Friday / Lundi au vendredi

All day service

Service toute la journée



05.2025

- Transitway & Station
- Peak Periods / Périodes de pointe
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.05

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

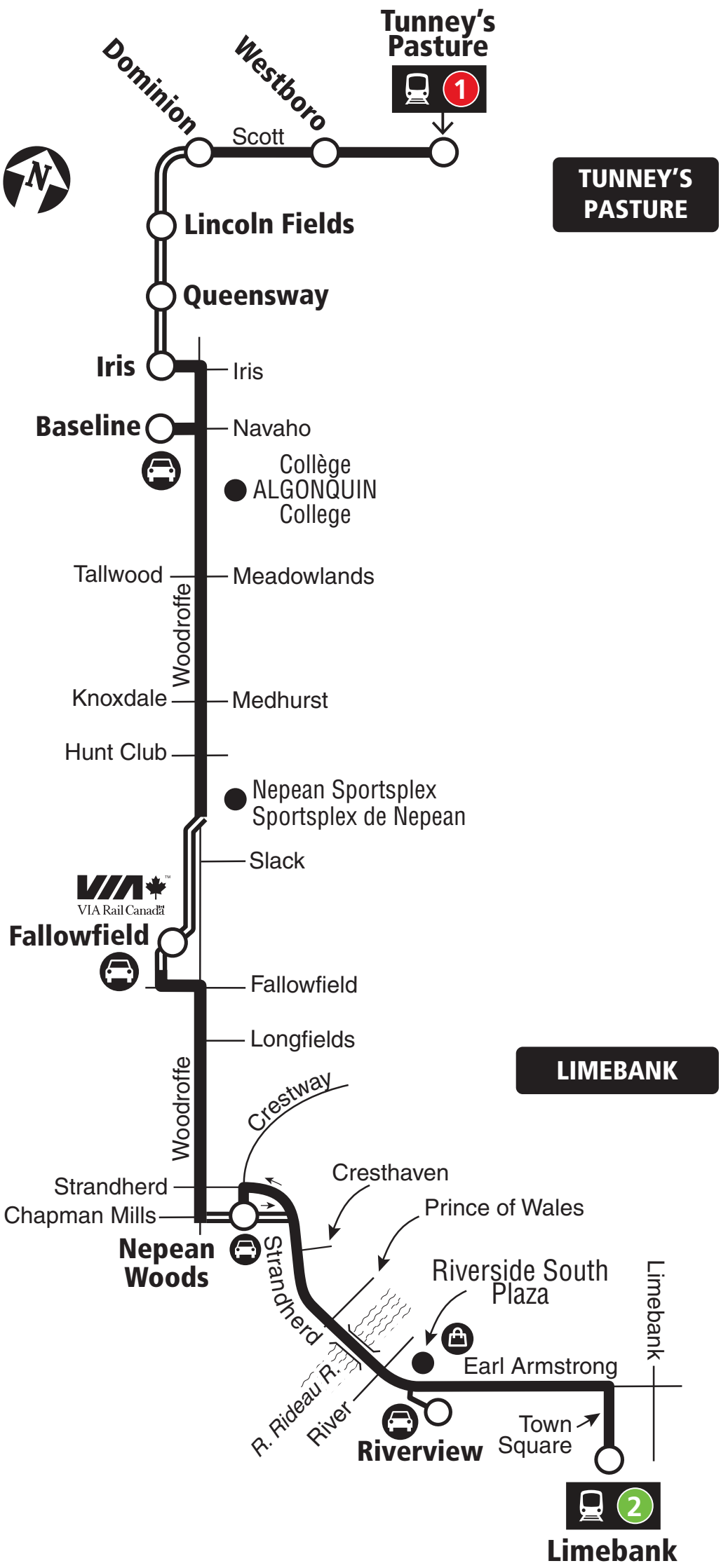
74

Fréquent

TUNNEY'S PASTURE
LIMEBANK

7 days a week / 7 jours par semaine

All day service
Service toute la journée



05.2025

Transitway & Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

2025.05

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

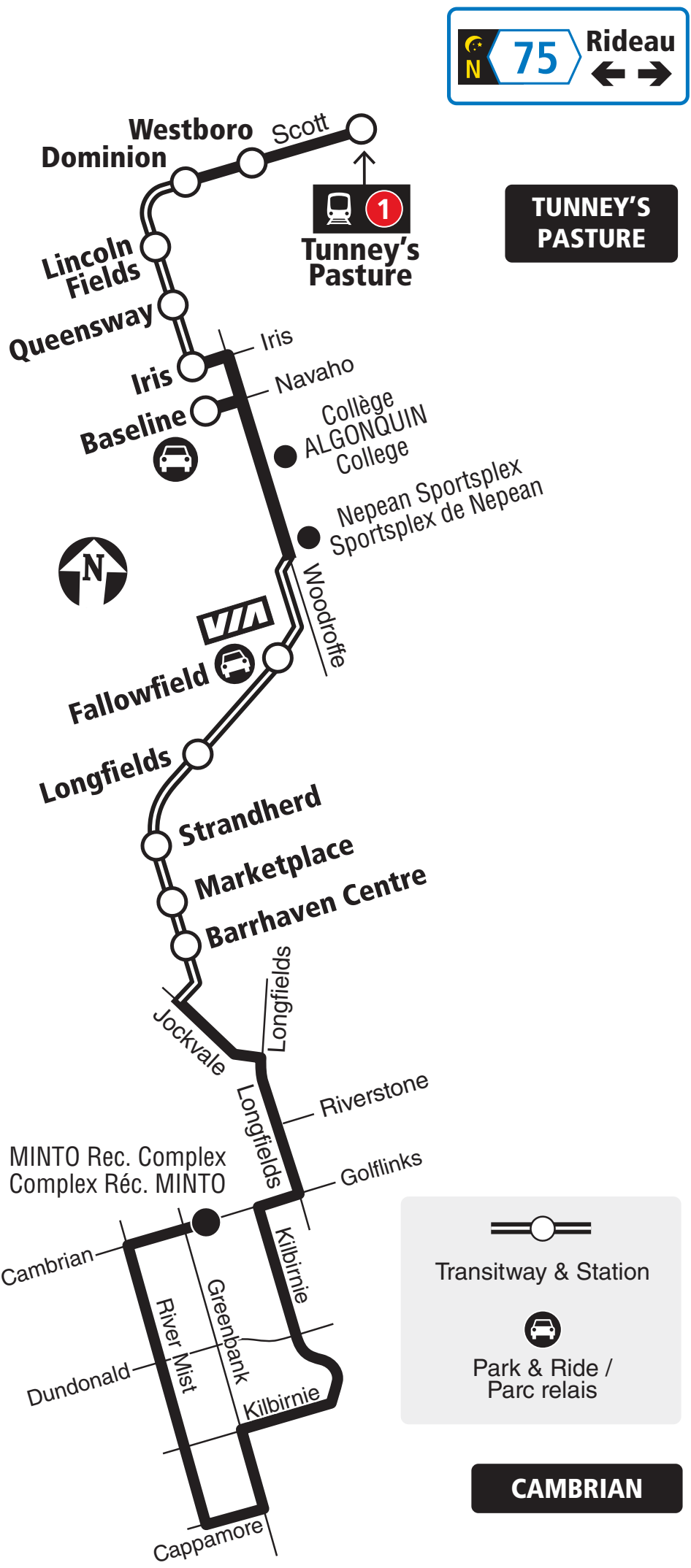
OC Transpo **octranspo.com**

75 CAMBRIAN / TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

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



04.2025

N 75 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.

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

81

TUNNEY'S PASTURE
BAYSHORE

Local

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

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

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

Security / Sécurité **613-741-2478**

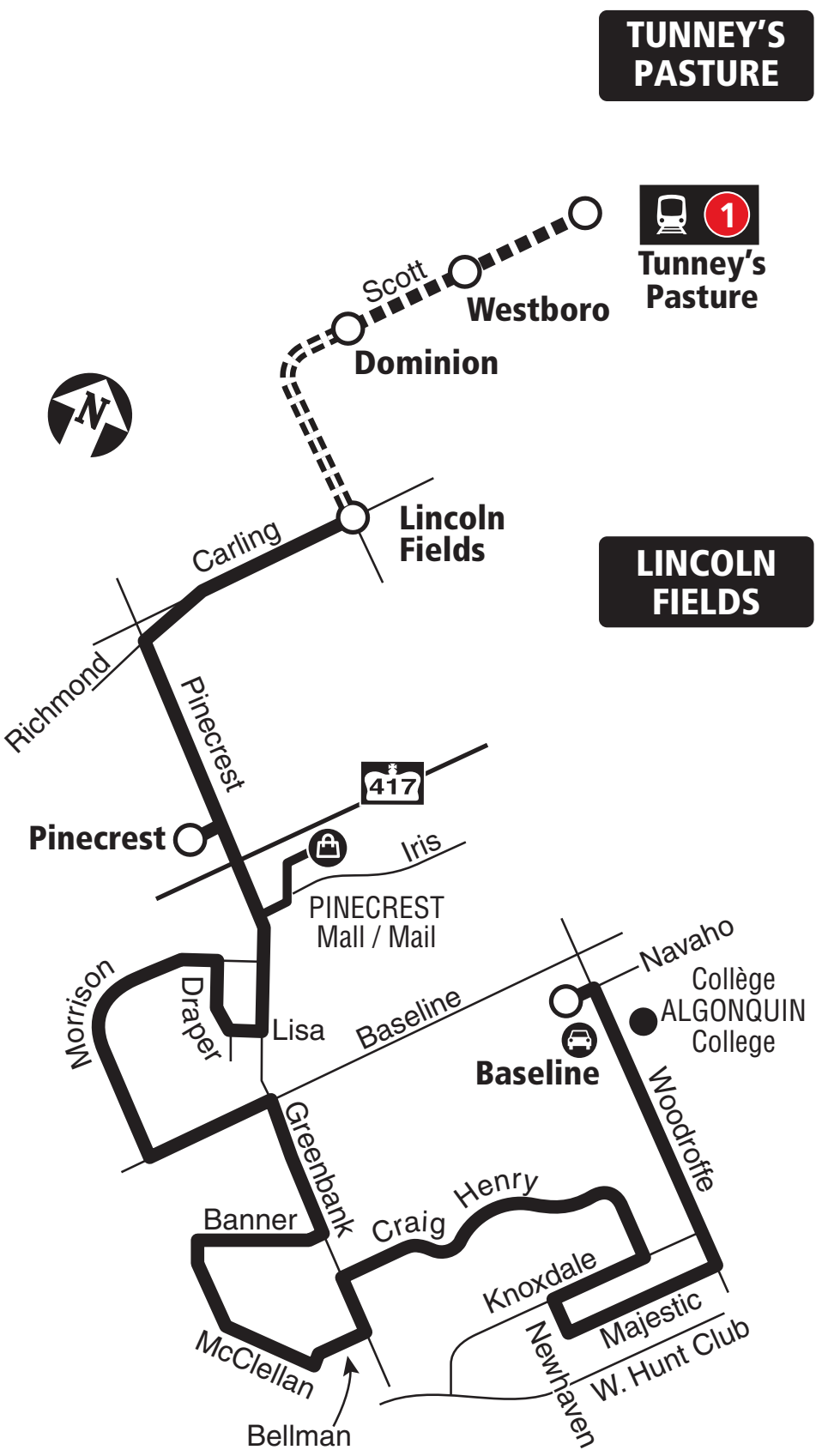
OC Transpo **octranspo.com**

82

TUNNEY'S PASTURE
LINCOLN FIELDS
BASELINE

Local

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



04/2025

==○==	Transitway & Station (Peak periods / périodes de pointe)
■■■■■■	Peak periods / périodes de pointe
	Park & Ride / Parc relais
	Shopping Centre / Centre commercial

2025.04

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Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

87

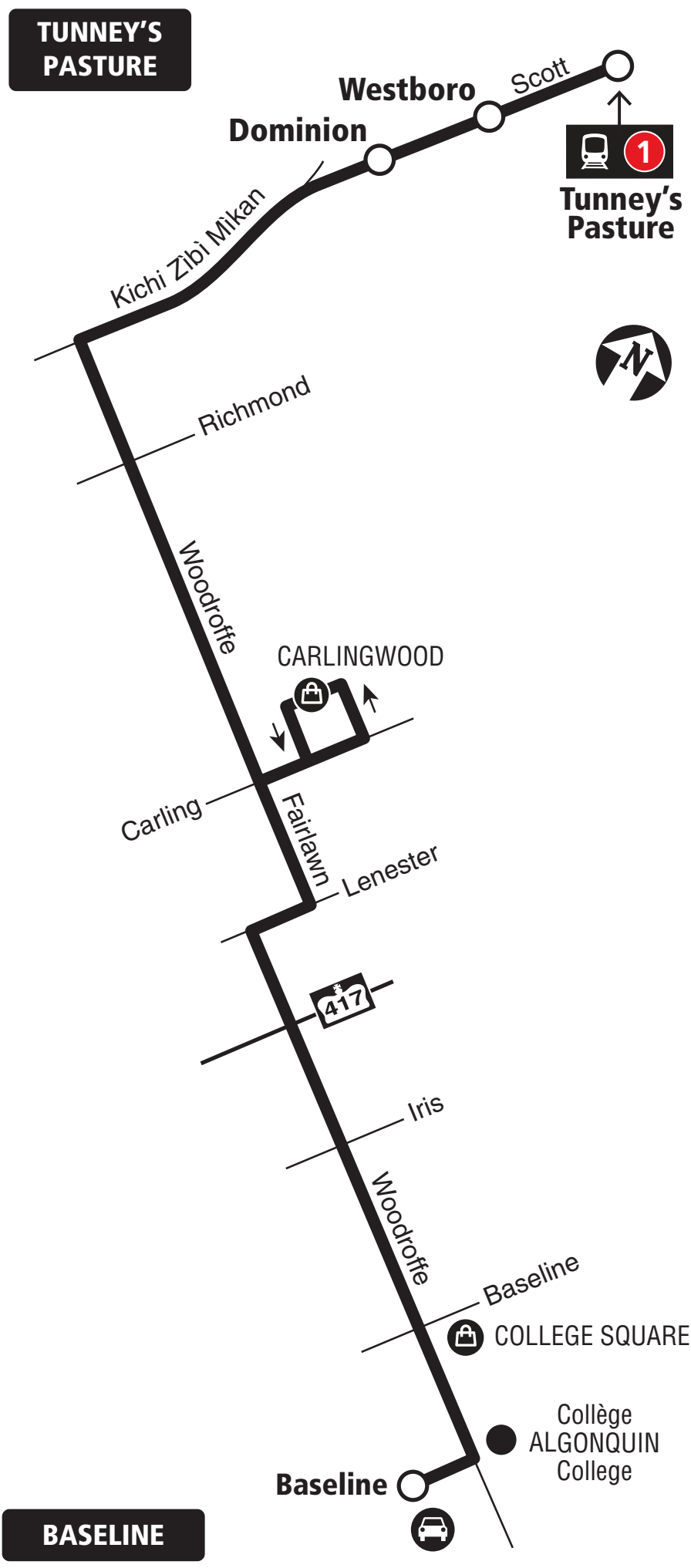
Fréquent

TUNNEY'S PASTURE
BASELINE

7 days a week / 7 jours par semaine

All day service

Service toute la journée



04.2025

Transitway & Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

2025.04

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Security / Sécurité **613-741-2478**

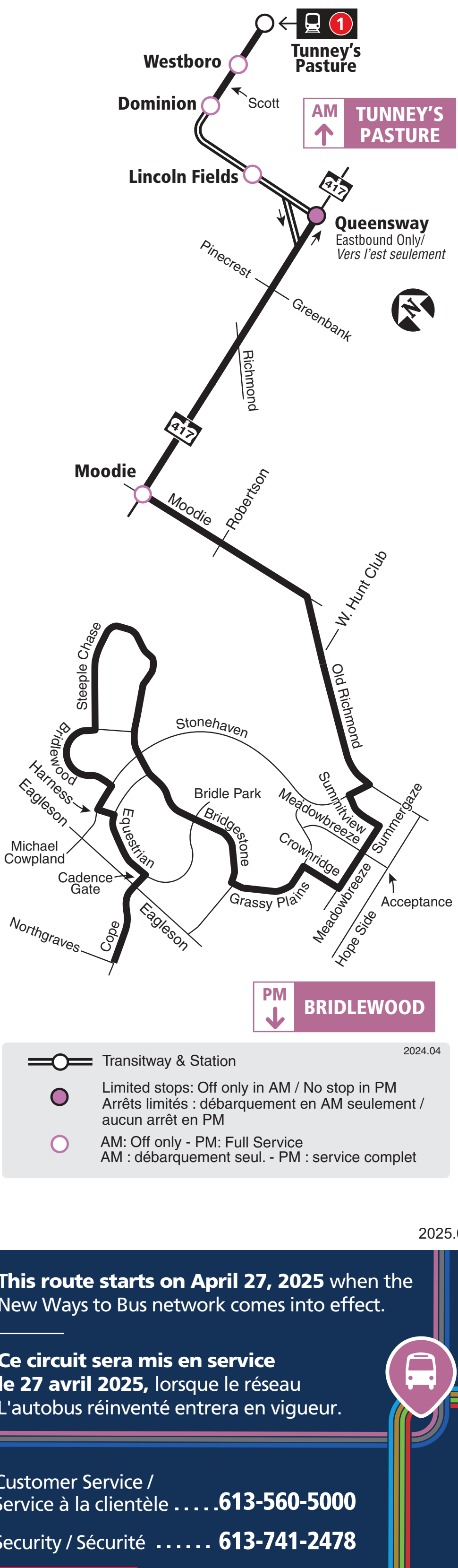
OC Transpo **octranspo.com**

256 Connexion

TUNNEY'S PASTURE
BRIDLEWOOD

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



2024.04

Transitway & Station

Limited stops: Off only in AM / No stop in PM
Arrêts limités : débarquement en AM seulement / aucun arrêt en PM

AM: Off only - PM: Full Service
AM : débarquement seul. - PM : service complet

2025.04

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Security / Sécurité **613-741-2478**

