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Environmental
Restoration



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

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

Prepared By:

NOVATECH

Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
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Dated: October 2021
Revised: March 2022

Novatech File: 121193
Ref: R-2021-124

March 25, 2022

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

Attention: Mr. Wally Dubyk
Project Manager, Infrastructure Approvals

Dear Mr. Dubyk:

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

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

The original TIA in support of this development was submitted in October 2021. This revised TIA has been prepared to reflect changes in the site plan and address City comments.

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

Yours truly,

NOVATECH



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



TIA Plan Reports

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

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

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

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check appropriate field(s)] is either transportation engineering or transportation planning .

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

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Dated at Ottawa this 25th day of March, 2022.
(City)

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

Professional Title: Project Coordinator, Transportation/Traffic

B. Byvelds

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

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EXECUTIVE SUMMARY

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

The subject site is surrounded by the following:

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

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

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

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

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site-generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2022. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2022 and horizon year 2027.

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

Development Design

- Sidewalk connections will be provided between the building entrance and Richmond Road and Tweedsmuir Avenue.
- Sidewalks will be depressed and continuous across the parking garage access in accordance with City standards.
- Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 194 bicycle parking spaces will be provided within the underground parking garage. In total, 196 bicycle parking spaces will be provided.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.
- No changes to the existing signage are proposed along the subject site's frontage.

Parking

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

Boundary Street Design

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

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

Access Intersections

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

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;
 - Provide real-time arrival information display at entrances;
 - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/ move-in, to encourage residents to use resident;
 - Unbundle parking cost from purchase price;
 - Provide a multimodal travel option information package to new residents;
 - The proposed development will provide bicycle parking spaces at a rate of over 2 spaces per unit.
- Based on the foregoing, the proposed development is recommended from a transportation perspective.

1.0 SCREENING

1.1 Introduction

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

The subject site is surrounded by the following:

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

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

Figure 1: Study Area



1.2 Proposed Development

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

which allows for 'a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses, in areas designated Traditional Mainstreet in the Official Plan.'

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

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

1.3 Screening Form

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

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

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

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

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

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

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

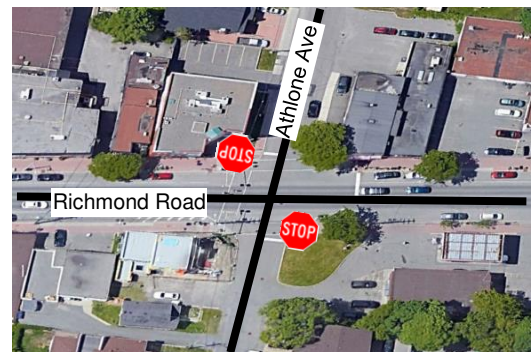
Tweedsmuir Avenue is a local roadway that runs on a north-south alignment between Scott Street and Currell Avenue. Within the study area, Tweedsmuir Avenue has a two-lane undivided urban cross-section, sidewalks on the eastern side of the roadway, and an unposted regulatory speed limit of 50 km/h under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

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

2.1.2 Study Area Intersections

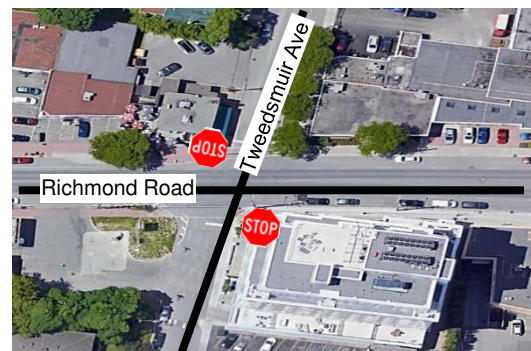
Richmond Road/Athlone Avenue

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



Richmond Road/Tweedsmuir Avenue

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



Richmond Road/McRae Road

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



2.1.3 Driveways

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

Richmond Road, North Side:

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

Richmond Road, South Side:

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

Tweedsmuir Avenue, North of Richmond Road:

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

2.1.4 Pedestrian and Cycling Facilities

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

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

2.1.5 Area Traffic Management

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

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

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

- Richmond Road eastbound has lane hatch markings on the curb at the intersection with Athlone Avenue and Tweedsmuir Avenue to prevent drivers from using it as a turn lane.

- No Heavy Trucks (Rb-62) signs are implemented on Athlone Avenue and Tweedsmuir Avenue north of Richmond Road.
- Athlone Avenue north of Richmond Road has a playground ahead (Wc-3) sign in advance of the pedestrian connection to Lion's Park.
- Tweedsmuir Avenue, south of Richmond Road, has a speed bump, mid-block and intersection narrowings.

2.1.6 Transit

The Westboro Transit Station (future Light Rail Transit station) is located north of Scott Street at Tweedsmuir Avenue, at a walking distance of approximately 300m from the subject site. This station currently services bus routes 16, 50, 57, 61, 62, 63, 64, 66, 73, 74, 75, 82, 87, 153, 164, 258, 282, and 404.

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

Richmond Road/Kirkwood Avenue

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

Richmond Road/McRae Avenue

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

Richmond Road/Eden Avenue

- Stop #4864: Services bus route 11

Richmond Road/Edgewood Avenue

- Stop #4865: Services bus route 11

Richmond Road/Churchill Avenue

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

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

Figure 2: OC Transpo Bus Stop Locations

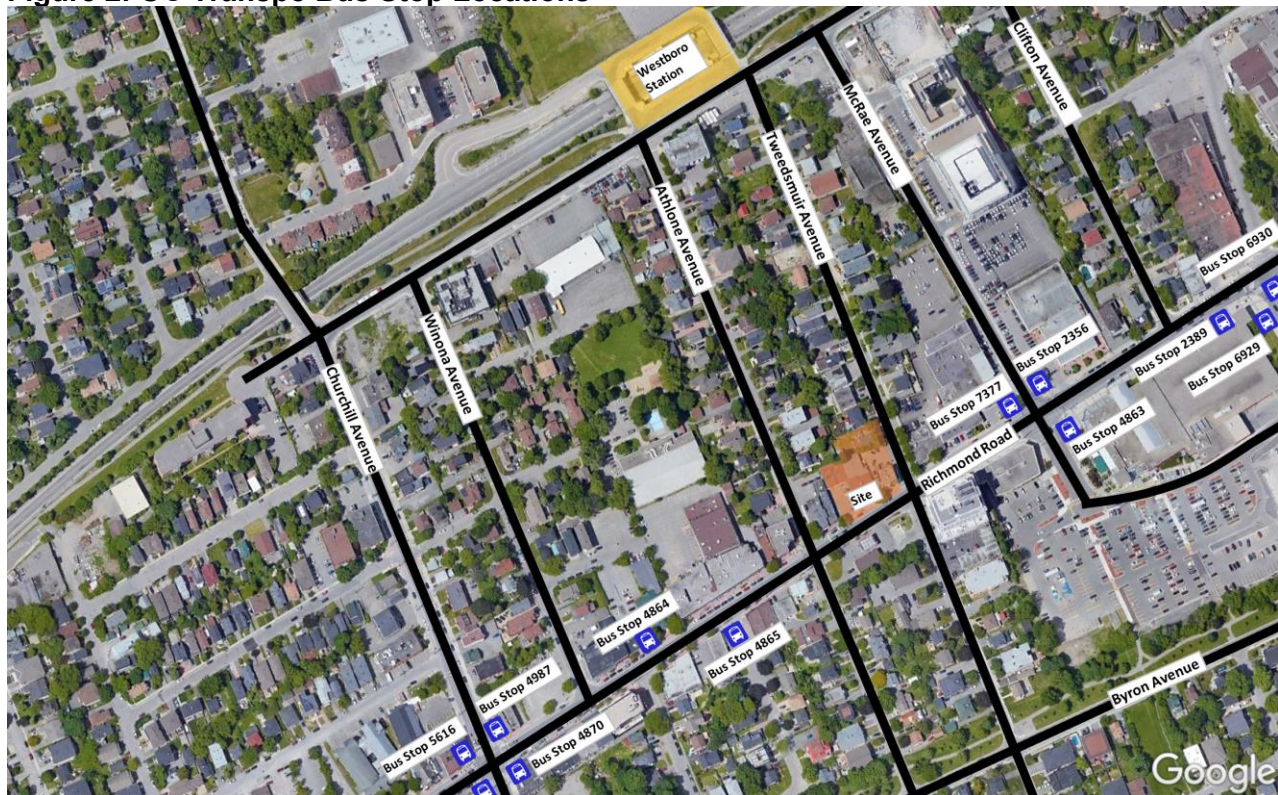


Table 1: OC Transpo Route Information

Route	From ↔ To	Frequency
11	Lincoln Fields / Westboro ↔ Laurier	15-minute headways, 7 days per week, all day service
16	Main ↔ Tunney's Pasture / Westboro	30-minute headways, 7 days per week, all day service
50	Tunney's Pasture ↔ Lincoln Fields	30-minute headways, Mon-Sat
51	Tunney's Pasture ↔ Britannia	15-minute headways, 7 days per week, all day service
57	Tunney's Pasture ↔ N Rideau	30-minute headways, 7 days per week, all day service
61	Terry Fox / Stittsville ↔ Tunney's Pasture / Gatineau	20-minute headways, 7 days per week, all day service
62	Terry Fox / Stittsville ↔ Tunney's Pasture	30-minute headways, 7 days per week, all day service
63	Briarbrook ↔ Tunney's Pasture / Gatineau	5- to 10-minute headways during peak periods, 7 days per week, all day service
64	Morgan's Grant ↔ Tunney's Pasture	15-minute headways during peak periods, Mon-Fri, all day service
66	Kanata / Solandt ↔ Gatineau/Tunney's Pasture	15-minute headways, Mon-Fri, peak periods only
73	Leikin ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
74	Nepean Woods ↔ Tunney's Pasture	30-minute headways, 7 days per week, all day service

Route	From ↔ To	Frequency
75	Tunney's Pasture / Gatineau ↔ Barrhaven Centre / Cambrian	15-minute headways, 7 days per week, all day service
81	Tunney's Pasture ↔ Clyde	30-minute headways, 7 days per week, no evening service on weekends
82	Lincoln Fields / Tunney's Pasture ↔ Bayshore	30-minute headways, 7 days per week, all day service
87	Tunney's Pasture ↔ Baseline	15-minute headways, 7 days per week, all day service
153	Tunney's Pasture / Carlingwood ↔ Lincoln Fields	60-minute headways, 7 days per week, select time periods
164	Hope Side ↔ Terry Fox	60-minute headways, Mon-Fri, peak periods only
258	Grandview ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
282	Trend-Arlington ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
404	Canadian Tire Centre ↔ Tunney's Pasture	5- to 20-minute headways, only during periods before or after events at the Canadian Tire Centre

