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Proposed Mixed-Use Development
5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue, Ottawa
Transportation Impact Assessment

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Proposed Mixed-Use Development
5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue

Transportation Impact Assessment

Prepared By:

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

Dated: June 2023
Revised: May 2024

Novatech File: 122186
Ref: R-2023-025

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Engineers, Planners & Landscape Architects

May 23, 2024

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

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

Dear Mr. Dubyk:

Reference: **5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue**
Revised Transportation Impact Assessment
Novatech File No. 122186

We are pleased to submit the following revised Transportation Impact Assessment (TIA), in support of Zoning By-Law Amendment and Site Plan Control applications at 5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue (referred to as 47 Beechwood Avenue in this study), for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Transportation Impact Assessment Guidelines* (June 2017).

The original submission of this TIA was dated June 2023, and has since been revised to address City comments and reflect updates to the proposed Site Plan.

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

Yours truly,

NOVATECH

Joshua Audia, P.Eng.
Project Engineer | Transportation

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

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

TIA Plan Reports

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

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

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

Certification

- ☑ I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines (Update Effective July 2023);
- ☑ I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- ☑ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

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

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

☑ is either transportation engineering

☐ or transportation planning.

Dated at Ottawa (City) this 23rd day of May, 20 24.

Name: Jennifer Luong, P.Eng.

Professional Title: Senior Project Manager

Jennifer Luong

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)	
Address:	240 Michael Cowpland Drive, Suite 200
City / Postal Code:	Ottawa, ON K2M 1P6
Telephone / Extension:	613-254-9643 x 254
E-Mail Address:	j.luong@novatech-eng.com

Stamp

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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for the properties located at 5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue. For simplicity, the subject site is referred to as 47 Beechwood Avenue for the remainder of this report. The subject site is approximately 0.19 hectares in size, and is currently occupied by four buildings consisting of ground-floor restaurant or commercial space and upper-floor residential or office space. The subject site is currently served by one driveway to each of Springfield Road, Douglas Avenue, and Beechwood Avenue.

The subject site is surrounded by the following:

- A restaurant and low-rise residences to the north;
- Beechwood Avenue, followed by a Metro grocery store to the south;
- Douglas Avenue, followed by low-rise residences to the east; and
- Springfield Road, followed by low-rise or mid-rise residences and the High Commission of India to the west.

The proposed development consists of a single eight-storey mixed-use building with 123 dwellings and approximately 5,821 ft^2 gross floor area (GFA) of ground-floor retail. A total of 48 parking spaces will be provided within an underground parking garage, which will be accessed via a full-movement driveway to Springfield Road.

The subject site is located in the Inner Urban Transect (Schedule B2) of the City of Ottawa's Official Plan with an evolving neighbourhood overlay. It is designated as 'Corridor – Mainstreet' (Beechwood Avenue). The implemented zoning for the property is 'Traditional Mainstreet' (TM8), and the site is within the Beechwood Community Design Plan (CDP) area.

The study area for this report includes the boundary roadways Beechwood Avenue, Springfield Road, and Douglas Avenue, as well as the intersection at Beechwood Avenue/Springfield Road. The time periods considered in this TIA are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The TIA will consider the buildout year 2024 and horizon year 2029.

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

Forecasting

- The proposed development is estimated to generate a net additional 37 person trips (including 11 additional vehicle trips) during the AM peak hour, and three net additional person trips (but nine fewer vehicle trips) during the PM peak hour.

Development Design and Parking

- Pedestrian walkways will connect all building entrances to the existing sidewalks on Beechwood Avenue, Springfield Road, or Douglas Avenue.

- A total of 128 bicycle parking spaces are proposed for residents, with 106 spaces in a secure room on the ground floor, and 18 spaces in the parking garage. Cyclists will be able to enter/exit the secure room via Douglas Avenue. A total of four exterior bicycle parking spaces are proposed for the retail units, and will be located at the southeast and southwest corners of the subject site.

- The subject site is within 400m walking distance of stops that are served by OC Routes 6, 7, 9, 19, and 20. The proposed development will maintain the location of the existing stop #8788, which is located on the east side of Springfield Road, north of Beechwood Avenue.

- Articulated and single-unit buses turning from Beechwood Avenue onto Springfield Road can place all doors within 300m of the curb at stop #8788.

- A review of the City's *Transportation Demand Management (TDM) Supportive Development Design and Infrastructure Checklists* has been conducted. Any required TDM supportive design and infrastructure measures in the TDM checklist for residential and non-residential developments have been met.

- Garbage will be collected in ground-floor commercial and residential garbage rooms, and will be wheeled out to be collected curbside on Douglas Avenue. Moving and delivery activities will also be accommodated curbside.

- There is no on-site fire route proposed for this development. Fire trucks responding to any calls from the proposed development can park curbside on Beechwood Avenue, Springfield Road, or Douglas Avenue.

- The proposed development will meet the minimum bicycle parking requirements. The overall proposed number of vehicle parking spaces is 20 short of the requirement, and a relief from the zoning by-law will be required.

Boundary Streets

- Based on the results of the segment MMLOS analysis:
    - No boundary streets meet the target pedestrian level of service (PLOS);
    - No boundary streets meet the target bicycle level of service (BLOS);
    - Beechwood Avenue does not meet the target transit level of service (TLOS);
    - Beechwood Avenue meets the target truck level of service (TkLOS).

- Both sides of Beechwood Avenue include sidewalks with an approximate width of 1.5m and a minimum boulevard width between 0.5m and 2.0m. A PLOS C can be achieved if sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m, improving to the target PLOS B if on-street parking is provided. These represent the best-possible levels of service without reducing the operating speed of Beechwood Avenue to 50 km/h (i.e. reducing the speed limit to 40 km/h). Based on the future cycle tracks on Beechwood Avenue, sidewalks with a width of greater than 2.0m and 2.0m-wide cycle tracks are planned. This will be constructed between Springfield Road and Douglas Avenue as part of construction of the proposed development. The cycle tracks will act as a boulevard for pedestrians between the sidewalk and roadway, and this design will therefore achieve a BLOS C.

- Sidewalks with an approximate width of 1.5m are provided on both sides of Springfield Road. The roadway can meet the target PLOS A by providing sidewalks with a minimum width of 2.0m and a boulevard width of 0.5m. This is identified for the City's consideration .

- Sidewalks are provided on both sides of Douglas Avenue, with an approximate width of 1.5m on the east side and 2.0m on the west side. The west sidewalk meets the target PLOS C. The east sidewalk can meet the target PLOS C with a minimum width of 1.8m and no boulevard. This is identified for the City's consideration.

- Beechwood Avenue currently has bike lanes in each direction within the study area. Between Springfield Road and Douglas Avenue, the eastbound bike lane is curbside, and the westbound bike lane is adjacent to a parking lane along the subject site's frontage. Beechwood Avenue can achieve the target BLOS A by implementing physically separated bikeways. Therefore, the planned cycle tracks on Beechwood Avenue will achieve the target.

- Springfield Road has recently been resurfaced, with a northbound bike lane implemented between Maple Lane and approximately 40m north of Beechwood Avenue. Based on Exhibit 11 of the *MMLOS Guidelines*, the target BLOS B can be met for the entire roadway by implementing curbside bike lanes and reducing the operating speed to 50 km/h, or by implementing physically separated cycling facilities. This is identified for the City's consideration.

- Douglas Avenue does not have any cycling facilities within the study area. The target BLOS D can be met by implementing any type of bike lane (i.e. curbside or adjacent to a parking lane). This is identified for the City's consideration.

- The City's 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network identifies Beechwood Avenue as a Transit Priority Corridor, with transit signal priority at select intersections between Vanier Parkway and St. Laurent Boulevard, and parking lanes in the immediate vicinity of some intersections may be converted for transit use. It is anticipated that these isolated measures will improve transit operations on Beechwood Avenue.

- Through consultation with City staff, a functional design has been developed for the planned cycle tracks along Beechwood Avenue from Springfield Road to Douglas Avenue (i.e. along the site's frontage). The cycle tracks along this section of Beechwood Avenue will be integrated with the proposed development, so that both can be constructed at the same time. The existing westbound parking lane in front of the subject site will be removed to accommodate the proposed cycle tracks and slight realignment of Beechwood Avenue will be required to accommodate the pedestrian refuge at the protected intersection. This allows pedestrians to cross the cycle tracks and Beechwood Avenue separately. Additional lands at the northeastern corner of Beechwood Avenue/Springfield Road is required to be taken by the City to accommodate the protected intersection. Pending City review of the ultimate design, an interim design will be developed, which will match the existing conditions at each corner of the subject site.

Access Design

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

- Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. Section 25(p) also identifies that the 3.0m minimum can be reduced to as little as 0.3m, provided that the proposed private approach is located a safe distance from the neighbouring property, in a manner that maintains adequate sightlines for vehicles exiting the property, and in a manner that does not create a traffic hazard. It is requested that the proposed access to Springfield Road be approved on this basis.

- TAC's *Geometric Design Guide* identifies a minimum corner clearance requirement of 55m for accesses to collector roadways, measuring between the nearest edge of the private approach and the nearest edge of the intersecting roadway. This requirement is not met by the proposed access to Springfield Road, as it is approximately 28m from the nearest edge of Beechwood Avenue, but it is located as far from Beechwood Avenue as possible.

- For a design speed of 60 km/h, TAC recommends minimum intersection sight distances of 130m for left-turning vehicles and 110m for right-turning vehicles. Neighbouring structures are anticipated to limit the left-turning sightlines at the proposed access to approximately 96m.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has agreed to consider providing the following TDM measures:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Provide online links to OC Transpo and STO information;
    - Provide a multimodal travel option information package to new residents/employees;
    - Unbundle parking cost from monthly rent.

1.0 SCREENING

1.1 Introduction

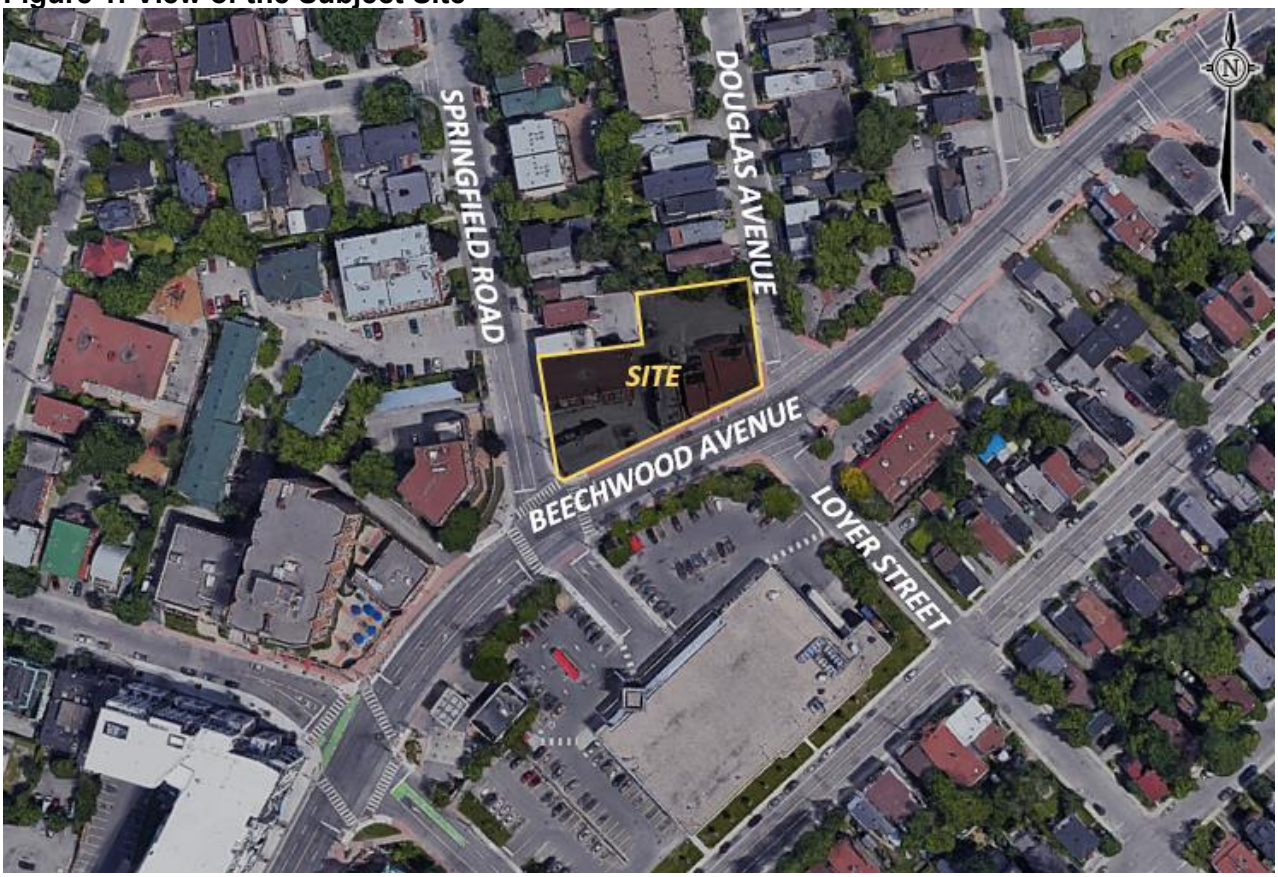
This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for the properties located at 5 Springfield Road, 12 Douglas Avenue, and 47 Beechwood Avenue. For simplicity, the subject site is referred to as 47 Beechwood Avenue for the remainder of this report. The subject site is approximately 0.19 hectares in size, and is currently occupied by four buildings consisting of ground-floor restaurant or commercial space and upper-floor residential or office space. The subject site is currently served by one driveway to each of Springfield Road, Douglas Avenue, and Beechwood Avenue.

The subject site is surrounded by the following:

- A restaurant and low-rise residences to the north;
- Beechwood Avenue, followed by a Metro grocery store to the south;
- Douglas Avenue, followed by low-rise residences to the east; and
- Springfield Road, followed by low-rise or mid-rise residences and the High Commission of India to the west.

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

Figure 1: View of the Subject Site



1.2 Proposed Development

The proposed development consists of a single eight-storey mixed-use building with 123 dwellings and approximately 5,932 ft^2 gross floor area (GFA) of ground-floor retail. A total of 48 parking spaces will be provided within an underground parking garage, which will be accessed via a full-movement driveway to Springfield Road.

The subject site is located in the Inner Urban Transect (Schedule B2) of the City of Ottawa's Official Plan with an evolving neighbourhood overlay. It is designated as 'Corridor – Mainstreet' (Beechwood Avenue). The implemented zoning for the property is 'Traditional Mainstreet' (TM8), and the site is within the Beechwood Community Design Plan (CDP) area.

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, which is included in **Appendix B**. The trigger results are as follows:

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

- Location Triggers – The development is located within a Design Priority Area (DPA); further assessment is **required** based on this trigger.

- Safety Triggers – The proposed development meets two safety triggers related to the proximity of the proposed driveway to the Beechwood Avenue/Springfield Road intersection; further assessment is **required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

Beechwood Avenue is an arterial roadway that generally runs on an east-west alignment between Vanier Parkway and Juliana Road. West of Vanier Parkway, the roadway continues as St. Patrick Street. East of Juliana Road, the roadway continues as Hemlock Road. Within the study area, Beechwood Avenue has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, bike lanes or cycle tracks on both sides of the roadway, and a regulatory speed limit of 50 km/h. Beechwood Avenue is not classified as a truck route, and street parking is permitted in select areas, including the site frontage. Along the subject site's frontage, there is an existing 28m-long existing parking lane that is restricted to one-hour parking between 7:00am and 7:00pm, seven days a week. The City's Official Plan identifies a right-of-way (ROW) protection of 24.5m on Beechwood Avenue within the study area, where 11.5m is protected on the north side and 13m is protected on the south side. A widening is not required along the subject site's frontage.

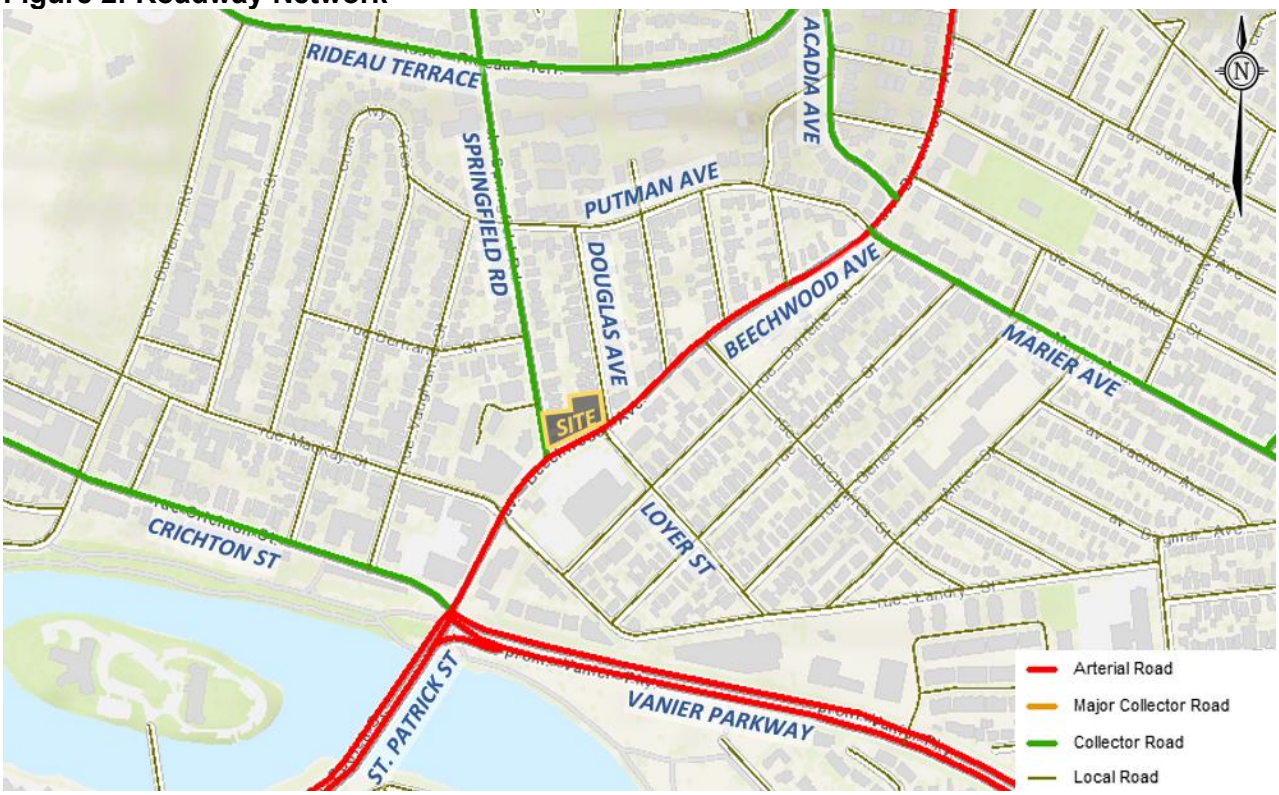
Springfield Road is a collector roadway that generally runs on a north-south alignment between Beechwood Avenue and Coltrin Road. Within the study area, Springfield Road has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and a posted speed limit of 50 km/h. Springfield Road is not classified as a truck route. Street parking is not permitted on the east side as a northbound bike lane is provided. Street parking is generally permitted on the west side of the roadway beyond the first 60m north of Beechwood Avenue. A loading zone is located on the east side of Springfield Road along the frontages to 5 and 13 Springfield Road (i.e. partially along the subject site's frontage). The City's Official Plan does not identify a ROW protection for this section of Springfield Road.