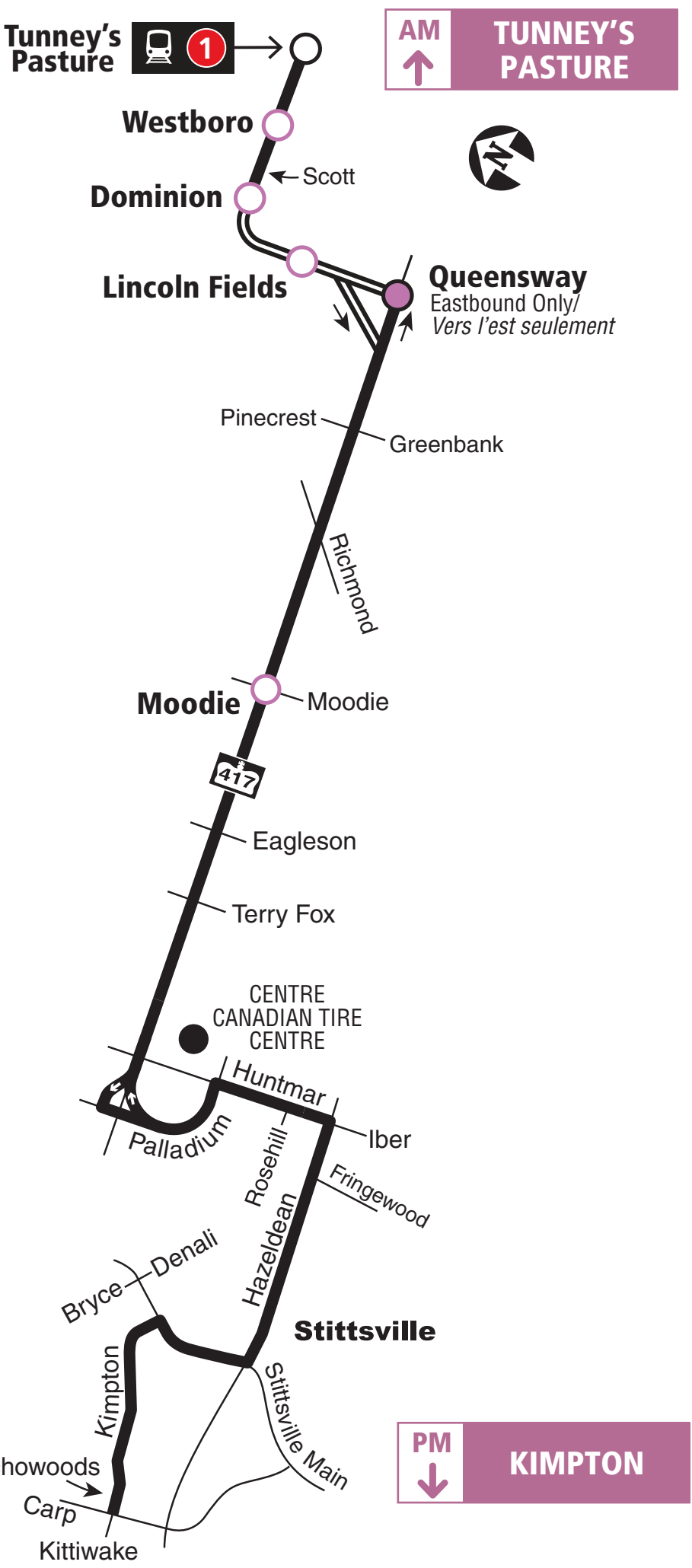
OC Transpo **octranspo.com**

261 Connexion

KIMPTON
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

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

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

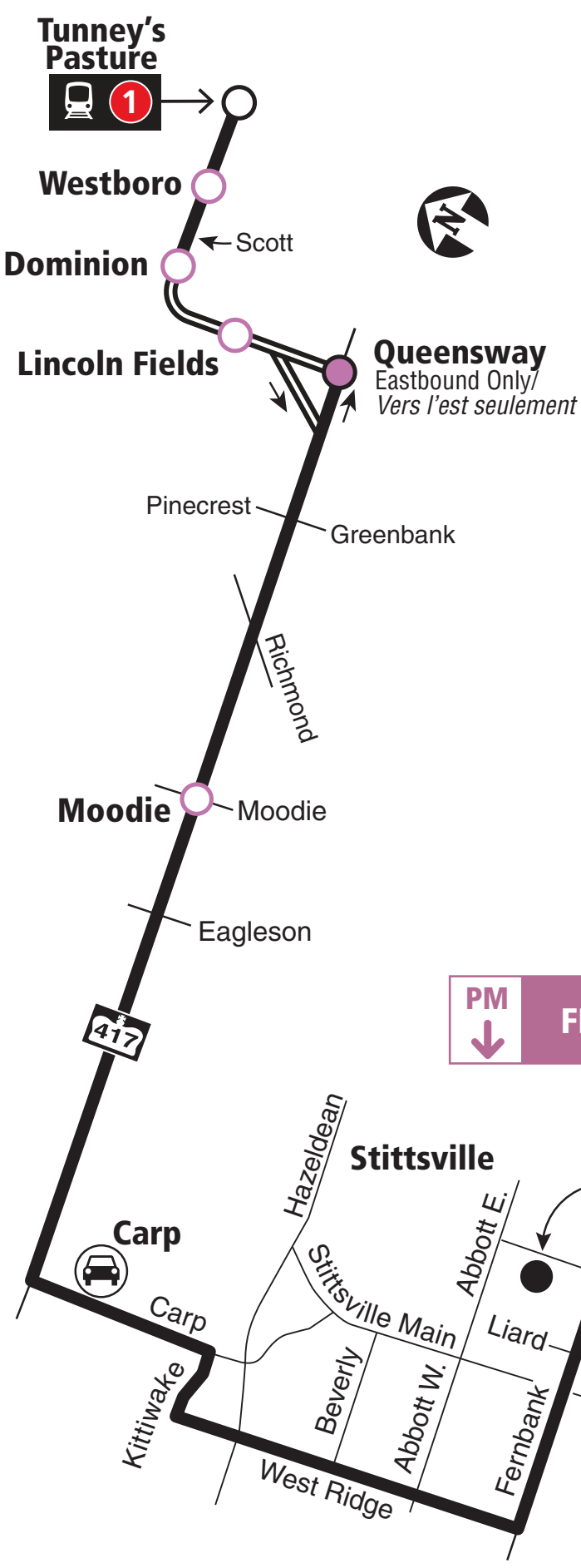
262 Connexion

FERNBANK
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement

AM ↑ TUNNEY'S PASTURE



04.2025

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

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

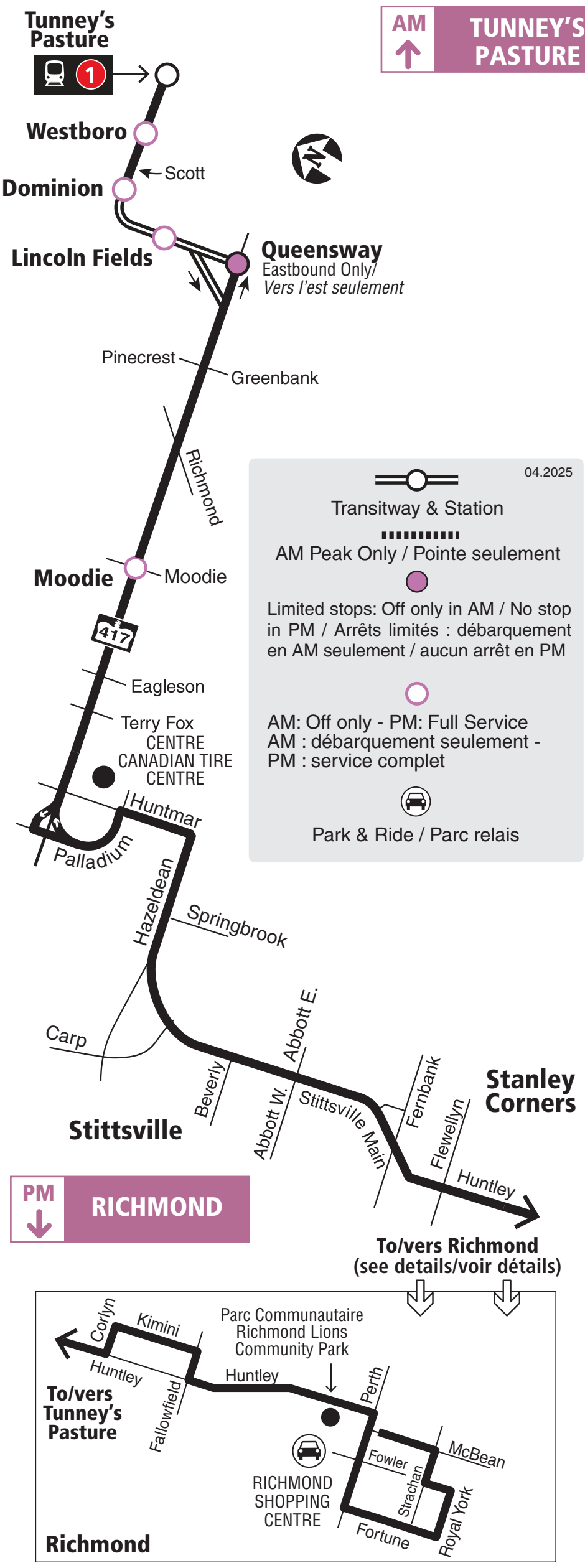
OC Transpo **octranspo.com**

263 Connexion

TUNNEY'S PASTURE
RICHMOND

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

Transitway & Station

AM Peak Only / Pointe seulement

Limited stops: Off only in AM / No stop in PM / Arrêts limités : débarquement en AM seulement / aucun arrêt en PM

AM: Off only - PM: Full Service
AM : débarquement seulement -
PM : service complet

Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

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

Security / Sécurité **613-741-2478**

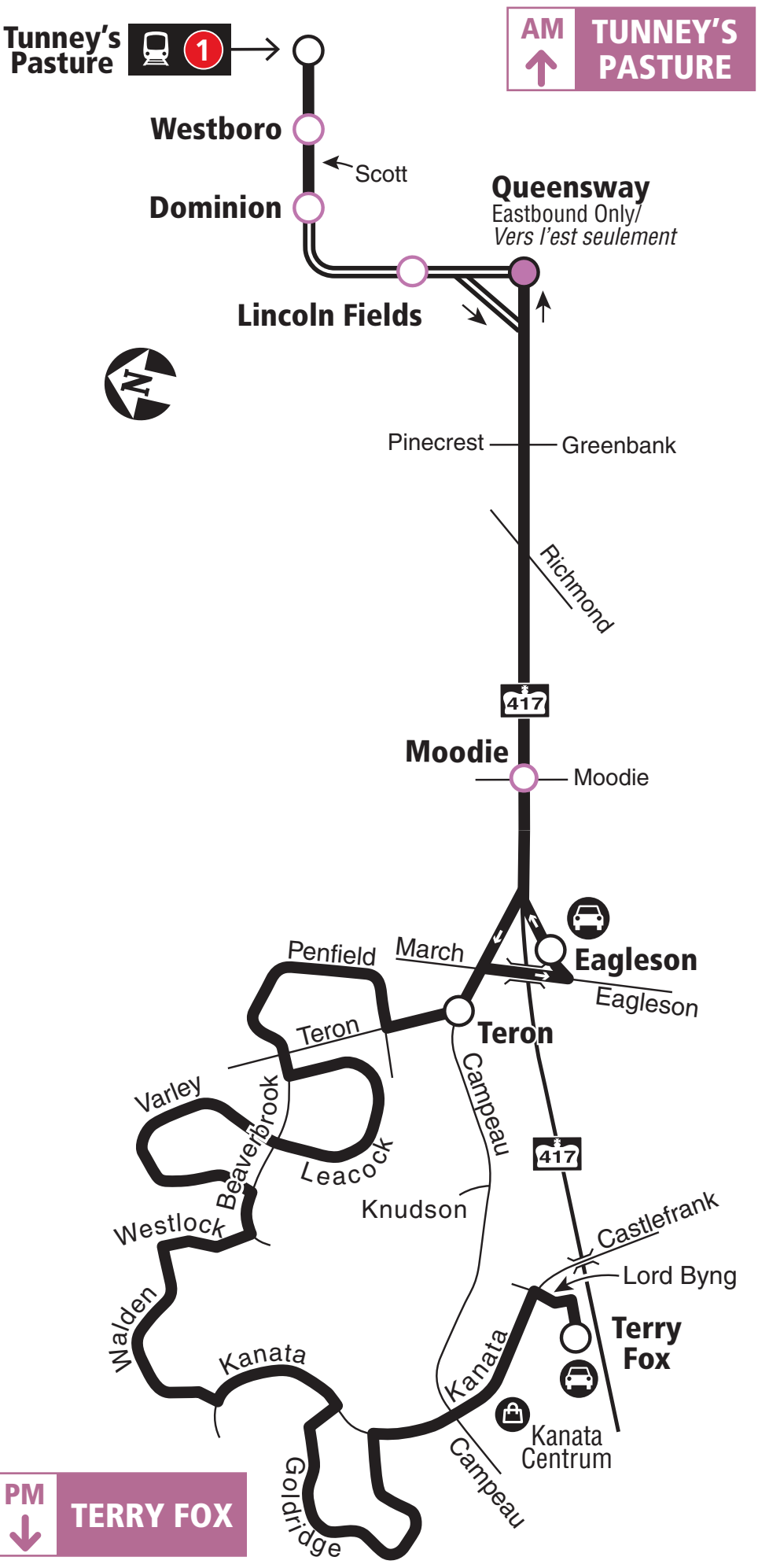
OC Transpo **octranspo.com**

265 Connexion

TUNNEY'S PASTURE
TERRY FOX

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

- Transitway & Station
- AM Peak Only / Pointe seulement
- Limited stops: Off only in AM / No stop in PM
  Arrêts limités : débarquement en AM seul. / aucun arrêt en PM
- AM: Off only - PM: Full Service
  AM : débarquement seul. - PM : service complet
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

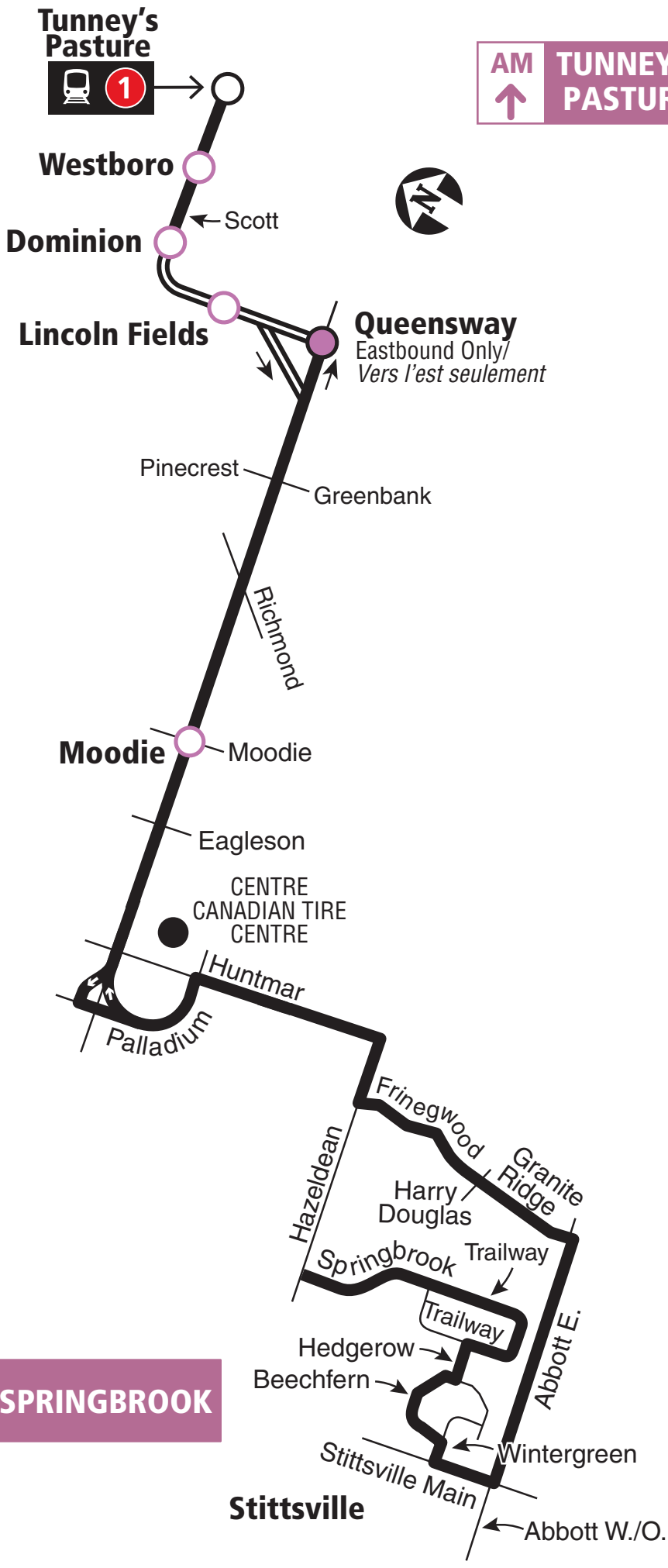
OC Transpo **octranspo.com**

266 Connexion

SPRINGBROOK
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

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

2024

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

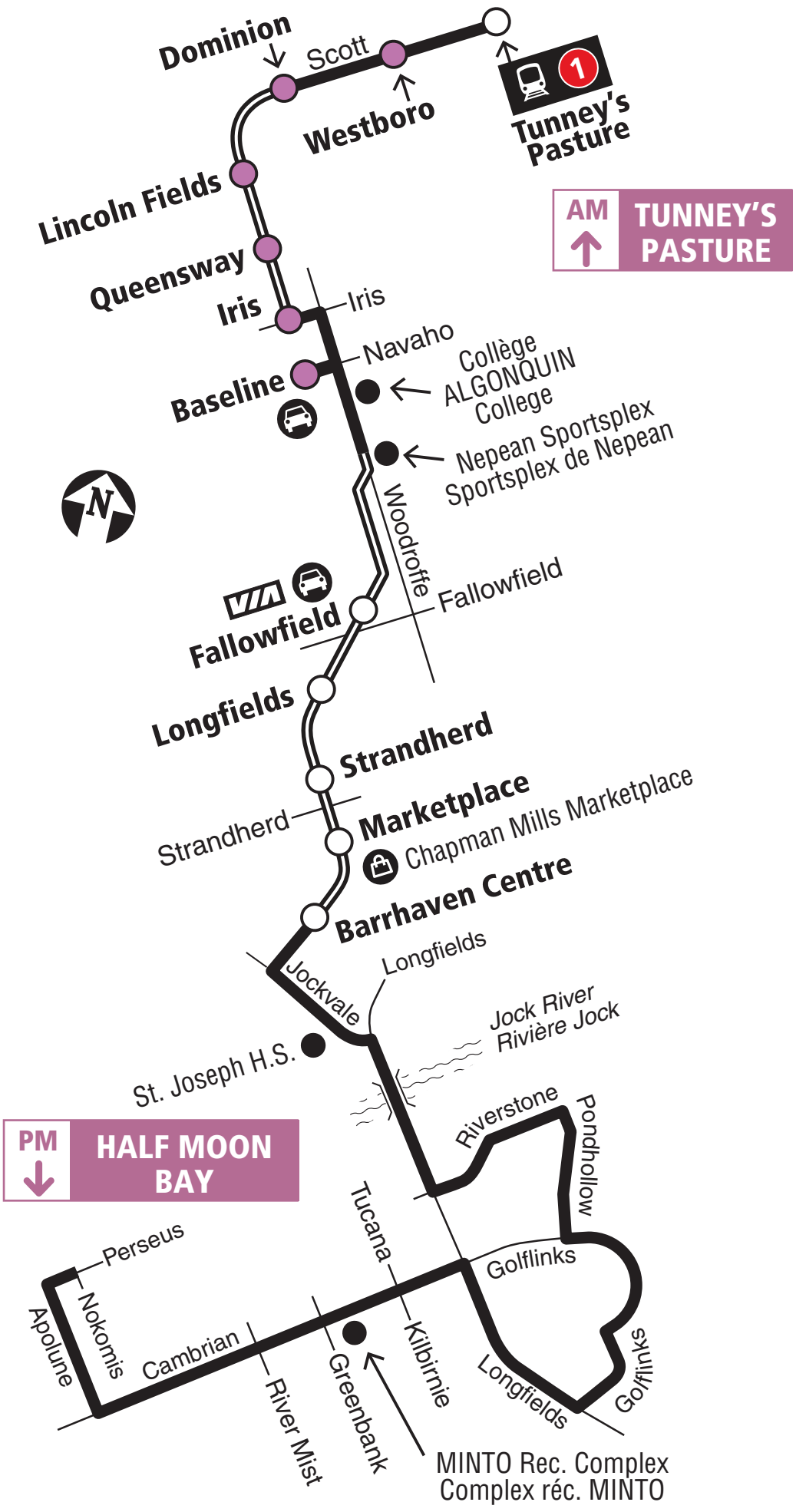
OC Transpo **octranspo.com**

275 Connexion

HALF MOON BAY
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

- Transitway & Station
- **Limited stops:** Off only in AM / No stop in PM
  Arrêts limités : débarquement en AM seulement / aucun arrêt en PM
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

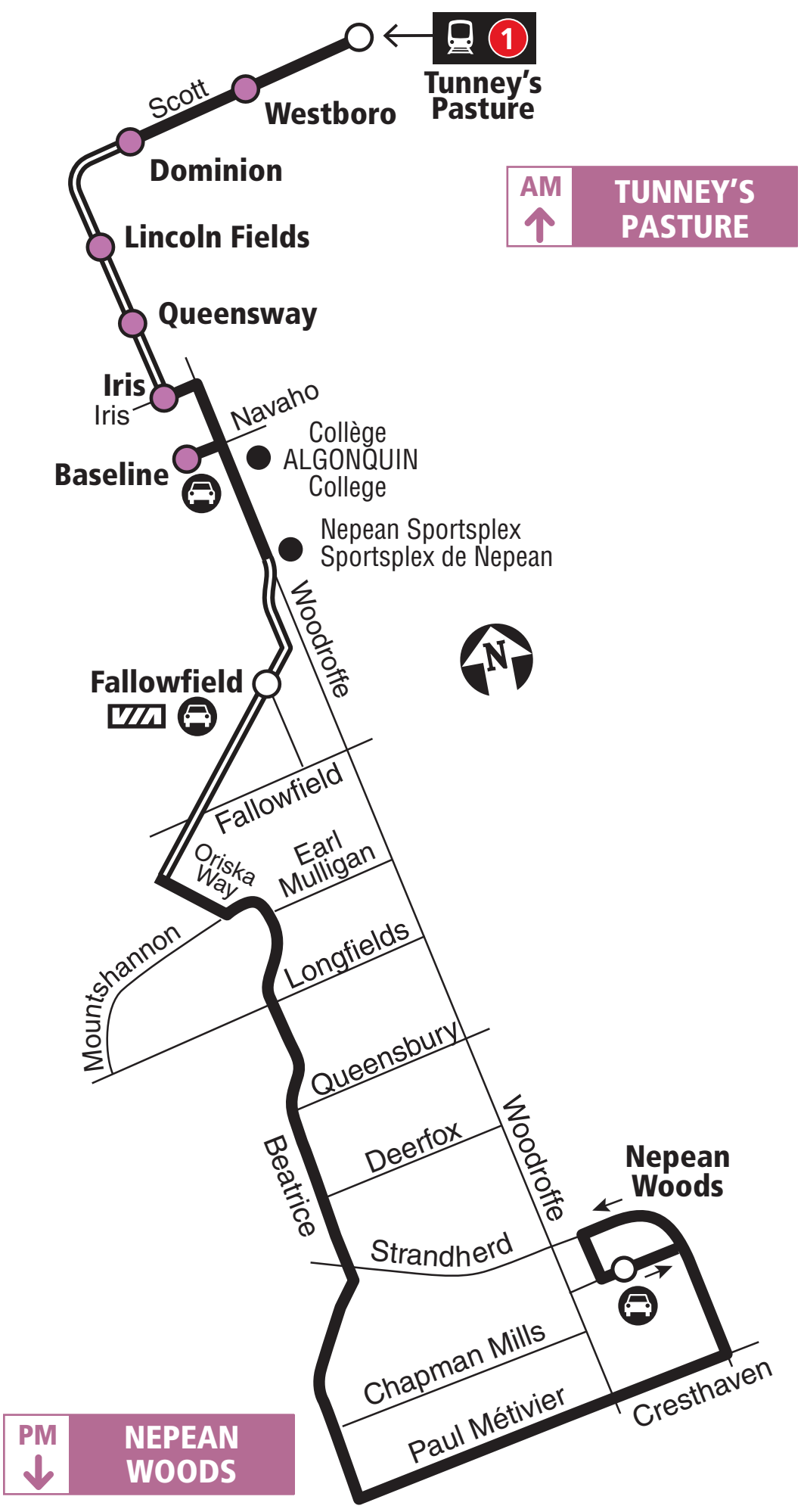
Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

277 Connexion

NEPEAN WOODS
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement



04.2025

Transitway & Station

Limited stops: Off only in AM / No stop in PM
Arrêts limités: débarquement en AM seul. / aucun arrêt en PM

Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

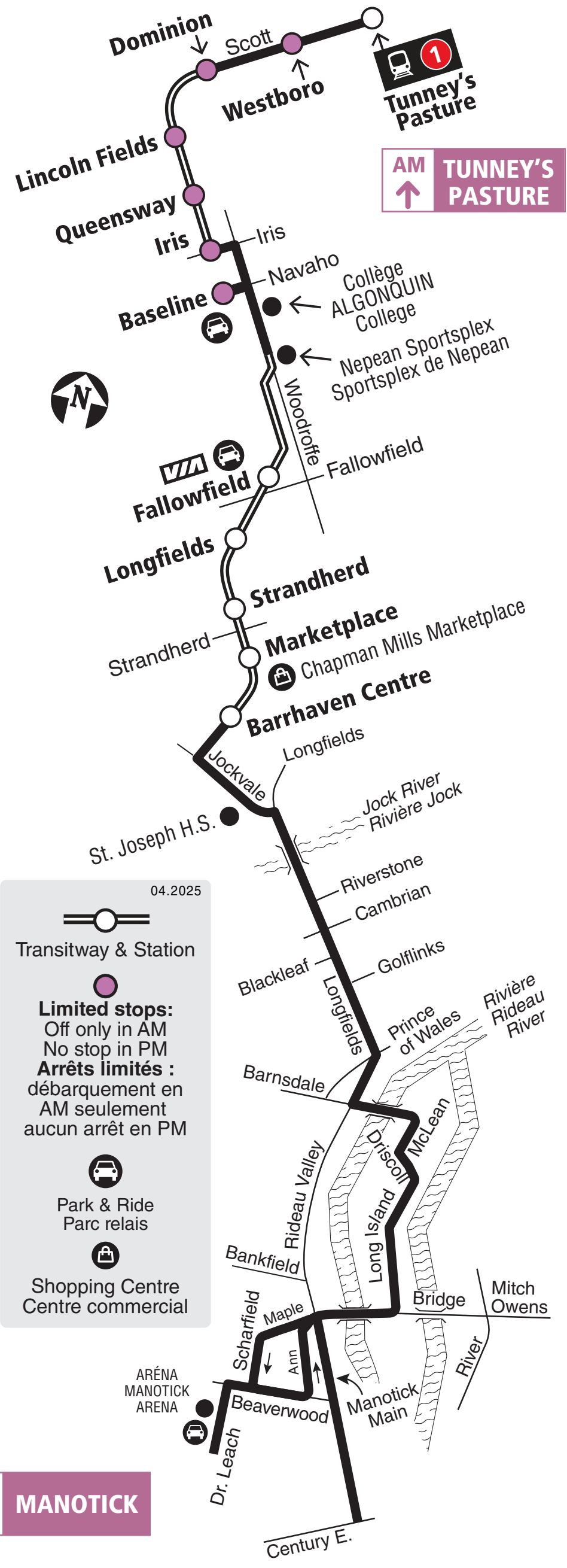
OC Transpo **octranspo.com**

279 Connexion

MANOTICK
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

Appendix D: Traffic Count Data

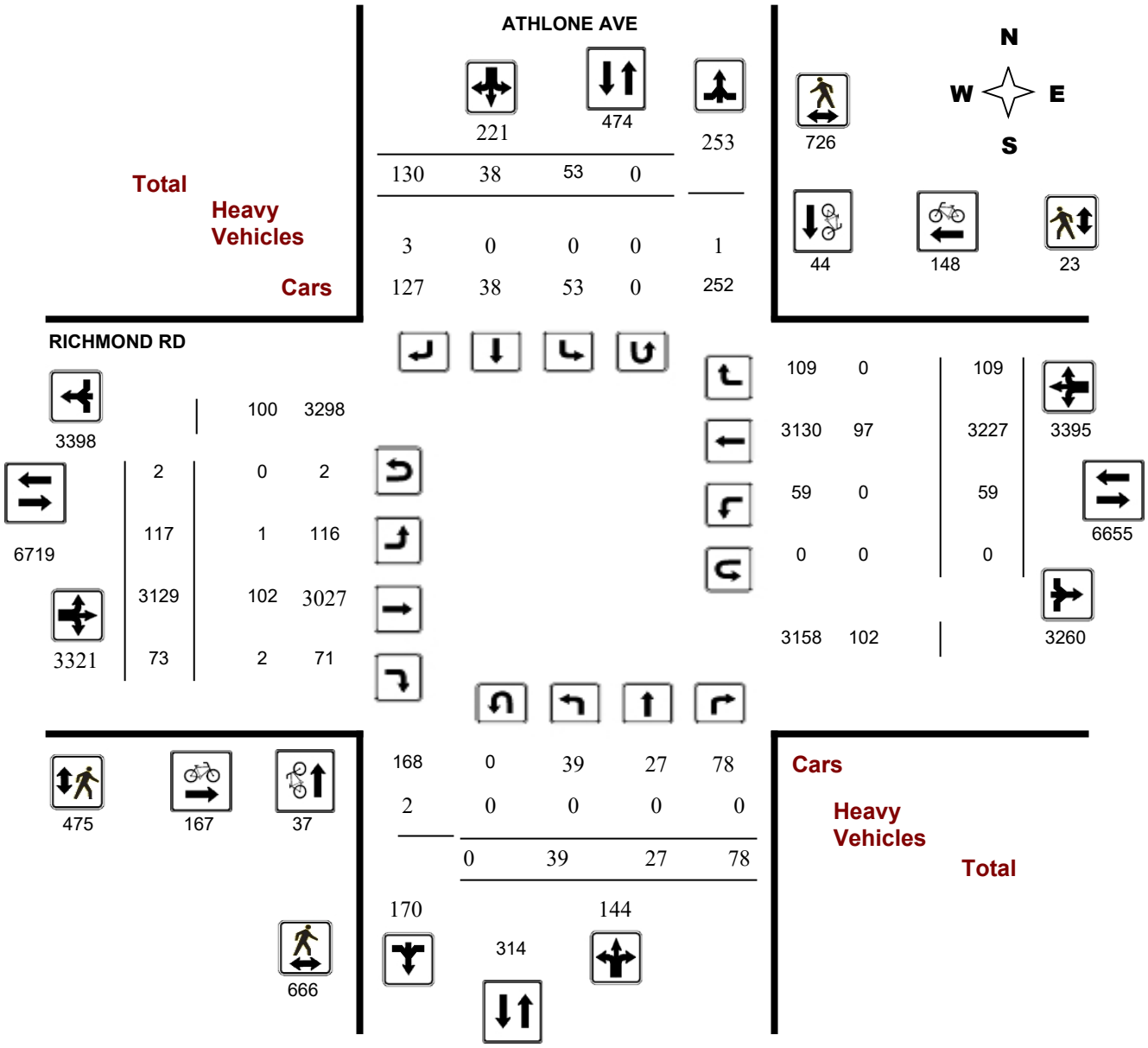
Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019
Start Time: 07:00
WO No: 38412
Device: Miovision

Full Study Diagram



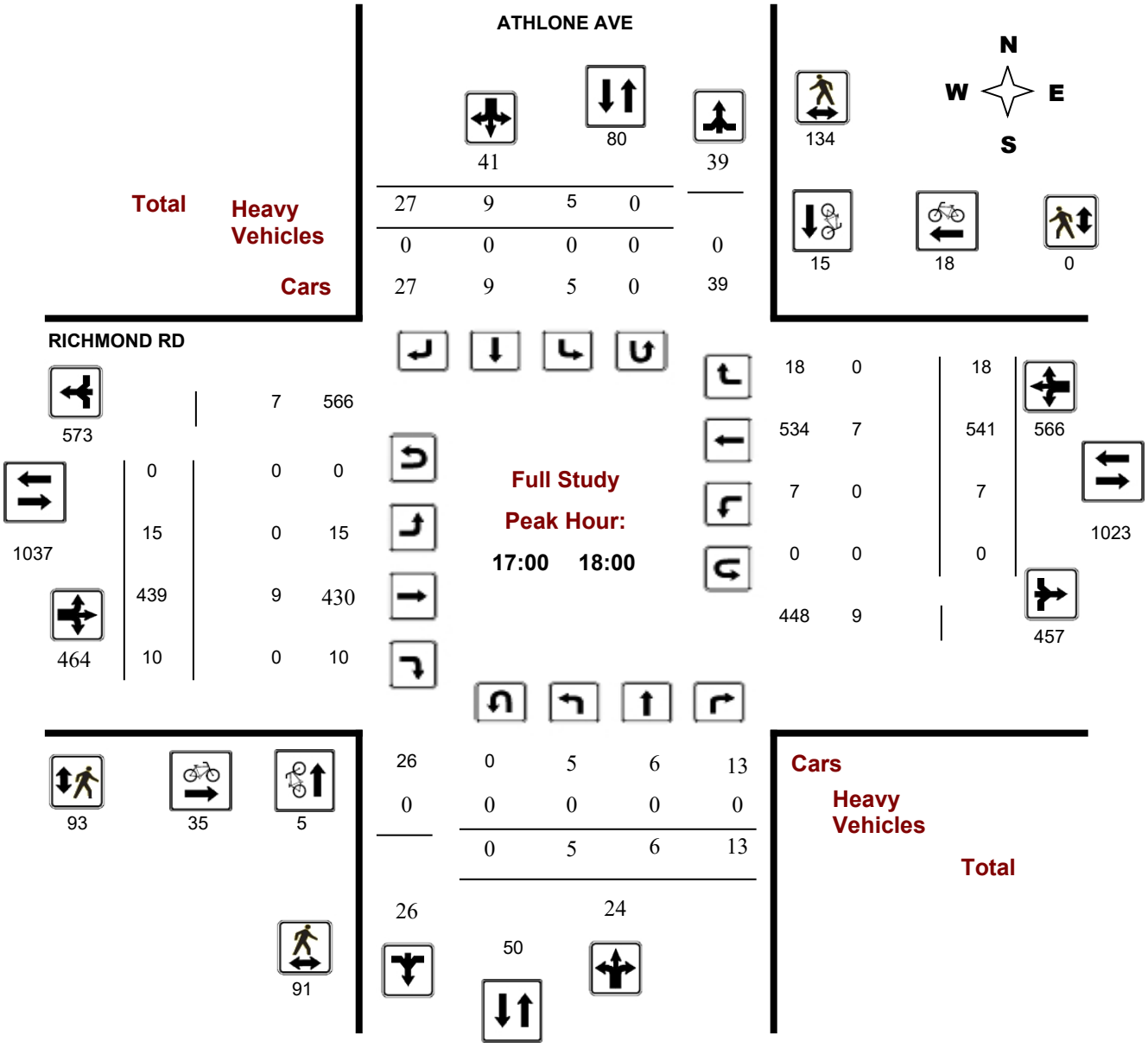
Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019
Start Time: 07:00
WO No: 38412
Device: Miovision

Full Study Peak Hour Diagram



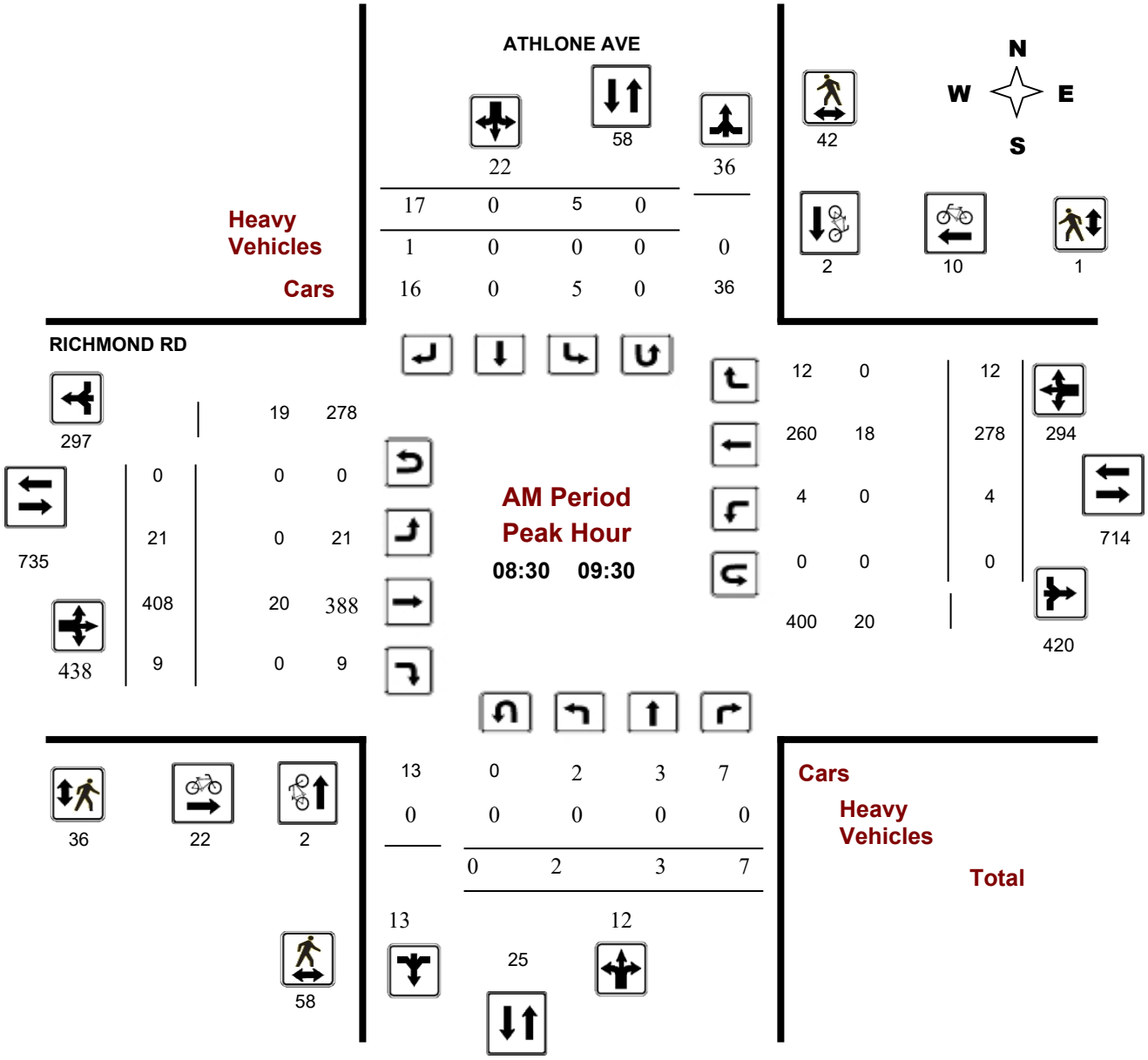
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019
Start Time: 07:00

WO No: 38412
Device: Miovision



Comments

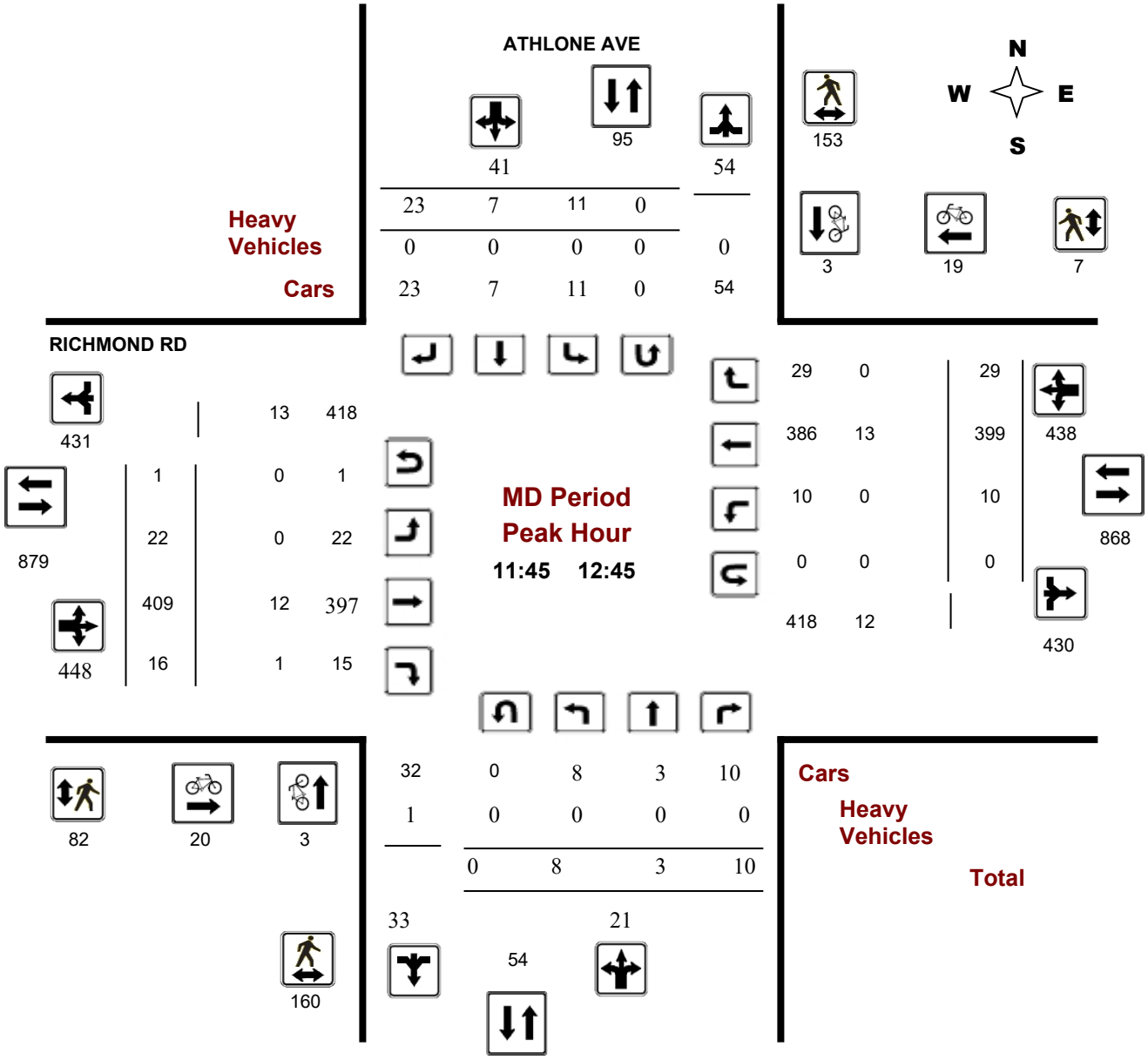
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019
Start Time: 07:00

WO No: 38412
Device: Miovision



Comments

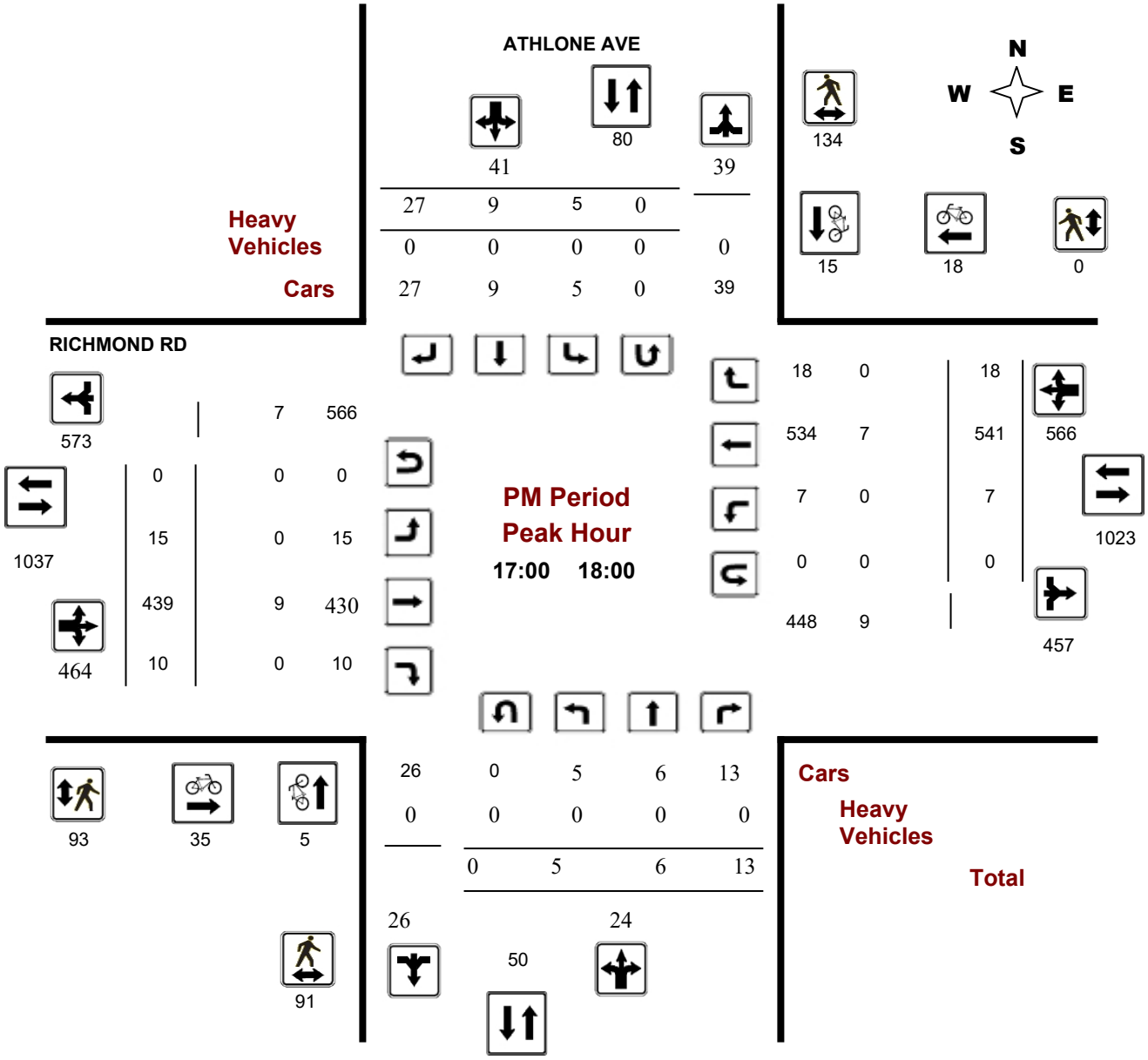
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019
Start Time: 07:00

WO No: 38412
Device: Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, July 18, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 2 Westbound: 0

AADT Factor

.90

	ATHLONE AVE								RICHMOND RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	3	4	9	**16**	4	6	9	**19**	**35**	15	350	3	**368**	4	195	6	**205**	**573**	**608**
08:00 09:00	5	5	7	**17**	7	0	15	**22**	**39**	15	410	3	**428**	5	253	12	**270**	**698**	**737**
09:00 10:00	1	3	4	**8**	4	2	12	**18**	**26**	18	370	10	**398**	5	304	7	**316**	**714**	**740**
11:30 12:30	6	2	10	**18**	11	8	18	**37**	**55**	21	404	12	**437**	12	412	27	**451**	**888**	**943**
12:30 13:30	7	5	10	**22**	6	3	14	**23**	**45**	13	393	13	**419**	5	414	17	**436**	**855**	**900**
15:00 16:00	2	1	11	**14**	8	5	21	**34**	**48**	11	379	12	**402**	7	535	9	**551**	**953**	**1001**
16:00 17:00	10	1	14	**25**	8	5	14	**27**	**52**	9	384	10	**403**	14	573	13	**600**	**1003**	**1055**
17:00 18:00	5	6	13	**24**	5	9	27	**41**	**65**	15	439	10	**464**	7	541	18	**566**	**1030**	**1095**
Sub Total	39	27	78	**144**	53	38	130	**221**	**365**	117	3129	73	**3319**	59	3227	109	**3395**	**6714**	**7079**
U Turns	0			**0**	0			**0**	**0**	**2**			**2**	0			**0**	**2**	**2**
Total	39	27	78	**144**	53	38	130	**221**	**365**	119	3129	73	**3321**	59	3227	109	**3395**	**6716**	**7081**
EQ 12Hr	54	38	108	**200**	74	53	181	**308**	**508**	165	4349	101	**4615**	82	4486	152	**4720**	**9335**	**9843**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	49	34	97	**180**	67	48	163	**278**	**458**	148	3914	91	**4153**	74	4037	137	**4248**	**8401**	**8859**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	64	45	127	**236**	88	63	214	**365**	**601**	194	5127	119	**5440**	97	5288	179	**5564**	**11004**	**11605**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study 15 Minute Increments