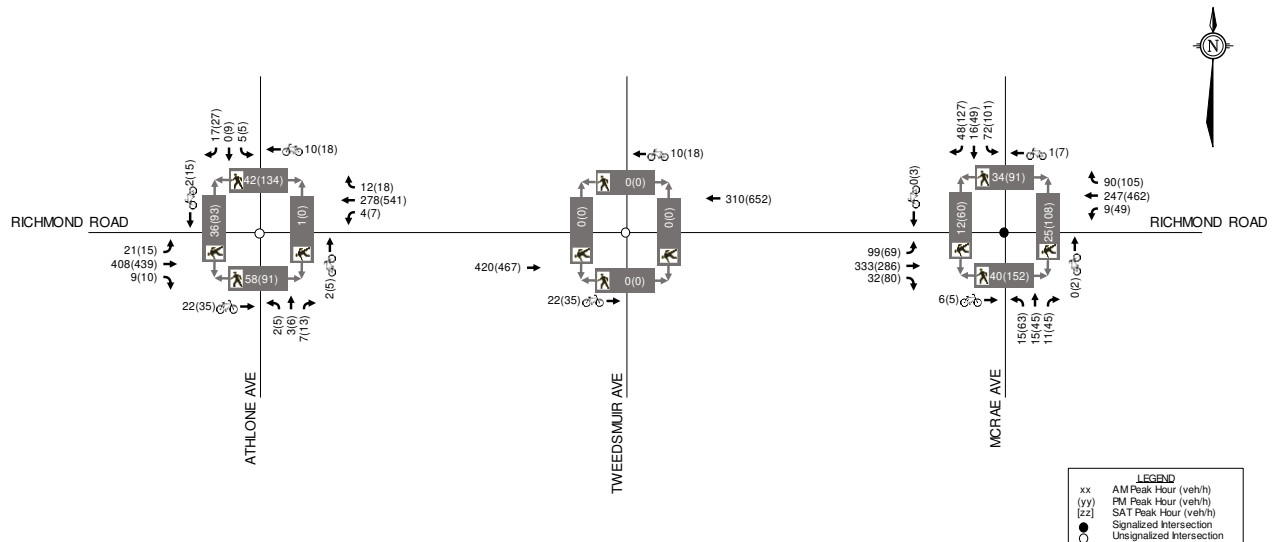
2.1.7 Existing Traffic Volumes

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

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

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

Figure 3: Existing Traffic Volumes



2.1.8 Collision Records

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

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

Table 2: Collision History Summary

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

1. SMV: Single Motor Vehicle

Richmond Road/Athlone Avenue

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

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

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

Richmond Road/Tweedsmuir Avenue

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

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

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

Richmond Road/McRae Avenue

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

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

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

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

Richmond Road between Athlone Avenue and Tweedsmuir Avenue

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

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

Richmond Road between Tweedsmuir Avenue and McRae Avenue

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

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

2.2 Planned Conditions

2.2.1 Transportation Projects

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

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

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

2.2.2 Other Area Developments

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

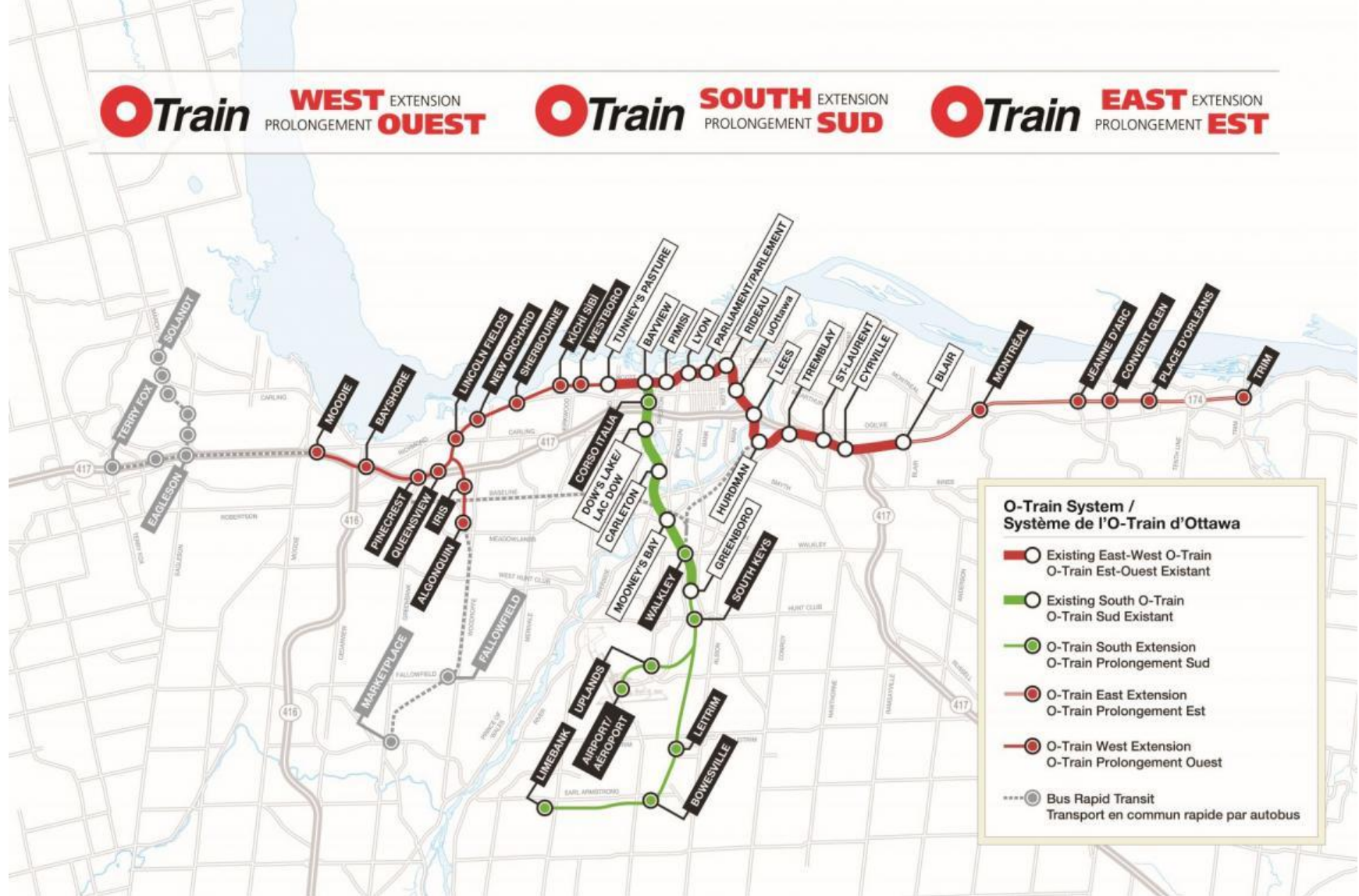
- *114 Richmond Road*: nine storey addition consisting of an apartment building and conversion of the convent into a mixed-use building.
- *175 Richmond Road*: nine-storey mixed-use building to accommodate commercial uses on the main floors and residential uses above. There are 241 residential units proposed and approximately 675 m² of retail commercial along Richmond Road.
- *319-327 Richmond Road*: a nine-storey mixed-use building with ground floor commercial units and approximately 185 dwelling units on the upper storeys.
- *70 Richmond*: nine-storey mixed-use building with 60 residential units and a retail use at grade.
- *316-332 Clifton Road*: low-rise planned unit development consisting of 29 dwelling units, comprising of townhouses and back-to-back townhouses and an internal private road.
- *398-406 Roosevelt Avenue*: redevelopment of the site for a six-storey mixed-use building including two commercial units, 35 dwelling units, underground parking and rear surface parking.
- *349 Danforth Avenue*: three-storey mixed-use building with 13 residential units and 2 commercial, ground-floor units.
- *335 Roosevelt Avenue*: two high-rise residential buildings, three low-rise residential buildings with common underground parking lot with a total of 361 units and with 343 parking spaces.
- *397-399 Winston Avenue*: seven-storey mixed use development with a commercial use on the ground floor and 42 residential units above and two levels of underground parking with 18 parking spaces.

2.3 Study Area and Time Periods

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

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site-generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2022. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2022 and horizon year 2027.

Figure 4: LRT Phase 2 – Confederation Line Extension West



2.4 Exemptions Review

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

Table 3: TIA Exemptions

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

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

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

Trips Generated from Existing Development

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

Table 4: Person Trips Generated by Existing Development

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

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

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

Table 5: Existing Development – Peak Hour Person Trips

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

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

Trips Generated from Proposed Residential Development

The proposed redevelopment will include 87 residential units. Trips generated by the proposed residential units during the AM and PM peak period have been estimated using the recommended rates from the TRANS Trip Generation Manual, prepared in 2020 by WSP Canada. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential in the Ottawa West Area. The directional split between inbound and outbound trips are based on the blended splits presented in Table 9 of the report.

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

Table 6: Trips Generated by Proposed Residential Development

Land Use	TRANS Rate	Units	AM Peak Period (PPP) ¹			PM Peak Period (PPP) ¹		
			In	Out	Total	In	Out	Total
High-Rise Residential, Ottawa West	AM: 0.80 PM: 0.90	87 units	22	48	70	45	33	78

1. PPP = Person Trips per Period

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

Table 7: TRANS and TOD Mode Share Comparison

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

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

Table 8: Proposed Residential Development – Peak Period Person Trips

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Residential Person Trips		22	48	70	45	33	78
Auto Driver	25%	6	12	18	11	9	20
Auto Passenger	10%	2	5	7	5	3	8
Transit	40%	9	18	27	18	12	30
Cyclist	5%	1	3	4	2	2	4
Pedestrian	20%	4	10	14	9	7	16

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

Table 9: Proposed Residential Development – Peak Hour Person Trips

Travel Mode	Adjustment Factor		AM Peak Period			PM Peak Period		
	AM	PM	In	Out	Total	In	Out	Total
Residential Person Trips			12	25	37	21	16	37
Auto Driver	0.48	0.44	3	6	9	5	4	9
Auto Passenger	0.48	0.44	1	2	3	2	2	4
Transit	0.55	0.47	5	10	15	8	6	14
Cyclist	0.58	0.48	1	1	2	1	1	2
Pedestrian	0.58	0.52	2	6	8	5	3	8

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

Trips Generated from Proposed Commercial Development

The proposed redevelopment will also include two retail units with a combined gross floor area of approximately 4,200 square feet and a restaurant with a gross floor area of approximately 2,550 square feet. Consistent with the existing development, trips generated by the commercial uses have been calculated using the Shopping Centre (LU 820) and High Turnover Sit Down Restaurant (LU 932) land uses in the ITE Trip Generation Manual, 10th Edition. The proposed restaurant is conservatively assumed to operate during both peak hours.

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

Table 10: Trips Generated by Proposed Commercial Development

Land Use	ITE Code	GFA	AM Peak Hour (PPH)			PM Peak Hour (PPH)		
			In	Out	Total	In	Out	Total
Shopping Centre	820	4,200 ft ²	3	2	5	11	11	22
High-Turnover Restaurant	932	2,550 ft ²	18	15	33	20	12	32
Total			21	17	38	31	23	54

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

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

Table 11: Proposed Commercial Development – Peak Hour Person Trips

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Shopping Centre Person Trips		3	2	5	11	11	22
Auto Driver	50%	2	0	2	5	7	12
Auto Passenger	15%	0	1	1	2	1	3
Transit	10%	0	1	1	1	1	2
Cyclist	5%	0	0	0	1	0	1
Pedestrian	20%	1	0	1	2	2	4
Restaurant Person Trips		18	15	33	20	12	32
Auto Driver	35%	6	6	12	7	4	11
Auto Passenger	10%	2	1	3	2	1	3
Transit	5%	1	1	2	1	1	2
Cyclist	5%	1	1	2	1	1	2
Pedestrian	45%	8	6	14	9	5	14

Based on the previous table, the proposed commercial uses are projected to generate 38 person trips during the AM peak period and 54 person trips during the PM peak period. Of the trips generated, 14 and 23 are expected to be vehicle trips during the AM and PM peak periods, respectively.

Net Trip Generation

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

Table 12: Net Person Trip Generation

Travel Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
<i>Existing Development</i>						
Auto Driver	3	2	5	19	16	35
Auto Passenger	1	0	1	6	4	10
Transit	1	0	1	4	3	7
Cyclist	0	0	0	3	2	5
Pedestrian	1	1	2	16	12	28
Total	6	3	9	48	37	85
<i>Proposed Development</i>						
Auto Driver	11	12	23	17	15	32
Auto Passenger	3	4	7	6	4	10
Transit	6	12	18	10	8	18
Cyclist	2	2	4	3	2	5
Pedestrian	11	12	23	16	10	26
Total	33	42	75	52	39	91
<i>Net Trips</i>						
Auto Driver	8	10	18	-2	-1	-3
Auto Passenger	2	4	6	0	0	0
Transit	5	12	17	6	5	11
Cyclist	2	2	4	0	0	0
Pedestrian	10	11	21	0	-2	-2
Total	27	39	66	4	2	6

Based on the previous table, the vehicle trip generation for the proposed development is expected to increase by eight vehicle trips during the AM peak hours and is anticipated to decrease by two vehicle trips during the PM peak hour. The proposed development is expected to generate an additional 14 and 11 transit trips during the AM and PM peak hours, respectively, compared to the existing development.

3.1.2 Trip Distribution

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

3.2 Background Traffic

3.2.1 Other Area Developments

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

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

- *114 Richmond Road*: nine storey addition consisting of an apartment building and conversion of the convent into a mixed-use building.
- *70 Richmond*: nine-storey mixed-use building with 60 residential units and a retail use at grade.

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

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

- *175 Richmond Road*: nine-storey mixed-use building to accommodate commercial uses on the main floors and residential uses above. There are 241 residential units proposed and approximately 675 m² of retail commercial along Richmond Road.
- *335 Roosevelt Avenue*: two high-rise residential buildings, three low-rise residential buildings with common underground parking lot with a total of 361 units and with 343 parking spaces
- *319-327 Richmond Road*: a nine-storey mixed-use building with ground floor commercial units and approximately 185 dwelling units on the upper storeys.

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

3.2.2 General Background Growth Rate

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

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

The background traffic volumes in 2022 and 2027 is shown in **Figure 5** and **Figure 6**.

Figure 5: 2022 Background Traffic Volumes

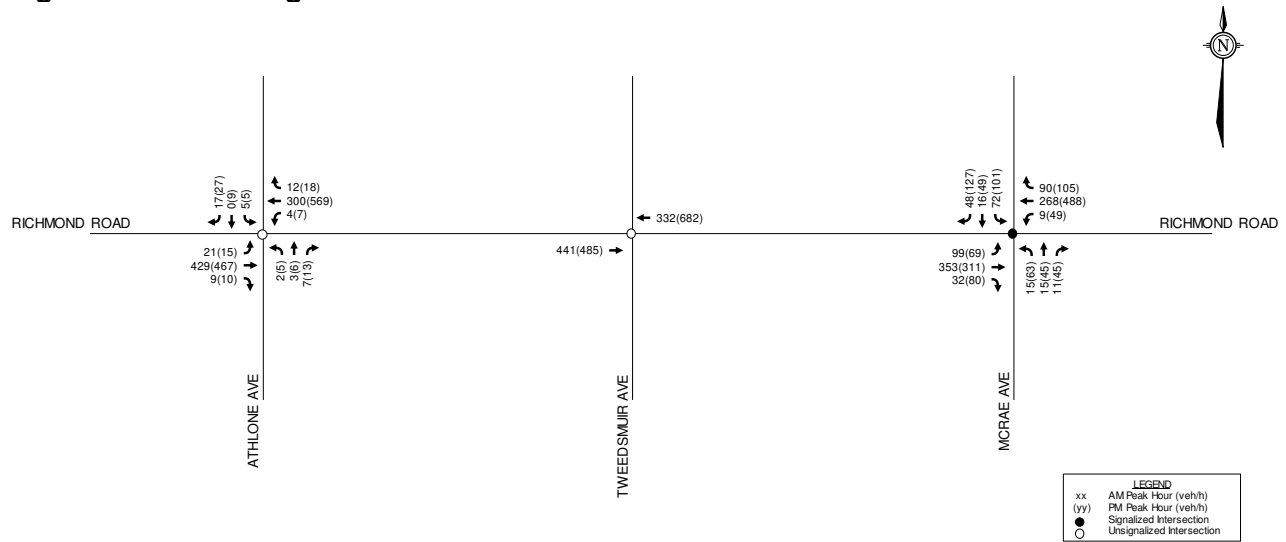
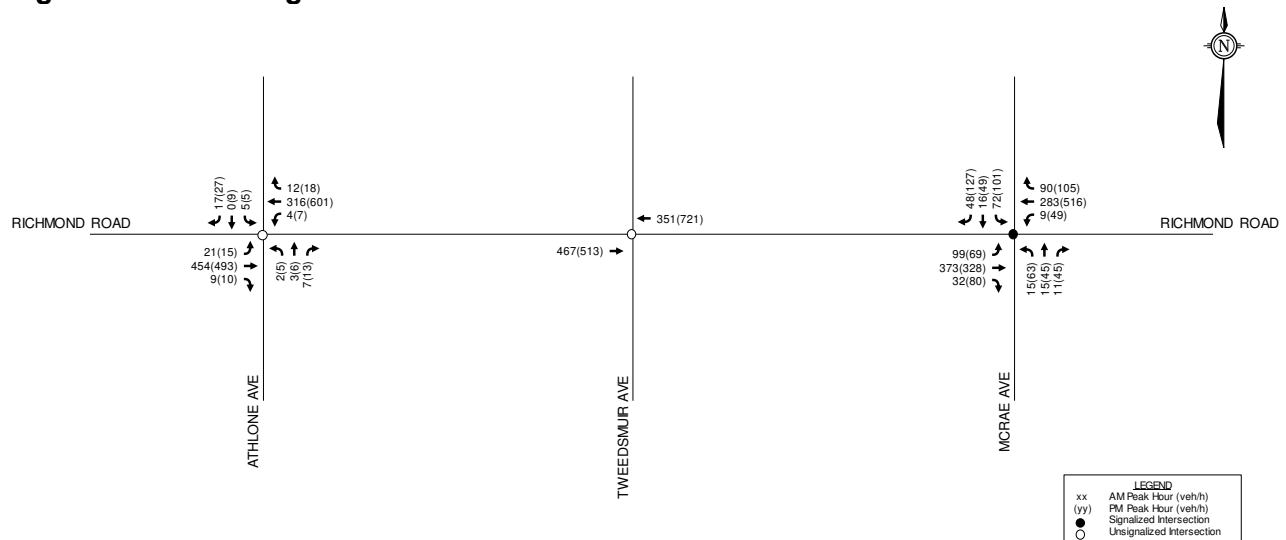


Figure 6: 2027 Background Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

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

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

Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 194 will be provided within the underground parking garage. In total, 196 bicycle parking spaces will be provided. Further review of the number of bicycle parking spaces is included in Section 4.2: Parking.