Douglas Avenue is a local roadway that generally runs on a north-south alignment between Beechwood Avenue and Putman Avenue. South of Beechwood Avenue, the roadway continues as Loyer Street. Within the study area, Douglas Avenue has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted speed limit of 50 km/h. Douglas Avenue is not classified as a truck route. Street parking is generally permitted on either side of the roadway. The City's Official Plan does not identify a ROW protection for Douglas Avenue.

Loyer Street is a local roadway that generally runs on a north-south alignment between Beechwood Avenue and Landry Street. North of Beechwood Avenue, the roadway continues as Douglas Avenue. Within the study area, Loyer Street has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and a posted speed limit of 30 km/h. Loyer Street is not classified as a truck route. Street parking is generally permitted on both sides of the roadway.

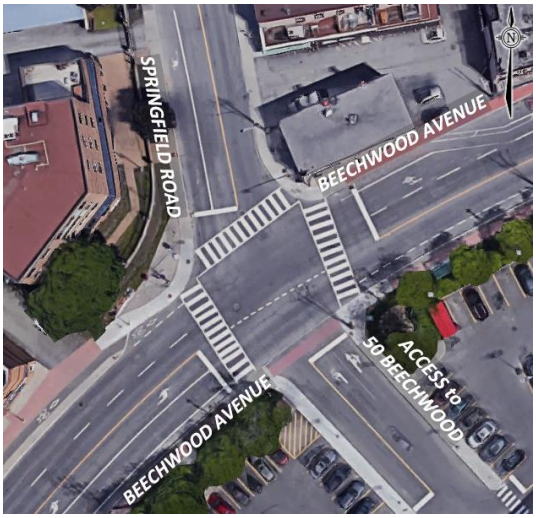
The roadway of the greater area surrounding the subject site is illustrated in **Figure 2**.

Figure 2: Roadway Network



2.1.2 Intersections

Beechwood Avenue/Springfield Road



- Signalized four-legged intersection
- North Approach (Springfield Road): one shared left turn/through lane and one right turn lane
- South Approach (Access to 50 Beechwood Ave): one left turn lane and one shared through/right turn lane
- East Approach (Beechwood Avenue): one shared left turn/through lane and one right turn lane
- West Approach (Beechwood Avenue): one left turn lane and one shared through/right turn lane
- Bike lanes on east and west approaches
- Zebra-striped crosswalks on north, east, and west approaches; textured crosswalk on south approach

Beechwood Avenue/Douglas Avenue/Loyer Street

- Unsignalized four-legged intersection
- North Approach (Douglas Avenue): one shared left turn/through/right turn lane
- South Approach (Loyer Street): one shared left turn/through/right turn lane
- East/West Approaches (Beechwood Avenue): one shared left turn/through/right turn lane
- Bike lanes on east and west approaches
- Standard crosswalks on north and south approaches

2.1.3 Driveways

In accordance with the *2017 TIA Guidelines*, a review of the existing adjacent driveways along the boundary roads are provided as follows:

Beechwood Avenue, north side

- One driveway to a residential/commercial uses at 33 Beechwood Avenue
- Two driveways to commercial uses at 59-71 Beechwood Avenue and 19 Commanda Way

Beechwood Avenue, south side

- Six driveways to commercial uses at 6, 20, 50, 64, and 98 Beechwood Avenue
- Two driveways to 78 Beechwood Avenue (one currently unused)

Springfield Road, east side

- Eleven driveways to residential/commercial uses at 13-81 Springfield Road

Springfield Road, west side

- Nine driveways to residential uses at 24-76 Springfield Road
- One driveway to the High Commission of India at 10 Springfield Road

Douglas Avenue, east side

- Fifteen driveways to residential uses at 15-61 Douglas Avenue

Douglas Avenue, west side

- Fifteen driveways to residential uses at 18-58 Douglas Avenue and 36 Putman Avenue

2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided on both sides of Beechwood Avenue, Springfield Road, Douglas Avenue, and Loyer Street. Bike lanes or cycle tracks are provided on Beechwood Avenue, and a northbound bike lane on Springfield Road has been implemented between Maple Lane and approximately 40m north of Beechwood Avenue.

In the City of Ottawa's primary cycling network, Beechwood Avenue forms part of Crosstown Bikeway #2. This route provides connectivity to a major pathway that runs along the east side of the Rideau River (west of the study area), and to a Neighbourhood Bikeway (north and east of the study area).

2.1.5 Area Traffic Management

Within the study area, there are no Area Traffic Management (ATM) studies that are in progress.

Signage is provided on Beechwood Avenue indicating that the study area is located in a traffic-calmed neighbourhood. Speed humps and bulb-outs are located on Springfield Road. 'SLOW' pavement markings are provided on Loyer Street.

2.1.6 Transit

The locations of OC Transpo bus stops in the vicinity of the subject site are described in **Table 1**, and are shown in **Figure 3**. A summary of the various routes which serve the study area is included in **Table 2**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Table 1: OC Transpo Transit Stops

Stop	Location	Routes Serviced
#1697	South side of Barrette Street, west of St. Charles Street	20
#2309	West side of Loyer Street, north of Barrette Street	20
#7011	North side of Crichton Street, west of Beechwood Avenue	9
#7021	East side of Springfield Road, south of Putman Avenue	6
#8764	South side of Crichton Street, west of Beechwood Avenue	9
#8788	East side of Springfield Road, north of Beechwood Avenue(1)	6
#8790	North side of Beechwood Avenue, east of St. Charles Street	6, 7, 19, 20
#8794	South side of Beechwood Avenue, west of Loyer Street	7, 19
#8795	South side of Beechwood Avenue, east of St. Charles Street	7, 19, 20
#8922	North side of Beechwood Avenue, east of MacKay Street	6, 7, 19

1. Located along subject site's frontage to Springfield Road

Figure 3: OC Transpo Bus Stop Locations

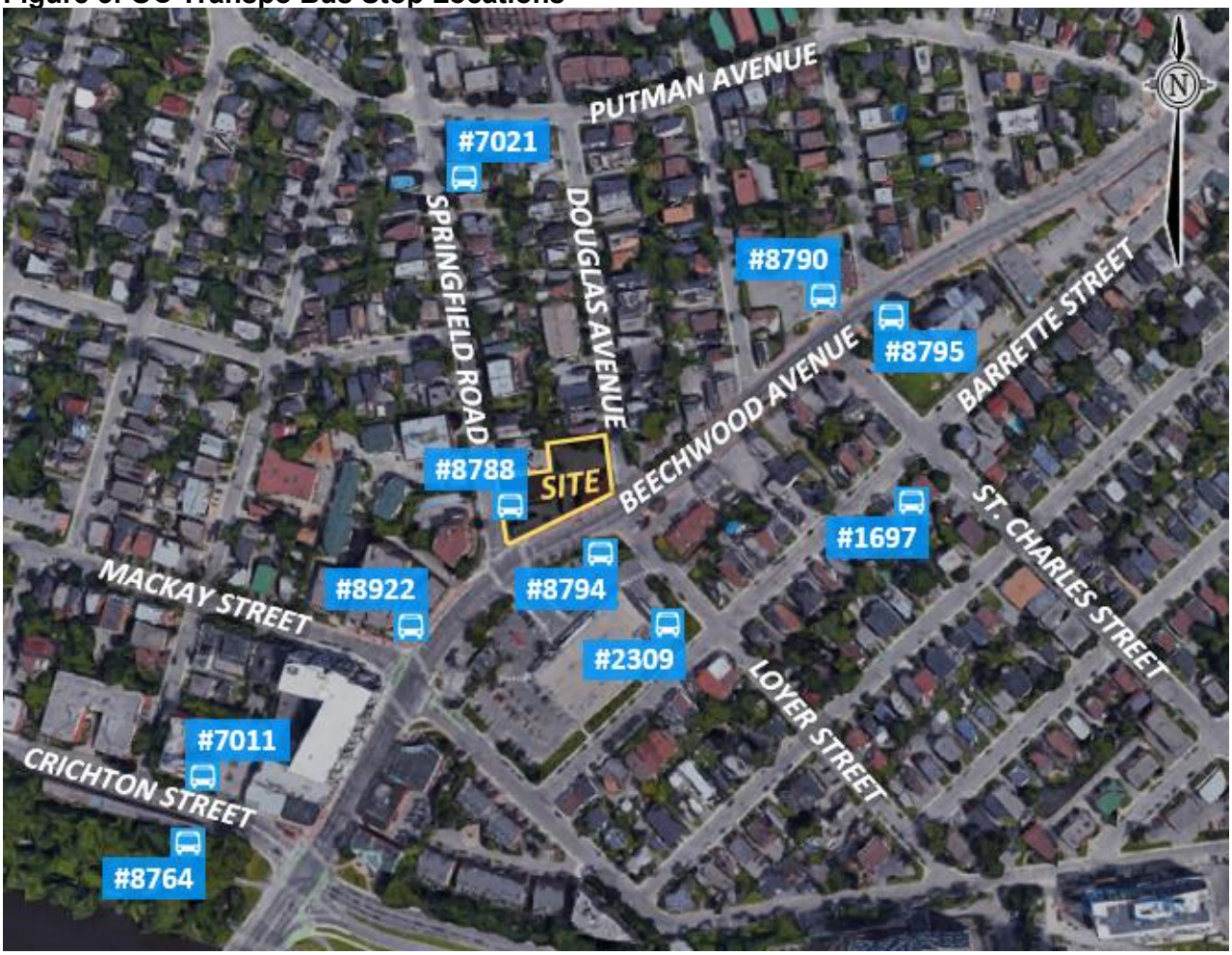


Table 2: OC Transpo Route Information

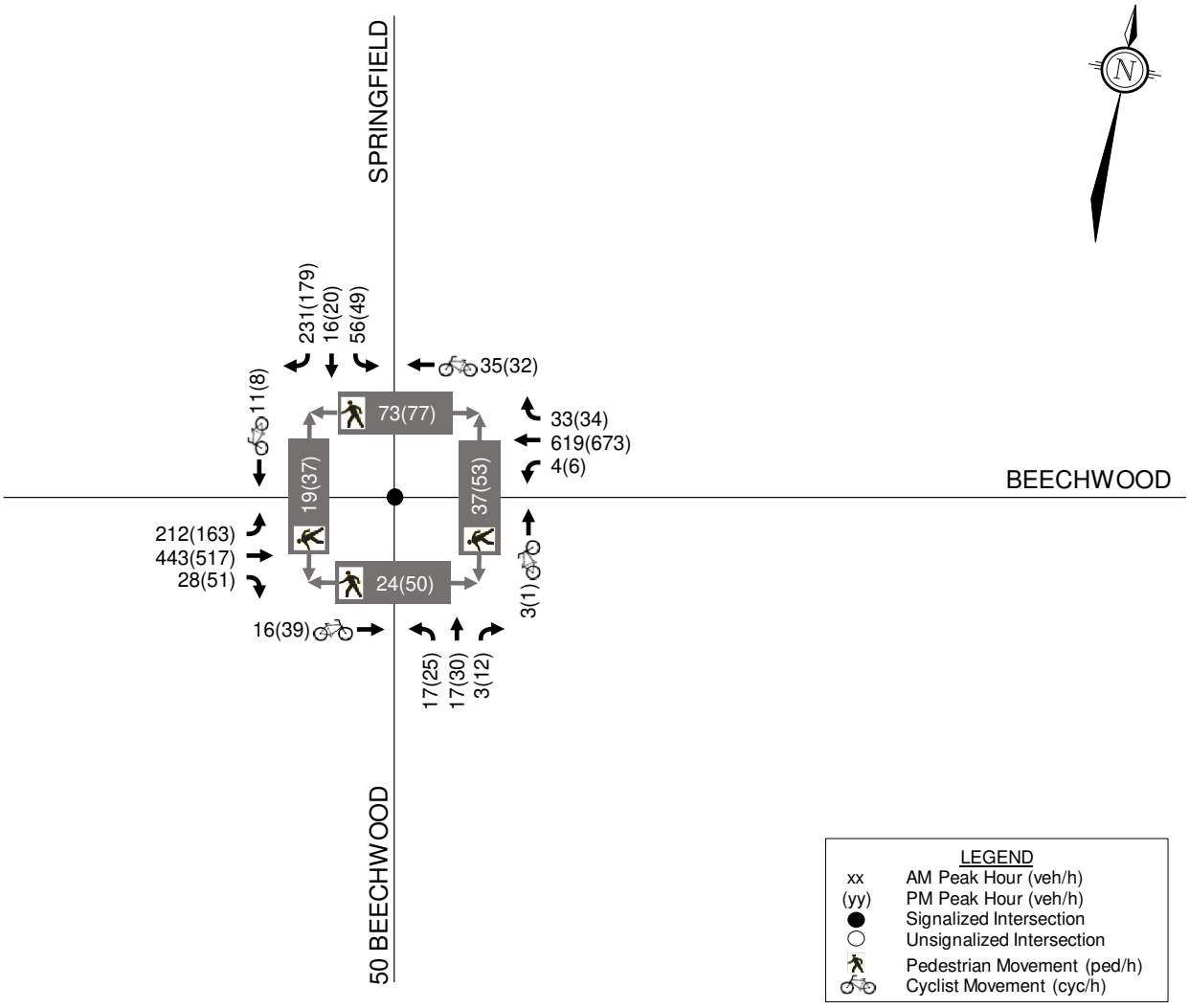
Route	From ↔ To	Frequency
6	Greenboro ↔ Rockcliffe	All day service, seven days a week; 10- to 30-minute headways
7	Carleton ↔ St. Laurent	All day service, seven days a week; 12- to 30-minute headways
9	Rideau ↔ Hurdman	All day service, seven days a week; 15- to 30-minute headways
19	Parliament ↔ St. Laurent	All day service, seven days a week; 30-minute headways
20	Vanier ↔ St. Laurent	All day service, seven days a week; 30- to 60-minute headways

2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa at Beechwood Avenue/Springfield Road have been used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at that intersection. The counts were completed on March 26, 2019 (for vehicle and pedestrian volumes) and June 28, 2022 (for cyclist volumes, as this count occurred in the summer).

The traffic count data discussed is included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 4**.

Figure 4: Existing Traffic Volumes



Based on the traffic count data obtained, the average annual daily traffic (AADT) of the boundary streets can be summarized as follows:

- Beechwood Avenue: 16,550 vehicles per day;
- Springfield Road: 5,280 vehicles per day.

2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *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, 2016 to December 31, 2020 is summarized in **Table 3**.

Table 3: Reported Collisions

Intersection or Segment	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Movement	SMV[1]/ Other	
Beechwood Ave/ Springfield Rd	-	1	6	2	1	1	**11**
Beechwood Ave/ Douglas Ave/Loyer St	-	1	-	-	-	-	**1**
Beechwood Ave btwn Springfield Rd & Douglas Ave	-	-	-	-	-	-	**0**
Springfield Rd btwn Beechwood Ave & Bertrand St	-	-	-	-	-	2	**2**
Douglas Ave btwn Beechwood Ave & Putman Ave	-	-	-	-	-	5	**5**

1. SMV = Single Motor Vehicle

Beechwood Avenue/Springfield Road
A total of 11 collisions were reported at this intersection over the last five years, of which there were one angle impact, six rear-end impacts, two sideswipe impacts, one turning movement impact, and one single vehicle/other impact. Three of the collisions resulted in injuries, but none caused fatalities. Five of the collisions occurred in poor driving conditions. One collision involved a pedestrian, and one involved a cyclist.

Of the six rear-end impacts, one involved eastbound vehicles, and five involved westbound vehicles. Four of the six rear-end impacts occurred in poor driving conditions. The single vehicle impact involved a northbound right turning vehicle failing to yield right-of-way to a pedestrian. This impact resulted in non-fatal injuries.

Beechwood Avenue/Douglas Avenue/Loyer Street
One angle impact was reported at this intersection over the last five years. The collision resulted in injuries and occurred in fair driving conditions. The collision did not involve pedestrians or cyclists.

Springfield Road between Beechwood Avenue and Bertrand Street
Two single vehicle/other impacts were reported along this segment over the last five years. Neither collision resulted in injuries, or involved pedestrians or cyclists. One collision occurred in poor driving conditions.

Douglas Avenue between Beechwood Avenue and Putman Avenue
Five single vehicle/other impacts were reported along this segment over the last five years. No collisions resulted in injuries, or involved pedestrians or cyclists. One collision occurred in poor driving conditions.

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

In the City's 2013 Transportation Master Plan (TMP), the 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network and 2031 RTTP Network Concept identifies the Beechwood Avenue-Hemlock Road corridor as a Transit Priority Corridor with Isolated Measures. Transit signal priority measures will be implemented at select intersections between Vanier Parkway and St. Laurent Boulevard. Additionally, parking lanes in the immediate vicinity of select intersections may be converted for the use of transit vehicles.

The Lindenlea-Vanier Neighbourhood Bikeway project will include shared use lanes on Princess Avenue, Lisgar Road, Rideau Terrace, Corona Avenue, Marier Avenue, Pères Blancs Avenue, Granville Street, Lafontaine Avenue, Carmen Avenue, Eve Street, Fullerton Avenue, Lola Street, Pauline Charron Place, Dunbarton Court, and Brittany Drive. Additionally, cycle tracks on Beechwood Avenue in both directions are ultimately planned by the City, between Vanier Parkway and the Beechwood National Cemetery. The 2019 reference design plan (RMA-2019-TPC-037) for this project is included in **Appendix F**.

Per the City's 2023 TMP update, the Active Transportation Project List includes a cycling infrastructure project on Beechwood Avenue adjacent to the proposed development, which will 'convert three short segments of Beechwood Avenue bike lanes to parking-protected cycling facilities.'

It is anticipated that Beechwood Avenue will be resurfaced in the next three to five years, and may provide opportunities to implement some of the planned improvements listed above.

2.2.2 Other Area Developments

A review of the City's Development Application Search Tool has been conducted, to determine if there are other developments in the vicinity of the subject site that are under construction, approved, or are in the approval process. It is noted that there are multiple development applications in proximity of the subject site, but they are generally not significant enough to require a transportation study. The following development applications included work conducted by a transportation consultant:

78-92 Beechwood Avenue and 69-93 Barrette Street
The development includes 229 apartment units and 6,135 ft^2 of ground-floor commercial space. A TIA and technical memorandum were prepared by IBI Group in July and December 2020, respectively, estimating that the development would generate approximately 74 new two-way vehicle trips during the AM peak hour and 89 new two-way vehicle trips during the PM peak hour. This development is currently under construction, and includes improvements to the south side of Beechwood Avenue between Loyer Avenue and St. Charles Street. Excerpts of the TIA plus the approved pavement markings and signage plan for this section of Beechwood Avenue is included in **Appendix G**.

89-97 Beechwood Avenue
The development includes 93 apartment units and two live/work units on the ground floor (approximately 1,400 m^2 each). A TIA was prepared in June 2020 and revised in August 2021, estimating that the development would generate approximately 27 new two-way vehicle trips during the AM peak hour and 29 new two-way vehicle trips during the PM peak hour. This development is now approved.

200 Baribeau Street
The proposed development includes 92 townhomes, replacing a one-storey building operating as an elementary school, mosque, and community centre. A technical memorandum was prepared by Novatech in August 2020, and outlined that the proposed townhomes are projected to generate fewer trips than the previous development. Therefore, no TIA was required.