		ATHLONE AVE									RICHMOND RD								
		Northbound				Southbound					Eastbound				Westbound				
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	0	1	2	2	2	1	5	**7**	4	60	1	65	1	38	0	39	**104**	**111**
07:15	07:30	1	2	3	6	0	2	3	5	**11**	6	79	0	85	0	52	0	52	**137**	**148**
07:30	07:45	1	2	2	5	1	0	3	4	**9**	3	86	2	91	2	46	0	48	**139**	**148**
07:45	08:00	0	0	3	3	1	2	2	5	**8**	3	125	0	128	1	59	6	66	**194**	**202**
08:00	08:15	2	1	1	4	3	0	2	5	**9**	2	100	1	103	2	55	2	59	**162**	**171**
08:15	08:30	2	2	1	5	0	0	2	2	**7**	1	102	0	103	1	61	2	64	**167**	**174**
08:30	08:45	1	0	2	3	4	0	4	8	**11**	5	110	1	116	1	66	4	71	**187**	**198**
08:45	09:00	0	2	3	5	0	0	7	7	**12**	7	98	1	106	1	71	4	76	**182**	**194**
09:00	09:15	1	0	1	2	1	0	2	3	**5**	4	102	3	109	2	67	4	73	**182**	**187**
09:15	09:30	0	1	1	2	0	0	4	4	**6**	5	98	4	107	0	74	0	74	**181**	**187**
09:30	09:45	0	1	1	2	1	1	2	4	**6**	5	79	2	86	3	76	1	80	**166**	**172**
09:45	10:00	0	1	1	2	2	1	4	7	**9**	4	91	1	96	0	87	2	89	**185**	**194**
11:30	11:45	0	0	5	5	2	2	1	5	**10**	4	98	0	102	3	107	4	114	**216**	**226**
11:45	12:00	2	1	3	6	5	2	5	12	**18**	8	106	6	120	3	92	9	104	**224**	**242**
12:00	12:15	1	1	2	4	3	1	4	8	**12**	1	88	3	92	2	101	5	108	**200**	**212**
12:15	12:30	3	0	0	3	1	3	8	12	**15**	8	112	3	123	4	112	9	125	**248**	**263**
12:30	12:45	2	1	5	8	2	1	6	9	**17**	6	103	4	113	1	94	6	101	**214**	**231**
12:45	13:00	2	1	1	4	0	1	2	3	**7**	4	75	4	83	2	114	4	120	**203**	**210**
13:00	13:15	3	1	4	8	1	0	5	6	**14**	2	109	1	112	1	113	2	116	**228**	**242**
13:15	13:30	0	2	0	2	3	1	1	5	**7**	2	106	4	112	1	93	5	99	**211**	**218**
15:00	15:15	1	0	3	4	5	0	4	9	**13**	4	98	3	105	0	124	0	124	**229**	**242**
15:15	15:30	0	0	3	3	0	1	4	5	**8**	3	105	2	110	3	133	2	138	**248**	**256**
15:30	15:45	1	0	2	3	1	1	7	9	**12**	1	95	0	96	3	131	4	138	**234**	**246**
15:45	16:00	0	1	3	4	2	3	6	11	**15**	3	81	7	91	1	147	3	151	**242**	**257**
16:00	16:15	2	0	6	8	1	1	1	3	**11**	5	98	3	106	2	143	1	146	**252**	**263**
16:15	16:30	3	1	5	9	3	2	5	10	**19**	3	107	2	112	2	152	7	161	**273**	**292**
16:30	16:45	2	0	2	4	2	1	4	7	**11**	1	101	2	104	5	159	3	167	**271**	**282**
16:45	17:00	3	0	1	4	2	1	4	7	**11**	0	78	3	81	5	119	2	126	**207**	**218**
17:00	17:15	2	3	2	7	3	3	8	14	**21**	5	105	1	111	1	126	8	135	**246**	**267**
17:15	17:30	3	1	4	8	0	3	4	7	**15**	3	122	2	127	1	144	4	149	**276**	**291**
17:30	17:45	0	2	4	6	1	2	7	10	**16**	4	105	3	112	2	144	1	147	**259**	**275**
17:45	18:00	0	0	3	3	1	1	8	10	**13**	3	107	4	114	3	127	5	135	**249**	**262**
Total:		39	27	78	144	53	38	130	221	**365**	119	3129	73	3321	59	3227	109	3395	**365**	**7,081**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study Cyclist Volume

Time Period		ATHLONE AVE			RICHMOND RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	2	0	**2**	**2**
07:15	07:30	1	0	**1**	2	2	**4**	**5**
07:30	07:45	0	0	**0**	5	1	**6**	**6**
07:45	08:00	2	1	**3**	5	5	**10**	**13**
08:00	08:15	4	1	**5**	5	4	**9**	**14**
08:15	08:30	7	0	**7**	4	5	**9**	**16**
08:30	08:45	0	0	**0**	6	4	**10**	**10**
08:45	09:00	2	0	**2**	9	3	**12**	**14**
09:00	09:15	0	1	**1**	4	0	**4**	**5**
09:15	09:30	0	1	**1**	3	3	**6**	**7**
09:30	09:45	2	0	**2**	1	4	**5**	**7**
09:45	10:00	0	1	**1**	3	9	**12**	**13**
11:30	11:45	2	2	**4**	7	7	**14**	**18**
11:45	12:00	1	0	**1**	3	1	**4**	**5**
12:00	12:15	0	3	**3**	7	4	**11**	**14**
12:15	12:30	2	0	**2**	5	2	**7**	**9**
12:30	12:45	0	0	**0**	5	12	**17**	**17**
12:45	13:00	0	4	**4**	5	7	**12**	**16**
13:00	13:15	0	1	**1**	5	3	**8**	**9**
13:15	13:30	0	1	**1**	2	1	**3**	**4**
15:00	15:15	0	2	**2**	4	7	**11**	**13**
15:15	15:30	0	1	**1**	3	6	**9**	**10**
15:30	15:45	3	1	**4**	4	6	**10**	**14**
15:45	16:00	0	1	**1**	8	6	**14**	**15**
16:00	16:15	2	1	**3**	3	6	**9**	**12**
16:15	16:30	2	2	**4**	5	10	**15**	**19**
16:30	16:45	2	3	**5**	13	6	**19**	**24**
16:45	17:00	0	2	**2**	4	6	**10**	**12**
17:00	17:15	1	1	**2**	4	3	**7**	**9**
17:15	17:30	1	8	**9**	12	4	**16**	**25**
17:30	17:45	2	2	**4**	8	5	**13**	**17**
17:45	18:00	1	4	**5**	11	6	**17**	**22**
Total		37	44	**81**	167	148	**315**	**396**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study Pedestrian Volume

		ATHLONE AVE			RICHMOND RD			
Time Period		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00	07:15	4	6	**10**	5	0	**5**	**15**
07:15	07:30	7	5	**12**	5	2	**7**	**19**
07:30	07:45	12	0	**12**	9	2	**11**	**23**
07:45	08:00	9	12	**21**	6	0	**6**	**27**
08:00	08:15	8	11	**19**	11	0	**11**	**30**
08:15	08:30	15	9	**24**	16	0	**16**	**40**
08:30	08:45	20	6	**26**	9	0	**9**	**35**
08:45	09:00	9	11	**20**	9	1	**10**	**30**
09:00	09:15	13	12	**25**	7	0	**7**	**32**
09:15	09:30	16	13	**29**	11	0	**11**	**40**
09:30	09:45	9	10	**19**	8	0	**8**	**27**
09:45	10:00	21	17	**38**	7	0	**7**	**45**
11:30	11:45	32	31	**63**	11	2	**13**	**76**
11:45	12:00	25	27	**52**	18	1	**19**	**71**
12:00	12:15	49	39	**88**	24	1	**25**	**113**
12:15	12:30	54	42	**96**	24	2	**26**	**122**
12:30	12:45	32	45	**77**	16	3	**19**	**96**
12:45	13:00	39	40	**79**	28	4	**32**	**111**
13:00	13:15	32	29	**61**	19	1	**20**	**81**
13:15	13:30	29	34	**63**	17	0	**17**	**80**
15:00	15:15	25	14	**39**	13	1	**14**	**53**
15:15	15:30	16	23	**39**	16	2	**18**	**57**
15:30	15:45	10	17	**27**	9	0	**9**	**36**
15:45	16:00	17	22	**39**	16	0	**16**	**55**
16:00	16:15	21	31	**52**	16	1	**17**	**69**
16:15	16:30	10	23	**33**	11	0	**11**	**44**
16:30	16:45	23	31	**54**	20	0	**20**	**74**
16:45	17:00	18	32	**50**	21	0	**21**	**71**
17:00	17:15	22	35	**57**	32	0	**32**	**89**
17:15	17:30	24	30	**54**	19	0	**19**	**73**
17:30	17:45	29	35	**64**	25	0	**25**	**89**
17:45	18:00	16	34	**50**	17	0	**17**	**67**
Total	.....	666	726	**1392**	475	23	**498**	**1890**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study Heavy Vehicles

		ATHLONE AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	4	0	**4**	**9**	**9**
07:15	07:30	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	1	0	**1**	**7**	**7**
07:30	07:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	4	0	**4**	**5**	**5**
07:45	08:00	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	1	0	**1**	**6**	**6**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	0	**3**	**7**	**7**
08:15	08:30	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	4	0	**4**	**9**	**9**
08:30	08:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	5	0	**5**	**9**	**9**
08:45	09:00	0	0	0	**0**	0	0	1	**1**	**1**	0	6	0	**6**	0	4	0	**4**	**10**	**11**
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	3	0	**3**	**8**	**8**
09:15	09:30	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**5**	0	6	0	**6**	**11**	**11**
09:30	09:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	7	0	**7**	**11**	**11**
09:45	10:00	0	0	0	**0**	0	0	0	**0**	**0**	1	3	0	**4**	0	7	0	**7**	**11**	**11**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	1	0	**1**	**4**	**4**
11:45	12:00	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	2	0	**2**	**5**	**5**
12:00	12:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	1	**4**	0	5	0	**5**	**9**	**9**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	1	0	**1**	**5**	**5**
12:30	12:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	5	0	**5**	**7**	**7**
12:45	13:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	1	**5**	0	4	0	**4**	**9**	**9**
13:00	13:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	4	0	**4**	**6**	**6**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
15:00	15:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	0	0	**0**	**3**	**3**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	3	0	**3**	**5**	**5**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	2	0	**2**	**4**	**4**
16:00	16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	5	0	**5**	**8**	**8**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	3	0	**3**	**4**	**4**
16:30	16:45	0	0	0	**0**	0	0	2	**2**	**2**	0	0	0	**0**	0	2	0	**2**	**2**	**4**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	1	0	**1**	**3**	**3**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	1	0	**1**	**5**	**5**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**3**	0	1	0	**1**	**4**	**4**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	5	0	**5**	**6**	**6**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	0	0	**0**	**1**	**1**
Total:	None	0	0	0	**0**	0	0	3	**3**	**3**	1	102	2	**105**	0	97	0	**97**	**202**	**205**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ATHLONE AVE @ RICHMOND RD

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

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

Full Study 15 Minute U-Turn Total

Time Period		ATHLONE AVE Northbound U-Turn Total	ATHLONE AVE Southbound U-Turn Total	RICHMOND RD Eastbound U-Turn Total	RICHMOND RD Westbound U-Turn Total	Total
07:00	07:15	0	0	1	0	**1**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	0	0	0	0	**0**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	1	0	**1**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	0	0	0	**0**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	0	0	0	0	**0**
16:00	16:15	0	0	0	0	**0**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		0	0	2	0	**2**

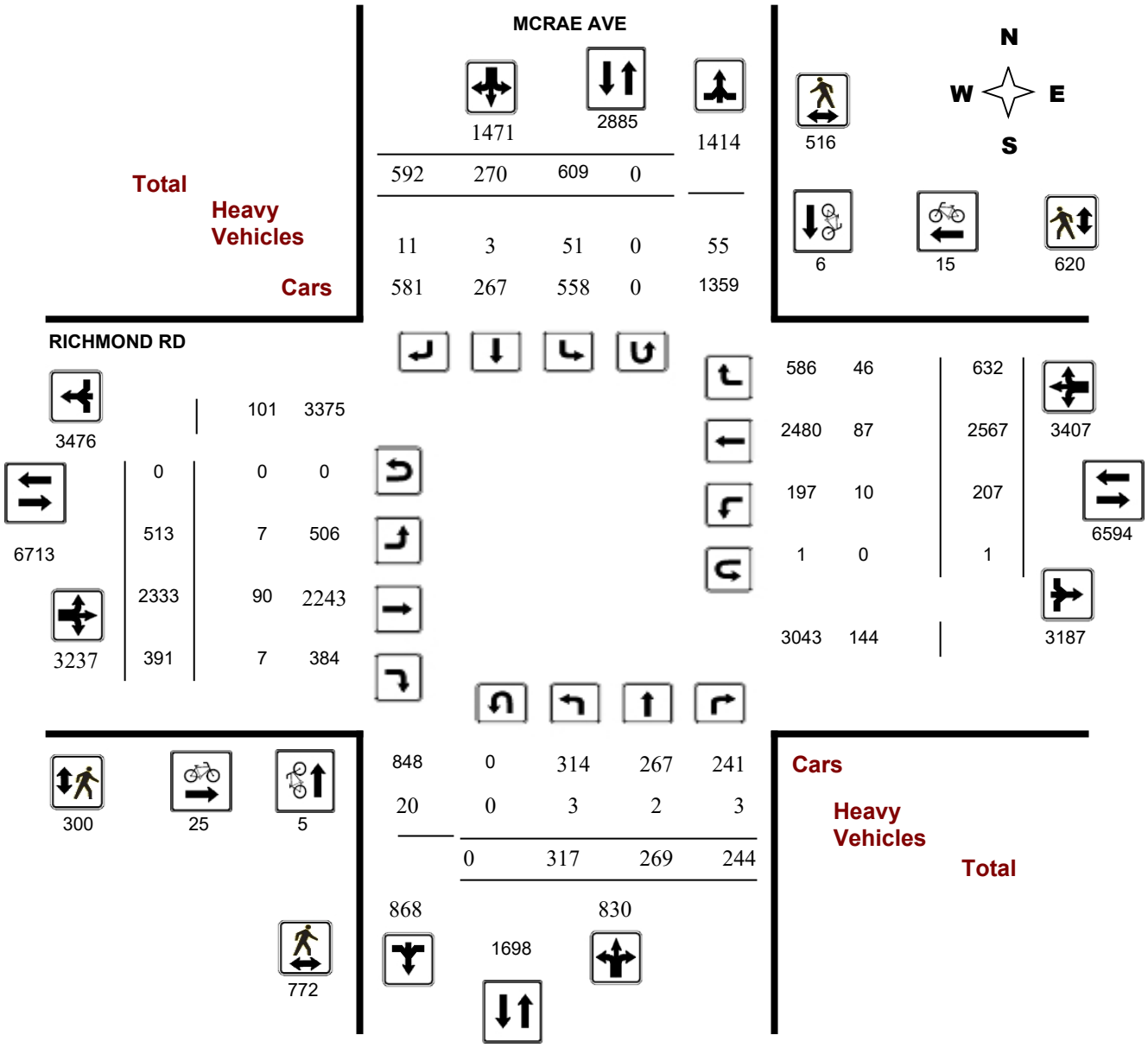
Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020
Start Time: 07:00
WO No: 39388
Device: Miovision

Full Study Diagram



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

Transportation Services - Traffic Services

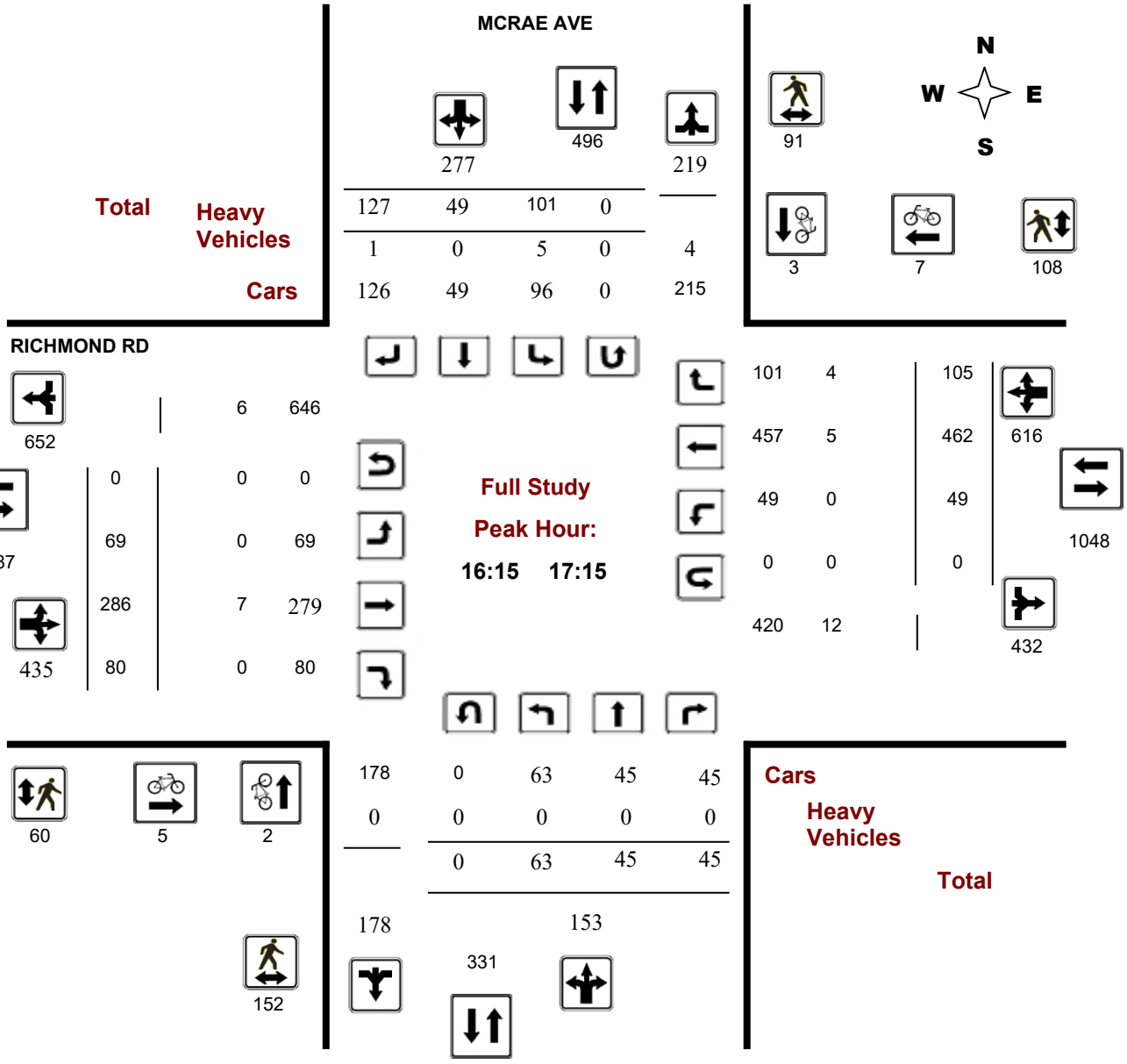
Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study Peak Hour Diagram



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

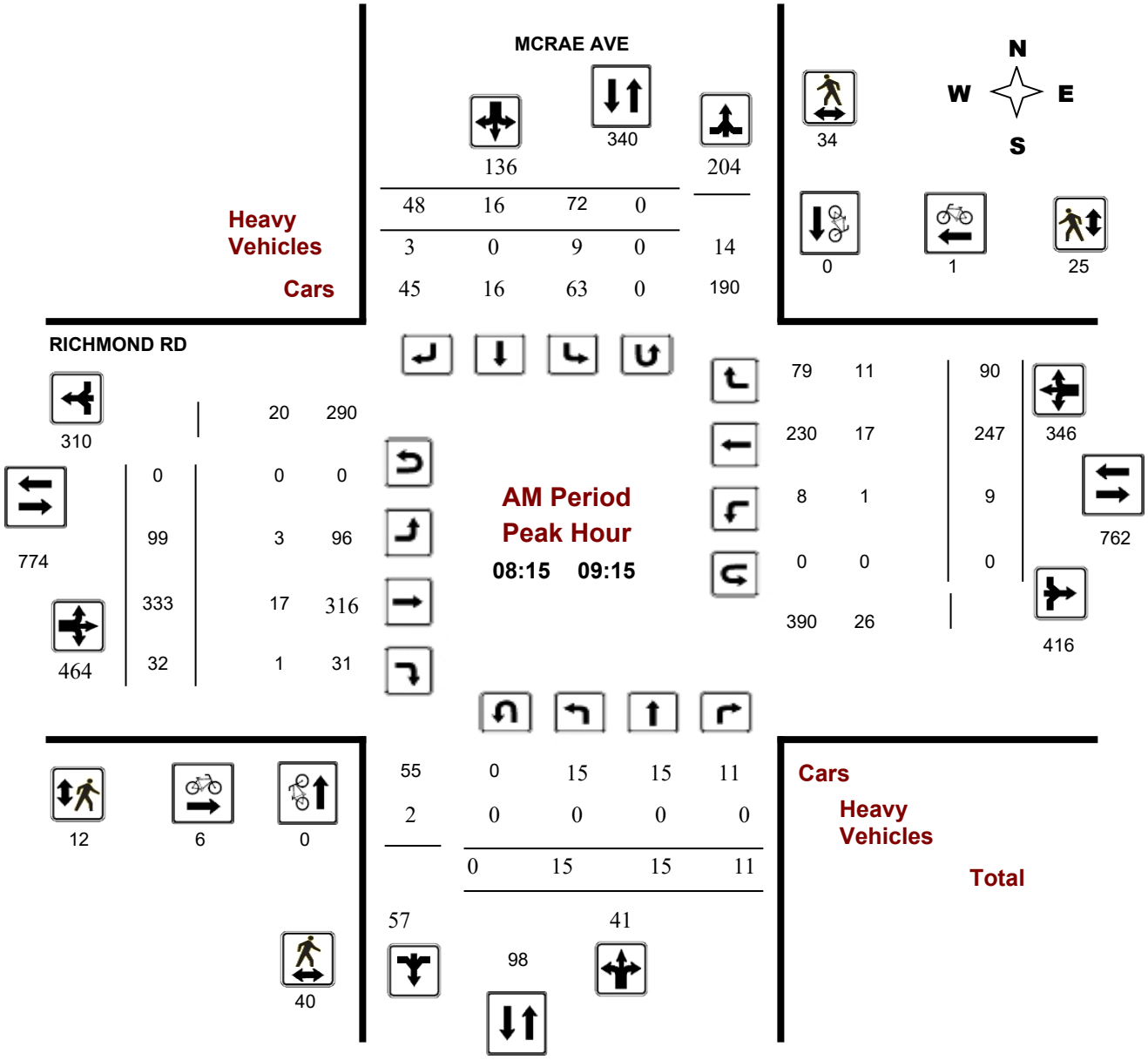
Transportation Services - Traffic Services