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

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

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

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

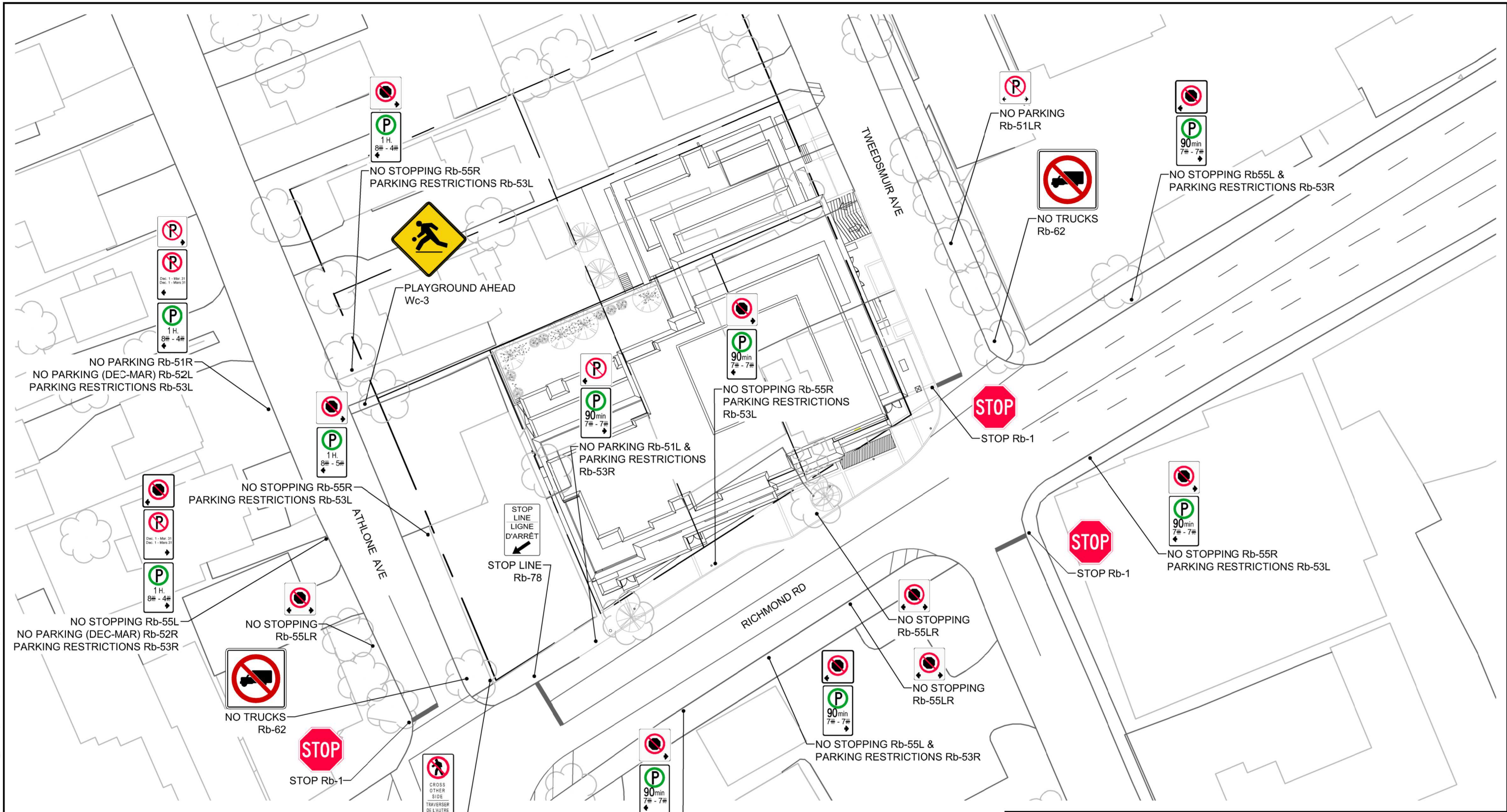
An existing pavement markings and signage figure, which also includes the proposed site plan and both sides of Richmond Road, Tweedsmuir Avenue, and Athlone Avenue in the immediate vicinity of the subject site, is shown in **Figure 7**. No changes to the existing signage are proposed along the subject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

4.2 Parking

The subject site is located in Area B of Schedule 1 and Area Y of Schedule 1A of the City of Ottawa's Zoning By-Law (ZBL), and is located within 600m of a rapid transit station.

Sections 101, 102, 103, and 111 of the ZBL summarize the minimum vehicle parking space rates, maximum vehicle parking space rates, and minimum bicycle parking space rates for various land uses. The parking space requirements for the proposed development are summarized in **Table 13**.

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255 RICHMOND ROAD

PAVEMENT MARKING & SIGNAGE

SCALE 1 : 500

DATE MAR 2022 JOB 121193 FIGURE 7

Table 13: Minimum Parking Requirements

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

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

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

4.3 Boundary Streets

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

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

4.3.1 Pedestrian Level of Service (PLOS)

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

Table 14: PLOS Segment Analysis

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

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

4.3.2 Bicycle Level of Service (BLOS)

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

Table 15: BLOS Segment Analysis

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

4.3.3 Transit Level of Service (TLOS)

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

Table 16: TLOS Segment Analysis

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

4.3.4 Truck Level of Service (TkLOS)

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

Table 17: TkLOS Segment Analysis

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

4.3.5 Segment MMLOS Summary

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

Table 18: Segment MMLOS Summary

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

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

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

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

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

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

4.4 Access Intersections

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

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

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

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

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

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

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development consists of a total of 87 residential units. The unit breakdown is summarized as follows:

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

4.5.2 Need and Opportunity

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

4.5.3 TDM Program

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

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

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

In addition to the above, bicycle parking will be provided at a rate of over two per unit, four times the minimum zoning requirement.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Development Design

- Sidewalk connections will be provided between the building entrance and Richmond Road and Tweedsmuir Avenue.
- Sidewalks will be depressed and continuous across the parking garage access in accordance with City standards.
- Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 194 bicycle parking spaces will be provided within the underground parking garage. In total, 196 bicycle parking spaces will be provided.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.
- No changes to the existing signage are proposed along the subject site's frontage.

Parking

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

Boundary Street Design

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

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

Access Intersections

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

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;
 - Provide real-time arrival information display at entrances;
 - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/ move-in, to encourage residents to use resident;
 - Unbundle parking cost from purchase price;
 - Provide a multimodal travel option information package to new residents;
 - The proposed development will provide bicycle parking spaces at a rate of over 2 spaces per unit.

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

NOVATECH

Prepared by:



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

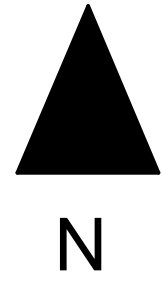
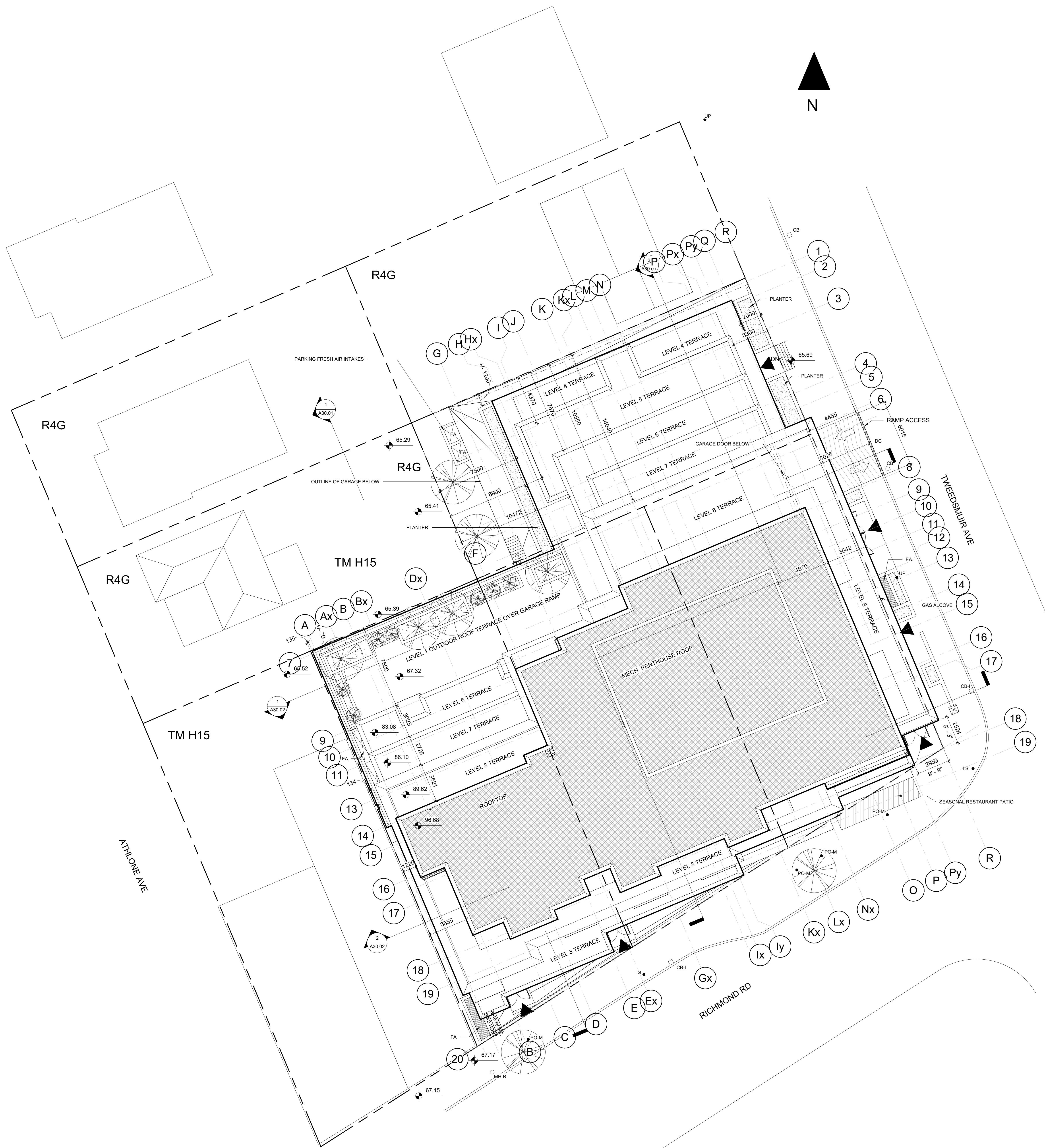
Reviewed by:



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

APPENDIX A

Site Plan



ZONING INFORMATION

ZONE DESIGNATION

TM H(15)

ZONING REQUIREMENTS

NOTE:

MIN. LOT WIDTH REQUIRED:	NO MINIMUM
LOT WIDTH PROVIDED (NORTH PROPERTY LINE):	48.8M
LOT WIDTH PROVIDED (SOUTH PROPERTY LINE):	49.6M
MIN. LOT AREA REQUIRED (M ²):	NO MINIMUM
LOT AREA PROVIDED:	2181.2M ²
MAX BUILDING HEIGHT:	15.0M
BUILDING HEIGHT FROM AVG GRADE:	31.0M
MAX FRONT YARD SETBACK:	2M
FRONT YARD SETBACK (RETAIL) (VARIES AT GRADE):	9M
FRONT YARD SETBACK (RESIDENTIAL, AT L2):	1.1M
MIN. REAR YARD SETBACK:	7.5M
REAR YARD SETBACK (FORMER R4 ZONE):	1.2M
REAR YARD SETBACK (AMENITY AREAS):	0.070M
REAR YARD SETBACK (BUILDING ABOVE GRADE):	7.5M
MAX INTERIOR SIDE YARD SETBACK:	3M
INTERIOR SIDE YARD SETBACK (FORMER R4 ZONE):	7.5M
INTERIOR SIDE YARD SETBACK (TM ZONE):	0.135M
INTERIOR SIDE YARD SETBACK (WEST):	1.2M
MIN. CORNER YARD SETBACK (EAST):	3M
MIN. CORNER YARD SETBACK (ABOVE 15M):	2M
CORNER YARD SETBACK (EAST) PROVIDED:	0M
CORNER YARD SETBACK (ABOVE 15M) PROVIDED:	2.9M
MIN. DRIVEWAY AISLE WIDTH:	6.7M
DRIVEWAY AISLE WIDTH:	9M

DEVELOPMENT INFORMATION

PROPOSED:

GROUND FLOOR G.F.A. (RETAIL/RESIDENTIAL LOBBY/RAMP):	1661.64M ²
SECOND FLOOR G.F.A.:	1640.02M ²
THIRD FLOOR G.F.A.:	1550.32M ²
FOURTH FLOOR G.F.A.:	1470.34M ²
FIFTH FLOOR G.F.A.:	1394.36M ²
SIXTH FLOOR G.F.A.:	1288.20M ²
SEVENTH FLOOR G.F.A.:	1180.68M ²
EIGHTH FLOOR G.F.A.:	854.94M ²
NINTH FLOOR G.F.A.:	854.68M ²
TOTAL G.F.A. (RETAIL/LOBBY/RAMP):	1661.64M ²
TOTAL G.F.A. (RESIDENTIAL):	16287.56M ²
TOTAL BUILDING G.F.A.:	17949.20M ²

PROPOSED # UNIT (RETAIL):	3 UNITS
PROPOSED # UNITS (RESIDENTIAL):	87 UNITS

PARKING REQUIREMENTS

NOTE:

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

PROPOSED PARKING

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

PROPOSED BICYCLE PARKING

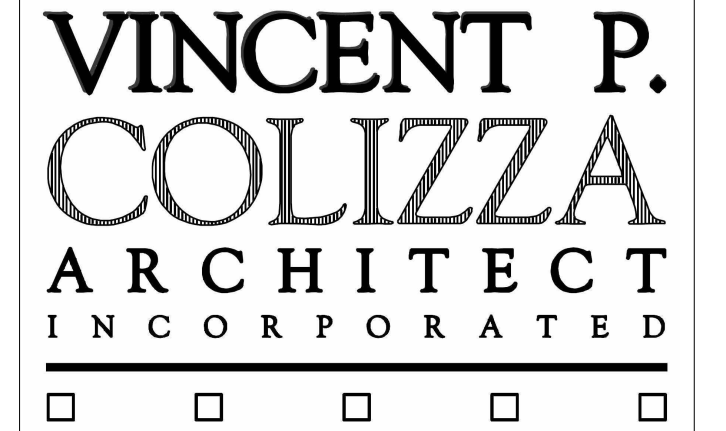
REQUIRED RETAIL BICYCLE PARKING:	2
REQUIRED RESIDENTIAL BICYCLE PARKING (@ 1/UNIT):	87
SUB-TOTAL OF REQUIRED BICYCLE PARKING:	89
PROVIDED RESIDENTIAL BICYCLE PARKING:	2.2/SUITE
BICYCLE PARKING PROVIDED (UNDERGROUND):	194
BICYCLE PARKING PROVIDED (EXTERIOR):	2
BICYCLE PARKING PROVIDED (TOTAL):	196