229-247 Beechwood Avenue
The proposed development includes two apartment buildings and a total of 94 dwellings, replacing five low-rise residential buildings. A TIA was prepared by EXP in February 2022, but the scope of the study was limited to review the on-site design, and did not include any site-generated traffic projections.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Beechwood Avenue, Springfield Road, and Douglas Avenue, as well as the intersection at Beechwood Avenue/Springfield Road.

The time periods considered in this TIA are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The TIA will consider the buildout year 2024 and horizon year 2029.

2.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the *2017 TIA Guidelines*. The applicable exemptions for this site are shown in **Table 4**.

Table 4: TIA Exemptions

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

Module	Element	Exemption Criteria	Status
4.7 Transit	*4.7.1* Transit Route Capacity	• Required when proposed development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	• Required when proposed development generates more than 75 vehicle trips	Exempt
4.8 Network Concept	*All elements*	• Required when proposed development generates more than 200 person trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt
4.9 Intersection Design	*All elements*	• Required when proposed development generates more than 75 vehicle trips	Exempt

Based on the foregoing, the following modules are included in the TIA report:

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

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

Existing Trip Generation

The gross floor area of the various land uses, as well as the number of upper-floor dwellings, has been estimated using street-level or aerial photography. It is estimated that the existing development consists of five dwellings, 1,460 ft^2 GFA of office space, 2,850 ft^2 GFA of retail space, a 4,720 ft^2 fine-dining restaurant, and a 1,460 ft^2 high-turnover restaurant.

The number of peak hour trips generated by the existing residences has been estimated using the trip generation rates outlined in the *TRANS Trip Generation Manual Summary Report* (prepared in October 2020 by WSP), corresponding to the Low-Rise Multifamily Housing (one or two storeys) land use and the Ottawa East district. Per the *TRANS Trip Generation Manual*, the observed mode shares for Low-Rise Multifamily Housing in Ottawa East can be summarized as follows:

- Auto Driver: 36% in AM peak hour, 39% in PM peak hour;
- Auto Passenger: 11% in AM peak hour, 16% in PM peak hour;
- Transit: 38% in AM peak hour, 29% in PM peak hour;
- Cyclist: 7% in AM peak hour, 5% in PM peak hour;
- Pedestrian: 8% in AM peak hour, 11% in PM peak hour.

The assumed mode shares for the existing residences are a blend of the mode shares above, and can be summarized as 40% driver, 10% passenger, 35% transit, 5% cyclist, and 10% pedestrian.

The process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed dwellings for the AM and PM peak periods are shown in **Table 5**. A breakdown of these trips by mode share is shown in **Table 6**.

Table 5: Existing Residential – Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
Low-Rise Multifamily Housing	AM: 1.35 PM: 1.58	5	2	5	*7*	4	4	*8*

1. ppp: Person Trips per Peak Period

Table 6: Existing Residential – Peak Period Trips by Mode Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**2**	**5**	***7***	**4**	**4**	***8***
Auto Driver	40%	1	1	*2*	2	1	*3*
Auto Passenger	10%	-	1	*1*	-	1	*1*
Transit	35%	1	1	*2*	1	1	*2*
Cyclist	5%	-	1	*1*	1	-	*1*
Pedestrian	10%	-	1	*1*	-	1	*1*

Table 4 of the *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 7**.

Table 7: Existing Residential – Peak Hour Trips by Mode Share

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Auto Driver	0.48	0.44	-	1	*1*	1	1	*2*
Auto Passenger	0.48	0.44	-	-	*0*	-	-	*0*
Transit	0.55	0.47	-	1	*1*	1	1	*2*
Cyclist	0.58	0.48	-	-	*0*	-	-	*0*
Pedestrian	0.58	0.52	-	-	*0*	-	-	*0*
Peak Hour Person Trips			**0**	**2**	***2***	**2**	**2**	***4***

The number of peak hour trips generated by the various commercial uses has been estimated based on the trip generation rates outlined in the *ITE Trip Generation Manual, 11th Edition*, corresponding to the Small Office Building (code 712), Strip Retail Plaza (code 822), Fine Dining Restaurant (code 931), and High-Turnover Restaurant (code 932) land uses. Trips estimated using the *ITE Trip Generation Manual* have been converted to person trips using an adjustment factor of 1.28, consistent with the City's *2017 TIA Guidelines*.

The estimated number of person trips generated by the existing convenience store are shown in **Table 8**.

Table 8: Existing Commercial – Peak Hour Trip Generation

Land Use	ITE Code	GFA	AM Peak Hour (pph[1])			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Small Office Building	712	1,460 ft²	3	-	*3*	1	3	*4*
Strip Retail Plaza (<40,000 ft² GFA)	822	2,850 ft²	5	4	*9*	12	12	*24*
Fine Dining Restaurant	931	4,720 ft²	-	-	*0*	31	16	*47*
High-Turnover (Sit-Down) Restaurant	932	1,460 ft²	10	8	*18*	10	7	*17*
		Total	**18**	**12**	***30***	**54**	**38**	***92***

1. pph: Person Trips per Hour

The *TRANS Trip Generation Manual* includes data to estimate the mode shares for commercial trip generators, based on the district. The observed commercial mode shares for the Ottawa East district can be summarized as follows:

- Auto Driver: 57% in AM peak hour, 55% in PM peak hour;
- Auto Passenger: 10% in AM peak hour, 18% in PM peak hour;
- Transit: 15% in AM peak hour, 11% in PM peak hour;
- Cyclist: 1% in AM peak hour, 1% in PM peak hour;
- Pedestrian: 17% in AM peak hour, 15% in PM peak hour.

The assumed mode shares for the existing commercial uses are a blend of the mode shares above, and can be summarized as 55% driver, 15% passenger, 10% transit, 5% cyclist, and 15% pedestrian. A breakdown of the existing site-generated trips by mode share (including the residential peak hour trips shown in **Table 7**) is included in **Table 9**.

Table 9: Existing Development – Peak Hour Trips by Mode Share

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**0**	**2**	***2***	**2**	**2**	***4***
Auto Driver	40%	-	1	*1*	1	1	*2*
Auto Passenger	10%	-	-	*0*	-	-	*0*
Transit	35%	-	1	*1*	1	1	*2*
Cyclist	5%	-	-	*0*	-	-	*0*
Pedestrian	10%	-	-	*0*	-	-	*0*
Commercial Person Trips		**18**	**12**	***30***	**54**	**38**	***92***
Auto Driver	55%	10	6	*16*	30	21	*51*
Auto Passenger	15%	2	3	*5*	8	6	*14*
Transit	10%	2	1	*3*	5	4	*9*
Cyclist	5%	1	-	*1*	3	1	*4*
Pedestrian	15%	3	2	*5*	8	6	*14*
Total Person Trips		**18**	**14**	***32***	**56**	**40**	***96***
Auto Driver		10	7	*17*	31	22	*53*
Auto Passenger		2	3	*5*	8	6	*14*
Transit		2	2	*4*	6	5	*11*
Cyclist		1	-	*1*	3	1	*4*
Pedestrian		3	2	*5*	8	6	*14*

From the previous table, the existing development is estimated to generate 32 person trips (including 17 vehicle trips) during the AM peak hour, and 96 person trips (including 53 vehicle trips) during the PM peak hour.

Proposed Trip Generation

The proposed development will include 123 apartment dwellings and approximately 5,932 ft^2 GFA of ground-floor retail.

The number of peak hour trips generated by the proposed residences has been estimated using the trip generation rates outlined in the *TRANS Trip Generation Manual*, corresponding to the High-Rise Multifamily Housing (three or more storeys) land use and Ottawa East district. The mode shares for the proposed residences are assumed to equal the assumed mode shares for the existing residences (i.e. 40% driver, 10% passenger, 35% transit, 5% cyclist, and 10% pedestrian).

The process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed dwellings for the AM and PM peak periods are shown in **Table 10**. A breakdown of these trips by mode share is shown in **Table 11**.

Table 10: Proposed Residential – Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	123	30	67	*97*	63	46	*109*

1. ppp: Person Trips per Peak Period

Table 11: Proposed Residential – Peak Period Trips by Mode Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**30**	**67**	***97***	**63**	**46**	***109***
Auto Driver	40%	12	27	*39*	26	18	*44*
Auto Passenger	10%	3	7	*10*	6	5	*11*
Transit	35%	11	23	*34*	22	16	*38*
Cyclist	5%	1	4	*5*	3	2	*5*
Pedestrian	10%	3	6	*9*	6	5	*11*

Table 4 of the *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 12**.

Table 12: Proposed Residential – Peak Hour Trips by Mode Share

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Auto Driver	0.48	0.44	6	13	*19*	11	8	*19*
Auto Passenger	0.48	0.44	1	3	*4*	3	2	*5*
Transit	0.55	0.47	6	13	*19*	10	8	*18*
Cyclist	0.58	0.48	1	2	*3*	2	1	*3*
Pedestrian	0.58	0.52	2	4	*6*	3	2	*5*
Peak Hour Person Trips			**16**	**35**	***51***	**29**	**21**	***50***

The number of peak hour trips generated by the proposed commercial units has been estimated based on the trip generation rates outlined in the *ITE Trip Generation Manual, 11th Edition*, corresponding to the Strip Retail Plaza (code 822) land use. Trips estimated using the *ITE Trip Generation Manual* have been converted to person trips using an adjustment factor of 1.28, consistent with the City's *2017 TIA Guidelines*.

The estimated number of person trips generated by the proposed commercial units are shown in **Table 13**.

Table 13: Proposed Commercial – Peak Hour Trip Generation

Land Use	ITE Code	GFA	AM Peak Hour (pph)			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Strip Retail Plaza	822	5,932 ft^2	11	7	*18*	25	24	*49*

1. pph: Person Trips per Hour

The assumed mode shares for the proposed commercial uses match the assumed mode shares for the existing commercial uses (i.e. 55% driver, 15% passenger, 10% transit, 5% cyclist, and 15% pedestrian).

A breakdown of the proposed site-generated trips by mode share (including the residential peak hour trips shown in **Table 12**) is included in **Table 14**.

Table 14: Proposed Development – Peak Hour Trips by Mode Share

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**16**	**35**	***51***	**29**	**21**	***50***
Auto Driver	40%	6	13	*19*	11	8	*19*
Auto Passenger	10%	1	3	*4*	3	2	*5*
Transit	35%	6	13	*19*	10	8	*18*
Cyclist	5%	1	2	*3*	2	1	*3*
Pedestrian	10%	2	4	*6*	3	2	*5*
Commercial Person Trips		**11**	**7**	***18***	**25**	**24**	***49***
Auto Driver	55%	6	3	*9*	13	12	*25*
Auto Passenger	15%	2	1	*3*	4	4	*8*
Transit	10%	1	1	*2*	2	3	*5*
Cyclist	5%	-	1	*1*	2	1	*3*
Pedestrian	15%	2	1	*3*	4	4	*8*
Total Person Trips		**27**	**42**	***69***	**54**	**45**	***99***
Auto Driver		12	16	*28*	24	20	*44*
Auto Passenger		3	4	*7*	7	6	*13*
Transit		7	14	*21*	12	11	*23*
Cyclist		1	3	*4*	4	2	*6*
Pedestrian		4	5	*9*	7	6	*13*

From the previous table, the proposed development is estimated to generate 69 person trips (including 28 vehicle trips) during the AM peak hour, and 99 person trips (including 44 vehicle trips) during the PM peak hour.

For the purposes of this TIA, it is assumed that all trips generated by the existing and proposed developments are external (i.e. no on-site residents will travel to/from the commercial uses during the peak hours). Additionally, the existing and proposed commercial uses are not assumed to generate any pass-by trips.

Net Trip Generation
The net traffic generated by the proposed development (calculated by subtracting the existing trips from the proposed trips) is shown in **Table 15**.

Table 15: Net Peak Hour Trips by Mode Share

Travel Mode	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOT	IN	OUT	TOT
Existing Person Trips	**18**	**14**	***32***	**56**	**40**	***96***
Auto Driver	10	7	*17*	31	22	*53*
Auto Passenger	2	3	*5*	8	6	*14*
Transit	2	2	*4*	6	5	*11*
Cyclist	1	-	*1*	3	1	*4*
Pedestrian	3	2	*5*	8	6	*14*
Proposed Person Trips	**27**	**42**	***69***	**54**	**45**	***99***
Auto Driver	12	16	*28*	24	20	*44*
Auto Passenger	3	4	*7*	7	6	*13*
Transit	7	14	*21*	12	11	*23*
Cyclist	1	3	*4*	4	2	*6*
Pedestrian	4	5	*9*	7	6	*13*
Net Person Trips	**9**	**28**	***37***	**-2**	**5**	***3***
Auto Driver	2	9	*11*	-7	-2	*-9*
Auto Passenger	1	1	*2*	-1	-	*-1*
Transit	5	12	*17*	6	6	*12*
Cyclist	-	3	*3*	1	1	*2*
Pedestrian	1	3	*4*	-1	-	*-1*

From the previous table, the proposed development is estimated to generate a net additional 37 person trips (including 11 additional vehicle trips) during the AM peak hour, and three net additional person trips (but nine fewer vehicle trips) during the PM peak hour.

3.1.2 Trip Distribution and Assignment

The proposed development is not projected to generate a net additional 60 person trips during the peak hours, and therefore the Trip Generation trigger is not met. Therefore, the distribution and assignment of site-generated trips is exempt from this TIA.

3.2 Background Traffic

3.2.1 General Background Growth Rate

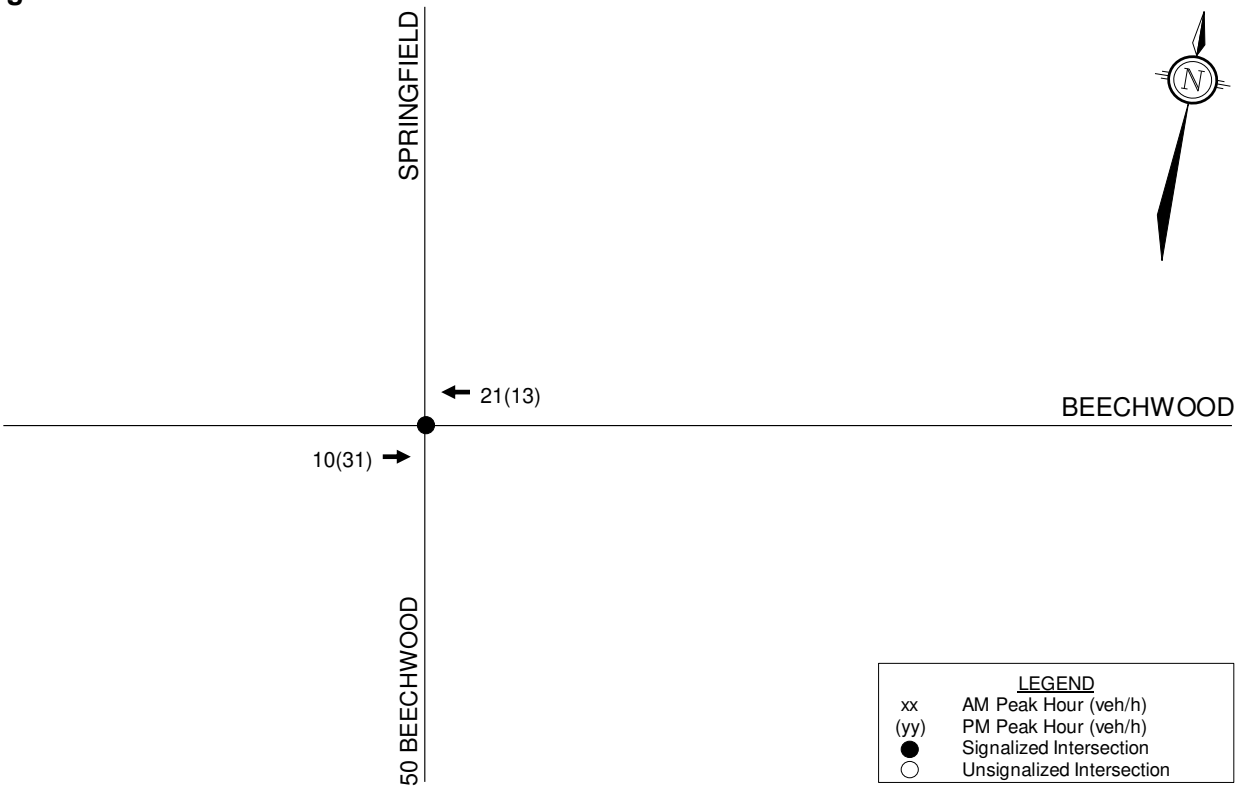
A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix H**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* generally suggests negative or negligible growth on Beechwood Avenue. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering select intersections, identify annual peak hour growth rates of -0.2% to -2.0% at Beechwood Avenue/Springfield Road between 2000 and 2016.

For the purposes of this study, no annual background growth rate has been applied to the existing traffic volumes.

3.2.2 Other Area Developments

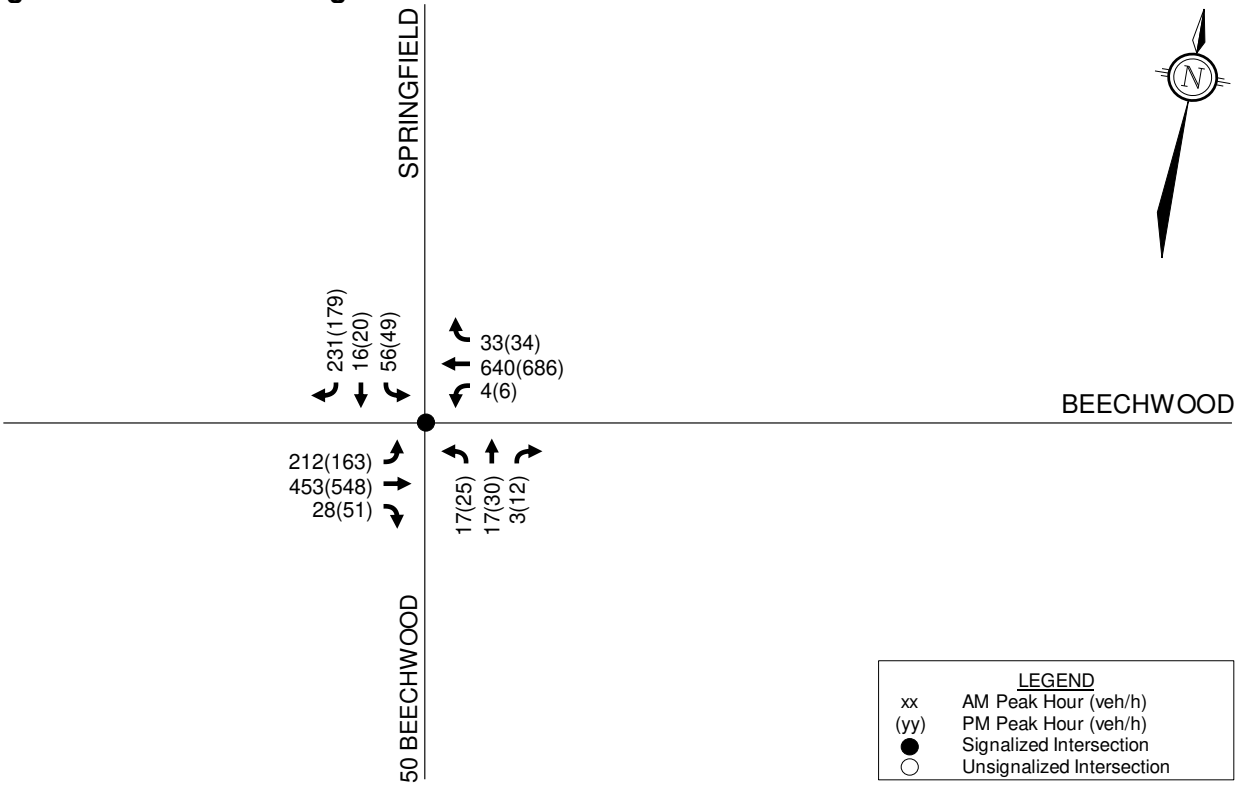
Of the developments discussed in Section 2.2.2, only the development at 78-92 Beechwood Avenue and 69-93 Barrette Street was significant enough to include the distribution of site-generated traffic to the roadway network, in both the 2024 and 2029 background conditions. At the intersection of Beechwood Avenue/Springfield Road, the TIA prepared by IBI Group estimated that the site would generate an additional 31 vehicle trips during the AM peak hour and an additional 44 vehicle trips during the PM peak hour. This is shown in **Figure 5**.