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

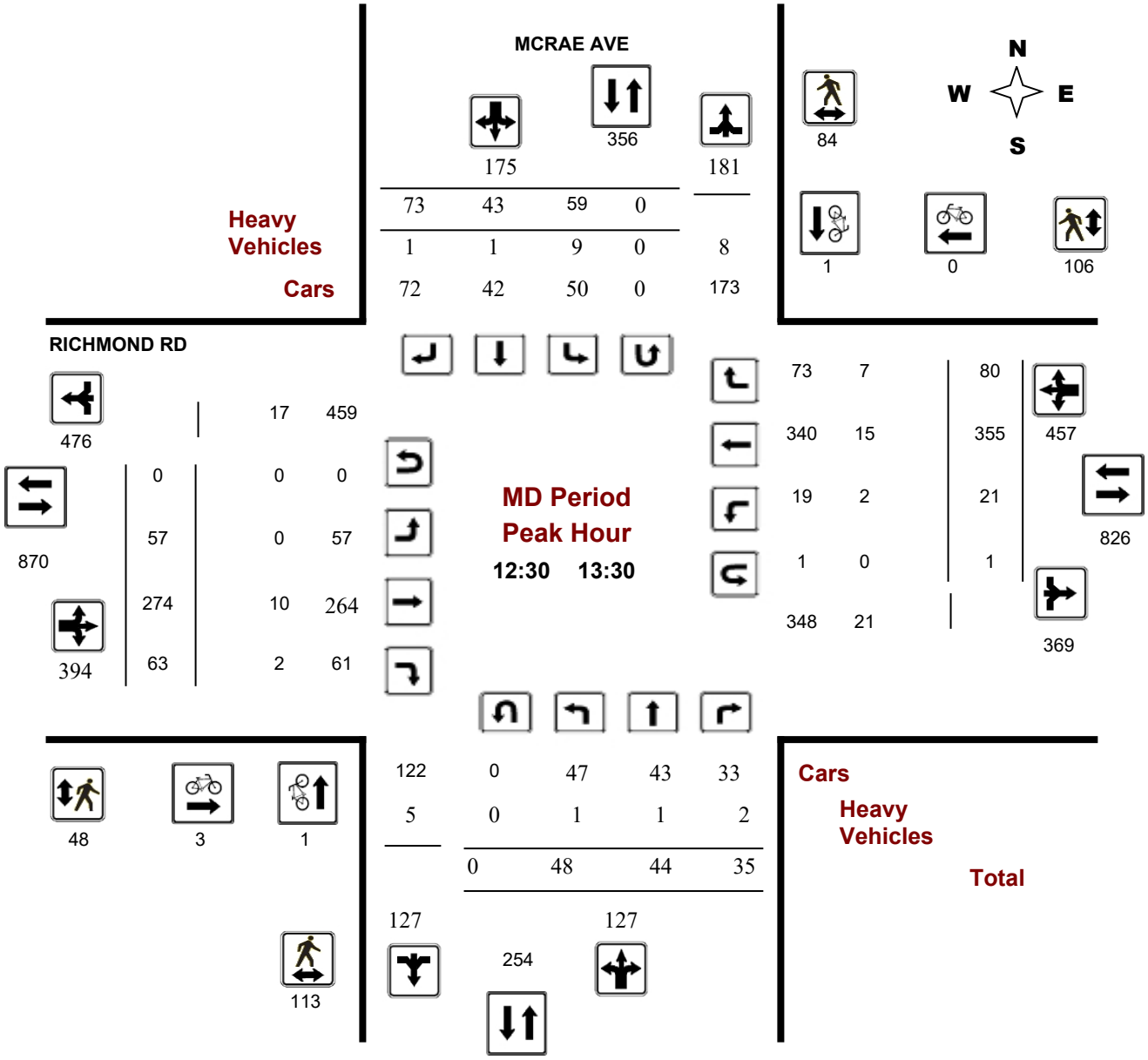
Transportation Services - Traffic Services

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

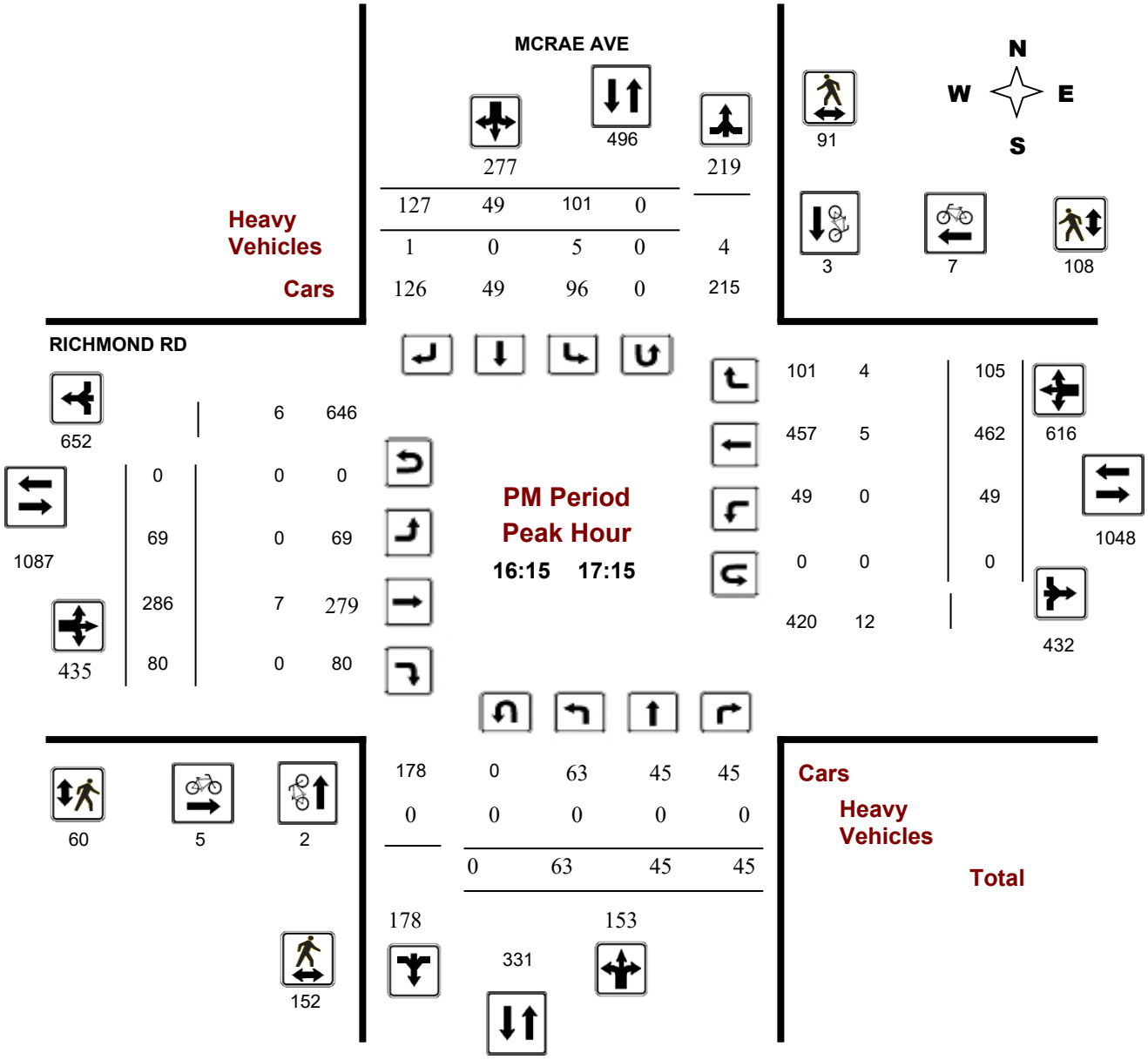
Transportation Services - Traffic Services

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, January 23, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 1

AADT Factor

1.00

	MCRAE AVE								RICHMOND RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	4	4	11	**19**	63	8	29	**100**	**119**	74	293	14	**381**	7	169	60	**236**	**617**	**736**
08:00 09:00	13	11	13	**37**	76	11	40	**127**	**164**	98	333	28	**459**	9	249	93	**351**	**810**	**974**
09:00 10:00	31	21	12	**64**	50	25	56	**131**	**195**	59	291	39	**389**	14	216	72	**302**	**691**	**886**
11:30 12:30	47	47	36	**130**	62	34	77	**173**	**303**	46	298	61	**405**	27	328	59	**414**	**819**	**1122**
12:30 13:30	48	44	35	**127**	59	43	73	**175**	**302**	57	274	63	**394**	21	355	80	**456**	**850**	**1152**
15:00 16:00	59	45	36	**140**	98	45	84	**227**	**367**	49	300	49	**398**	32	383	68	**483**	**881**	**1248**
16:00 17:00	53	48	45	**146**	95	40	123	**258**	**404**	62	267	64	**393**	39	452	114	**605**	**998**	**1402**
17:00 18:00	62	49	56	**167**	106	64	110	**280**	**447**	68	277	73	**418**	58	415	86	**559**	**977**	**1424**
Sub Total	317	269	244	**830**	609	270	592	**1471**	**2301**	513	2333	391	**3237**	207	2567	632	**3406**	**6643**	**8944**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	1			**1**	**1**	**1**
Total	317	269	244	**830**	609	270	592	**1471**	**2301**	513	2333	391	**3237**	208	2567	632	**3407**	**6644**	**8945**
EQ 12Hr	441	374	339	**1154**	847	375	823	**2045**	**3199**	713	3243	543	**4499**	289	3568	878	**4735**	**9234**	**12433**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	441	374	339	**1154**	847	375	823	**2045**	**3199**	713	3243	543	**4499**	289	3568	878	**4735**	**9234**	**12433**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	578	490	444	**1512**	1110	491	1078	**2679**	**4191**	934	4248	711	**5893**	379	4674	1150	**6203**	**12096**	**16287**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study 15 Minute Increments

		MCRAE AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	2	4	6	16	1	4	21	**27**	13	61	0	74	2	41	7	50	**124**	**151**
07:15	07:30	1	1	2	4	14	2	3	19	**23**	19	71	5	95	2	42	18	62	**157**	**180**
07:30	07:45	1	1	0	2	15	2	11	28	**30**	19	77	2	98	2	31	12	45	**143**	**173**
07:45	08:00	2	0	5	7	18	3	11	32	**39**	23	84	7	114	1	55	23	79	**193**	**232**
08:00	08:15	3	2	3	8	21	1	10	32	**40**	17	88	3	108	4	56	25	85	**193**	**233**
08:15	08:30	2	3	5	10	14	1	8	23	**33**	22	87	11	120	1	65	24	90	**210**	**243**
08:30	08:45	4	2	2	8	29	2	11	42	**50**	22	82	4	108	2	62	24	88	**196**	**246**
08:45	09:00	4	4	3	11	12	7	11	30	**41**	37	76	10	123	2	66	20	88	**211**	**252**
09:00	09:15	5	6	1	12	17	6	18	41	**53**	18	88	7	113	4	54	22	80	**193**	**246**
09:15	09:30	7	4	1	12	11	5	7	23	**35**	19	69	12	100	1	53	13	67	**167**	**202**
09:30	09:45	9	6	5	20	12	6	19	37	**57**	7	66	10	83	6	60	19	85	**168**	**225**
09:45	10:00	10	5	5	20	10	8	12	30	**50**	15	68	10	93	3	49	18	70	**163**	**213**
11:30	11:45	14	8	10	32	14	14	19	47	**79**	12	72	20	104	3	79	18	100	**204**	**283**
11:45	12:00	8	9	10	27	11	6	19	36	**63**	8	92	11	111	2	90	13	105	**216**	**279**
12:00	12:15	12	15	7	34	19	5	15	39	**73**	12	70	14	96	12	85	17	114	**210**	**283**
12:15	12:30	13	15	9	37	18	9	24	51	**88**	14	64	16	94	10	74	11	95	**189**	**277**
12:30	12:45	8	10	7	25	11	11	24	46	**71**	19	53	19	91	5	84	24	113	**204**	**275**
12:45	13:00	15	14	7	36	12	13	13	38	**74**	15	71	13	99	9	92	14	115	**214**	**288**
13:00	13:15	10	12	11	33	18	7	14	39	**72**	8	74	19	101	5	87	24	116	**217**	**289**
13:15	13:30	15	8	10	33	18	12	22	52	**85**	15	76	12	103	3	92	18	113	**216**	**301**
15:00	15:15	14	6	8	28	27	12	16	55	**83**	14	82	12	108	8	95	13	116	**224**	**307**
15:15	15:30	22	11	10	43	20	15	18	53	**96**	9	82	13	104	7	81	12	100	**204**	**300**
15:30	15:45	13	17	11	41	21	7	29	57	**98**	12	65	7	84	5	102	14	121	**205**	**303**
15:45	16:00	10	11	7	28	30	11	21	62	**90**	14	71	17	102	12	105	29	146	**248**	**338**
16:00	16:15	7	12	13	32	30	9	25	64	**96**	18	56	8	82	12	99	32	143	**225**	**321**
16:15	16:30	12	11	12	35	20	13	30	63	**98**	15	74	20	109	11	131	30	172	**281**	**379**
16:30	16:45	19	13	11	43	23	9	35	67	**110**	16	76	16	108	9	113	29	151	**259**	**369**
16:45	17:00	15	12	9	36	22	9	33	64	**100**	13	61	20	94	7	109	23	139	**233**	**333**
17:00	17:15	17	9	13	39	36	18	29	83	**122**	25	75	24	124	22	109	23	154	**278**	**400**
17:15	17:30	14	11	14	39	28	20	28	76	**115**	7	52	17	76	8	110	20	138	**214**	**329**
17:30	17:45	9	14	17	40	20	13	19	52	**92**	15	68	13	96	18	105	23	146	**242**	**334**
17:45	18:00	22	15	12	49	22	13	34	69	**118**	21	82	19	122	10	91	20	121	**243**	**361**
Total:		317	269	244	830	609	270	592	1471	**2301**	513	2333	391	3237	208	2567	632	3407	**2301**	**8,945**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study Cyclist Volume

Time Period		MCRAE AVE			RICHMOND RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	2	0	**2**	**2**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	0	**0**	2	0	**2**	**2**
08:00	08:15	0	0	**0**	1	2	**3**	**3**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	0	**0**	3	1	**4**	**4**
08:45	09:00	0	0	**0**	1	0	**1**	**1**
09:00	09:15	0	0	**0**	2	0	**2**	**2**
09:15	09:30	0	0	**0**	0	1	**1**	**1**
09:30	09:45	0	0	**0**	1	1	**2**	**2**
09:45	10:00	0	0	**0**	0	1	**1**	**1**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	1	0	**1**	**1**
12:30	12:45	1	0	**1**	0	0	**0**	**1**
12:45	13:00	0	0	**0**	2	0	**2**	**2**
13:00	13:15	0	1	**1**	1	0	**1**	**2**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	1	0	**1**	**1**
15:15	15:30	0	0	**0**	1	0	**1**	**1**
15:30	15:45	0	0	**0**	1	2	**3**	**3**
15:45	16:00	0	0	**0**	1	0	**1**	**1**
16:00	16:15	2	0	**2**	0	0	**0**	**2**
16:15	16:30	0	0	**0**	0	2	**2**	**2**
16:30	16:45	0	2	**2**	1	1	**2**	**4**
16:45	17:00	2	1	**3**	4	1	**5**	**8**
17:00	17:15	0	0	**0**	0	3	**3**	**3**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	2	**2**	0	0	**0**	**2**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		5	6	**11**	25	15	**40**	**51**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study Pedestrian Volume

	MCRAE AVE			RICHMOND RD			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	**Total**	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	**Total**	**Grand Total**
07:00 07:15	7	3	**10**	2	0	**2**	**12**
07:15 07:30	6	5	**11**	1	4	**5**	**16**
07:30 07:45	7	8	**15**	2	5	**7**	**22**
07:45 08:00	29	11	**40**	5	11	**16**	**56**
08:00 08:15	9	1	**10**	4	8	**12**	**22**
08:15 08:30	12	7	**19**	4	5	**9**	**28**
08:30 08:45	18	14	**32**	6	11	**17**	**49**
08:45 09:00	5	4	**9**	2	3	**5**	**14**
09:00 09:15	5	9	**14**	0	6	**6**	**20**
09:15 09:30	13	11	**24**	6	11	**17**	**41**
09:30 09:45	14	6	**20**	4	14	**18**	**38**
09:45 10:00	12	7	**19**	4	9	**13**	**32**
11:30 11:45	25	10	**35**	3	29	**32**	**67**
11:45 12:00	12	18	**30**	4	19	**23**	**53**
12:00 12:15	35	20	**55**	11	35	**46**	**101**
12:15 12:30	30	21	**51**	5	23	**28**	**79**
12:30 12:45	36	22	**58**	23	24	**47**	**105**
12:45 13:00	24	28	**52**	13	27	**40**	**92**
13:00 13:15	21	17	**38**	6	22	**28**	**66**
13:15 13:30	32	17	**49**	6	33	**39**	**88**
15:00 15:15	28	17	**45**	12	20	**32**	**77**
15:15 15:30	22	13	**35**	8	21	**29**	**64**
15:30 15:45	42	26	**68**	12	26	**38**	**106**
15:45 16:00	37	27	**64**	11	27	**38**	**102**
16:00 16:15	41	20	**61**	26	27	**53**	**114**
16:15 16:30	39	16	**55**	12	23	**35**	**90**
16:30 16:45	46	20	**66**	23	19	**42**	**108**
16:45 17:00	35	29	**64**	10	31	**41**	**105**
17:00 17:15	32	26	**58**	15	35	**50**	**108**
17:15 17:30	25	19	**44**	13	32	**45**	**89**
17:30 17:45	31	38	**69**	29	31	**60**	**129**
17:45 18:00	42	26	**68**	18	29	**47**	**115**
Total	772	516	**1288**	300	620	**920**	**2208**

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study Heavy Vehicles

		MCRAE AVE									RICHMOND RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	2	0	0	**2**	**2**	1	2	0	**3**	1	1	0	**2**	**5**	**7**
07:15	07:30	0	0	0	**0**	0	0	1	**1**	**1**	0	3	1	**4**	0	3	1	**4**	**8**	**9**
07:30	07:45	0	0	0	**0**	1	0	0	**1**	**1**	0	3	0	**3**	1	3	2	**6**	**9**	**10**
07:45	08:00	0	0	0	**0**	1	0	1	**2**	**2**	0	3	0	**3**	0	2	1	**3**	**6**	**8**
08:00	08:15	0	0	0	**0**	3	0	1	**4**	**4**	0	4	0	**4**	0	6	1	**7**	**11**	**15**
08:15	08:30	0	0	0	**0**	3	0	1	**4**	**4**	1	6	0	**7**	0	5	2	**7**	**14**	**18**
08:30	08:45	0	0	0	**0**	3	0	0	**3**	**3**	0	7	1	**8**	1	4	2	**7**	**15**	**18**
08:45	09:00	0	0	0	**0**	1	0	1	**2**	**2**	1	1	0	**2**	0	4	4	**8**	**10**	**12**
09:00	09:15	0	0	0	**0**	2	0	1	**3**	**3**	1	3	0	**4**	0	4	3	**7**	**11**	**14**
09:15	09:30	1	0	0	**1**	2	0	0	**2**	**3**	1	4	0	**5**	0	3	0	**3**	**8**	**11**
09:30	09:45	0	0	0	**0**	3	0	0	**3**	**3**	0	5	2	**7**	0	4	2	**6**	**13**	**16**
09:45	10:00	1	0	0	**1**	0	0	2	**2**	**3**	1	6	1	**8**	0	1	3	**4**	**12**	**15**
11:30	11:45	0	0	0	**0**	1	1	0	**2**	**2**	0	1	0	**1**	0	5	1	**6**	**7**	**9**
11:45	12:00	0	0	0	**0**	1	0	1	**2**	**2**	0	3	0	**3**	0	2	2	**4**	**7**	**9**
12:00	12:15	0	0	0	**0**	3	1	0	**4**	**4**	1	5	0	**6**	1	4	1	**6**	**12**	**16**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	1	**4**	**8**	**8**
12:30	12:45	1	0	1	**2**	3	0	1	**4**	**6**	0	3	1	**4**	0	5	2	**7**	**11**	**17**
12:45	13:00	0	1	1	**2**	1	1	0	**2**	**4**	0	2	1	**3**	1	4	2	**7**	**10**	**14**
13:00	13:15	0	0	0	**0**	4	0	0	**4**	**4**	0	4	0	**4**	0	2	2	**4**	**8**	**12**
13:15	13:30	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**1**	1	4	1	**6**	**7**	**8**
15:00	15:15	0	0	0	**0**	2	0	0	**2**	**2**	0	4	0	**4**	0	4	2	**6**	**10**	**12**
15:15	15:30	0	0	1	**1**	1	0	0	**1**	**2**	0	2	0	**2**	0	2	0	**2**	**4**	**6**
15:30	15:45	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**1**	1	0	2	**3**	**4**	**5**
15:45	16:00	0	0	0	**0**	2	0	0	**2**	**2**	0	1	0	**1**	1	3	0	**4**	**5**	**7**
16:00	16:15	0	1	0	**1**	2	0	0	**2**	**3**	0	2	0	**2**	0	2	4	**6**	**8**	**11**
16:15	16:30	0	0	0	**0**	1	0	0	**1**	**1**	0	2	0	**2**	0	2	0	**2**	**4**	**5**
16:30	16:45	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**1**	0	0	1	**1**	**2**	**3**
16:45	17:00	0	0	0	**0**	2	0	1	**3**	**3**	0	1	0	**1**	0	0	1	**1**	**2**	**5**
17:00	17:15	0	0	0	**0**	1	0	0	**1**	**1**	0	3	0	**3**	0	3	2	**5**	**8**	**9**
17:15	17:30	0	0	0	**0**	1	0	0	**1**	**1**	0	0	0	**0**	0	1	0	**1**	**1**	**2**
17:30	17:45	0	0	0	**0**	1	0	0	**1**	**1**	0	2	0	**2**	2	0	1	**3**	**5**	**6**
17:45	18:00	0	0	0	**0**	1	0	0	**1**	**1**	0	1	0	**1**	0	1	0	**1**	**2**	**3**
Total:	None	3	2	3	**8**	51	3	11	**65**	**73**	7	90	7	**104**	10	87	46	**143**	**247**	**320**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCRAE AVE @ RICHMOND RD

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

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

Full Study 15 Minute U-Turn Total

Time Period		MCRAE AVE Northbound U-Turn Total	MCRAE AVE Southbound U-Turn Total	RICHMOND RD Eastbound U-Turn Total	RICHMOND RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	0	0	0	0	**0**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	1	**1**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	0	0	0	**0**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	0	0	0	0	**0**
16:00	16:15	0	0	0	0	**0**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		0	0	0	1	**1**