AMENITY AREA CALCULATIONS - PROPOSED

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

RESIDENTIAL TOTAL REQUIRED AMENITY AREA (MIN.): (87 UNITS @ 6.0M ² /UNIT)	522.0M ²
COMMUNAL AREA (MIN.): (50% OF REQ'D TOTAL AMENITY AREA)	261.0M ²
TOTAL RESIDENTIAL AMENITY AREA REQUIRED:	783.0M²
TOTAL AMENITY AREA PROVIDED:	
BALCONY AREA (87 UNITS):	944.94M ²
INDOOR AMENITY AREA (COMMUNAL):	497.3M ²
OUTDOOR AMENITY AREA (COMMUNAL):	367.94M ²
TOTAL RESIDENTIAL AMENITY AREA PROVIDED:	1,810.1M²
LANDSCAPED AREA REQUIRED:	NON MINIMUM
LANDSCAPED AREA PROVIDED:	471.2M ²
MINIMUM WIDTH OF LANDSCAPE AREA ABUTTING A RESIDENTIAL ZONE:	1.0M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 REAR YARD):	1.2M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 SIDE YARD):	7.5M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE REAR YARD):	0.070M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE ABOVE GARAGE RAMP):	7.5M

No.	DESCRIPTION	DATE	CHD
REVISIONS			
CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.			
DO NOT SCALE THE DRAWINGS			
	THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE ARCHITECT	DATE	05/09/21
	DRAWN	SH	
	CHECKED	VPC	
	DATE PRINTED	2022-02-23 4:06:11 PM	



255 Richmond Road

Ottawa, ON

DWG. TITLE
Site Plan

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

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



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

No.	DESCRIPTION	DATE	CHKD
REVISIONS			
11	CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.		
12	DO NOT SCALE THE DRAWINGS		
13	THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE ARCHITECT		
14	DATE	06/16/21	
15	DRAWN	SH	
16	DATE	06/16/21	
17	CHECKED	VPC	
18	DATE PRINTED	2022-02-23 4:06:16 PM	

VINCENT P. COLIZZA ARCHITECT INCORPORATED

255 Richmond Road
Ottawa, ON

DWG. TITLE
Level 01 Floor Plan

SCALE
1 : 100

DWG. NO.
A10.03

PROJ. NO.
2219

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	249-255 Richmond Road & 372 Tweedsmuir Avenue
Description of Location	Approximately 0.54 acres in area, located north of Richmond Road and west of Tweedsmuir Avenue
Land Use Classification	Mid-Rise Residential with Ground-Floor Retail
Development Size (units)	102 dwellings
Development Size (m ²)	595 m² (6,405 ft²) of retail space
Number of Accesses and Locations	One proposed access to Tweedsmuir Avenue
Phase of Development	1
Buildout Year	2022

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

2. Trip Generation Trigger

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

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

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

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

3. Location Triggers

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

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

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

4. Safety Triggers

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

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

5. Summary

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

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

APPENDIX C

OC Transpo Route Maps



11

LINCOLN FIELDS BAYSHORE

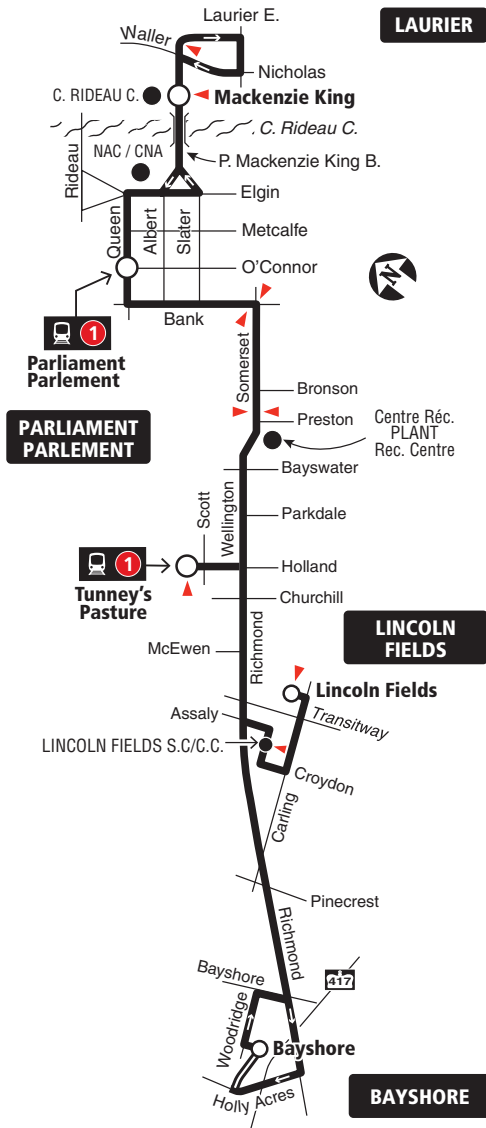
LAURIER

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



Transitway & Station
 Timepoint / Heures de passage

2021.09

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

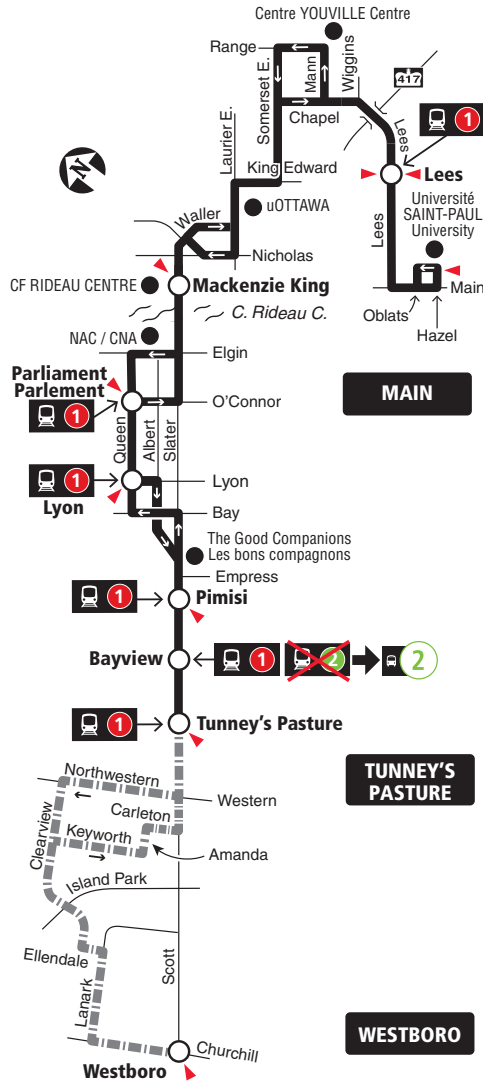
- Customer Service / Service à la clientèle **613-560-5000**
- Lost and Found / Objets perdus **613-563-4011**
- Security / Sécurité **613-741-2478**

Effective September 5, 2021
En vigueur 5 septembre 2021

16


MAIN TUNNEY'S PASTURE WESTBORO

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



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

2020.04

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

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

Effective May 3, 2020
En vigueur 3 mai 2020

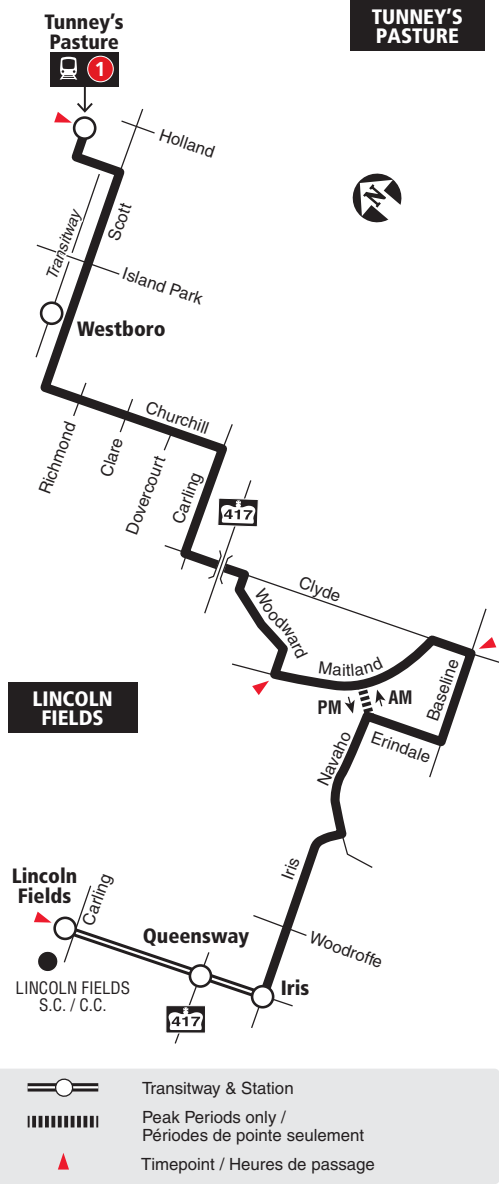


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LINCOLN FIELDS TUNNEY'S PASTURE

Local

Monday to Saturday / Lundi au samedi
No service Sat. eve. or all day Sunday / Aucun service le soir le sam. ou toute la journée dimanche



2019.06

Schedule / Horaire613-560-1000
Text / Texto560560

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

Customer Service
Service à la clientèle **613-842-3600**
Lost and Found / Objets perdus..... **613-563-4011**
Security / Sécurité **613-741-2478**

Effective April 24, 2017
En vigueur 24 avril 2017



51

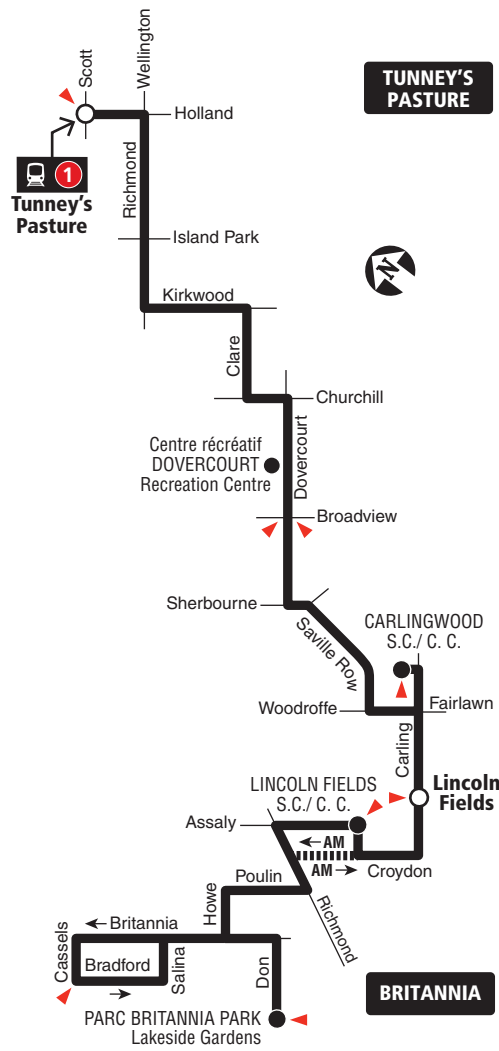
BRITANNIA TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