Figure 5: 78-92 Beechwood Avenue and 69-93 Barrette Street Traffic Volumes



The 2024 and 2029 background traffic volumes are assumed to equal the existing traffic volumes shown in **Figure 4**, plus the other area development traffic shown in **Figure 5**. The 2024/2029 background traffic volumes are shown in **Figure 6**.

Figure 6: 2024/2029 Background Traffic Volumes



3.3 Demand Rationalization

Based on the City's *2017 TIA Guidelines*, the Demand Rationalization module includes identifying any locations and approaches where total auto demand is projected to exceed capacity, and what reduction in peak hour volumes are required for demand to meet capacity. However, determining whether any approach has volumes that exceed capacity requires intersection analysis. Since the Trip Generation Trigger has not been met, all Network Impacts modules (including intersection analysis) are outside the scope of this study.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Pedestrian walkways will connect all building entrances to the existing sidewalks on Beechwood Avenue, Springfield Road, or Douglas Avenue.

A total of 128 bicycle parking spaces are proposed for residents, with 106 spaces in a secure room on the ground floor, and 18 spaces in the parking garage. Cyclists will be able to enter/exit the secure room via Douglas Avenue. A total of four exterior bicycle parking spaces are proposed for the retail units, and will be located at the southeast and southwest corners of the subject site. A review of the minimum requirements per the ZBL is included in Section 4.2.

The nearest bus stops to the subject site are discussed in Section 2.1.6 and shown in **Figure 3**. OC Transpo's service design guidelines for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. The subject site is within 400m walking distance of stops that are served by OC Routes 6, 7, 9, 19, and 20. As shown on the proposed site plan, the proposed development will maintain the location of the existing stop #8788, which is located on the east side of Springfield Road, north of Beechwood Avenue. Per a comment from City staff, articulated bus (ABUS) and single-unit bus (B12) movements have been prepared to confirm that buses turning from Beechwood Avenue onto Springfield Road can place all doors within 300m of the curb at stop #8788. These movements are shown in **Figure 7** and **Figure 8**.

A review of the City's *Transportation Demand Management (TDM) Supportive Development Design and Infrastructure Checklists* has been conducted. Any required TDM supportive design and infrastructure measures in the TDM checklist for residential and non-residential developments have been met. A copy of the checklists are included in **Appendix I**. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined in the checklists.

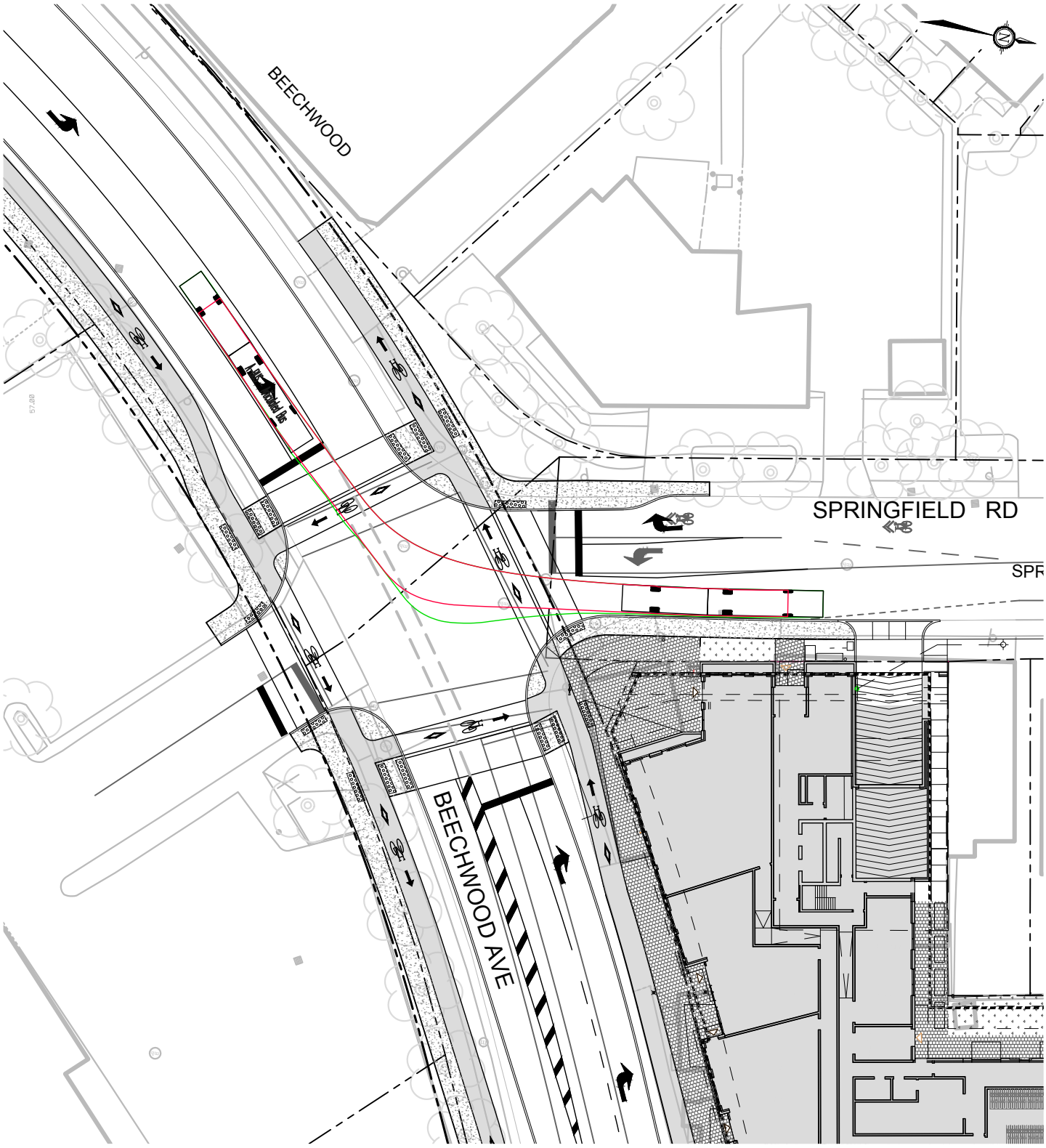
- Locate building close to the street, and do not locate parking areas between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Locate building doors and windows to ensure visibility of pedestrians from the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

4.1.2 Circulation and Access

Garbage will be collected in ground-floor commercial and residential garbage rooms, and will be wheeled out to be collected curbside on Douglas Avenue. Moving and delivery activities will also be accommodated curbside.

Pedestrian access to the secure bike room, residential garbage room, and move-in room will be provided via Douglas Avenue at the north limit of the subject site. This will not be used by vehicles.

There is no on-site fire route proposed for this development. Fire trucks responding to any calls from the proposed development will park curbside on Beechwood Avenue (i.e. where the main retail entrances are located), Springfield Road (i.e. where the main residential entrance is located), or Douglas Avenue.



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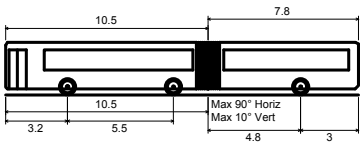

A-BUS - Articulated Bus

Overall Length	18.300m
Overall Width	2.400m
Overall Body Height	2.733m
Min Body Ground Clearance	0.320m
Track Width	2.400m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	13.100m

47 BEECHWOOD AVENUE

TURNING MOVEMENT (A-BUS)

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

DATE MAY 2024 | JOB 122186 | FIGURE FIGURE 7

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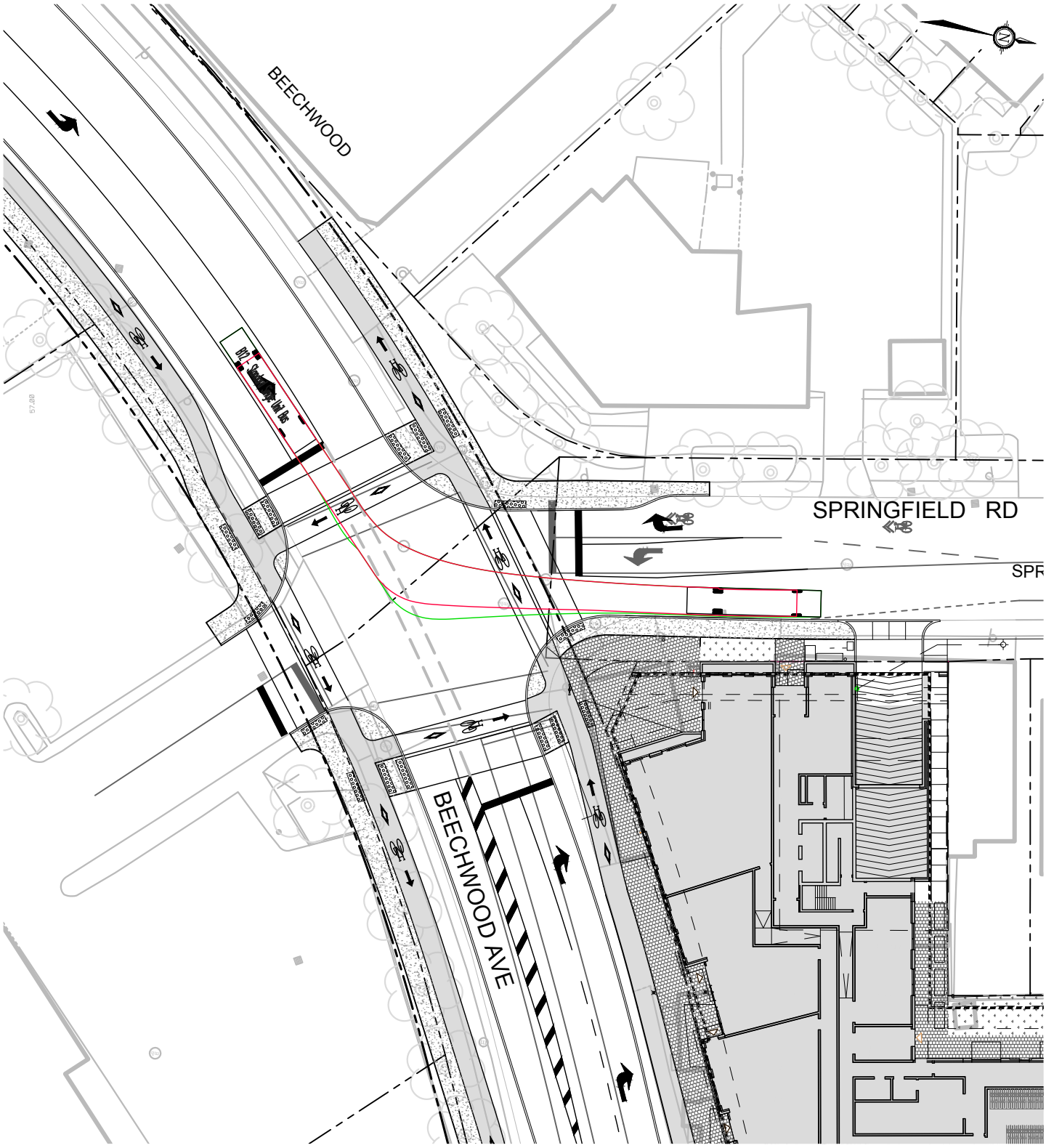

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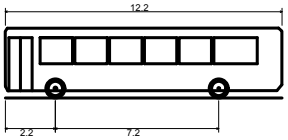

B12 - Standard Single Unit Bus

Overall Length	12.200m
Overall Width	2.400m
Overall Body Height	3.084m
Min Body Ground Clearance	0.319m
Track Width	2.400m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.900m

47 BEECHWOOD AVENUE

TURNING MOVEMENT (B12)

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

DATE MAY 2024 | JOB 122186 | FIGURE FIGURE 8

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4.2 Parking

The subject site is located in Area B of Schedule 1 and Area Y of Schedule 1A of the City's ZBL. Minimum vehicle parking rates, accessible parking rates, bicycle parking rates, and loading space rates for the proposed development are identified in Section 101, 102, 111, and 113 of the ZBL, and the City's *Accessibility Design Standards*. The parking requirements and proposed parking supply for these different criteria are summarized in **Table 16**.

Table 16: Required and Proposed Parking

Land Use	Rate	Units	Required	Provided
Minimum Vehicle Parking				
Dwelling, Mixed-Use	Resident: 0.5 spaces per dwelling unit after the first 12 units, and reduced by 10% as all parking is below grade	123 units	50	30
	Visitor: 0.1 spaces per dwelling unit after the first 12 units		11	11
Retail Store	1.25 per 100 m^2 GFA	551 m^2	7	7
		Total	**68**	**48**
Minimum Accessible Parking				
-	1 space required when 13 to 25 spaces are provided (only the required visitor and retail spaces are considered)	18 spaces	1	1
Minimum Bicycle Parking				
Dwelling, Mixed-Use	0.5 spaces per dwelling unit	123 units	62	124
Retail Store	1.0 space per 250 m^2 GFA	551 m^2	2	4
		Total	**64**	**128**
Minimum Loading Spaces				
Retail Store	0 spaces required when GFA is less than 1,000 m^2	551 m^2	0	0

Based on the previous table, the proposed development will meet the minimum bicycle parking requirements outlined in the ZBL. The proposed number of vehicle parking spaces is 20 short of the requirement, and relief from the zoning by-law will be required. The overall parking supply is approximately 71% of the minimum requirement.

Section 111(12) of the ZBL identifies that, where the number of bicycle parking spaces required for a single residential building exceeds 50 spaces, a minimum of 25% of the required total must be located within a building or structure, a secure area, or bicycle lockers. This requirement is met, as all bicycle parking spaces for residents will be provided in a secure area on the ground floor or within the parking garage.

4.3 Boundary Streets

This section provides a review of the boundary streets Beechwood Avenue, Springfield Road, and Douglas Avenue, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines* produced by IBI Group in October 2015 were used to evaluate the levels of service for the boundary roadways for each mode of transportation, based on existing conditions. Targets for the pedestrian level of service (PLOS), bicycle level of service (BLOS), transit level of service (TLOS), and truck level of service (TkLOS) are based on the targets for roadways within 300m of a school (when evaluating Beechwood Avenue and Springfield Road), and the targets for roadways within the General Urban Area (when evaluating Douglas Avenue).

A summary of the MMLOS review is included in **Table 17**, and the detailed MMLOS review is included in **Appendix J**.

Table 17: Segment MMLOS Summary

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Beechwood Avenue	**E**	A	**D**	A	**F**	D	C	E
Springfield Road	**F**	A	**F**	B	F	-	C	-
Douglas Avenue	**F**	C	**F**	D	-	-	B	-

Based on the results of the segment MMLOS analysis:

- No boundary streets meet the target PLOS;
- No boundary streets meet the target BLOS;
- Beechwood Avenue does not meet the target TLOS;
- Beechwood Avenue meets the target TkLOS.

Pedestrian Level of Service

Both sides of Beechwood Avenue include sidewalks with an approximate width of 1.5m and a minimum boulevard width between 0.5m and 2.0m. Based on Exhibit 4 of the *MMLOS Guidelines*, a PLOS C can be achieved if sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m, improving to the target PLOS B if on-street parking is provided. These represent the best-possible levels of service without reducing the operating speed of Beechwood Avenue to 50 km/h (i.e. reducing the speed limit to 40 km/h). Based on the future cycle tracks on Beechwood Avenue, sidewalks with a width of greater than 2.0m and 2.0m-wide cycle tracks are planned. This will be constructed between Springfield Road and Douglas Avenue as part of construction of the proposed development. The cycle tracks will act as a boulevard for pedestrians between the sidewalk and roadway, and this design will therefore achieve a BLOS C.

Sidewalks with an approximate width of 1.5m are provided on both sides of Springfield Road. Based on Exhibit 4 of the *MMLOS Guidelines*, the target PLOS A can be achieved by providing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 0.5m. This is identified for the City's consideration.

Sidewalks are provided on both sides of Douglas Avenue, with an approximate width of 1.5m on the east side and 2.0m on the west side. The west sidewalk meets the target PLOS C. Based on Exhibit 4 of the *MMLOS Guidelines*, the east sidewalk can meet the target PLOS C with a minimum width of 1.8m and no boulevard. This is identified for the City's consideration.

Bicycle Level of Service

Beechwood Avenue currently has bike lanes in each direction within the study area. Between Springfield Road and Douglas Avenue, the eastbound bike lane is curbside, and the westbound bike lane is adjacent to a parking lane along the subject site's frontage. Based on Exhibit 11 of the *MMLOS Guidelines*, Beechwood Avenue can achieve the target BLOS A by implementing physically separated bikeways. Therefore, the planned cycle tracks on Beechwood Avenue will achieve the target.

Springfield Road has recently been resurfaced, with a northbound bike lane implemented between Maple Lane and approximately 40m north of Beechwood Avenue. Based on Exhibit 11 of the *MMLOS Guidelines*, the target BLOS B can be met for the entire roadway by implementing curbside bike lanes and reducing the operating speed to 50 km/h, or by implementing physically separated cycling facilities. This is identified for the City's consideration.

Douglas Avenue does not have any cycling facilities within the study area. Based on Exhibit 11 of the *MMLOS Guidelines*, the target BLOS D can be met by implementing any type of bike lane (i.e. curbside or adjacent to a parking lane). This is identified for the City's consideration.

Transit Level of Service
As noted in Section 2.2.1, the City's 2031 Affordable RTTP Network identifies Beechwood Avenue as a Transit Priority Corridor, with transit signal priority at select intersections between Vanier Parkway and St. Laurent Boulevard, and parking lanes in the immediate vicinity of some intersections may be converted for transit use. It is anticipated that these isolated measures will improve transit operations on Beechwood Avenue.

Integration of Site Plan and Beechwood Avenue Cycle Tracks
Through consultation with City staff, a functional design has been developed for the planned cycle tracks along Beechwood Avenue from Springfield Road to Douglas Avenue (i.e. along the site's frontage). The cycle tracks along this section of Beechwood Avenue will be integrated with the proposed development, so that a portion of the ultimate design can be constructed at the same time as the site plan.

The ultimate functional design of the cycle tracks along this section of Beechwood Avenue, including a protected intersection design at the signalized Beechwood Avenue/Springfield Road intersection, is included in **Appendix K**.

The existing westbound parking lane in front of the subject site will be removed to accommodate the proposed cycle tracks and slight realignment of Beechwood Avenue will be required to accommodate the pedestrian refuge at the protected intersection. This allows pedestrians to cross the cycle tracks and Beechwood Avenue separately. Additional lands at the northeastern corner of Beechwood Avenue/Springfield Road is required to be taken by the City to accommodate the protected intersection.

Pending City review of the ultimate design, an interim design will be developed, which will match the existing conditions at each corner of the subject site.