Appendix E: Collision Records

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

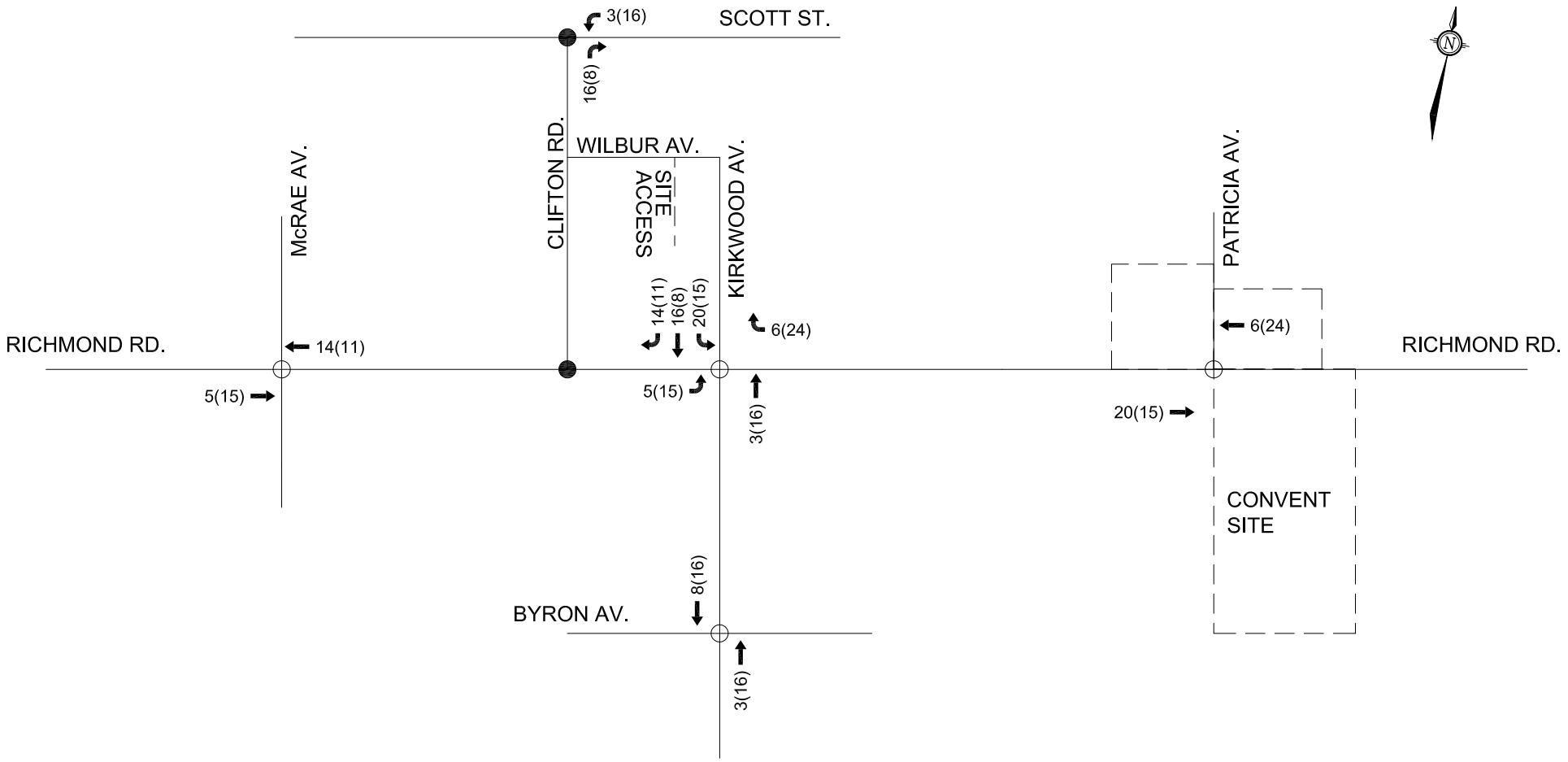
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-28, Thu,19:30	Clear	Sideswipe	Non-fatal injury	Dry	East	Stopped	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2019-Jun-02, 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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Email: novainfo@novatech-eng.com

LEGEND

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

175 RICHMOND ROAD

PROPOSED SITE TRAFFIC

SEP 2011 111130 FIGURE 9

SHT8X11.DWG - 216mmX278mm

Figure 13: New Site Generation Auto Volumes

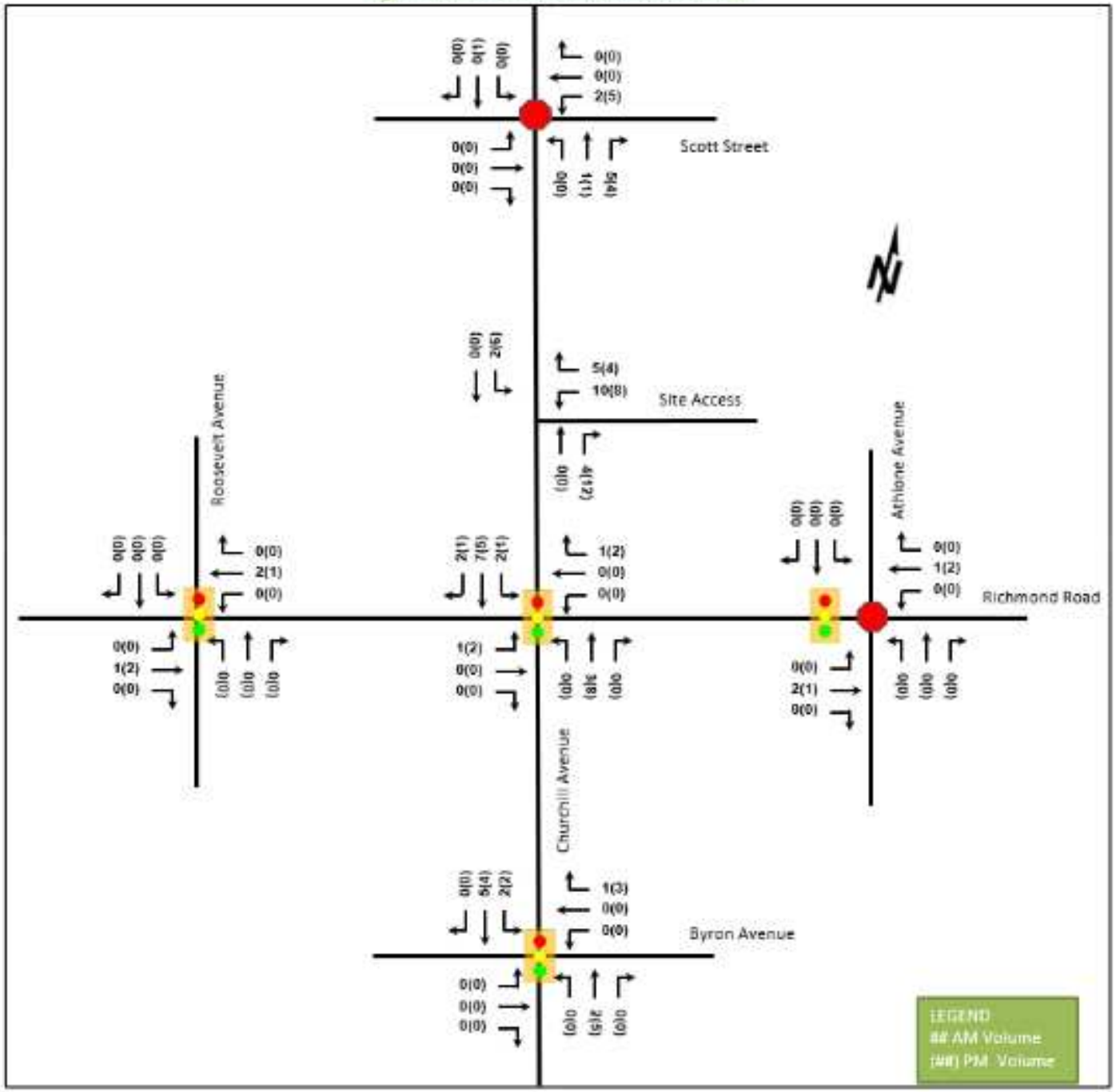
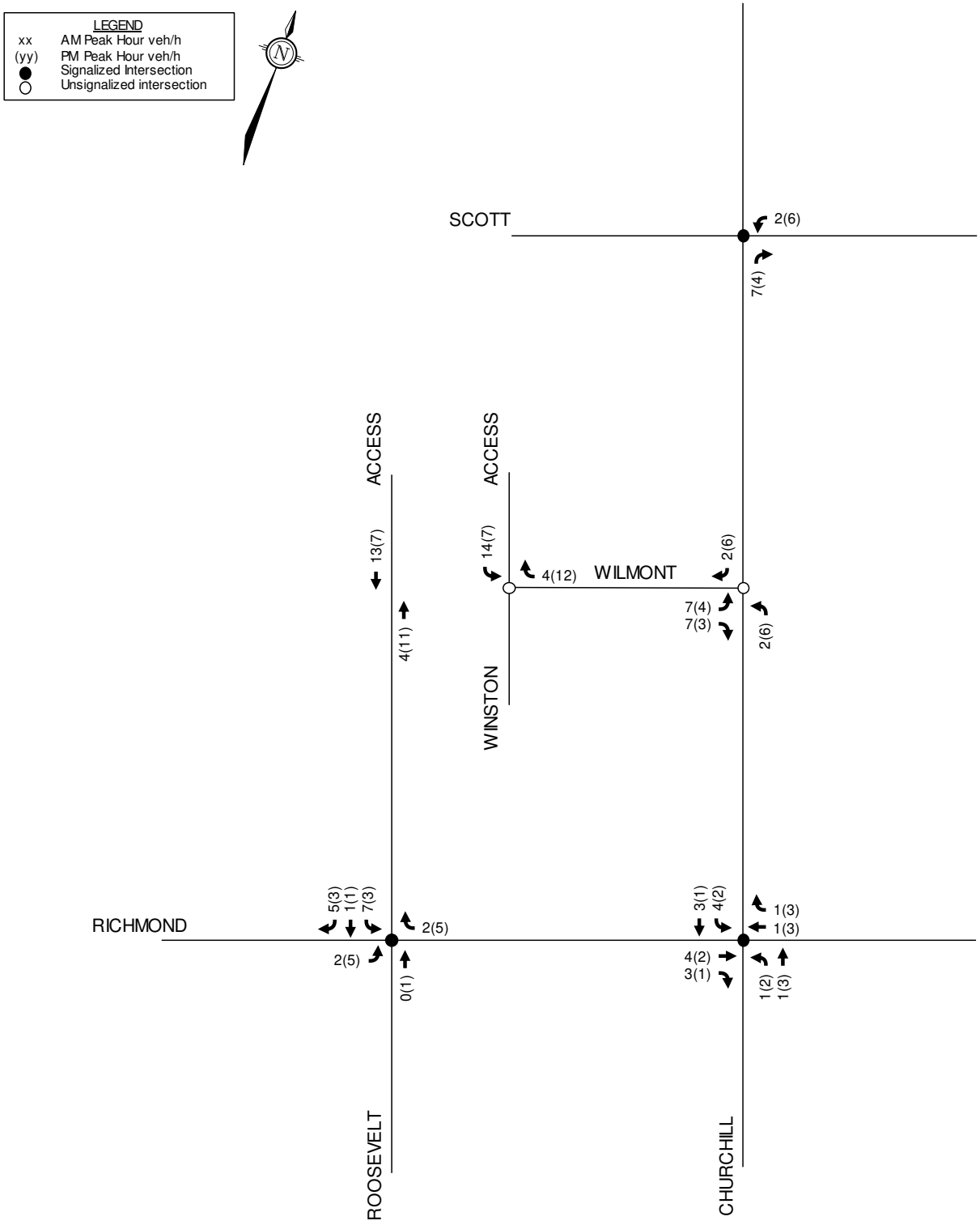


Figure 10: Site Generated Traffic



1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review Component and the Network Impact Component.

2 Existing and Planned Conditions

2.1 Proposed Development

The proposed development, located at 381 Churchill Avenue, 380 Winona Avenue, 319, 325, and 327 Richmond Road, is currently zoned as part Traditional Mainstreet (TM H15), part General Mixed Use (GM1), and part Residential Fourth Density (R4). The existing land uses include a car garage and maintenance shop, two small retail stores and a residential apartment with six units. TOD principles apply to the proposed development Study Area.

The proposed development is a nine-storey building with 184 apartment units, 1738 square metres of retail space, 130 vehicle parking spots, and 99 bicycle parking spaces. The site is proposed to have two accesses; one of which is a full movement access on Churchill Avenue approximately 65 metres north of the Churchill Avenue / Richmond Road intersection (measured from access centreline to intersection centre). The second access is located on Winona Avenue approximately 50 metres north of the Winona Avenue / Richmond Road intersection (measured from access centreline to intersection centre) and is a loading entrance with access solely to loading aisles. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area context. Figure 2 illustrates the proposed site plan of the development.

Figure 1: Area Context Plan

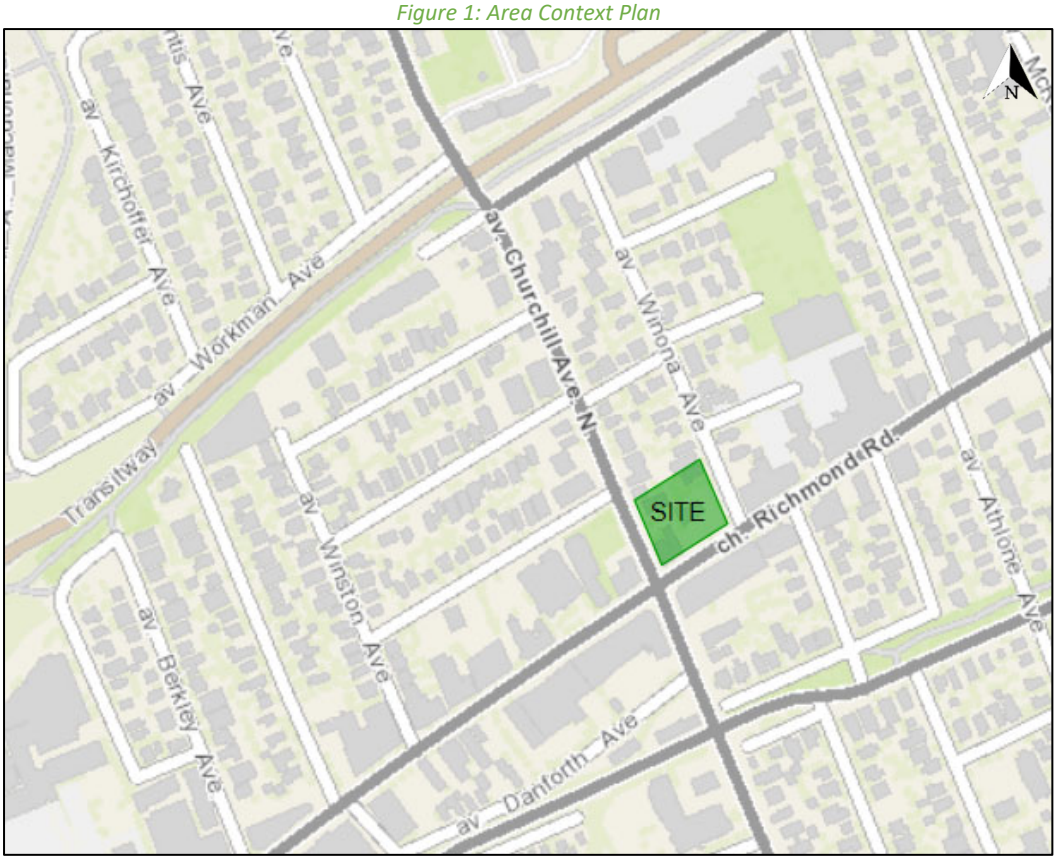
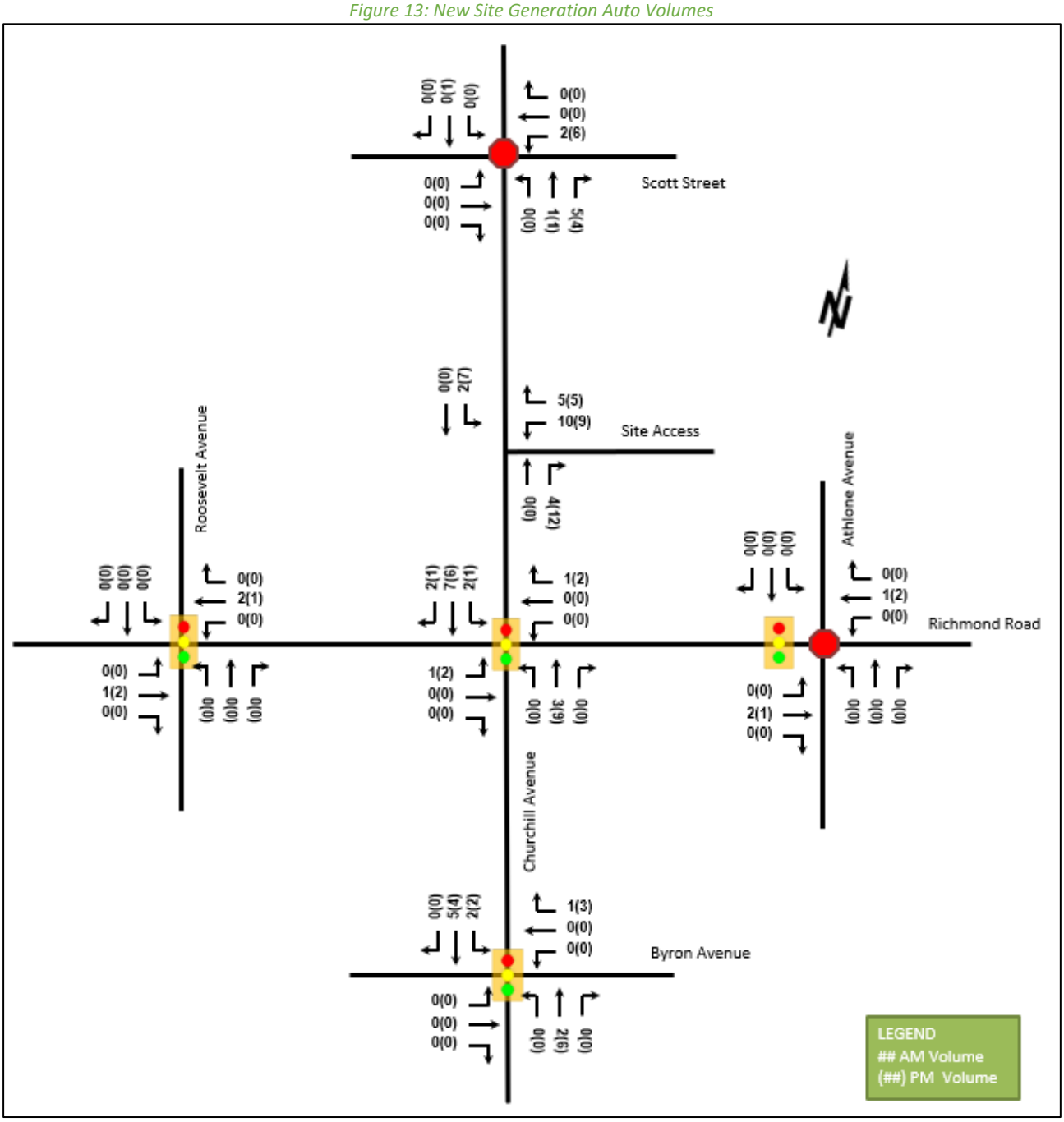


Figure 13: New Site Generation Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. Both TOD policies and the opening of the Westboro LRT station and Dominion LRT station have been accounted for within the modal share assumptions. No road improvements are noted for this area with the exception of future road sewer, and water work along Winona Avenue.

1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review component and the Network Impact Component. This study has been prepared to support a site plan application for 320 McRae Avenue.

2 Existing and Planned Conditions

2.1 Proposed Development

The proposed development located at 320 McRae Avenue is currently a mix of residential and commercial buildings. The site is in an area that is zoned as part Traditional Mainstreet (TM 2489 S382-h), part Parks and Open Space (O 1) and part General Mixed Zone (GM2490 H (15) h). The proposed development is within 400 metres of the future Westboro LRT Station to be built by 2025 and therefore TOD principles apply to the applicable future horizons.