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

2019.07

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

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

INFO 613-741-4390
 octranspo.com

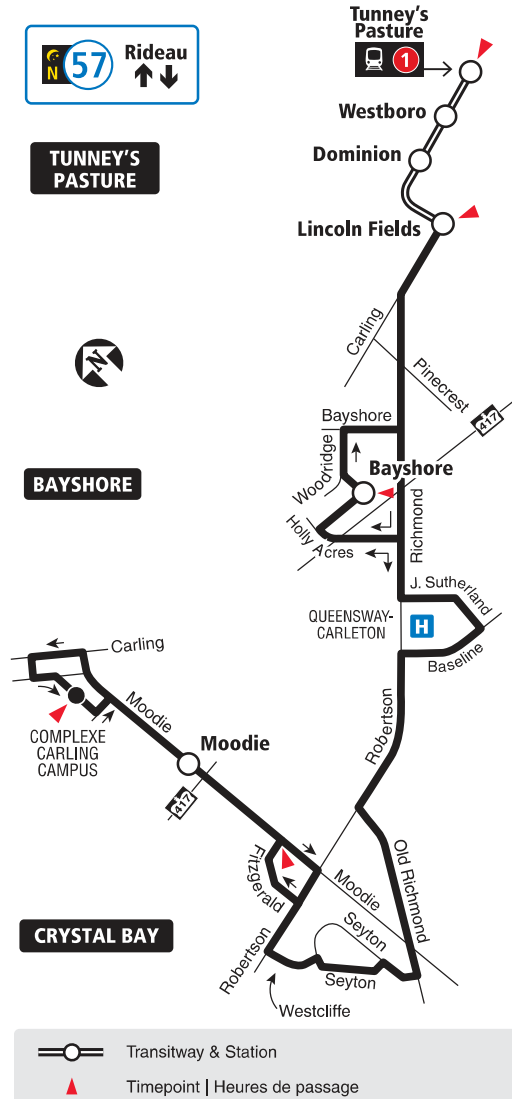


**BAYSHORE
CRYSTAL BAY
TUNNEY'S PASTURE**

Rapid

7 days a week / 7 jours par semaine

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



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

2021.09

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

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

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

Security / Sécurité **613-741-2478**

Effective September 5, 2021
En vigueur 5 septembre 2021

INFO 613-560-5000
octranspo.com

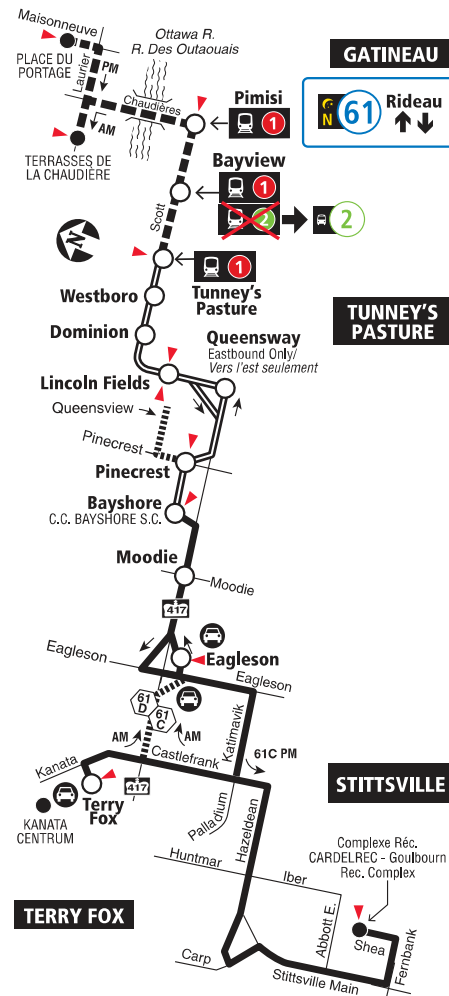


**TERRY FOX
STITTSVILLE**
**TUNNEY'S PASTURE
GATINEAU**

Rapid^e

7 days a week / 7 jours par semaine

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



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

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

2021.09

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

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

Effective September 5, 2021
En vigueur 5 septembre 2021

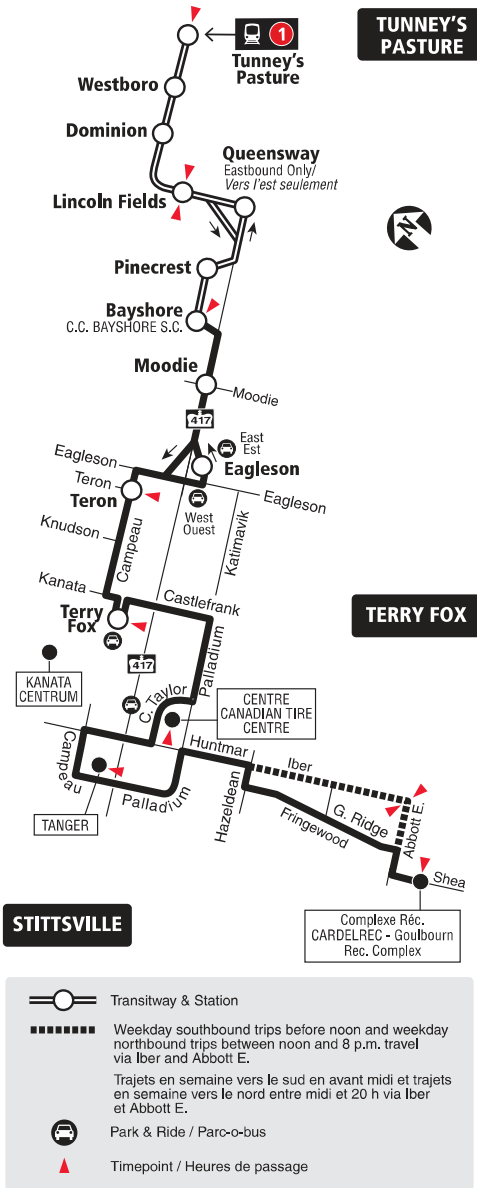


**TERRY FOX
STITTSVILLE
TUNNEY'S PASTURE**

TUNNEY'S PASTURE

TERRY FOX

STITTSVILLE



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

2021.09

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

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

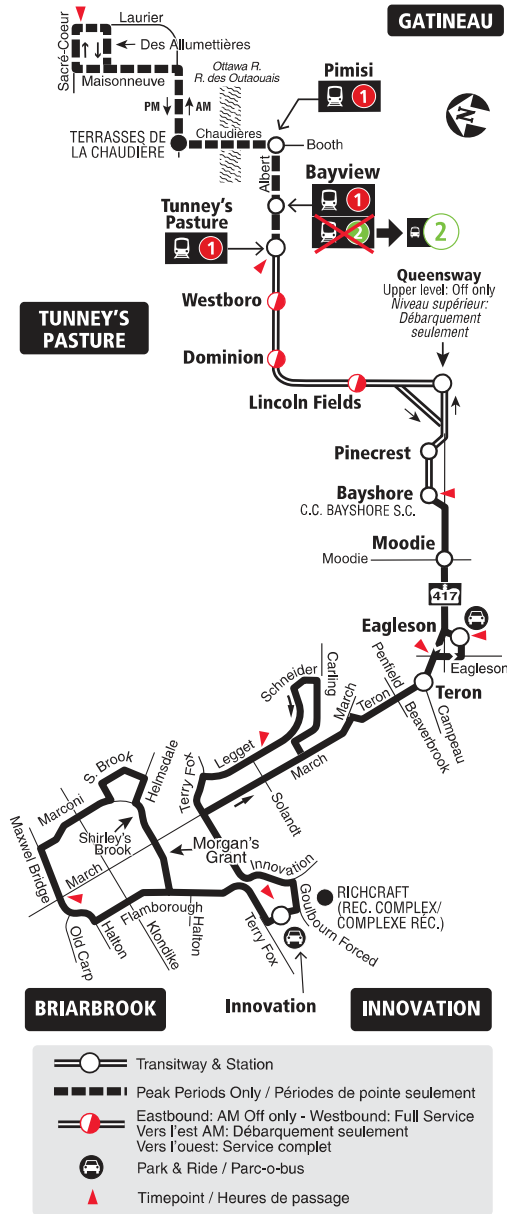
Effective September 5, 2021
En vigueur 5 septembre 2021

OC Transpo INFO 613-560-5000
octranspo.com



INNOVATION BRIARBROOK TUNNEY'S PASTURE GATINEAU

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



2021.09

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

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

Effective September 5, 2021
En vigueur 5 septembre 2021

OC Transpo INFO 613-560-5000
 octranspo.com



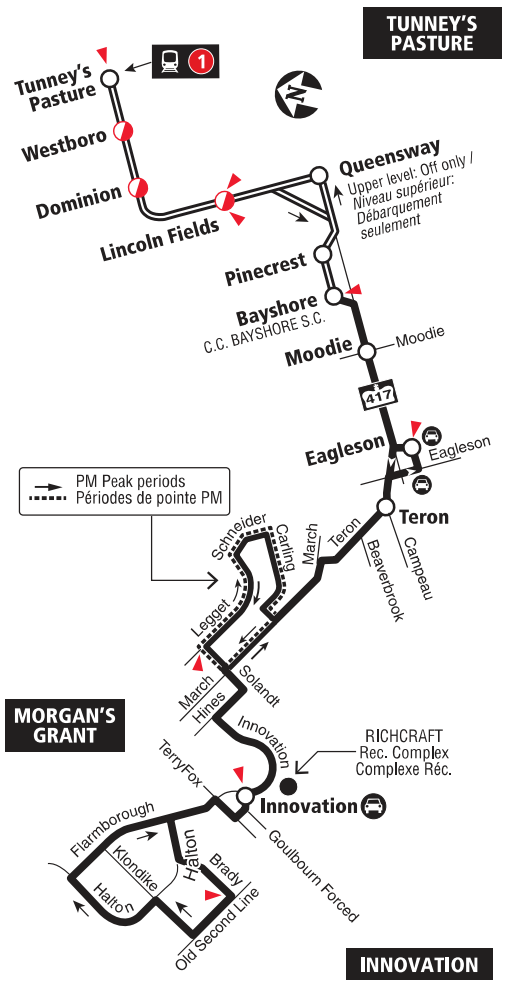
64

MORGAN'S GRANT INNOVATION TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

All day service
Service toute la journée



2021.09

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

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

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

Security / Sécurité **613-741-2478**

Effective September 5, 2021
En vigueur 5 septembre 2021



66

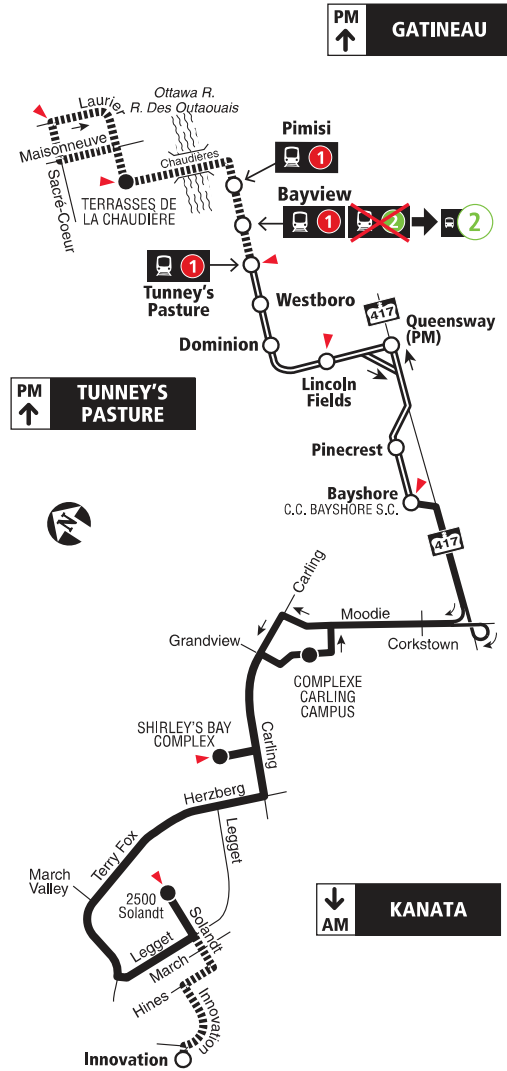
KANATA TUNNEY'S PASTURE GATINEAU

Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2021.09



Schedule / Horaire 613-560-1000

Text / Texto* 560560

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

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

Customer Service

Service à la clientèle 613-560-5000

Lost and Found / Objets perdus 613-563-4011

Security / Sécurité 613-741-2478

Effective September 5, 2021

En vigueur 5 septembre 2021



INFO 613-560-5000
octranspo.com



73

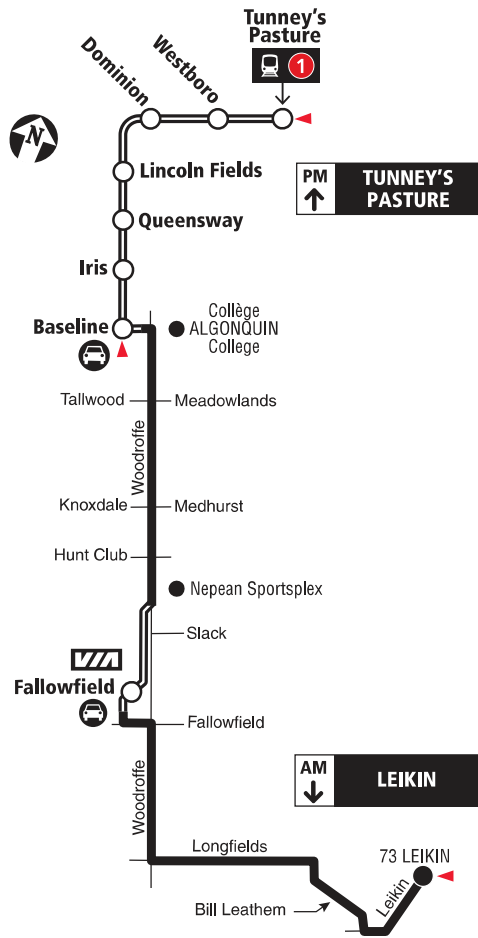
LEIKIN TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



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

2019.07

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

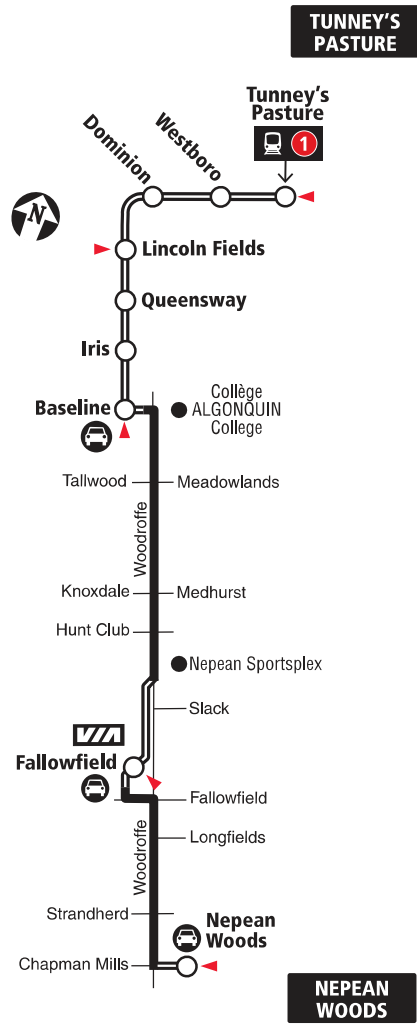
Lost and Found / Objets perdus..... 613-563-4011
 Security / Sécurité 613-741-2478

INFO 613-741-4390
 octranspo.com



**NEPEAN WOODS
TUNNEY'S PASTURE**

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



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

2021.06

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

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

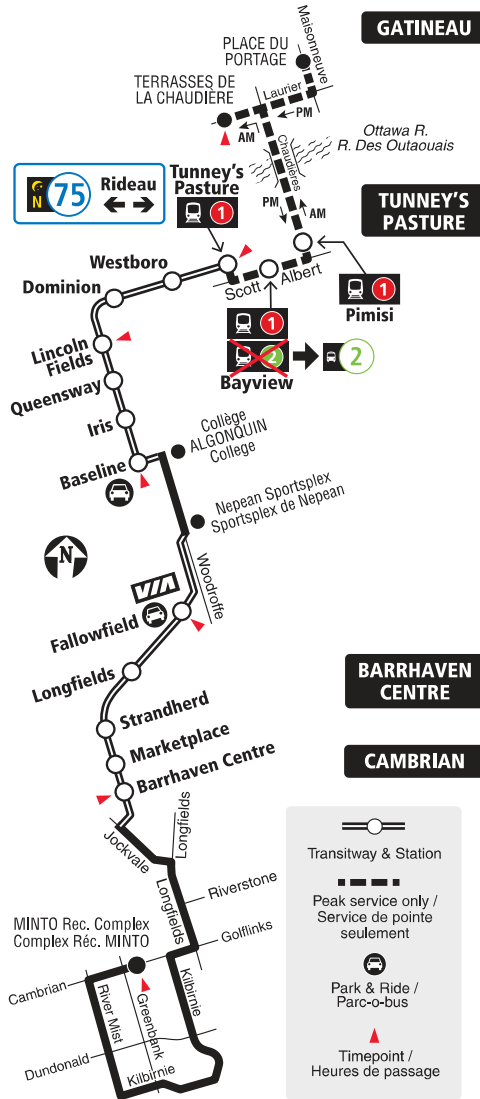
Effective June 20, 2021
En vigueur 20 juin 2021