4.4 Access Design

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

Section 25(a) of the PABL identifies a maximum of one two-way private approach to a given roadway is permitted when a site's frontage is between 20m and 34m to that roadway. This requirement is met, as the subject site has approximately 33m of frontage to Springfield Road.

Section 25(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach, as measured at the street line. This requirement is met, as the proposed access to Springfield Road is approximately 6m at the street line.

Section 107(1)(a)(iii) of the ZBL identifies that a minimum width of 6.0m is required for any double traffic lane and, in the case of a parking garage for apartments, a maximum width of 6.7m is permitted when leading to 20 or more parking spaces. As the proposed access to Springfield Road is 6.0m in width, these requirements are met.

Section 25(m) of the PABL identifies that, when a property abuts or is within 46m of an arterial roadway, there shall be minimum distances between the nearest edge of a private approach and the nearest intersecting street line, and between the nearest edges of any two private approaches to the same property. In the case of apartment buildings with 20 to 99 parking spaces, a minimum of 18m is required between a private approach and the nearest intersecting street line. This requirement is met, as the nearest edge of the proposed access to Springfield Road is approximately 25m north of Beechwood Avenue.

Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. This requirement is not met, as the proposed access to Springfield Road is approximately 2.3m from the northern property line.

Section 25(p) also identifies that the 3.0m minimum can be reduced to as little as 0.3m, provided that the proposed private approach is located a safe distance from the neighbouring property, in a manner that maintains adequate sightlines for vehicles exiting the property, and in a manner that does not create a traffic hazard. It is requested that the proposed access to Springfield Road be approved on this basis.

Section 25(u) of the PABL identifies a requirement that any private approach serving a parking area with less than 50 parking spaces shall not have a grade exceeding 2% to 6% for the first 6m inside the property line. This requirement is met, as the proposed maximum ramp grade within the first 6m is less than 6%.

TAC's *Geometric Design Guide* identifies a minimum corner clearance requirement of 55m for accesses to collector roadways, measuring between the nearest edge of the private approach and the nearest edge of the intersecting roadway. This requirement is not met by the proposed access to Springfield Road, as it is approximately 28m from the nearest edge of Beechwood Avenue. However, the proposed access is located as far from Beechwood Avenue as possible. The proposed access location will impact an existing loading zone on Springfield Road, which is located in front of part of the subject site (5 Springfield Road) and the neighbouring property to the north (13 Springfield Road).

For accesses to collector roadways, TAC's *Geometric Design Guide* recommends that a minimum clear throat length of 15m be provided. Measuring from the edge of Springfield Road to the garage door, 15m of clear throat is proposed to meet this requirement.

TAC's *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 Springfield Road is a straight and generally level roadway between Beechwood Avenue and Putman Avenue, adequate SSD can be provided at the proposed access location. Neighbouring structures are anticipated to limit the left-turning ISD at the Springfield Road access to approximately 96m. The sightlines for the left turn movement is included in **Figure 9**.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development will be constructed in a single phase. The ground-floor retail is proposed to include four retail units, ranging in gross floor areas from approximately 1,260 ft^2 to 2,085 ft^2. A total of 123 dwellings are proposed within the development, consisting of 31 studio units, 50 one-bedroom units, and 42 two-bedroom units.

4.5.2 Need and Opportunity

The subject site is designated as 'Corridor – Mainstreet' on Schedule B2 of the City's Official Plan with an Evolving Neighbourhood overlay, and within the Beechwood Avenue Traditional Main Street DPA. As shown in Section 3.1.1, the peak hour driver shares observed within the Ottawa East district are assumed to be generally similar to the driver shares of the proposed development (40% driver share for residential and 55% driver share for commercial).

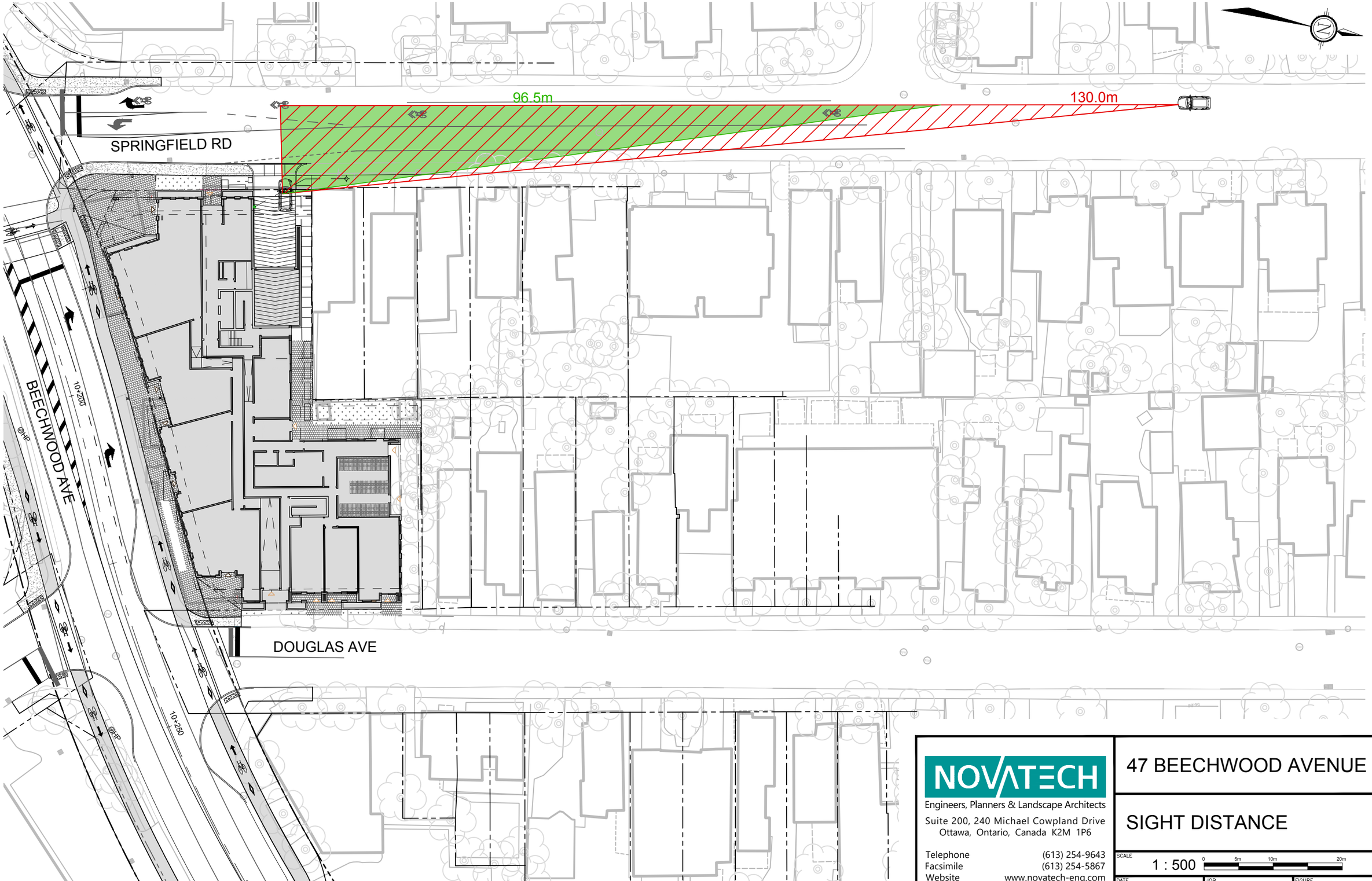
If the proposed development achieved a driver share of 60% during the peak hours, which represents a significant increase in the driver shares compared to the observed driver shares in the area, this would equate to an increase of approximately ten to twelve vehicles during the peak hours.

A failure to meet the mode share targets (included in Section 3.1.1) is not anticipated, as the mode share targets are attainable. The subject site is located within a high-density commercial area, parks, and recreation areas.

4.5.3 TDM Program

A review of the City's *TDM Measures Checklist* has been conducted by the proponent. A copy of the completed residential checklist is included in **Appendix I**. The proponent will consider providing the following TDM measures:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Provide online links to OC Transpo and STO information;
- Provide a multimodal travel option information package to residents/employees;
- Unbundle parking cost from monthly rent.



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Website www.novatech-eng.com

47 BEECHWOOD AVENUE

SIGHT DISTANCE

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

DATE MAY 2024 | JOB 122186 | FIGURE FIGURE 9

SHT11X17.DWG - 279mmX432mm

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5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- The proposed development is estimated to generate a net additional 37 person trips (including 11 additional vehicle trips) during the AM peak hour, and three net additional person trips (but nine fewer vehicle trips) during the PM peak hour.

Development Design and Parking

- Pedestrian walkways will connect all building entrances to the existing sidewalks on Beechwood Avenue, Springfield Road, or Douglas Avenue.

- A total of 128 bicycle parking spaces are proposed for residents, with 106 spaces in a secure room on the ground floor, and 18 spaces in the parking garage. Cyclists will be able to enter/exit the secure room via Douglas Avenue. A total of four exterior bicycle parking spaces are proposed for the retail units, and will be located at the southeast and southwest corners of the subject site.

- The subject site is within 400m walking distance of stops that are served by OC Routes 6, 7, 9, 19, and 20. The proposed development will maintain the location of the existing stop #8788, which is located on the east side of Springfield Road, north of Beechwood Avenue.

- Articulated and single-unit buses turning from Beechwood Avenue onto Springfield Road can place all doors within 300m of the curb at stop #8788.

- A review of the City's *Transportation Demand Management (TDM) Supportive Development Design and Infrastructure Checklists* has been conducted. Any required TDM supportive design and infrastructure measures in the TDM checklist for residential and non-residential developments have been met.

- Garbage will be collected in ground-floor commercial and residential garbage rooms, and will be wheeled out to be collected curbside on Douglas Avenue. Moving and delivery activities will also be accommodated curbside.

- There is no on-site fire route proposed for this development. Fire trucks responding to any calls from the proposed development can park curbside on Beechwood Avenue, Springfield Road, or Douglas Avenue.

- The proposed development will meet the minimum bicycle parking requirements. The overall proposed number of vehicle parking spaces is 20 short of the requirement, and a relief from the zoning by-law will be required.

Boundary Streets

- Based on the results of the segment MMLOS analysis:
  - No boundary streets meet the target pedestrian level of service (PLOS);
  - No boundary streets meet the target bicycle level of service (BLOS);
  - Beechwood Avenue does not meet the target transit level of service (TLOS);
  - Beechwood Avenue meets the target truck level of service (TkLOS).

- Both sides of Beechwood Avenue include sidewalks with an approximate width of 1.5m and a minimum boulevard width between 0.5m and 2.0m. A PLOS C can be achieved if sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m, improving to the target PLOS B if on-street parking is provided. These represent the best-possible levels of service without reducing the operating speed of Beechwood Avenue to 50 km/h (i.e. reducing the speed limit to 40 km/h). Based on the future cycle tracks on Beechwood Avenue, sidewalks with a width of greater than 2.0m and 2.0m-wide cycle tracks are planned. This will be constructed between Springfield Road and Douglas Avenue as part of construction of the proposed development. The cycle tracks will act as a boulevard for pedestrians between the sidewalk and roadway, and this design will therefore achieve a BLOS C.

- Sidewalks with an approximate width of 1.5m are provided on both sides of Springfield Road. The roadway can meet the target PLOS A by providing sidewalks with a minimum width of 2.0m and a boulevard width of 0.5m. This is identified for the City's consideration .

- Sidewalks are provided on both sides of Douglas Avenue, with an approximate width of 1.5m on the east side and 2.0m on the west side. The west sidewalk meets the target PLOS C. The east sidewalk can meet the target PLOS C with a minimum width of 1.8m and no boulevard. This is identified for the City's consideration.

- Beechwood Avenue currently has bike lanes in each direction within the study area. Between Springfield Road and Douglas Avenue, the eastbound bike lane is curbside, and the westbound bike lane is adjacent to a parking lane along the subject site's frontage. Beechwood Avenue can achieve the target BLOS A by implementing physically separated bikeways. Therefore, the planned cycle tracks on Beechwood Avenue will achieve the target.

- Springfield Road has recently been resurfaced, with a northbound bike lane implemented between Maple Lane and approximately 40m north of Beechwood Avenue. Based on Exhibit 11 of the *MMLOS Guidelines*, the target BLOS B can be met for the entire roadway by implementing curbside bike lanes and reducing the operating speed to 50 km/h, or by implementing physically separated cycling facilities. This is identified for the City's consideration.

- Douglas Avenue does not have any cycling facilities within the study area. The target BLOS D can be met by implementing any type of bike lane (i.e. curbside or adjacent to a parking lane). This is identified for the City's consideration.

- The City's 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network identifies Beechwood Avenue as a Transit Priority Corridor, with transit signal priority at select intersections between Vanier Parkway and St. Laurent Boulevard, and parking lanes in the immediate vicinity of some intersections may be converted for transit use. It is anticipated that these isolated measures will improve transit operations on Beechwood Avenue.

- Through consultation with City staff, a functional design has been developed for the planned cycle tracks along Beechwood Avenue from Springfield Road to Douglas Avenue (i.e. along the site's frontage). The cycle tracks along this section of Beechwood Avenue will be integrated with the proposed development, so that both can be constructed at the same time. The existing westbound parking lane in front of the subject site will be removed to accommodate the proposed cycle tracks and slight realignment of Beechwood Avenue will be required to accommodate the pedestrian refuge at the protected intersection. This allows pedestrians to cross the cycle tracks and Beechwood Avenue separately. Additional lands at the northeastern corner of Beechwood Avenue/Springfield Road is required to be taken by the City to accommodate the protected intersection. Pending City review of the ultimate design, an interim design will be developed, which will match the existing conditions at each corner of the subject site.

Access Design

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

- Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. Section 25(p) also identifies that the 3.0m minimum can be reduced to as little as 0.3m, provided that the proposed private approach is located a safe distance from the neighbouring property, in a manner that maintains adequate sightlines for vehicles exiting the property, and in a manner that does not create a traffic hazard. It is requested that the proposed access to Springfield Road be approved on this basis.

- TAC's *Geometric Design Guide* identifies a minimum corner clearance requirement of 55m for accesses to collector roadways, measuring between the nearest edge of the private approach and the nearest edge of the intersecting roadway. This requirement is not met by the proposed access to Springfield Road, as it is approximately 28m from the nearest edge of Beechwood Avenue, but it is located as far from Beechwood Avenue as possible.

- For a design speed of 60 km/h, TAC recommends minimum intersection sight distances of 130m for left-turning vehicles and 110m for right-turning vehicles. Neighbouring structures are anticipated to limit the left-turning sightlines at the proposed access to approximately 96m.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has agreed to consider providing the following TDM measures:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Provide online links to OC Transpo and STO information;
  - Provide a multimodal travel option information package to new residents/employees;
  - Unbundle parking cost from monthly rent.

NOVATECH

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APPENDIX A

Preliminary Site Plan

RESIDENTIAL UNIT COUNT

NAME	LVL 01	LVL 02	LVL 03	LVL 04	LVL 05	LVL 06	LVL 07	TOTAL COUNT	PERCENTAGE
1-BED	2	4	4	4	4	5	6	29	24%
1-BED + DEN	0	5	6	3	3	3	1	21	17%
2-BED	1	5	6	7	7	6	7	39	32%
DOUBLE HEIGHT UNIT 1 (2-BED)	0	0	0	0	0	0	1	1	1%
DOUBLE HEIGHT UNIT 2 (2-BED)	0	0	0	0	0	0	1	1	1%
DOUBLE HEIGHT UNIT 3 (2-BED)	0	0	0	0	0	0	1	1	1%
STUDIO	0	5	5	6	6	6	3	31	25%
TOTAL	3	19	21	20	20	20	20	123	100%

RETAIL UNIT LIST

NUMBER	UNIT TYPE	AREA	AREA (SF)
C1	COMMERCIAL UNIT 1	193.73 m²	2085 SF
C2	COMMERCIAL UNIT 2	121.00 m²	1302 SF
C3	COMMERCIAL UNIT 3	119.24 m²	1283 SF
C4	COMMERCIAL UNIT 4	116.84 m²	1258 SF
TOTAL		550.81 m²	5929 SF

PARKING SCH. (BICYCLE)

LEVEL	COUNT
LEVEL P1	18
LEVEL 1	110
TOTAL	128

PARKING SCH. (VEHICLE)

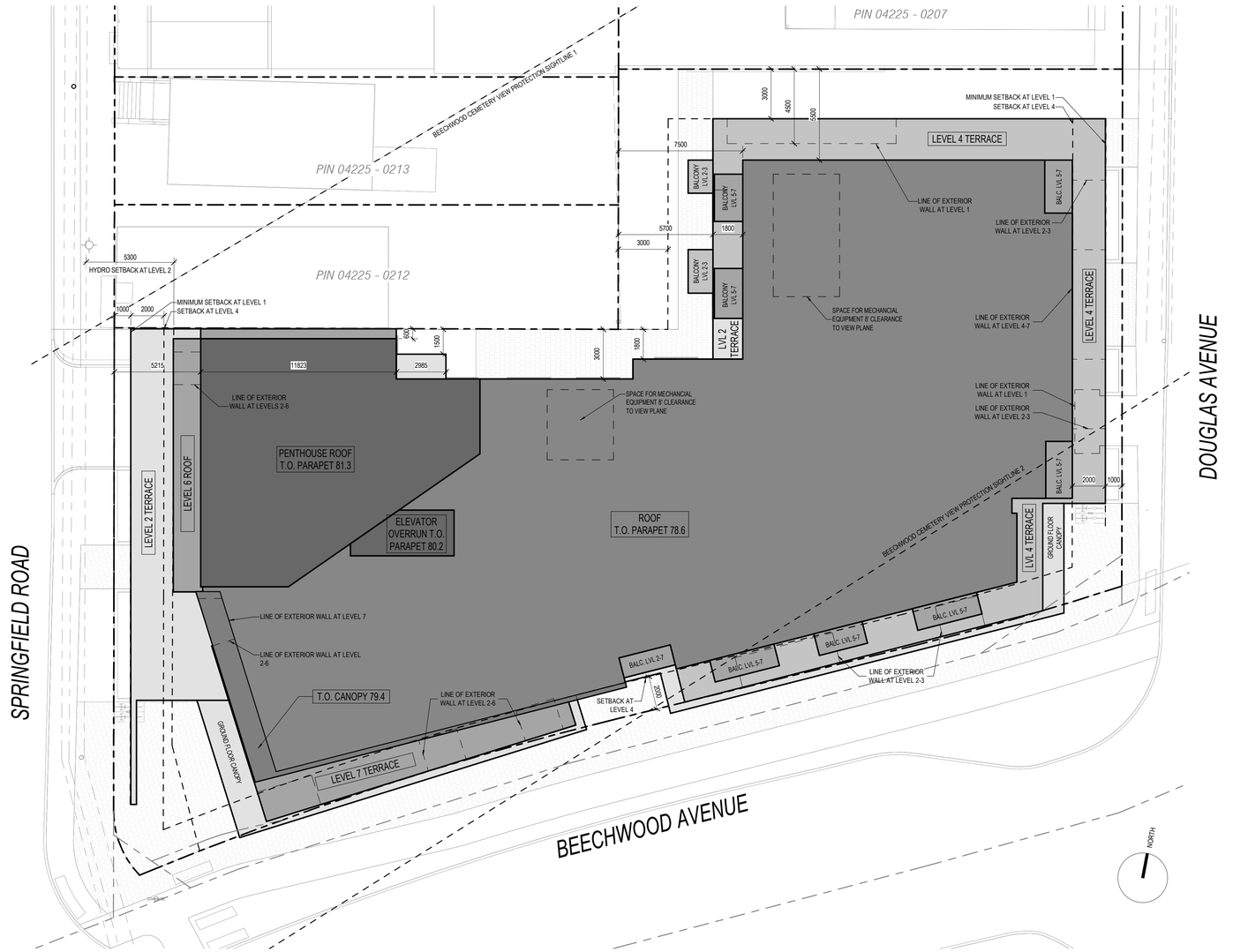
TYPE	COUNT
RESIDENT	30
RETAIL	7
VISITOR	11
TOTAL	48