The proposed development is made up of a four-storey commercial / residential tower, and a commercial / residential tower with both a 26-storey and a six-storey component. The development is expected to have 882 square metres (9,494 square feet) of commercial space, 307 apartment units, 11 townhouse units, 185 underground automobile parking spaces and 163 bicycle parking spaces. Of the 163 bicycle spaces, 123 will be underground and due to space restrictions, 15 bicycle parking spaces will be slightly off the property and 25 will be in the loading area. The site is proposed to have two full-movement accesses, one approximately 40 metres, curb to curb, south of Scott Street on Tweedsmuir Avenue (Site Access #1) and the second approximately 120 metres, curb to curb, south of Scott Street on McRae Avenue (Site Access #2). Site Access #2 is a loading access and is intended for truck use only. A drop-off area is located on McRae Avenue, approximately 23 metres, curb to curb, south of Scott Street. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan

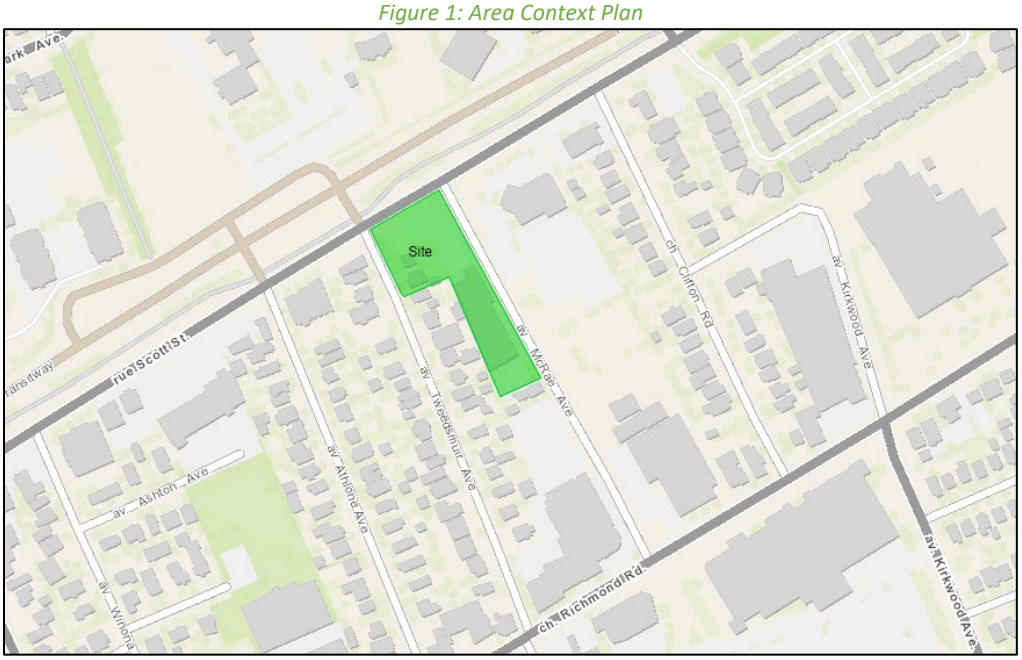


Figure 13: New 2022 Site Generation Auto Volumes

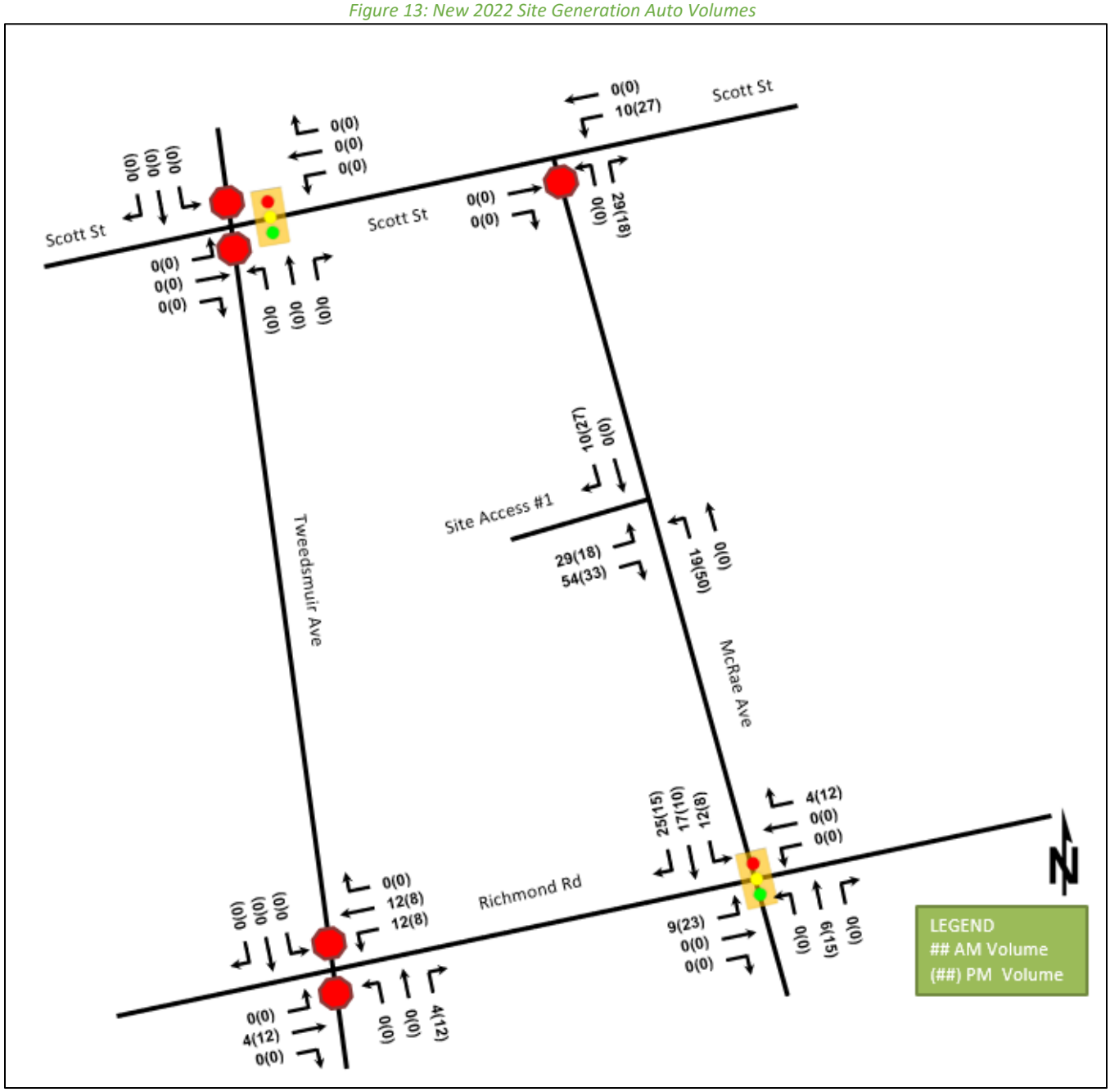
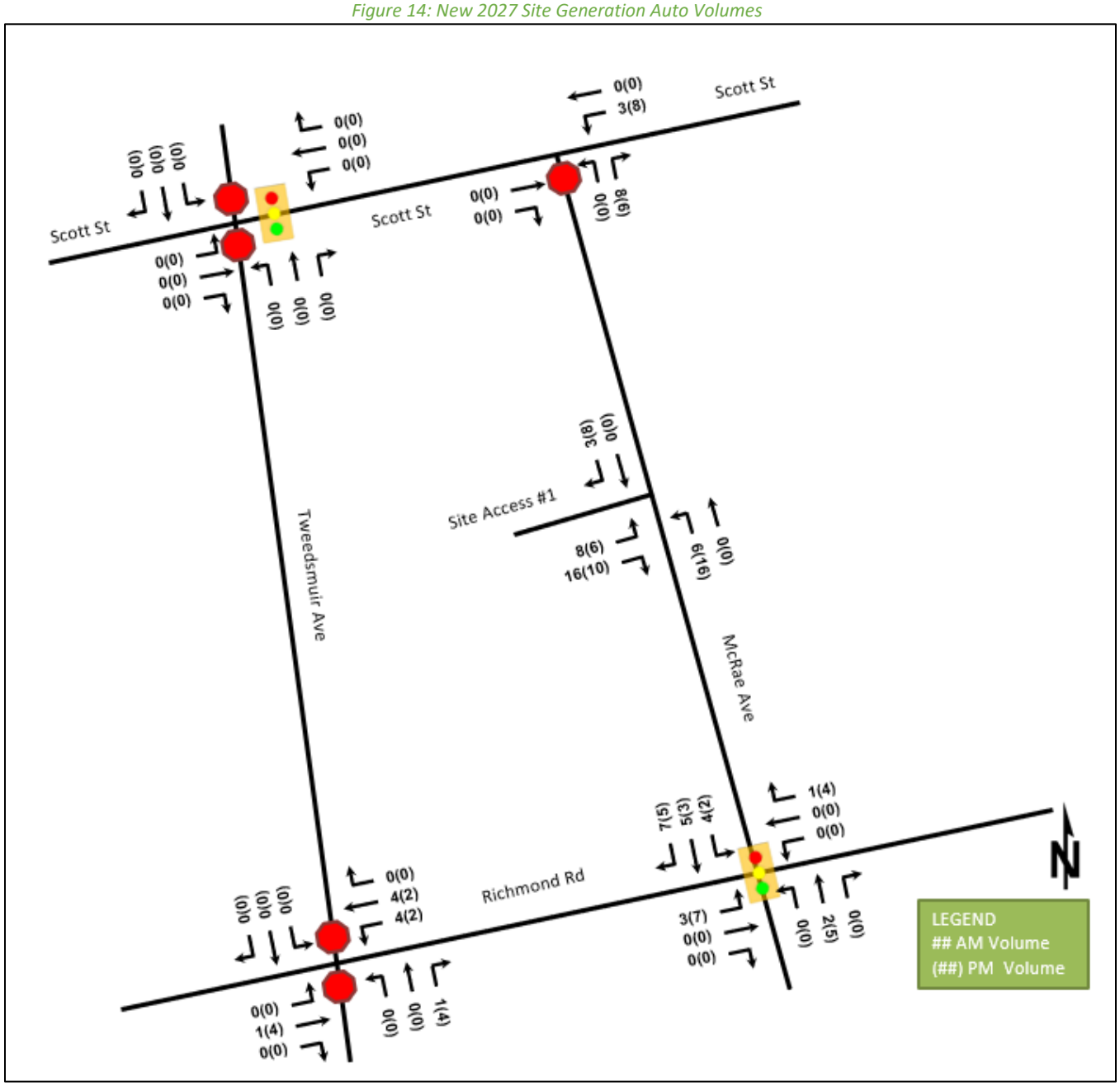


Figure 14: New 2027 Site Generation Auto Volumes



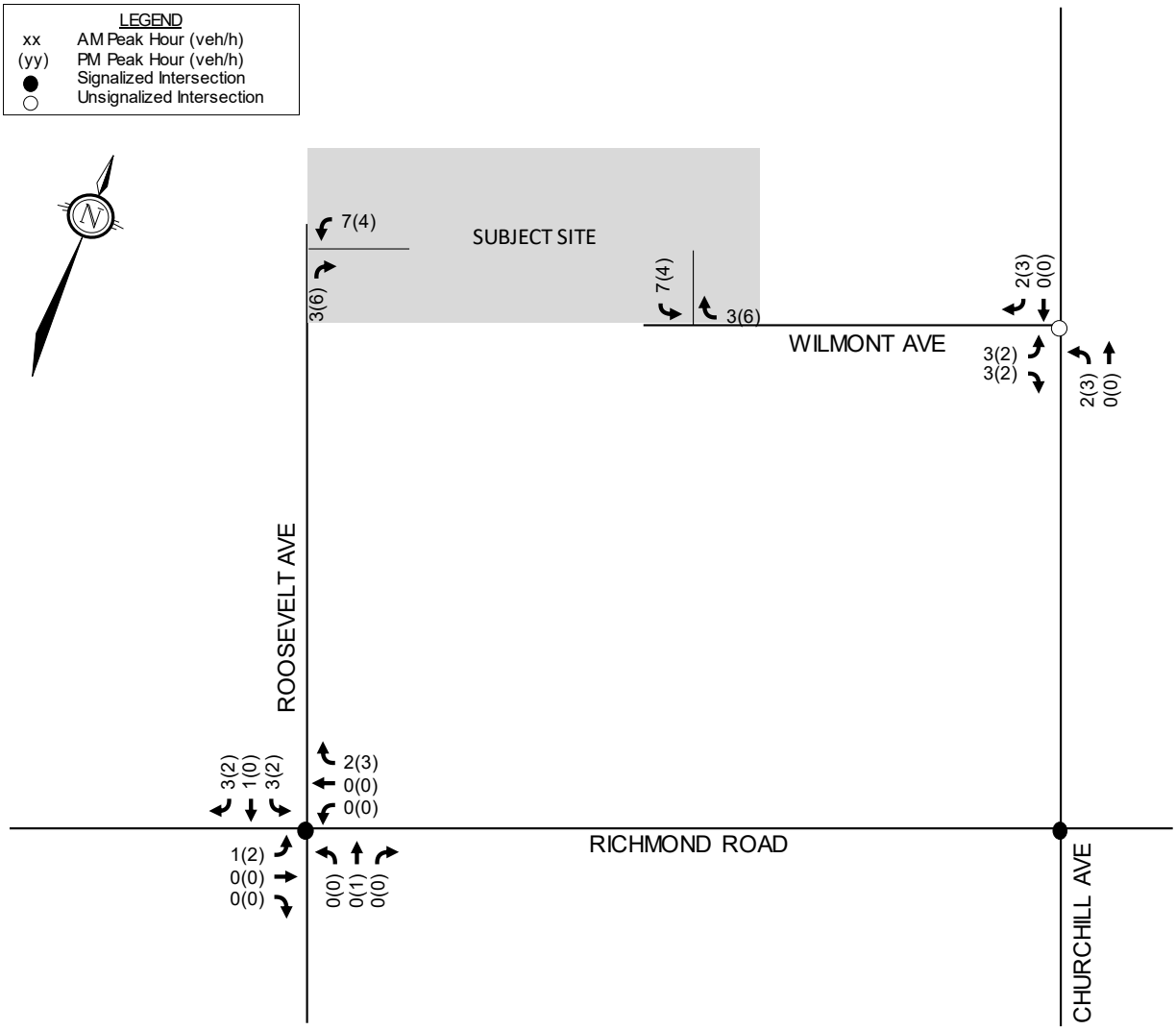
6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. The opening of the Westboro LRT station and Dominion LRT station, isolated measure transit priority along Richmond Road and TOD policies have been accounted for within the modal share assumptions. No road improvements within the study horizons are noted for this area.

The additional connectivity provided by future bicycle spine routes along Scott Street and Richmond Road as part of the City of Ottawa ultimate cycling plan will improve the active mode network.

Figure 7: Site Generated Traffic Volumes



2.5 Access Design

The proposed development will be served by two full movement accesses, one along Roosevelt Avenue and the other along Wilmont Avenue. The two buildings and the underground parking garage will be constructed in two phases; however, the garages will be connected internally once the construction is completed.

Roosevelt Avenue at the north end will be extended to form a cul-de-sac and will provide connectivity to the multi-use pathway. Winston Avenue will also be extended at the north end such that it forms a cul-de-sac between the two proposed buildings and will be used as pickup and drop off location.

1. Step 1 - Screening Form

With respect to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, the proposed development (described below in Section 2.1) triggered the trip generation, location, and the safety criteria outlined in the City's TIA Step 1 – Screening form. Given these three (3) triggers were met, a formal TIA (i.e. completed Steps 1-5) must accompany the subject development application.

2. Step 2 - Scoping

2.1 Existing and Planned Conditions

Description of Proposed Development

The subject site is municipally known as 403 Richmond Road and 389 Roosevelt Avenue, and is currently bound by Richmond Road to the south, Roosevelt Avenue to the west, commercial/residential land uses to the east and residential land uses to the north. Based on the available/provided information, the subject site is currently occupied by a funeral home (403 Richmond Road) and a single family home (389 Roosevelt Avenue) and is planned to be replaced by a 9 storey mix-used building with 141 residential units, a 10th floor amenity space and 5,283 ft^2 of ground floor commercial space. The development will be constructed in a single phase, with an estimated build-out year of 2025.

The latest Concept Plan depicts that the development will have one vehicular full-movement access point utilizing the existing driveway connection at Roosevelt Avenue, which is to the west of the site. All parking will be provided in an underground parking facility with access/egress located on the back side of the building. There will be no vehicular access point from Richmond Road (i.e. the existing driveway connection to Richmond Road will be closed).

Pedestrians will have direct access to existing sidewalks along both Roosevelt Avenue and Richmond Road, which connects with a well-developed surrounding pedestrian network. Cyclists will be able to use the dedicated cycling network along Scott Street to the north, or Byron Avenue to the south to access the City's established off-road cycling network. The surrounding active transportation network also provides convenient access to/from the public transit via the existing BRT Dominion station, as well as local bus service along Richmond Road and Churchill Avenue.

The local context of the subject development site is provided in the following **Figure 1**, and the proposed Concept Plan is provided in the subsequent **Figure 2**.

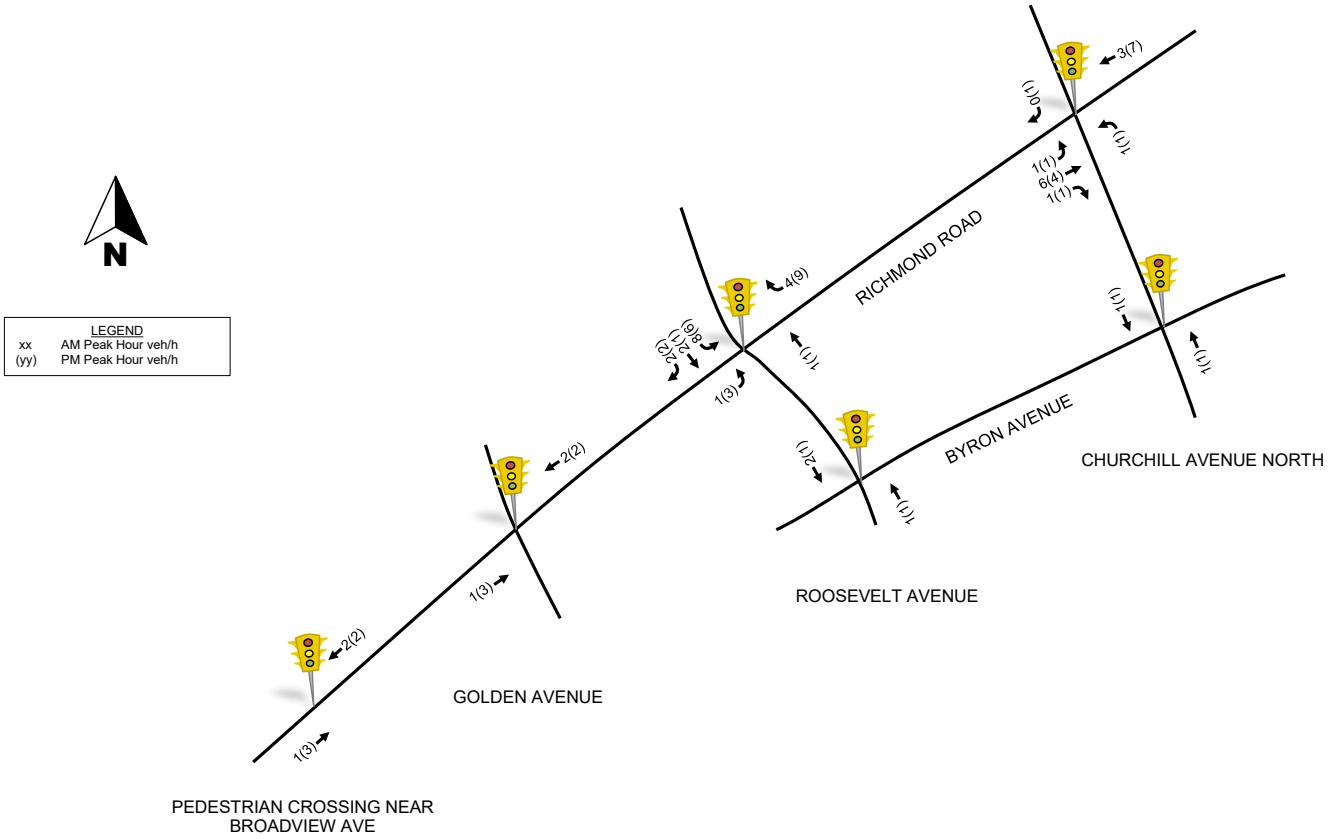
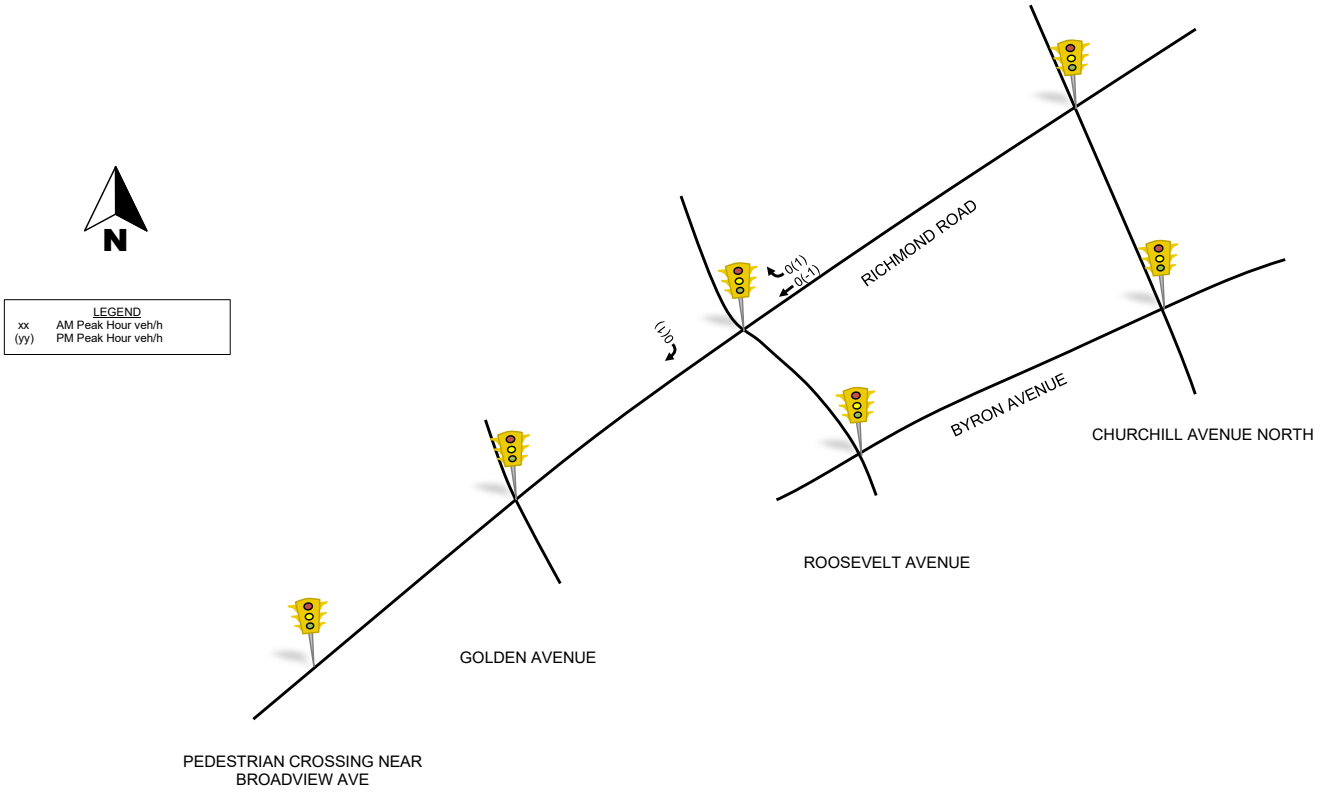


Figure 14: 'New' Projected Site-Generated Traffic



1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan application for a proposed development at 2006 Scott Street, 2020 Scott Street, 2026 Scott Street, 314 Athlone Avenue, 316 Athlone Avenue, and 318 Athlone Avenue.

The subject site is surrounded by the following:

- Scott Street and the OC Transpo East-West Transitway to the north;
- Ashton Avenue, Lion's Park, and residential properties fronting Athlone Avenue to the south;
- Athlone Avenue and residential uses to the east; and
- Various existing low-rise retail uses along Scott Street to the west. A residential development is proposed at 2050 Scott Street, directly abutting the subject site to the west.

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

The property at 2026 Scott Street is currently occupied by the Granite Curling Club, which will be relocated to 2740 Queensview Drive. The site is currently served by an existing full-movement access to Scott Street and a rear access at the eastern terminus of Ashton Avenue.

The property at 2020 Scott Street was previously occupied by a used car dealer, with access to Scott Street. The property at 2006 Scott Street was previously occupied by a retail store, with access to Scott Street. The property at 314 Athlone Avenue is currently being used as an office space, while the properties at 316 and 318 Athlone Avenue are residential homes. All existing buildings on-site will be demolished as part of this application.