INFO 613-560-5000
octranspo.com



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

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



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

2020.04

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

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

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

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

Effective May 3, 2020
En vigueur 3 mai 2020

Transpo INFO 613-741-4390
octranspo.com



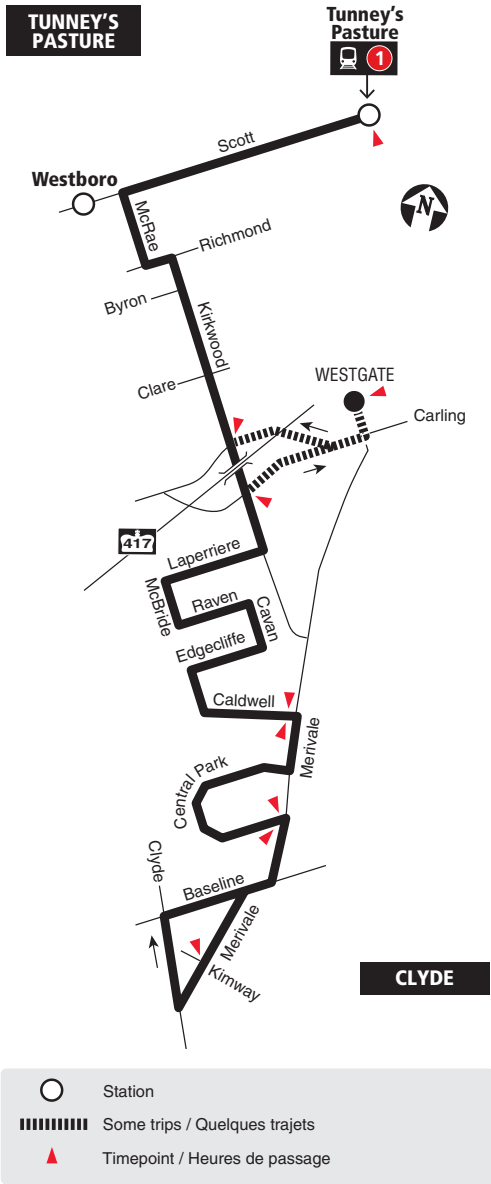
81

CLYDE TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine

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



2019.07

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

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

OC Transpo INFO 613-741-4390
 octranspo.com



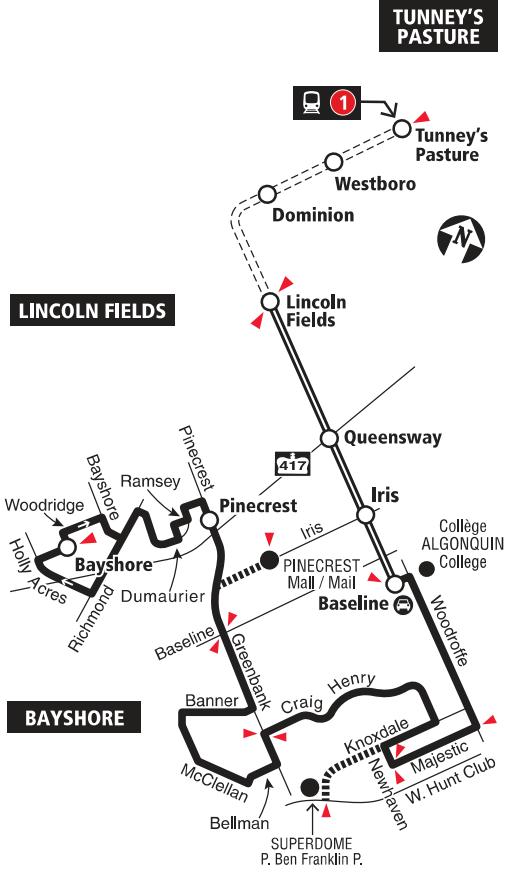
82

BAYSHORE LINCOLN FIELDS TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



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

2021.06

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

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

Effective June 20, 2021
En vigueur 20 juin 2021



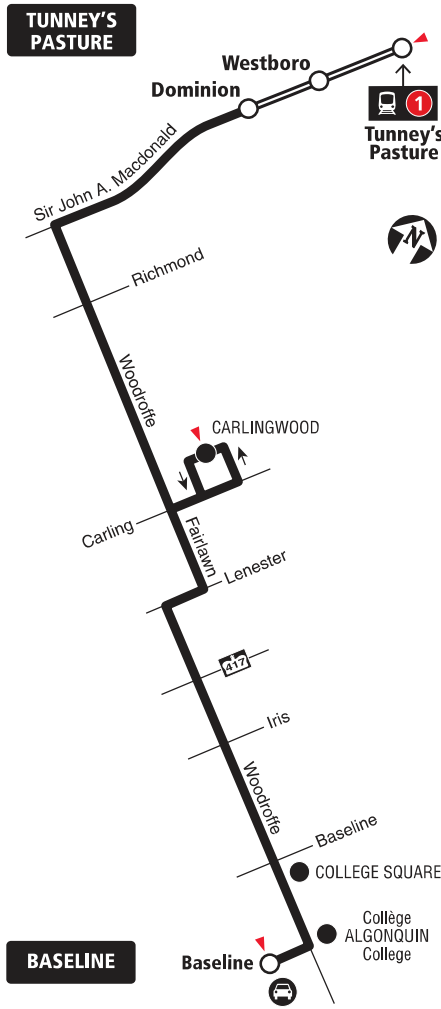
87

BASELINE TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée



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

2019.07

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

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

OC Transpo INFO 613-741-4390
 octranspo.com



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LINCOLN FIELDS TUNNEY'S PASTURE CARLINGWOOD

Local

7 days a week / 7 jours par semaine

Selected time periods only
Périodes sélectionnées seulement



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

2019.10

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

Customer Relations
 Service à la clientèle **613-842-3600**
 Lost and Found / Objets perdus..... **613-563-4011**
 Security / Sécurité **613-741-2478**