PART 1 Plan of PART OF LOTS 1, 2, 3 & 4
(NORTH BEECHWOOD AVENUE) LOT 1 AND
PART OF LOT 2 (WEST DOUGLAS AVENUE)
REGISTERED PLAN 74 CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

SURVEY INFO
SCALE: NTS

2 SP-02 LOCATION PLAN
SCALE: NTS



1 SP-02 SITE SETBACK PLAN
SCALE: 1 : 150

Site Statistics	
Current Zoning Designation:	TM8
Lot Width:	61.8m
Total Lot Area:	1930.5m²
Gross Floor Area:	11160m²
Building Area	1520m²
Floor Space Index:	5.78

Proposed Development - 8 Storey Mid-Rise Apartment Building
No. of Units: 123

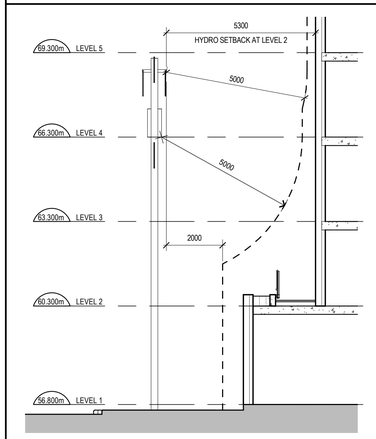
Zoning Mechanism	Required	Provided
Minimum Lot Area *Table 197(a)*	No Minimum	1930.5m²
Minimum Lot Width *Table 197(b)*	No Minimum	32m
Front Yard Setback *197(8)(b)(i)*	0m for the first 3 storeys 2m above third storey	0m (first 3 storeys) 2m (above sixth storey)
Corner Side Yard Setback *197(8)(b)(ii)*	Min. 1m, Max 3m for the first 3 storeys 2m more above third storey	1m (first 3 storeys) 2m greater than storeys 1-3
Rear Yard Setback *197(8)(b)(iii)*	where abutting a residential zone, - 5 metres for the first three storeys except in the case of corner or through lots 20 metres or greater in width, where setback is 3 metres for up to half the lot width measured from the corner side lot line and 7.5 metres for the remaining portion of the lot width - 7.5 metres above the third storey	3m (first three storeys) 5.5m (above third storey)
Max. Interior Side Yard Setback *Table 197(d)(i) (abutting residential zone) - East side*	Min. 3 metres for a non-residential use building or a mixed-use building abutting a residential zone	3m
Min. Interior Side Yard Setback *Table 197(d)(ii) (abutting mixed-use zone) - West side*	No minimum	0m on Springfield
Minimum Building Height *Table 197(g)(i)*	6.7 metres for a distance of 20 metres from the front lot line as set out under subsection 197(5)	24.4m
Maximum Building Height *Table 197(g)(ii)(1)*	20m / 6 storeys Add. setback of 2m where building greater than 4 stor.	24.4m / 8 storeys Additional 2m setback provided above 6th storey
Angular Plane *Table 197(g)(ii)(2)*	Rear lot line abuts an R3 zone. A 45 degree angular plane is required measured at a height of 15 m from a point 7.5 m from the rear lot line, projecting upwards towards the front lot line.	A 45 degree angular plane is provided measured at a height of **21.7 m** from a point **3.6 m** from the rear lot line.
Minimum Width of Landscaped Area *Table 197(i)*	3m (abbuting a residential zone) All other cases: No Minimum – lot abuts a TM zone	0m (rear lot line) 1.5m abutting Interior Side Yard lot lines
Minimum Driveway Width *Table 197(j)*	6m for parking lots with 20 or more parking spaces	6m
Total Amenity Area *Table 137(4)(ii)*	738m² *6m² / unit for 123 units*	880m²
Communal Amenity Area *Table 137(4)(iii)*	369m² *Min. 50% of Total Amenity Area*	375m²
Parking Requirements (Residential)		
Minimum Parking Spaces *101 (Sch. 1A - Area Y)*	50 Spaces *0 spaces for the first 12 units - Section 101(4)(b)* *0.5 spaces / unit for 111 units - Table 101(R15) - 10% Section 101(6)*	30 Spaces
Minimum Visitor Parking Spaces *102 (Sch. 1A - Area Y)*	11 Spaces *0 spaces for first 12 units - Section 102(2)* *0.1 spaces / unit for 111 units - Table 102*	11 Spaces
Parking Requirements (Retail)		
Minimum Parking Spaces *101 (Sch. 1A - Area Y)*	7 Spaces *1.25 space / 100m² x 551m² - Table 101(N79)*	7 Spaces
Bicycle Parking Rates		
Minimum Bicycle Parking Spaces (Residential) *Table 111A (Sch. 1 - Area B)*	62 Spaces *0.5 spaces / unit for 123 units[111A(b)(i)]*	124 Spaces (interior spaces) (106 at grade)
Minimum Bicycle Parking Spaces (Retail) *Table 111A (Sch. 1 - Area B)*	2 Spaces *1 space / 250m² x 551m² [111A(a)]*	4 Spaces (exterior spaces)

AREA SCH. (COMMUNAL AMENITY)

LEVEL	NAME	AREA	AREA (SF)
LEVEL 1	AMENITY - DOG WASH	6.15 m²	66 SF
LEVEL 1	AMENITY ROOM	55.90 m²	602 SF
LEVEL 1	OUTDOOR AMENITY AREA	132.67 m²	1428 SF
LEVEL 2	AMENITY - COMMUNAL TERRACE	42.93 m²	462 SF
LEVEL 2	AMENITY ROOM	137.20 m²	1477 SF
TOTAL		374.84 m²	4035 SF

AREA SCH. (PRIVATE AMENITY)

LEVEL	AREA	AREA (SF)
Not Placed	0.00 m²	0 SF
LEVEL 1	19.87 m²	214 SF
LEVEL 2	54.85 m²	590 SF
LEVEL 3	59.04 m²	635 SF
LEVEL 4	166.78 m²	1795 SF
LEVEL 5	54.87 m²	591 SF
LEVEL 6	54.88 m²	591 SF
LEVEL 7	84.24 m²	907 SF
LEVEL 8	11.08 m²	119 SF
TOTAL	505.61 m²	5442 SF



3 SP-02 HYDRO WIRE SECTION
SCALE: 1 : 100

4 SP-02 VIEW PROTECTION SIGHTLINES
SCALE:

GROSS AREA (OBC)

LEVEL	AREA	AREA (SF)
LEVEL P1	1759.94 m²	18944 SF
LEVEL 1	1423.08 m²	15318 SF
LEVEL 2	1409.13 m²	15168 SF
LEVEL 3	1409.13 m²	15168 SF
LEVEL 4	1259.64 m²	13559 SF
LEVEL 5	1259.42 m²	13556 SF
LEVEL 6	1259.44 m²	13557 SF
LEVEL 7	1187.57 m²	12783 SF
LEVEL 8	193.11 m²	2079 SF
TOTAL	11160.46 m²	120130 SF

RENTABLE AREA (RESIDENTIAL)

LEVEL	AREA	AREA (SF)
LEVEL 1	185.17 m²	1993 SF
LEVEL 2	1106.58 m²	11911 SF
LEVEL 3	1255.51 m²	13514 SF
LEVEL 4	1109.98 m²	11948 SF
LEVEL 5	1109.98 m²	11948 SF
LEVEL 6	1109.98 m²	11948 SF
LEVEL 7	1026.56 m²	11050 SF
LEVEL 8	181.47 m²	1953 SF
TOTAL	7085.23 m²	76265 SF

GENERAL ARCHITECTURAL NOTES:
1. This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect.
2. Drawings are not to be scaled. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.
3. Upon notice in writing, the Architect will provide written/graphic clarification or supplementary information regarding the intent of the Contract Documents.
4. The Architectural drawings are to be read in conjuction with all other Contract Documents including Project Manuals and the Structural, Mechanical and Electrical Drawings.
5. Positions of exposed or finished Mechanical or Electrical devices, fittings and fixtures are indicated on the Architectural Drawings. Locations shown on the Architectural Drawings shall govern over Mechanical and Electrical Drawings. Mechanical and Electrical items not clearly located will be located as directed by the Architect.
6. These documents are not to be used for construction unless specifically noted for such purpose.

KEY PLAN

5	REISSUED FOR SPC	2024-05-27
4	ISSUED FOR COORDINATION	2024-04-30
2	REISSUED FOR SPC	2024-04-10
1	ISSUED FOR SPC	2023-06-08

ISSUE RECORD

ONTARIO ASSOCIATION OF ARCHITECTS
RYAN M. KOOLMINE
LICENCE 7370

project1 studio
Project1 Studio Incorporated
| 613.884.3939 | mail@project1studio.ca

PROJ	SCALE	DRAWN	REVIEWED
2218	NOTED	JH	RMK

PROJECT STATISTICS AND ZONING INFORMATION

SP-02

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	5 Springfield, 12 Douglas, 47 Beechwood
Description of Location	N of Beechwood, E of Springfield, W of Douglas
Land Use Classification	Mixed-Use (retail and apartments)
Development Size (units)	123 apartment dwellings
Development Size square metre (m^2)	5,932 ft2 (551 m2) of retail space
Number of Accesses and Locations	1 (Springfield Road)
Phase of Development	1
Buildout Year	2024

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

2. Trip Generation Trigger

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

Table notes:

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

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

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

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☑	☐

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

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☑	☐
Is the proposed driveway within auxiliary lanes of an intersection?	☑	☐
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

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

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

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

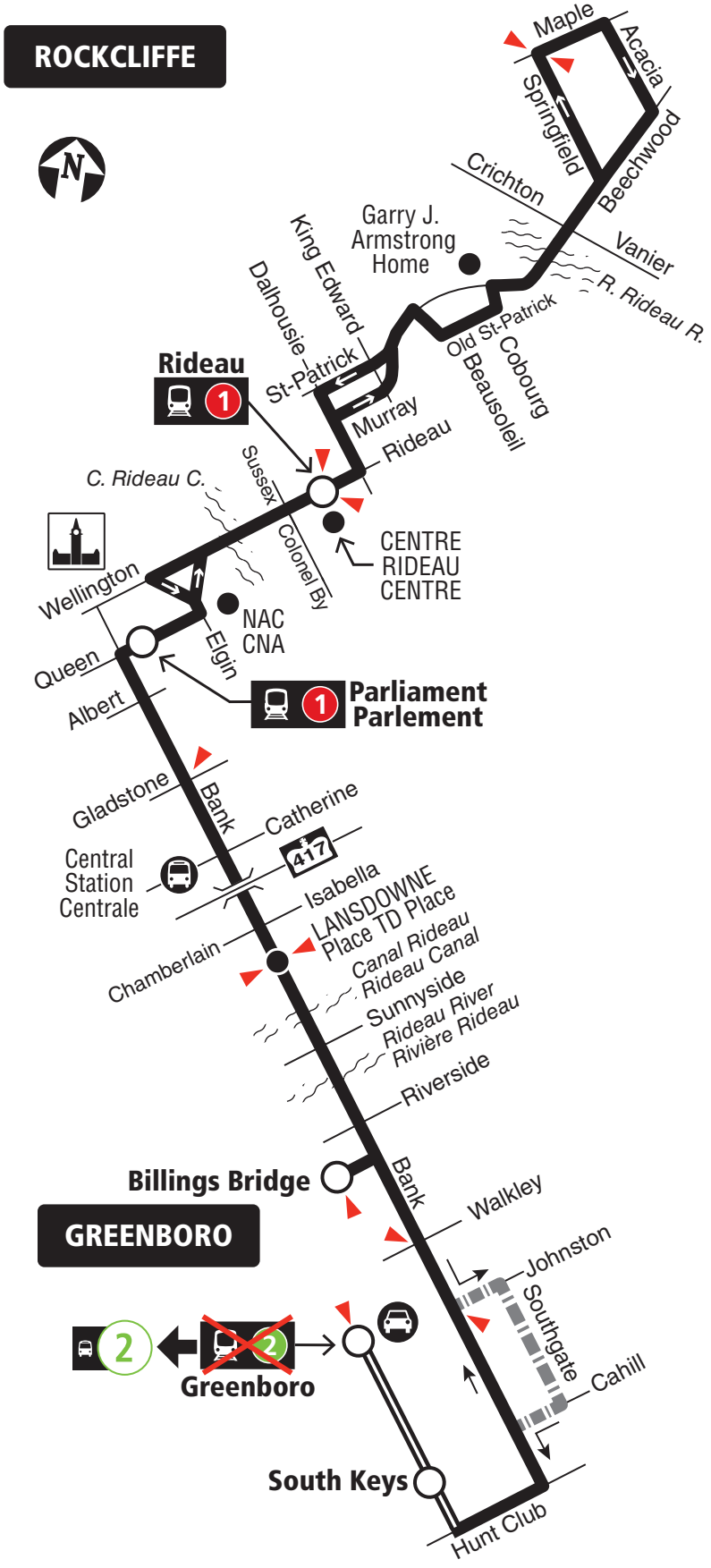
5. Summary

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

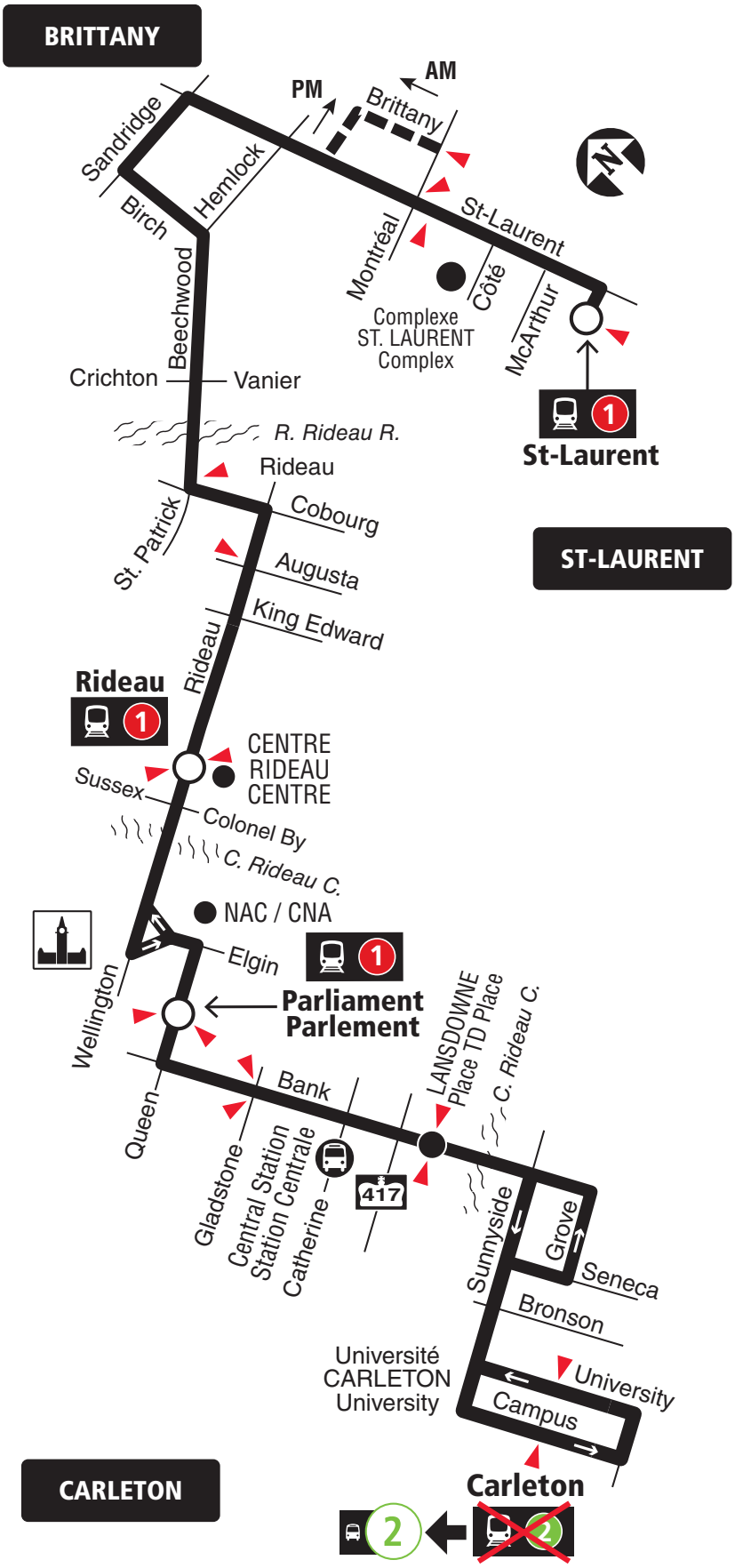
If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX C

OC Transpo Route Maps


ROCKCLIFFE
N
Maple
Acacia
Springfield
Beechwood
Crichton
Vanier
R. Rideau R.
Garry J. Armstrong Home
King Edward
Dalhousie
St-Patrick
Old St-Patrick
Cobourg
Beausoleil
Rideau
1
Murray
Rideau
Sussex
C. Rideau C.
Colonel By
CENTRE RIDEAU CENTRE
Wellington
NAC CNA
Elgin
Queen
Albert
1
Parliament Parlement
Gladstone
Bank
Catherine
417
Central Station Centrale
Isabella
LANSDOWNE Place TD Place
Chamberlain
Canal Rideau Rideau Canal
Sunnyside
Rideau River Rivière Rideau
Riverside
Billings Bridge
Bank
Walkley
GREENBORO
Johnston
Southgate
Cahill
2
2
Greenboro
South Keys
Hunt Club
Transitway & Station
No early morning service / Aucun service matinal
Park & Ride / Parc-o-Bus
Timepoint / Heures de passage

2020.08


BRITTANY
AM
PM
Brittany
Sandridge
Hemlock
Birch
Beechwood
Montréal
St-Laurent
Côté
McArthur
Complexe
ST. LAURENT
Complex
Crichton
Vanier
R. Rideau R.
St-Laurent
Rideau
Cobourg
St. Patrick
Augusta
King Edward
Rideau
ST-LAURENT
Rideau
CENTRE
RIDEAU
CENTRE
Sussex
Colonel By
C. Rideau C.
NAC / CNA
Elgin
Parliament
Parlement
Wellington
LANSDOWNE
Place TD Place
C. Rideau C.
Bank
Queen
Gladstone
Central Station
Station Centrale
Catherine
417
Sunnyside
Grove
Seneca
Bronson
Université
CARLETON
University
University
Campus
CARLETON
Carleton
Station
Peak periods only / Périodes de pointe seulement
Timepoint / Heures de passage