1.2 Proposed Development

The subject site is designated as 'Corridor – Mainstreet' (Scott Street) in Schedule B2 of the City of Ottawa's Official Plan and zoned as 'Traditional Mainstreet' (TM[2829]). The original TIA in support of a Zoning By-Law Amendment application for this development was submitted in April 2022 and resubmitted in September 2022 (City Application No. D02-02-22-0037).

The proposed development consists of two 40-storey towers with a total of 856 dwelling units and approximately 3,207 ft^2 of ground-floor commercial space. Phase 1 of the development includes the East Building, which consists of 392 dwellings and 1,287 ft^2 of commercial space. Phase 2 of the development includes the West Building, which consists of 464 dwellings and 1,920 ft^2 of commercial space. An underground parking garage with a total of 373 parking spaces will be provided beneath the entire development. The development will be accessed via one full-movement driveway to Athlone Avenue, which will be the only access constructed as part of Phase 1. One full-movement driveway to Scott Street will be constructed as part of Phase 2. The parking garage will be constructed in two phases, but the two phases will not be separated once complete (i.e. vehicles will be able to access any parking area from either driveway). Buildout of Phase 1 is anticipated to occur in 2026 and buildout of Phase 2 is anticipated to occur in 2029.

A copy of the site plan is included in **Appendix A**. A site context plan, which includes the site plan and shows all details of the roadway network immediately surrounding the site, is included in **Figure 2**.

Figure 8: Proposed Site-Generated Traffic Volumes (2026)

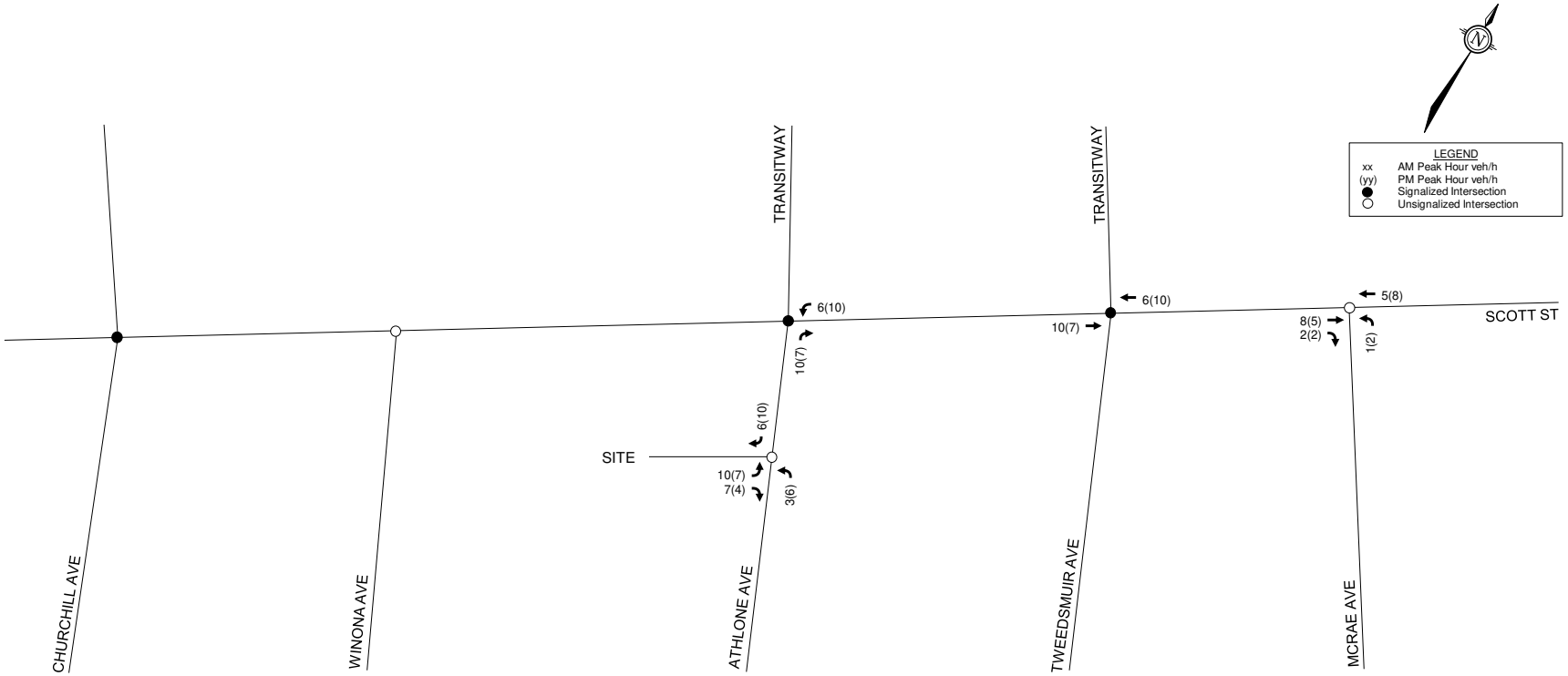


Figure 9: Proposed Site-Generated Traffic Volumes (2031)

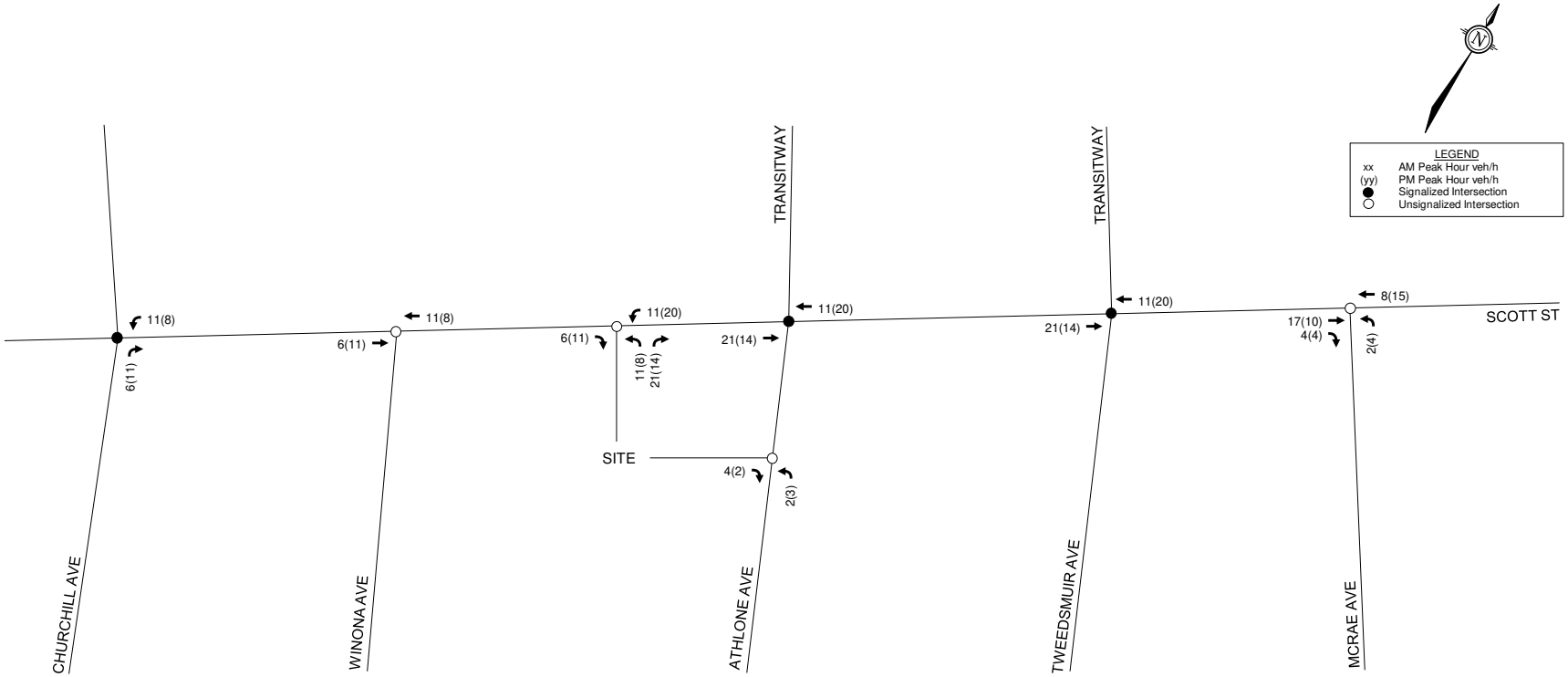


Figure 10: Net Site-Generated Traffic Volumes (2026)

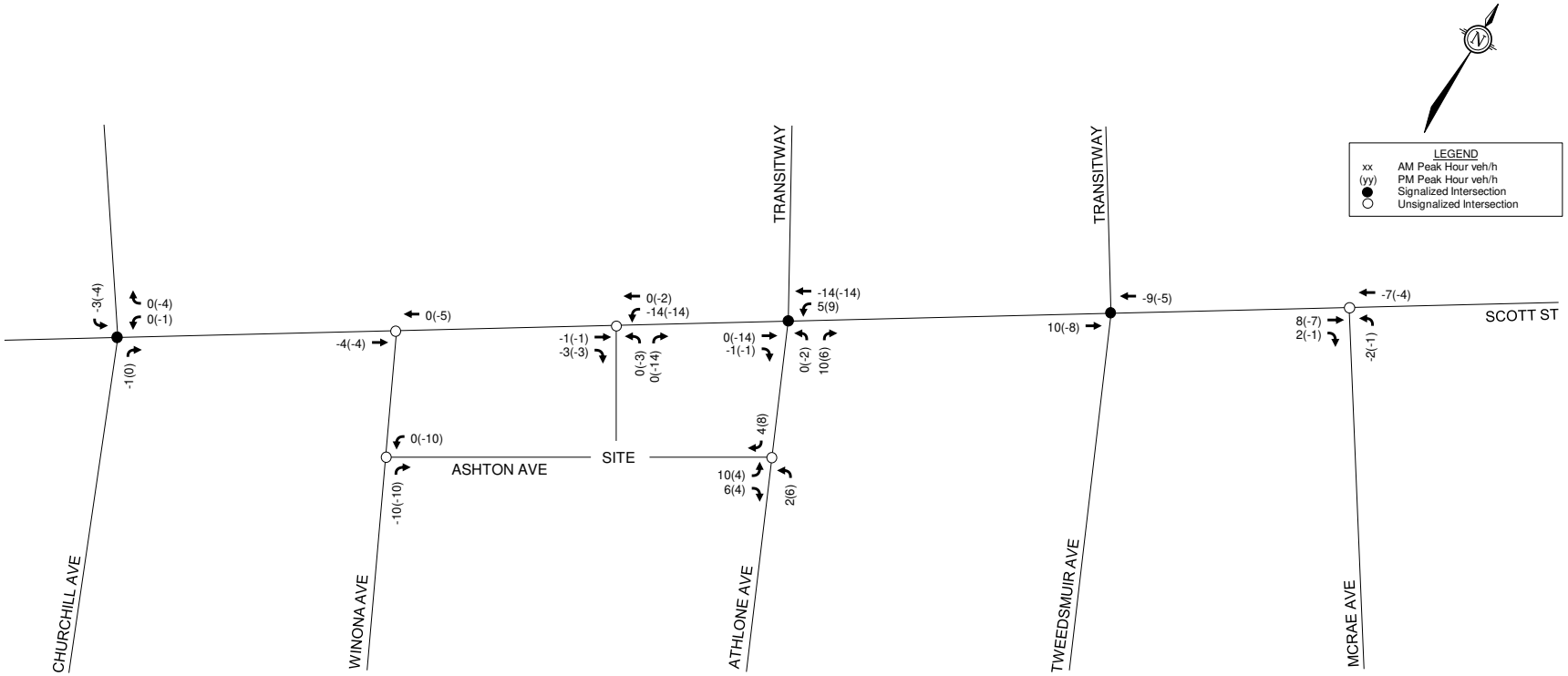
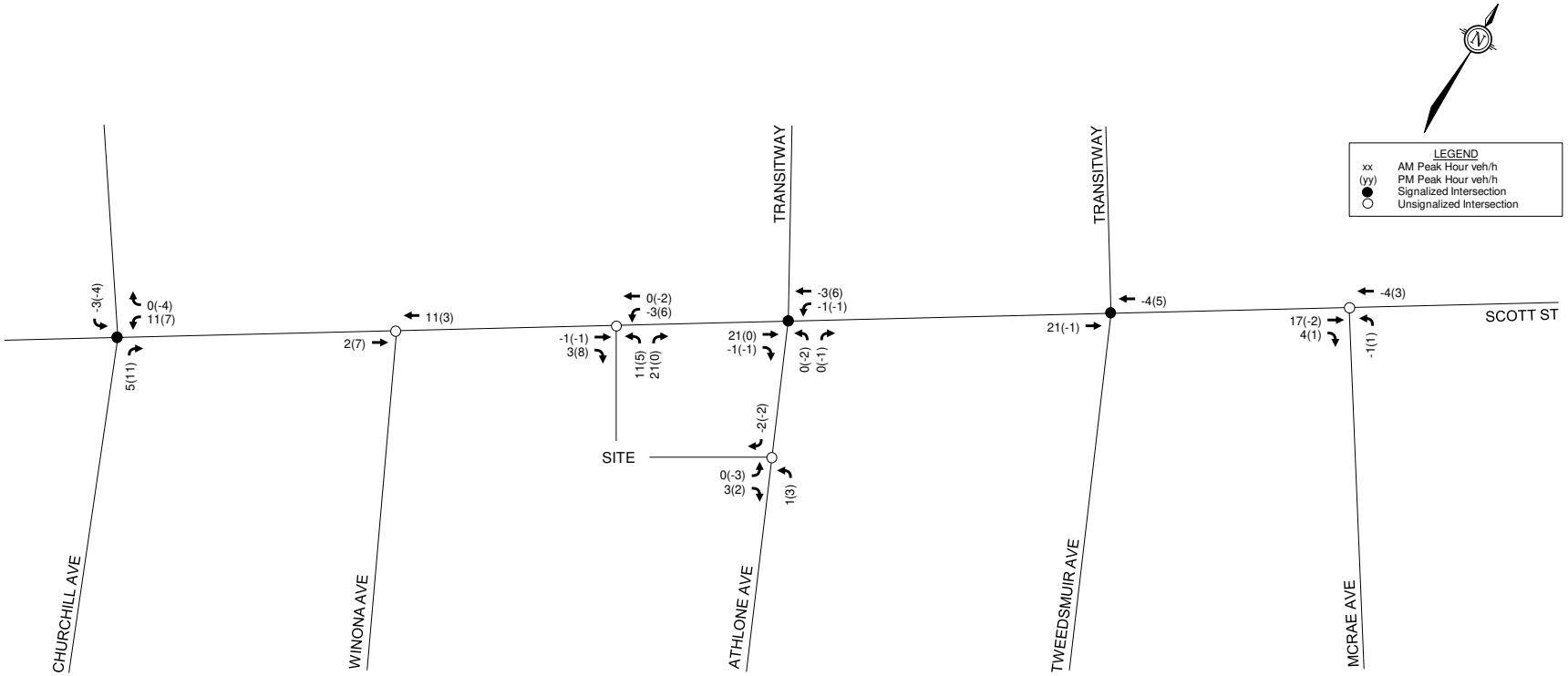


Figure 11: Net Site-Generated Traffic Volumes (2031)



TIA STRATEGY REPORT

The following Strategy Report has been prepared in support of a Site Plan Application (SPA) for the proposed residential development located at 2050 Scott Street. This document follows the TIA process, as outlined in the City Transportation Impact Assessment (TIA) Guidelines (2017). City comments and responses have been included as Appendix A.

1. Screening Form

The completed Screening Form for the proposed residential development at 2050 Scott Street confirmed the need for a TIA in support of the proposed development based on the Trip Generation, Location and Safety triggers. The proposed development consists of approximately 355 residential units; is located in a Design Priority Area (DPA) and Transit Oriented Development (TOD) area; and has a proposed driveway within the influence area of an adjacent traffic signal. The Screening Form is provided in Appendix B.

2. Scoping Report

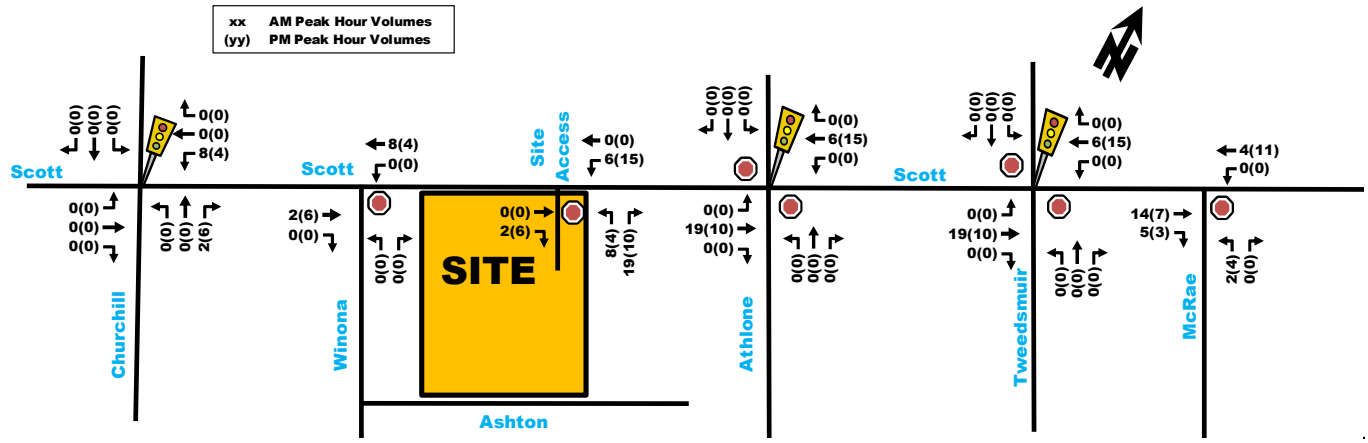
2.1. Existing and Planned Conditions

2.1.1. PROPOSED DEVELOPMENT

It is our understanding that the proponent is proposing to construct a residential development located at 2050 Scott Street. A single-phased project is proposed with assumed buildout year of 2021. The development will consist of a 30-storey residential building on a 3- and 6-storey podiums with approximately 353 units and 233 m² of ground commercial/office. The taller portion of the building is located closer to Scott Street while the 3- and 6-storey podiums extend towards Ashton Avenue. Vehicle access is proposed at Scott Street via a single all movement driveway. An underground parking lot with 210 vehicle spaces and 292 bicycle spaces are proposed. The site is located between 2 different land zonings, TM[103] fronting Scott Street and R4G on the south portion of the parcel towards Ashton Avenue. This TIA is in support of a Zoning By-Law Amendment (ZBLA) and Site Plan Application (SPA) to vary the height schedule from 6-storeys (18 meters) to 30-storeys within the TM zoning and from 4-storeys (11 meters) to 6-storeys within the R4 zoning. Height step-backs (staggering) are proposed to assist in the transition from low-rise to mid- and high-rise from south to north. The site is currently occupied by a mechanic garage, a hot tub retailer and 3 residential houses. The local context of the site is provided as **Figure 1** and the proposed Site Plan is provided as **Figure 2**.

Figure 1: Local Context

Figure 9: 'New' Site-Generated Traffic

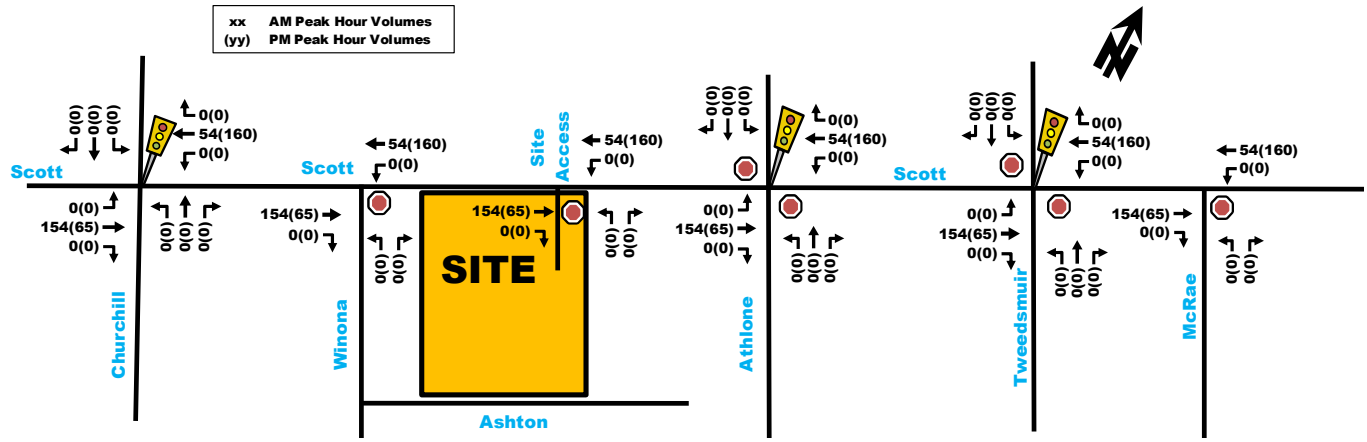


3.2. Background Network Travel Demands

3.2.1. TRANSPORTATION NETWORK PLANS

As mentioned in Section 2.1.3 Planned Conditions, 210 to 225 buses will be detoured on to Scott Street for the AM and PM peak periods respectively as part of the Stage 2 LRT West Extension construction. These buses were layered on to the study area intersections for the duration of anticipated construction (2021 to 2025) and are exhibited in **Figure 10**. Note that as part of the bus detours, Churchill/Scott intersection will be upgraded to a signalized intersection.

Figure 10: Buses Detoured on Scott Street



3.2.2. BACKGROUND GROWTH & OTHER DEVELOPMENTS

The emphasis in the City's recent Official Plan and Transportation Master Plan is to place priority on transit, encourage intensification around transit stations, encourage mixed-use developments and provide "complete streets" that better accommodate the active transportation needs of its residents and reduce the use of the private auto. Given the location of the site near future Confederation Line LRT Extension and future Scott Street 'Complete Street' plan, the trips generated from this development as well as nearby developments will likely choose alternate modes of transportation over driving. It is expected to see a decrease in vehicle traffic along Scott Street in the future as the public transportation network near the site becomes mature and alternate modes of transportation become more desirable (see map of anticipated background growth attached as Appendix F). As such, the background vehicle traffic volumes for horizon year 2026 is assumed to be the same as year 2021.

The projected vehicle volumes from the planned area developments as discussed in Section 2.1.3. 'Planned Conditions – Other Area Developments' were added to the study area intersections and are shown in **Figure 11**. The volumes from the other area development along with detoured buses were layered onto the existing traffic volumes for the future interim analysis volumes. Since the bus detour are anticipated between 2021 and 2025, they have been removed from 2026

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	☐