Effective October 6, 2019
En vigueur 6 octobre 2019

INFO 613-741-4390
 octranspo.com



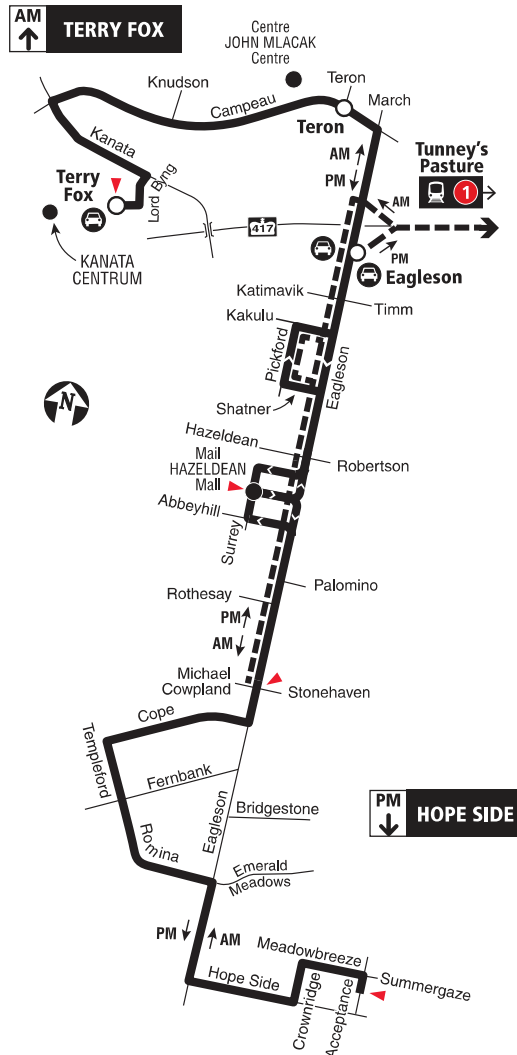
164

TERRY FOX HOPE SIDE

Local

Monday to Friday/ Lundi au vendredi

Peak periods only
Périodes de pointe seulement



2020.12



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

Text / Texto560560

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

Customer Service
Service à la clientèle 613-741-4390

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

Security / Sécurité..... 613-741-2478

Effective December 21, 2020

En vigueur 21 décembre 2020



INFO 613-741-4390
octranspo.com



258

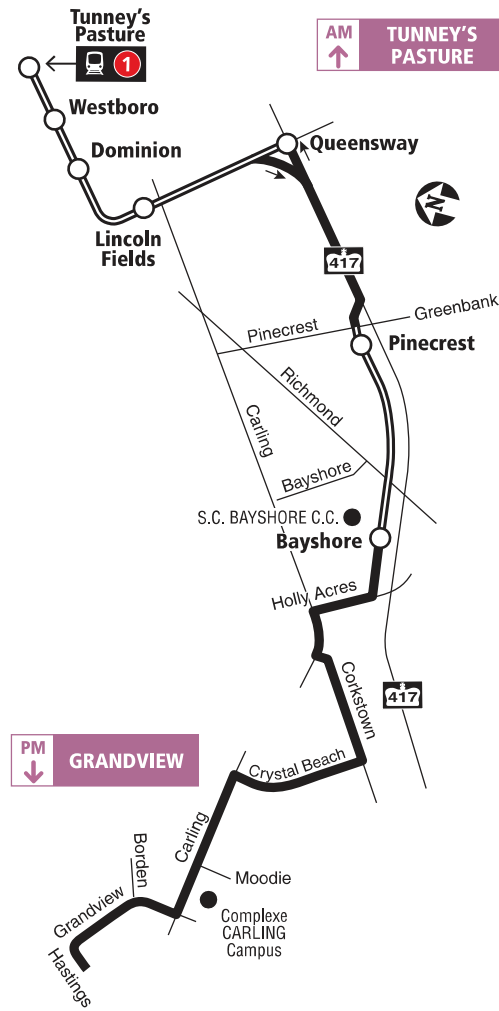
GRANDVIEW TUNNEY'S PASTURE

Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



Transitway & Station

2020.01

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

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

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

Effective January 5, 2020
En vigueur 5 janvier 2020

INFO 613-741-4390
 octranspo.com



282

TREND-ARLINGTON TUNNEY'S PASTURE

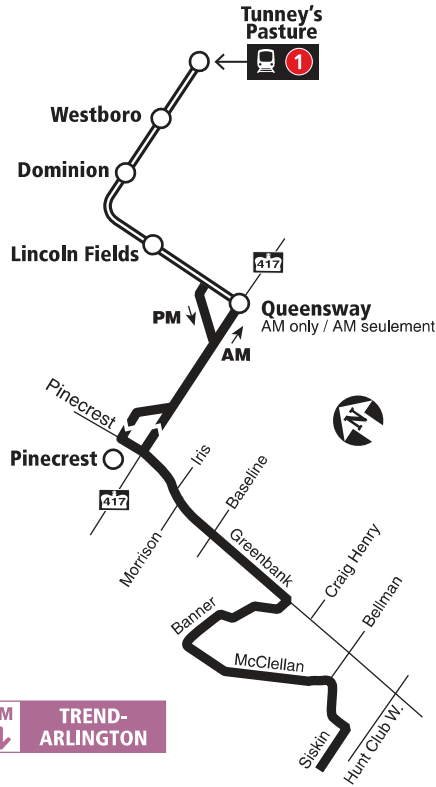
Connexion

Monday to Friday / Lundi au vendredi

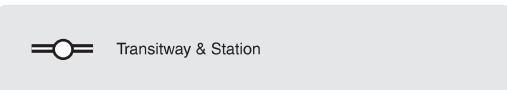
Peak periods only

Périodes de pointe seulement

AM
↑
TUNNEY'S PASTURE



PM
↓
TREND-ARLINGTON



2020.01



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

Text / Texto560560

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

Customer Service

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

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

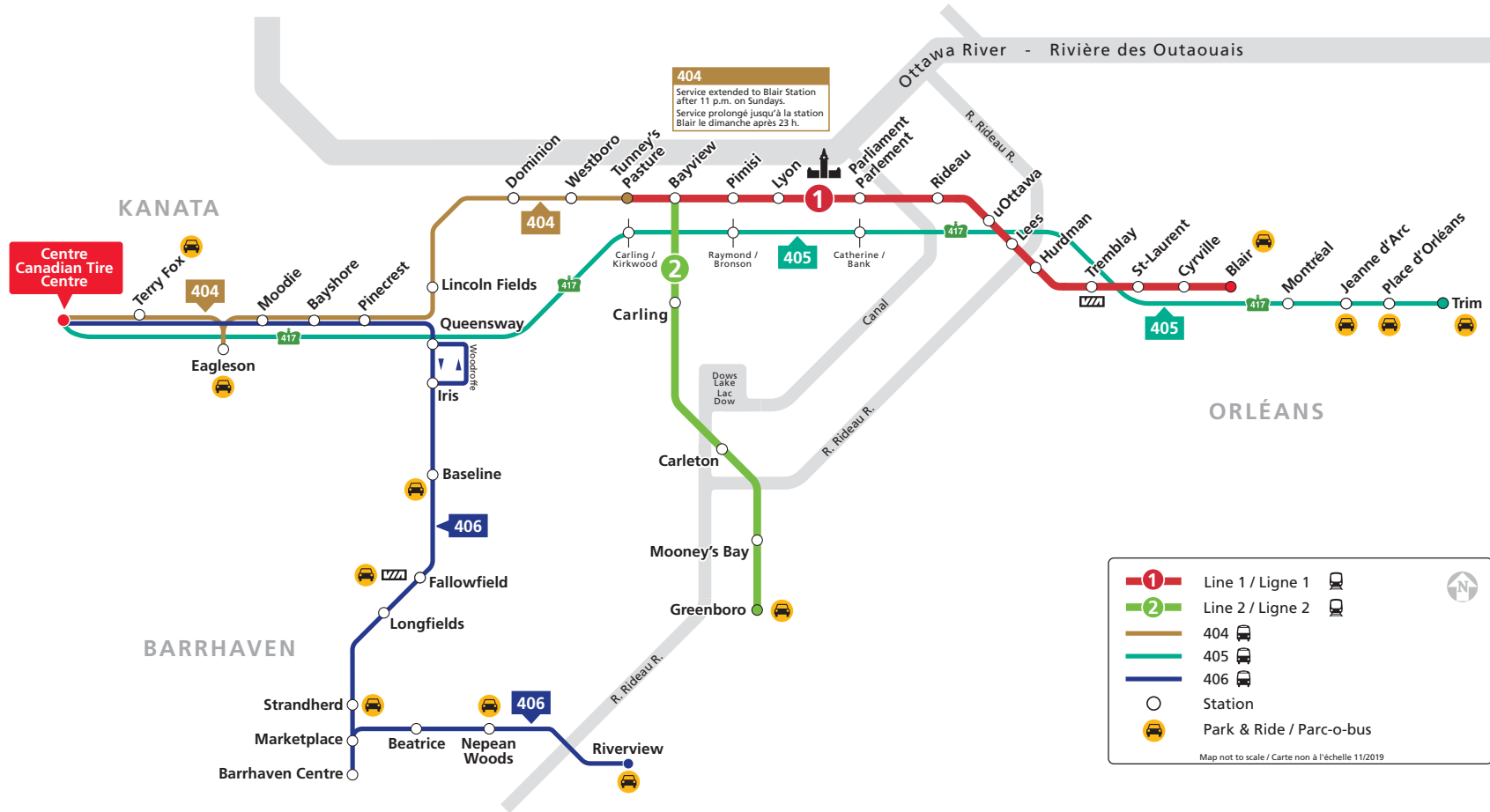
Security / Sécurité **613-741-2478**

Effective January 5, 2020

En vigueur 5 janvier 2020



INFO 613-741-4390
octranspo.com



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

Centre Canadian Tire Centre

KANATA

BARRHAVEN

ORLÉANS

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

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

Ottawa River
riv. des Outaouais

Westboro Beach
Plage Westboro

Rapides Remic Rapids

prom. Sir-John-A.-Macdonald

Dominion

Westboro

Tunney's Pasture

SITE

Trains replaced by buses
Trains remplacés par des autobus



APPENDIX D

Traffic Count Data

Turning Movement Count - Peak Hour Diagram

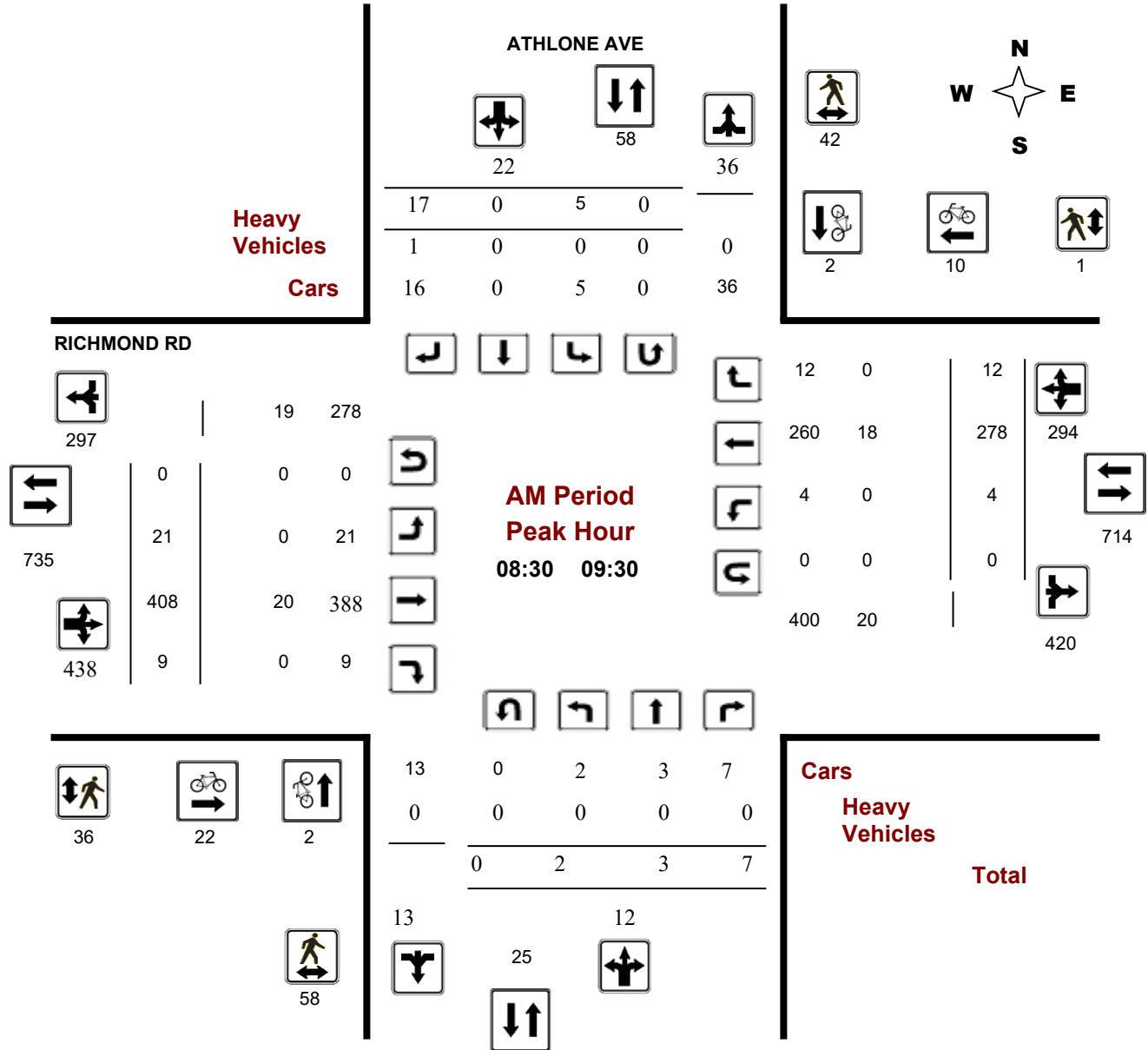
ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019

Start Time: 07:00

WO No: 38412

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

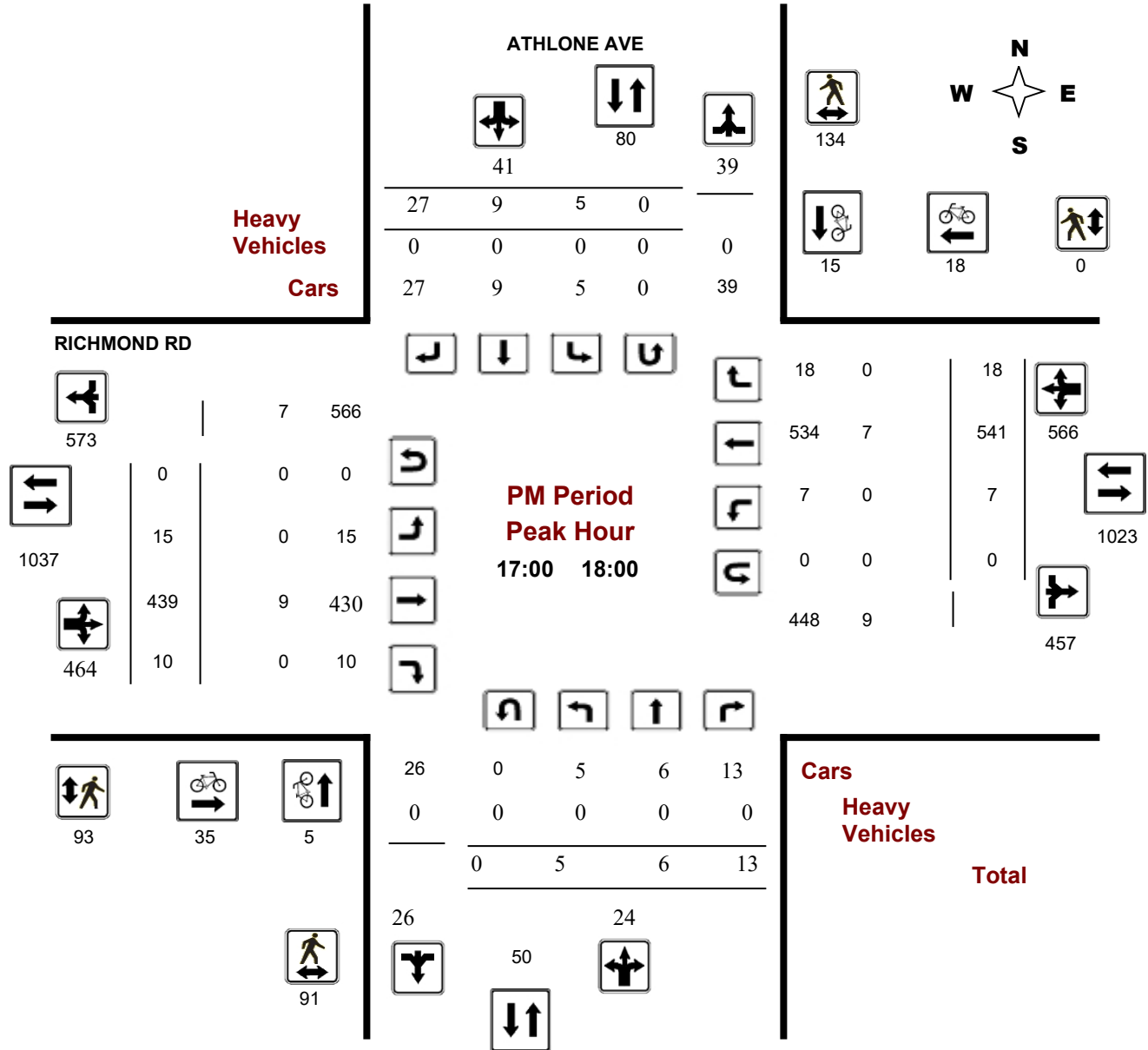
ATHLONE AVE @ RICHMOND RD

Survey Date: Thursday, July 18, 2019

Start Time: 07:00

WO No: 38412

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

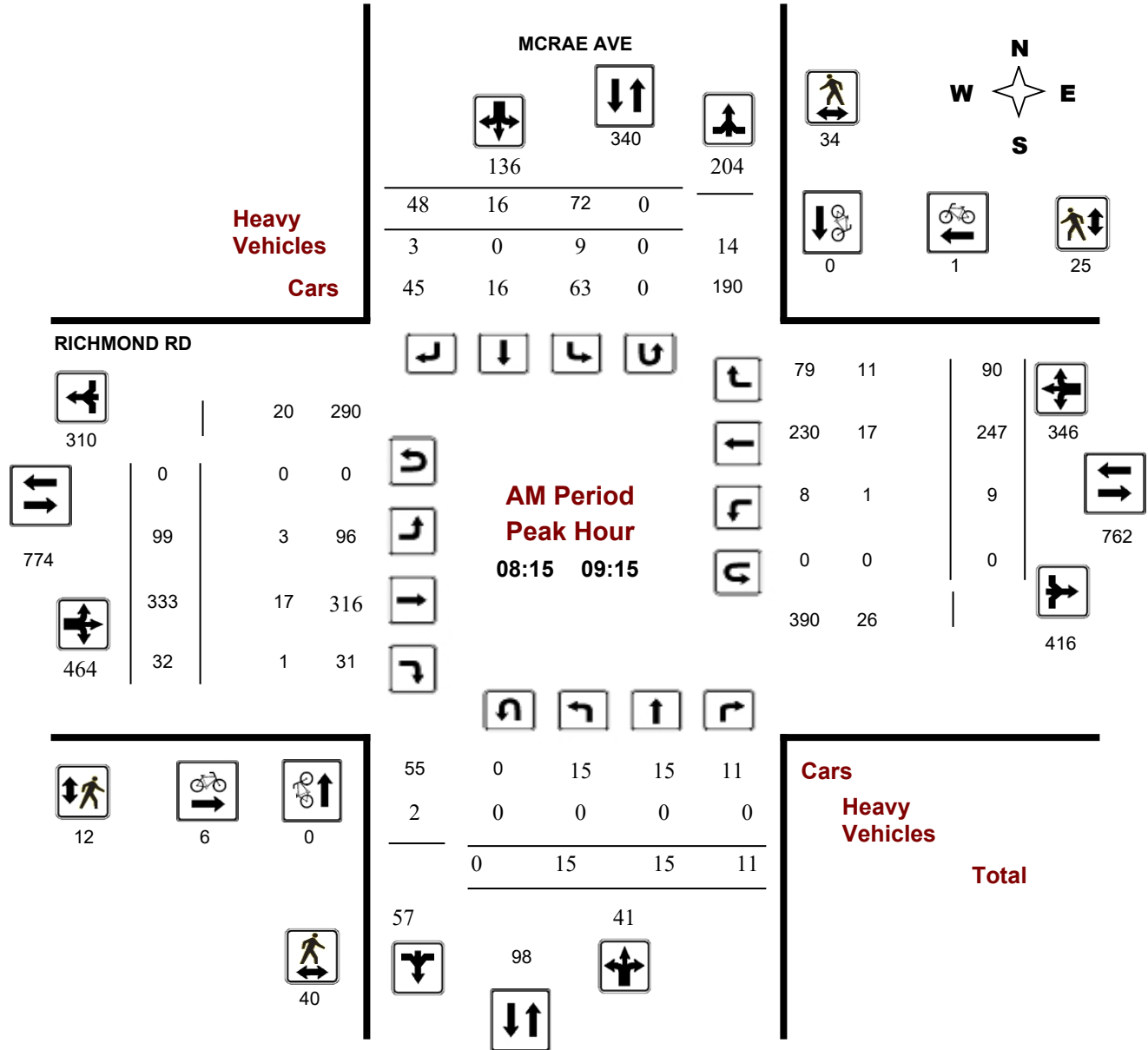
MCRAE AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020

Start Time: 07:00

WO No: 39388

Device: Miovision



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

Turning Movement Count - Peak Hour Diagram

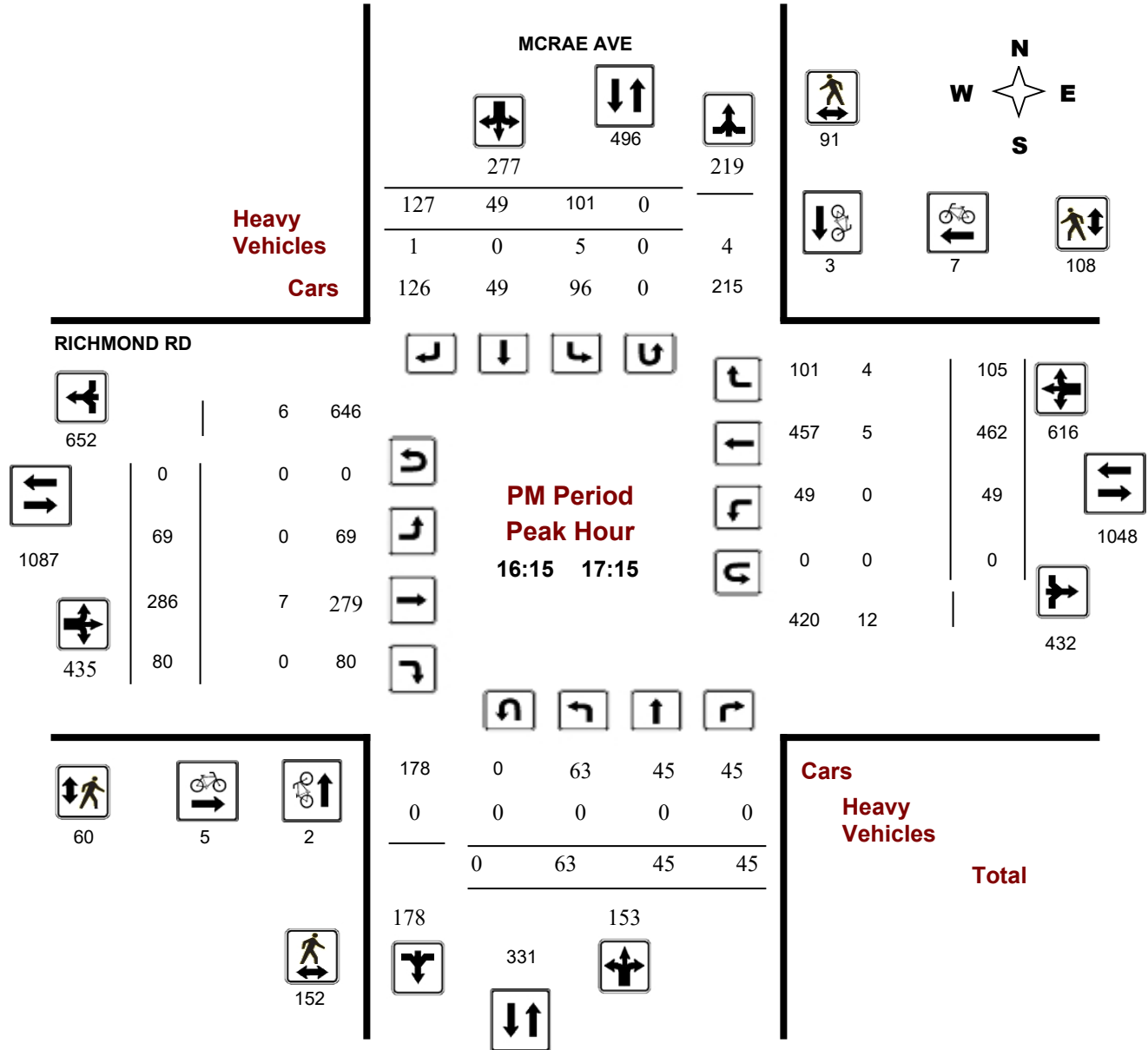
MCRAE AVE @ RICHMOND RD

Survey Date: Thursday, January 23, 2020

Start Time: 07:00

WO No: 39388

Device: Miovision



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

APPENDIX E

Collision History Summary



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: ATHLONE AVE @ RICHMOND RD

Traffic Control: Traffic signal

Total Collisions: 8

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

Location: MCRAE AVE @ RICHMOND RD

Traffic Control: Traffic signal

Total Collisions: 14

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



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MCRAE AVE @ RICHMOND RD

Traffic Control: Traffic signal

Total Collisions: 14

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



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: RICHMOND RD @ TWEEDSMUIR AVE