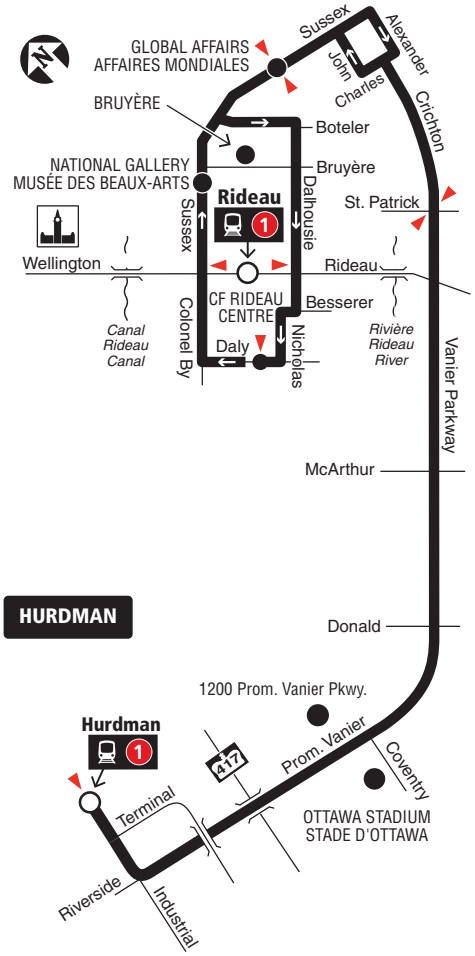
2020.08

9 RIDEAU / HURDMAN

Local

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

RIDEAU



HURDMAN

○ Station

▲ Timepointe / Heures de passage

2020.04

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

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

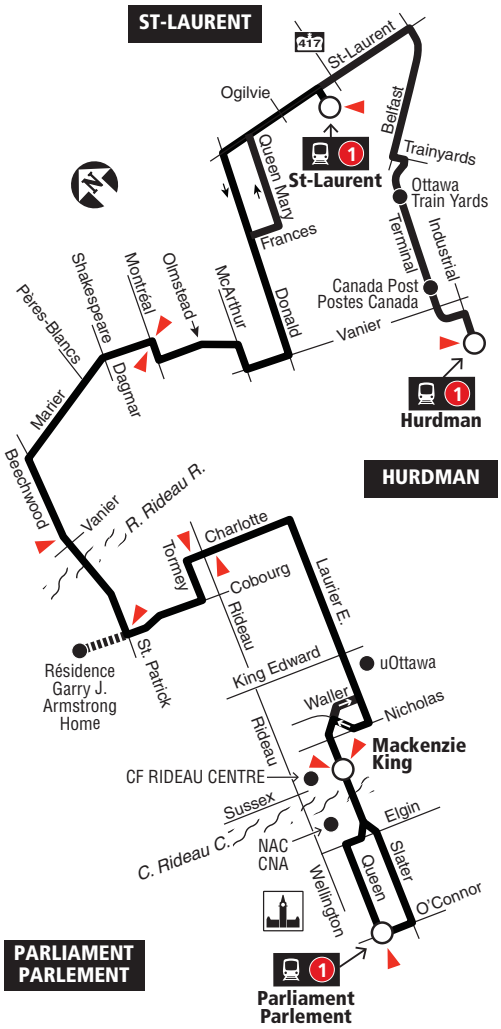
Effective April 26, 2020
En vigueur 26 avril 2020

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

19 ST-LAURENT HURDMAN
PARLIAMENT/ PARLEMENT

Local

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



Station
On request / Sur demande
Timepoint / Heures de passage

2021.06

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

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

Effective June 20, 2021
En vigueur 20 juin 2021

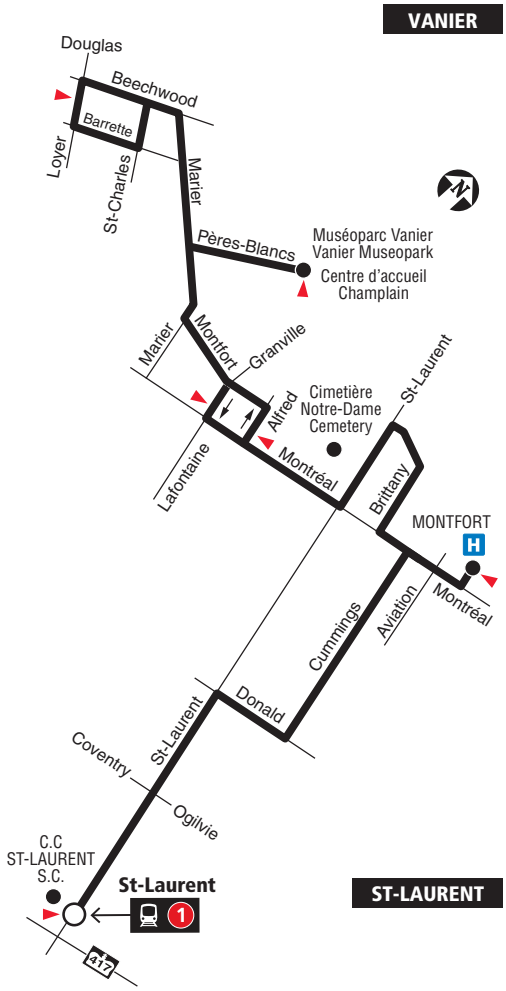
OC Transpo
INFO 613-741-4390
octranspo.com

20 VANIER / ST-LAURENT

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



09.2022

Station

Timepoint / Heures de passage

09.2022

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

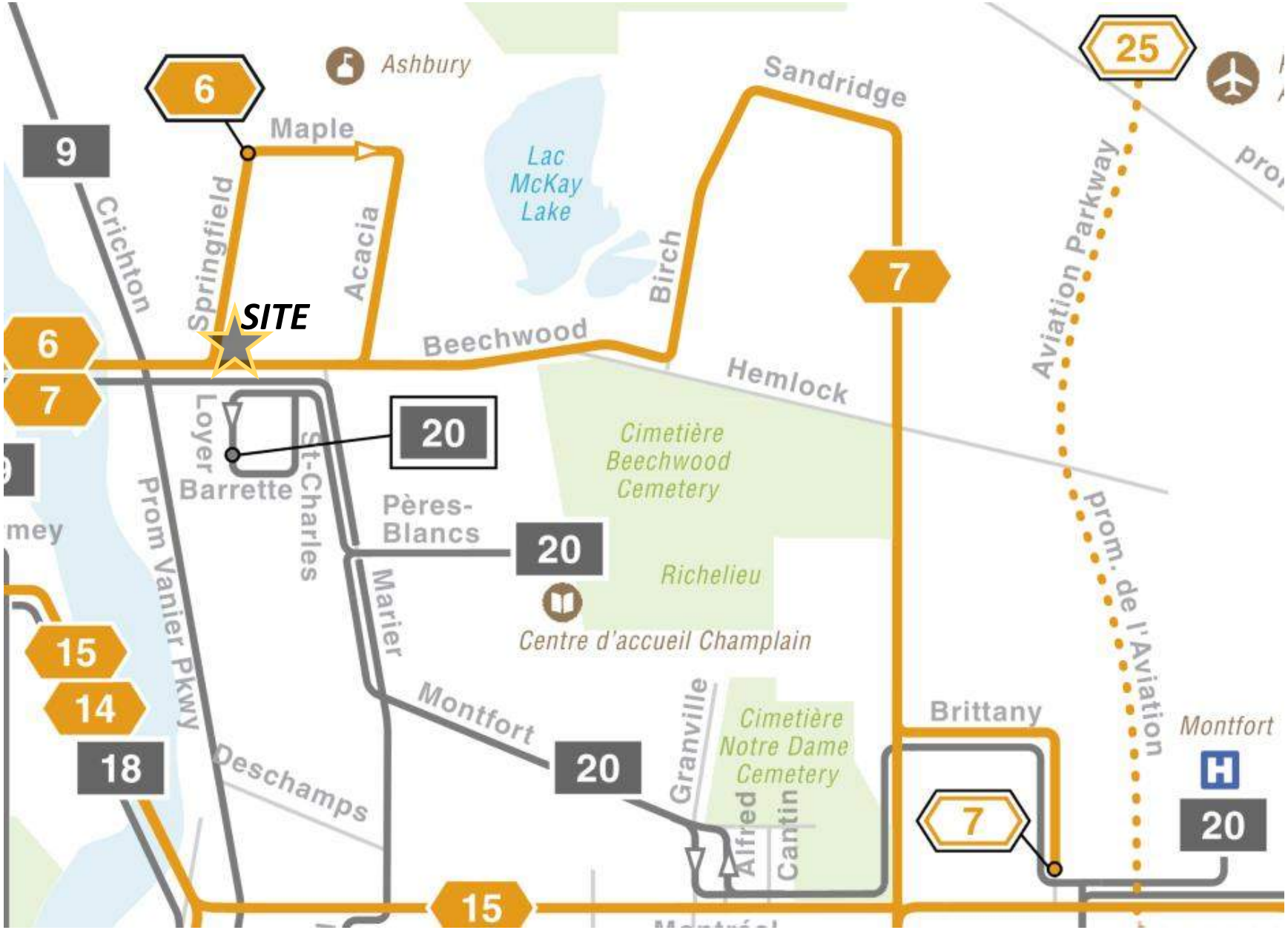
Customer Service
Service à la clientèle **613-560-5000**

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

Security / Sécurité **613-741-2478**

Effective September 4, 2022
En vigueur 4 septembre 2022

OC Transpo
INFO 613-560-5000
octranspo.com


SITE
Ashbury
Maple
Springfield
Acacia
Crichton
Lac McKay Lake
Sandridge
Birch
Beechwood
Hemlock
Aviation Parkway
prom. de l'Aviation
Lover
Barrette
St-Charles
Prom Vanier Pkwy
Pères-Blancs
Marier
Cimetière Beechwood Cemetery
Richelieu
Centre d'accueil Champlain
Montfort
Granville
Cimetière Notre Dame Cemetery
Alfred
Cantin
Brittany
Montfort
Deschamps
6
7
9
20
15
14
18
25

APPENDIX D

Traffic Count Data

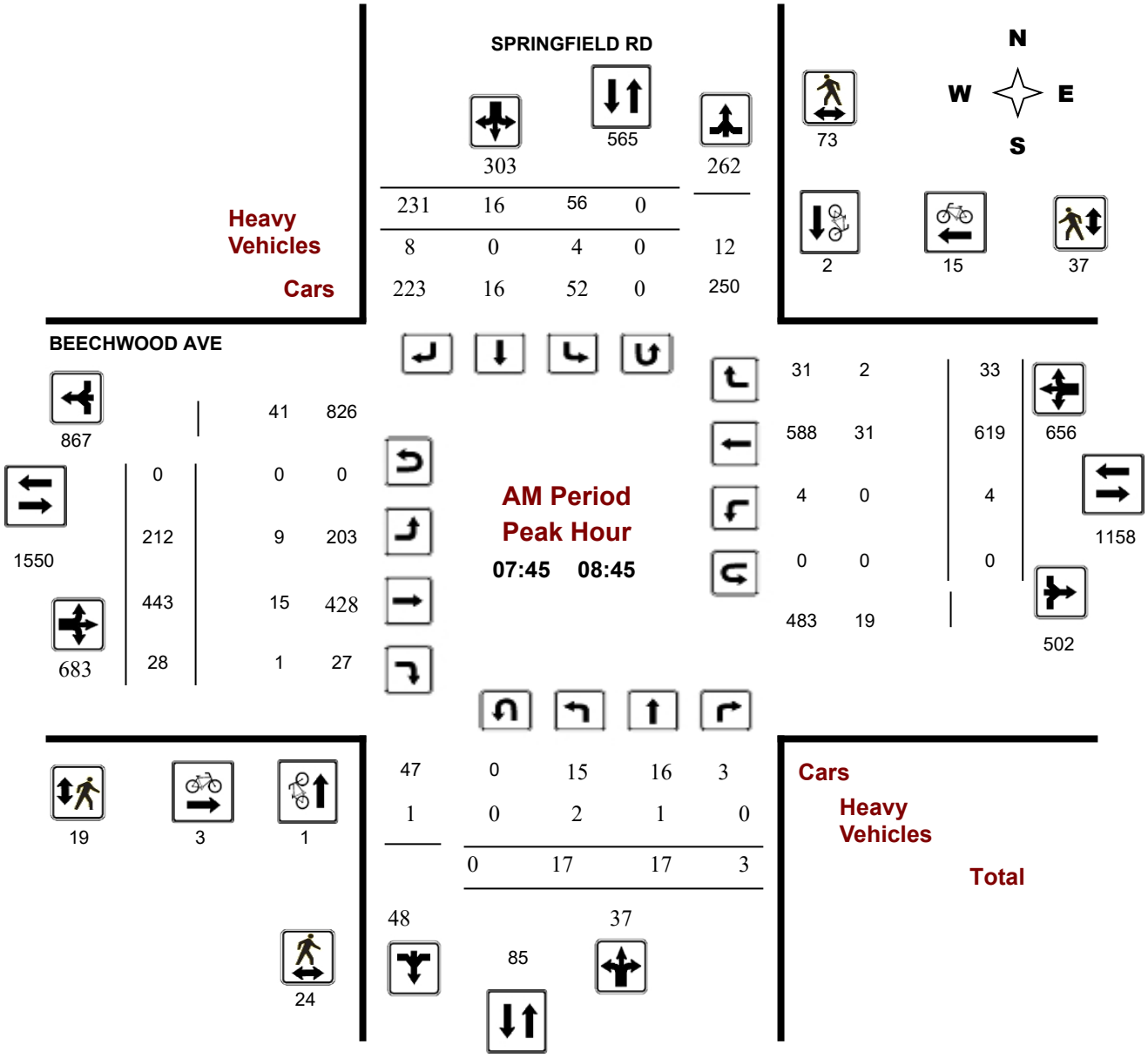
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BEECHWOOD AVE @ SPRINGFIELD RD

Survey Date: Tuesday, March 26, 2019 **WO No:** 38454

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



Comments

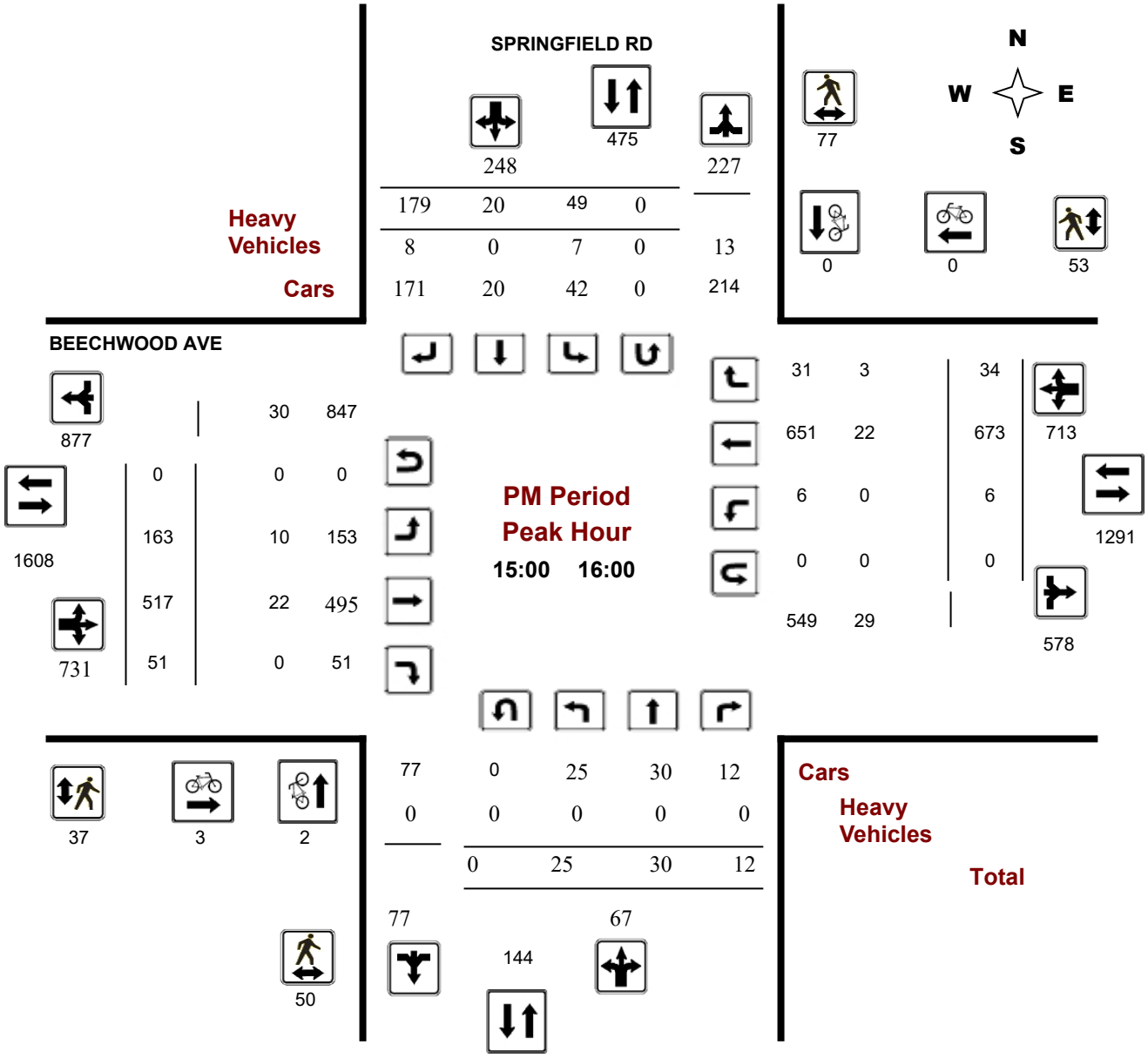
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BEECHWOOD AVE @ SPRINGFIELD RD

Survey Date: Tuesday, March 26, 2019 **WO No:** 38454

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



Comments

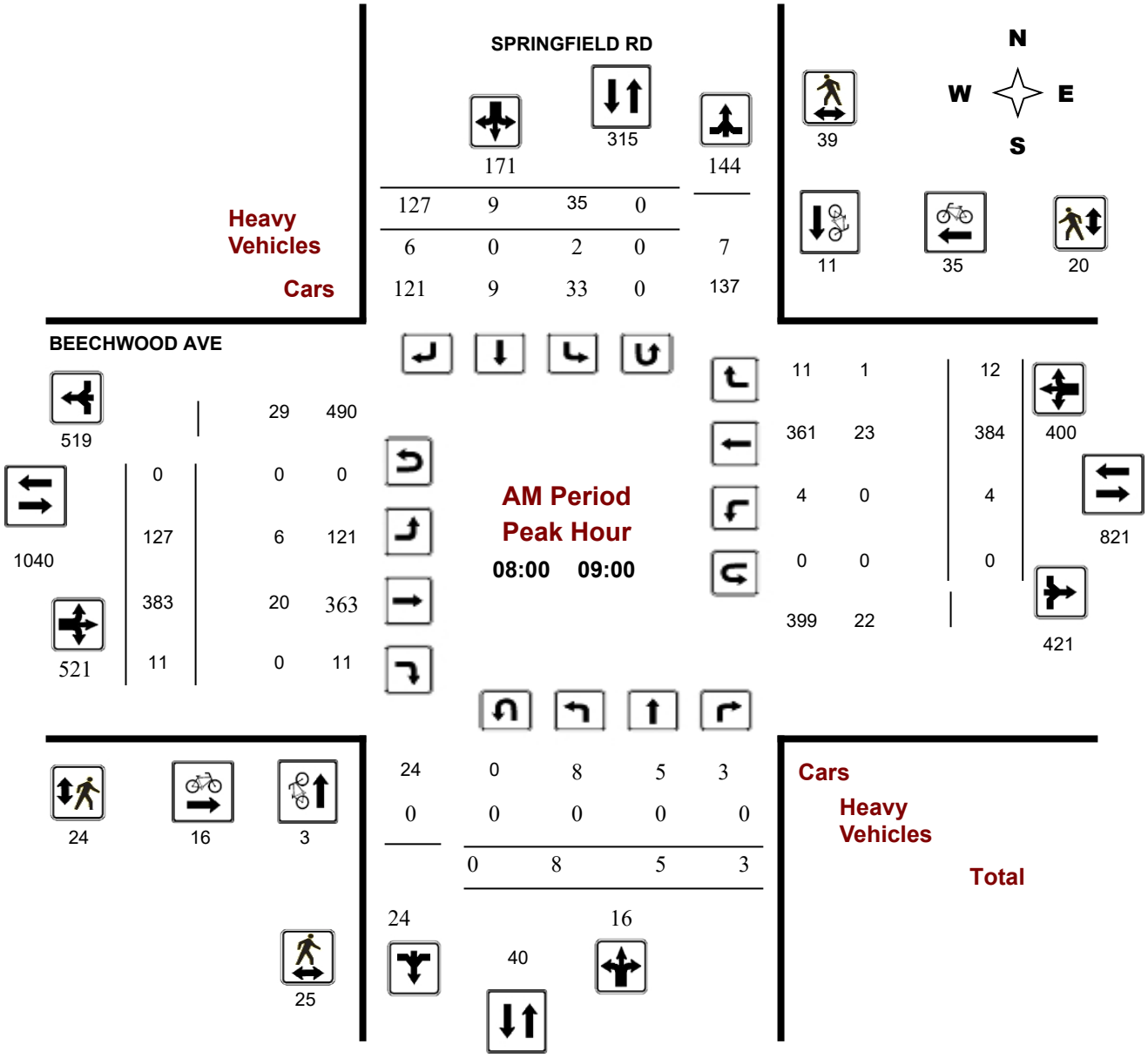
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BEECHWOOD AVE @ SPRINGFIELD RD