Traffic Control: Stop sign

Total Collisions: 7

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



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: RICHMOND RD btwn ATHLONE AVE & TWEEDSMUIR AVE

Traffic Control: No control

Total Collisions: 6

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

Location: RICHMOND RD btwn TWEEDSMUIR AVE & MCRAE AVE

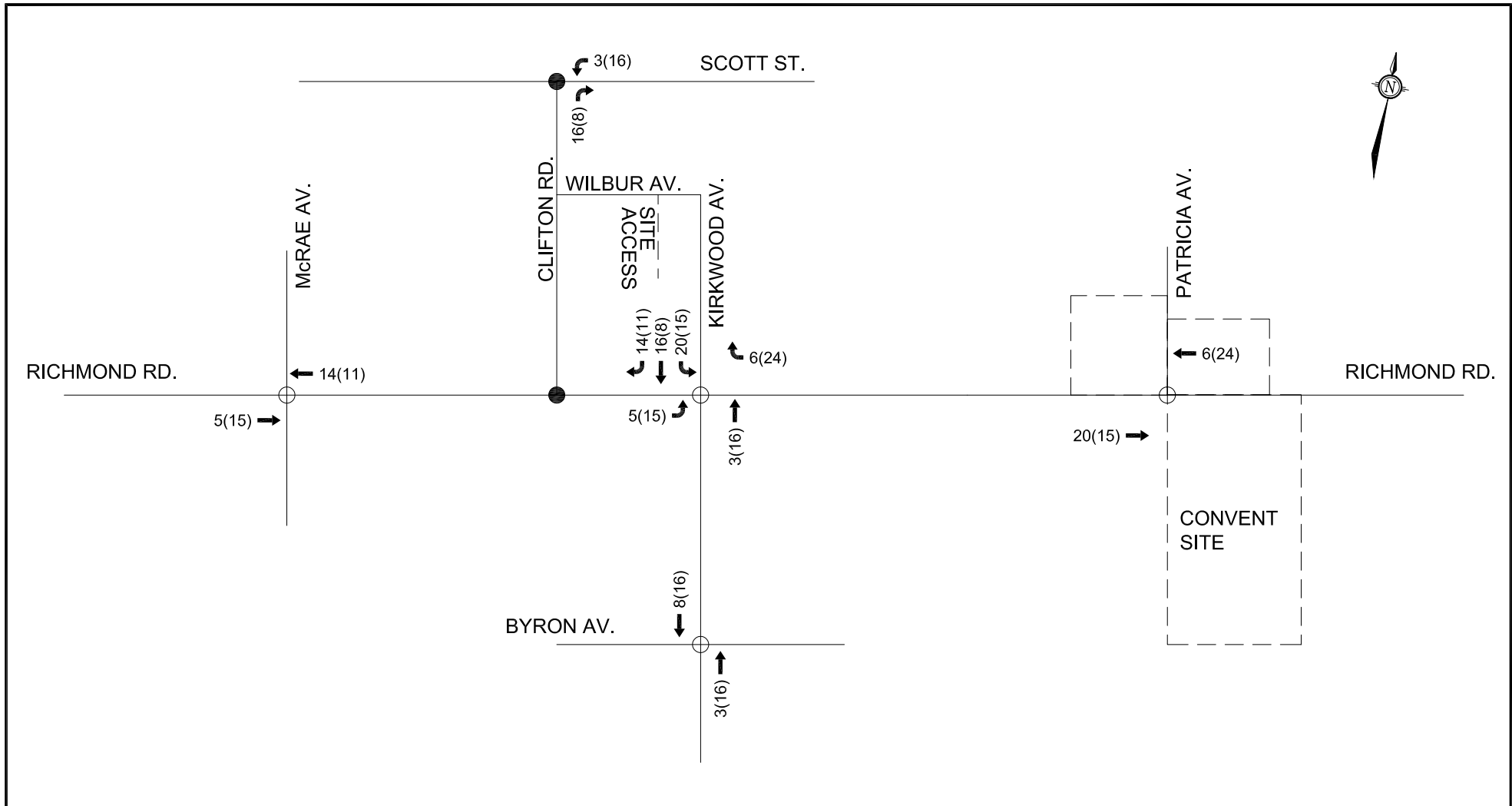
Traffic Control: No control

Total Collisions: 2

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

APPENDIX F

Other Area Developments



NOVATECH
ENGINEERING
CONSULTANTS LTD.

ENGINEERS & PLANNERS

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

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LEGEND

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

175 RICHMOND ROAD

PROPOSED SITE TRAFFIC

SEP 2011

111130

FIGURE 9

Figure 13: New Site Generation Auto Volumes

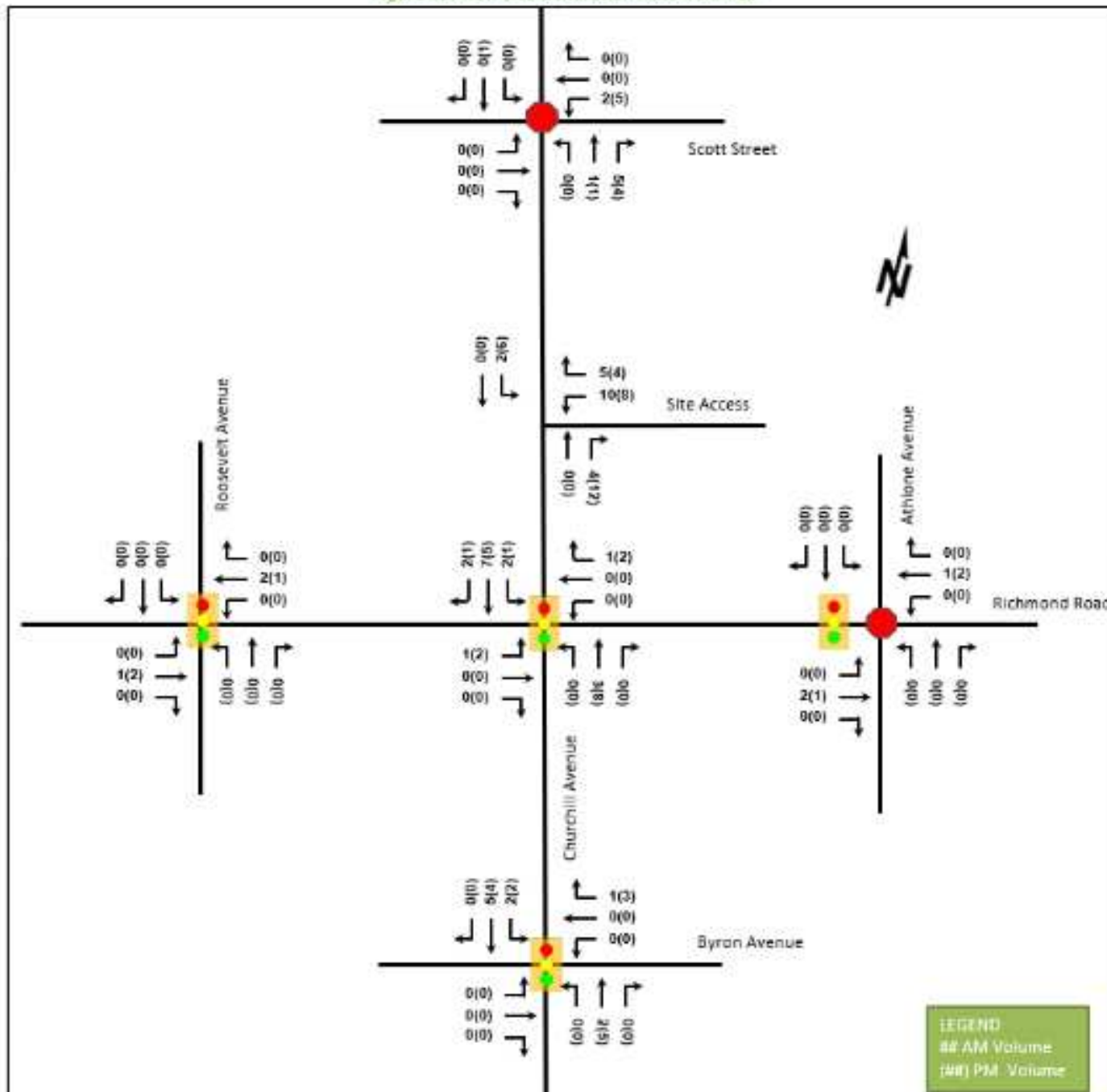
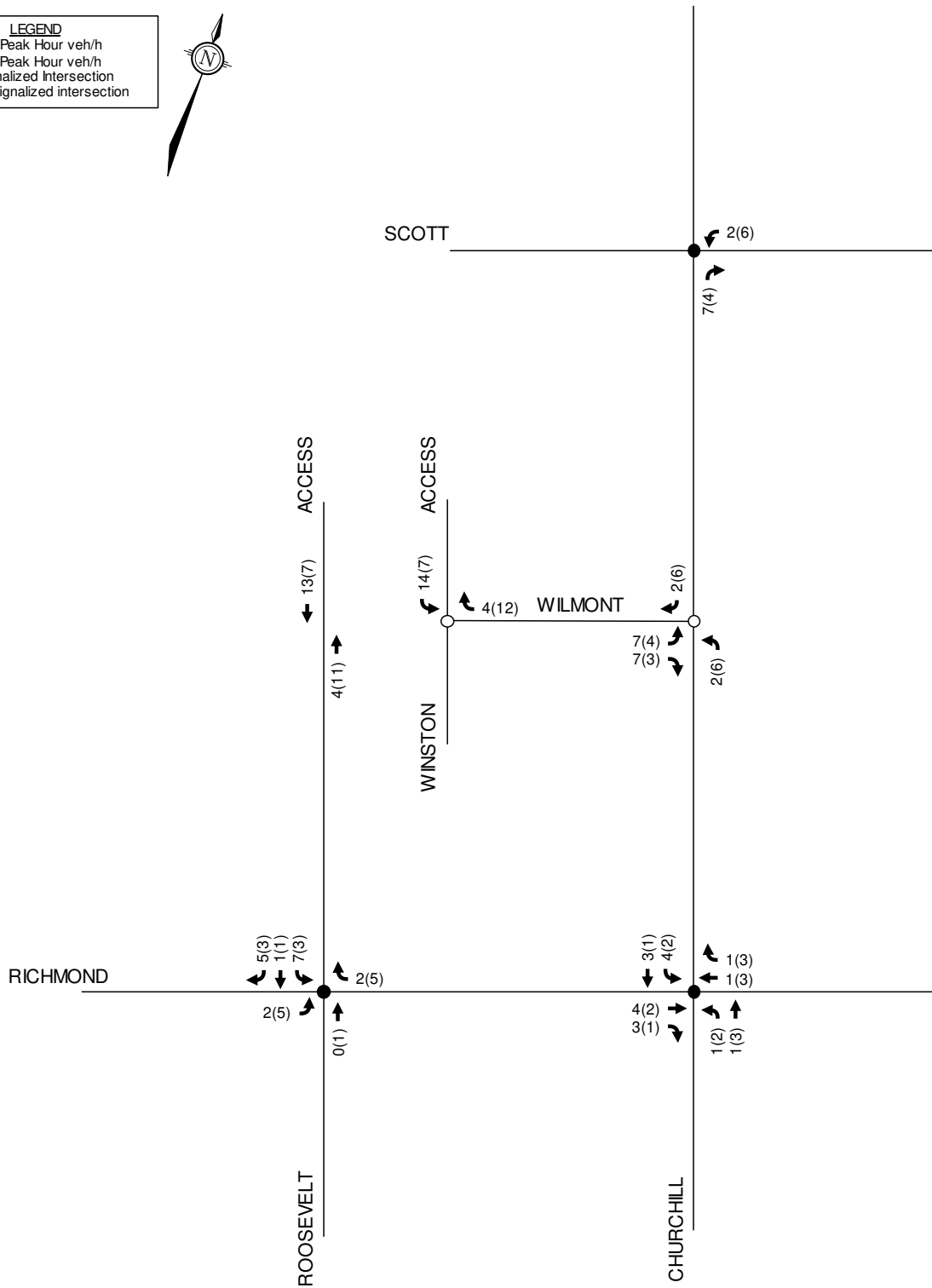


Figure 10: Site Generated Traffic

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



APPENDIX G

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

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

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
2. WALKING & CYCLING: END-OF-TRIP FACILITIES		
2.1 Bicycle parking		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
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 <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
2.3 Shower & change facilities		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
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)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		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	<input type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
4. RIDESHARING		
4.1 Pick-up & drop-off facilities		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
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	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
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 (<i>see Zoning By-law Section 94</i>)	<input type="checkbox"/>
5.2 Bikeshare station location		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		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	<input checked="" type="checkbox"/>
BASIC	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
BASIC	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>)	<input type="checkbox"/>
BETTER	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (<i>see Zoning By-law Section 111</i>)	<input type="checkbox"/>
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)	<input type="checkbox"/>
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	<input type="checkbox"/>

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

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

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

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

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

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

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

Legend	
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

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

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

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