Survey Date: Tuesday, June 28, 2022 **WO No:** 40414

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



Comments

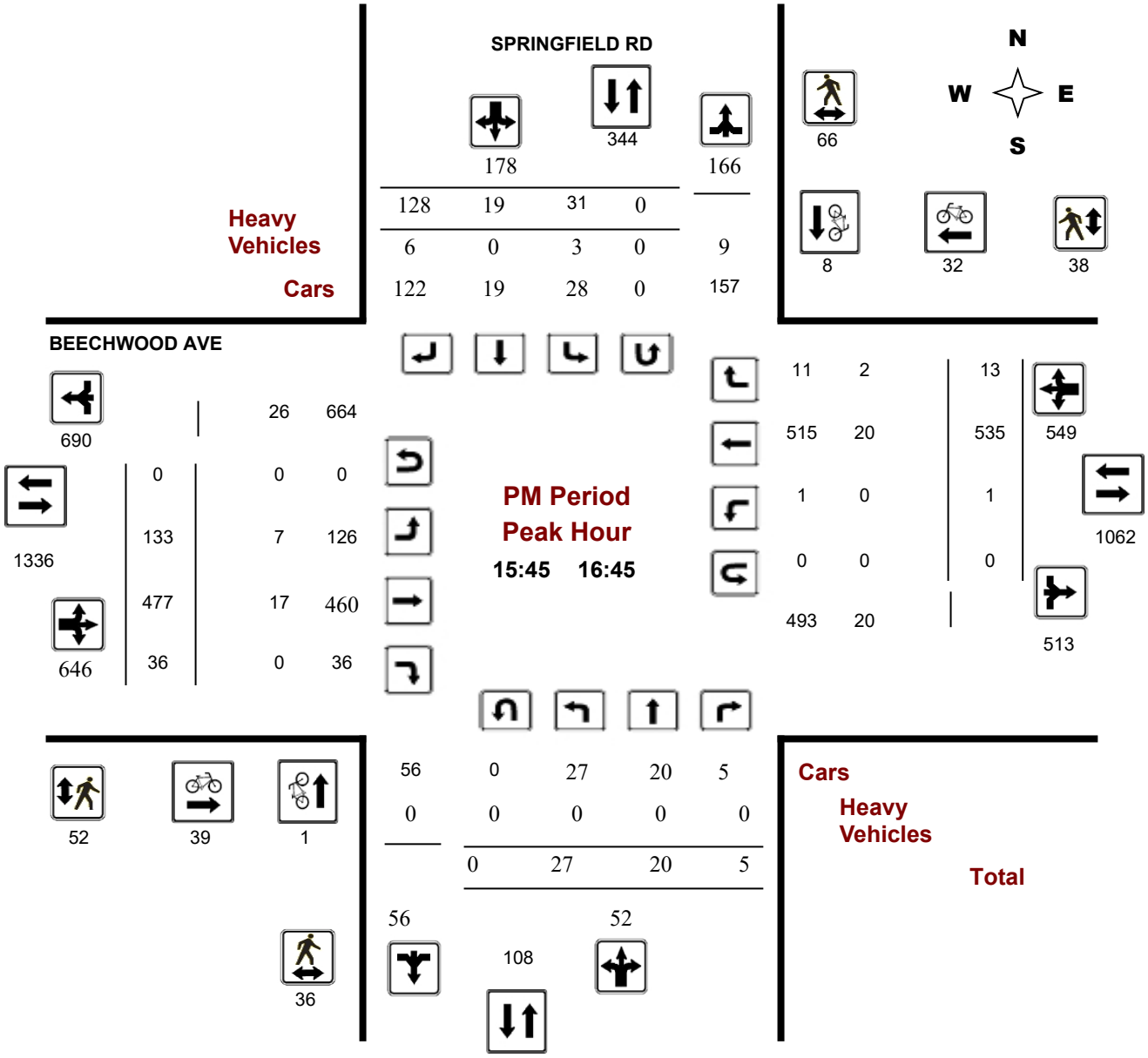
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BEECHWOOD AVE @ SPRINGFIELD RD

Survey Date: Tuesday, June 28, 2022 **WO No:** 40414

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BEECHWOOD AVE @ SPRINGFIELD RD

Survey Date: Tuesday, March 26, 2019 **WO No:** 38454

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 26, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	SPRINGFIELD RD									BEECHWOOD AVE									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	7	1	1	**9**	23	3	125	**151**	**160**	150	444	8	**602**	2	516	18	**536**	**1138**	**1298**
08:00 09:00	17	18	3	**38**	60	13	213	**286**	**324**	171	445	29	**645**	4	618	35	**657**	**1302**	**1626**
09:00 10:00	23	8	5	**36**	35	8	121	**164**	**200**	102	358	26	**486**	3	452	27	**482**	**968**	**1168**
11:30 12:30	25	21	10	**56**	31	11	107	**149**	**205**	94	323	45	**462**	3	362	24	**389**	**851**	**1056**
12:30 13:30	23	13	7	**43**	28	14	82	**124**	**167**	94	355	44	**493**	3	373	24	**400**	**893**	**1060**
15:00 16:00	25	30	12	**67**	49	20	179	**248**	**315**	163	517	51	**731**	6	673	34	**713**	**1444**	**1759**
16:00 17:00	22	25	13	**60**	44	16	113	**173**	**233**	134	538	62	**734**	4	475	14	**493**	**1227**	**1460**
17:00 18:00	27	36	11	**74**	36	29	126	**191**	**265**	151	524	67	**742**	4	493	27	**524**	**1266**	**1531**
Sub Total	169	152	62	**383**	306	114	1066	**1486**	**1869**	1059	3504	332	**4895**	29	3962	203	**4194**	**9089**	**10958**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	169	152	62	**383**	306	114	1066	**1486**	**1869**	1059	3504	332	**4895**	29	3962	203	**4194**	**9089**	**10958**
EQ 12Hr	235	211	86	**532**	425	158	1482	**2066**	**2598**	1472	4871	461	**6804**	40	5507	282	**5830**	**12634**	**15232**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	235	211	86	**532**	425	208	1941	**2066**	**2598**	1472	4871	461	**6804**	40	5507	282	**5830**	**12634**	**15232**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	308	276	113	**697**	557	272	2543	**2706**	**3403**	1928	6381	604	**8913**	52	7214	369	**7637**	**16551**	**19954**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Confidential Version

From: January 1, 2016 **To:** December 31, 2020

Location ..... BEECHWOOD AVE @ DOUGLAS AVE

Traffic Control.... Stop sign **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
200197736	2020-Aug-14, Fri,12:56	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	Improper turn	0
						East	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

Comments: D1 HTA 142 1

Location ..... BEECHWOOD AVE @ SPRINGFIELD RD

Traffic Control.... Traffic signal **Total Collisions....** 11

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
160010758	2016-Jan-13, Wed,15:15	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	0
						West	Stopped	Delivery van	Other motor vehicle	Driving properly	

Comments: CRC

160274397	2016-Oct-31, Mon,13:02	Clear	SMV other	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Pedestrian	Failed to yield right-of-way	1

Comments: D1 HTA 200 1

180045074	2018-Feb-23, Fri,17:44	Clear	Rear end	P.D. only	Ice	West	Going ahead	Pick-up truck	Other motor vehicle	Speed too fast for condition	0
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	

Comments: CRC

180189876	2018-Aug-02, Thu,17:40	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Unknown	Other motor vehicle	Unknown	0
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	

Comments: CRC

Transportation Services - Traffic Services

Collision Details Report - Confidential Version

From: January 1, 2016 **To:** December 31, 2020

Location ..... BEECHWOOD AVE @ SPRINGFIELD RD

Traffic Control.... Traffic signal

Total Collisions.... 11

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
180234758	2018-Sep-20, Thu,08:27	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	0
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:											
190021959	2019-Jan-25, Fri,07:45	Clear	Angle	P.D. only	Slush	South	Turning left	Unknown	Other motor vehicle	Unknown	0
						East	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	CRC										
190021723	2019-Jan-25, Fri,14:11	Clear	Rear end	P.D. only	Loose snow	West	Going ahead	Pick-up truck	Other motor vehicle	Unknown	0
						West	Stopped	Delivery van	Other motor vehicle	Driving properly	
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:											
190199159	2019-Aug-01, Thu,21:20	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	Failed to yield right-of-way	0
						East	Going ahead	Bicycle	Other motor vehicle	Driving properly	
Comments:	D1 HTA 142 1										
200031274	2020-Feb-02, Sun,10:05	Snow	Rear end	P.D. only	Loose snow	West	Unknown	Unknown	Other motor vehicle	Unknown	0
						West	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	CRC										

Transportation Services - Traffic Services

Collision Details Report - Confidential Version

From: January 1, 2016 **To:** December 31, 2020

Location ..... BEECHWOOD AVE @ SPRINGFIELD RD

Traffic Control.... Traffic signal **Total Collisions....** 11

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
200043044	2020-Feb-05, Wed,13:40	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	Improper lane change	0
						East	Going ahead	Pick-up truck	Other motor vehicle	Driving properly	
Comments: CRC, AMENDMENT ONLY (NO ORIGINAL)											
200247994	2020-Oct-09, Fri,14:17	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	0
						East	Stopped	Pick-up truck	Other motor vehicle	Driving properly	
Comments: CRC											

Location ..... DOUGLAS AVE btwn BEECHWOOD AVE & PUTMAN AVE

Traffic Control.... No control **Total Collisions....** 5

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
160020849	2016-Jan-21, Thu,14:30	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	Unknown	0
Comments:											
160308750	2016-Dec-13, Tue,08:03	Snow	SMV unattended vehicle	P.D. only	Loose snow	Unknown	Unknown	Unknown	Unattended vehicle	Unknown	0
Comments: CRC											
170136478	2017-Jun-12, Mon,16:32	Clear	SMV unattended vehicle	P.D. only	Dry	South	Going ahead	Truck - closed	Unattended vehicle	Lost control	0
Comments: CRC, Location 1: DOUGLAS AVE, Location 2: 18 DOUGLAS AVE, Distance: 0 M N											
180193960	2018-Aug-03, Fri,16:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	Unknown	0
Comments: CRC, Location 1: DOUGLAS AVELocation 2: BEECHWOOD AVEDistance: 47 M N											
190045645	2019-Feb-22, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Slush	Unknown	Unknown	Unknown	Unattended vehicle	Unknown	0
Comments: CRC, Location 1: DOUGLAS AVELocation 2: PUTMAN AVEDistance:											

Transportation Services - Traffic Services

Collision Details Report - Confidential Version

From: January 1, 2016 **To:** December 31, 2020

Location ..... SPRINGFIELD RD btwn BEECHWOOD AVE & SCHOOLHOUSE PRIV

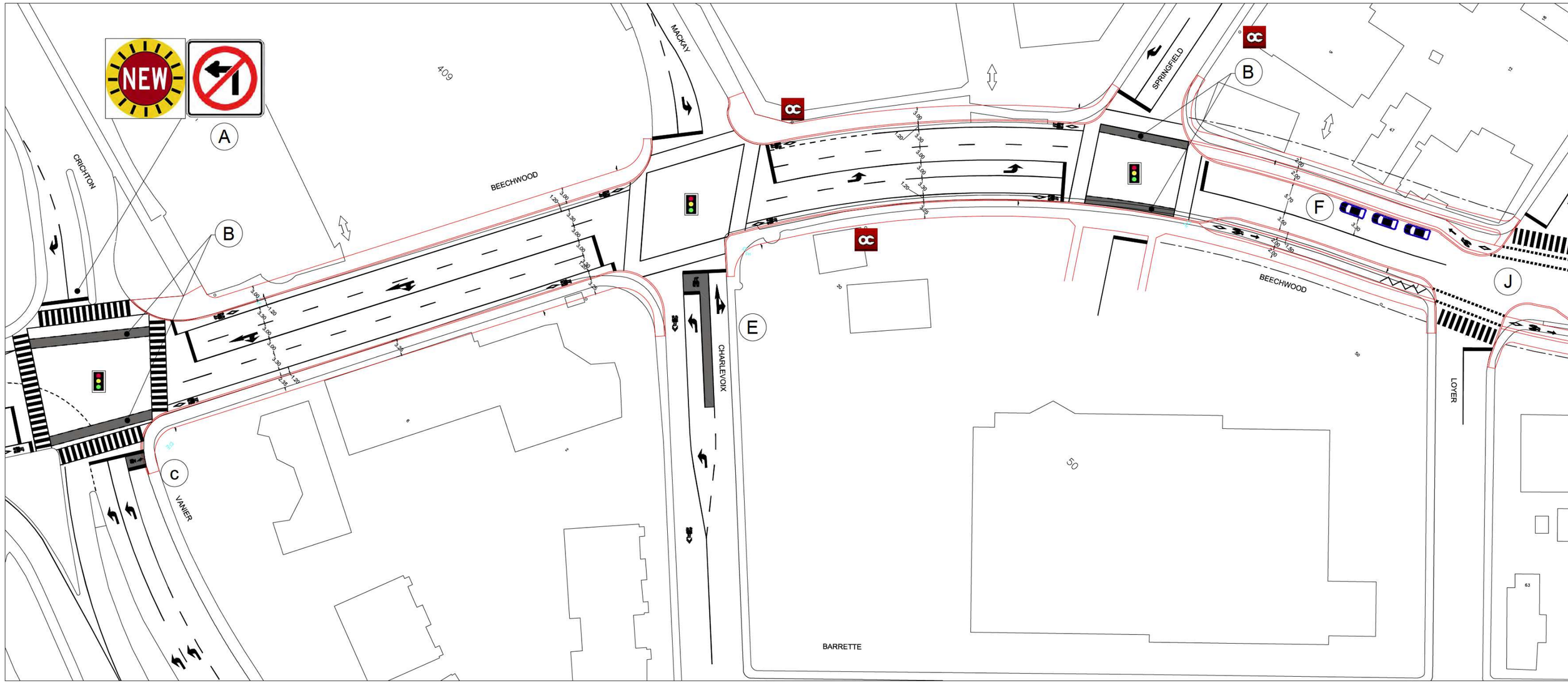
Traffic Control.... No control

Total Collisions.... 2

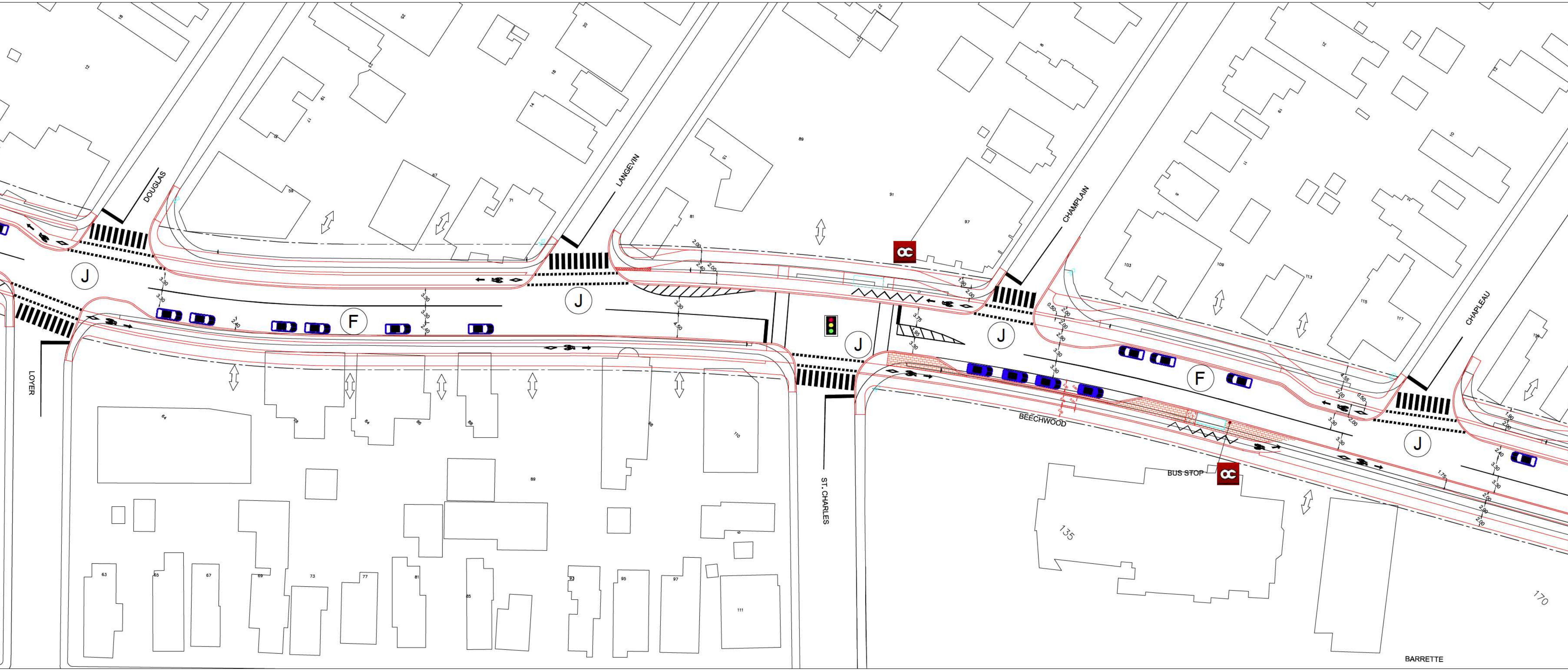
Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
160252556	2016-Oct-02, Sun,11:45	Clear	Other	P.D. only	Dry	South	Reversing	Pick-up truck	Other motor vehicle	Other	0
						South	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments: D1 REVERSED INTO V2, CRC											
180017833	2018-Jan-22, Mon,00:00	Snow	SMV unattended vehicle	P.D. only	Loose snow	Unknown	Unknown	Unknown	Unattended vehicle	Unknown	0
Comments: CRC, Location 1: SPRINGFIELD RDLocation 2: 10 Springfield RdDistance:											

APPENDIX F

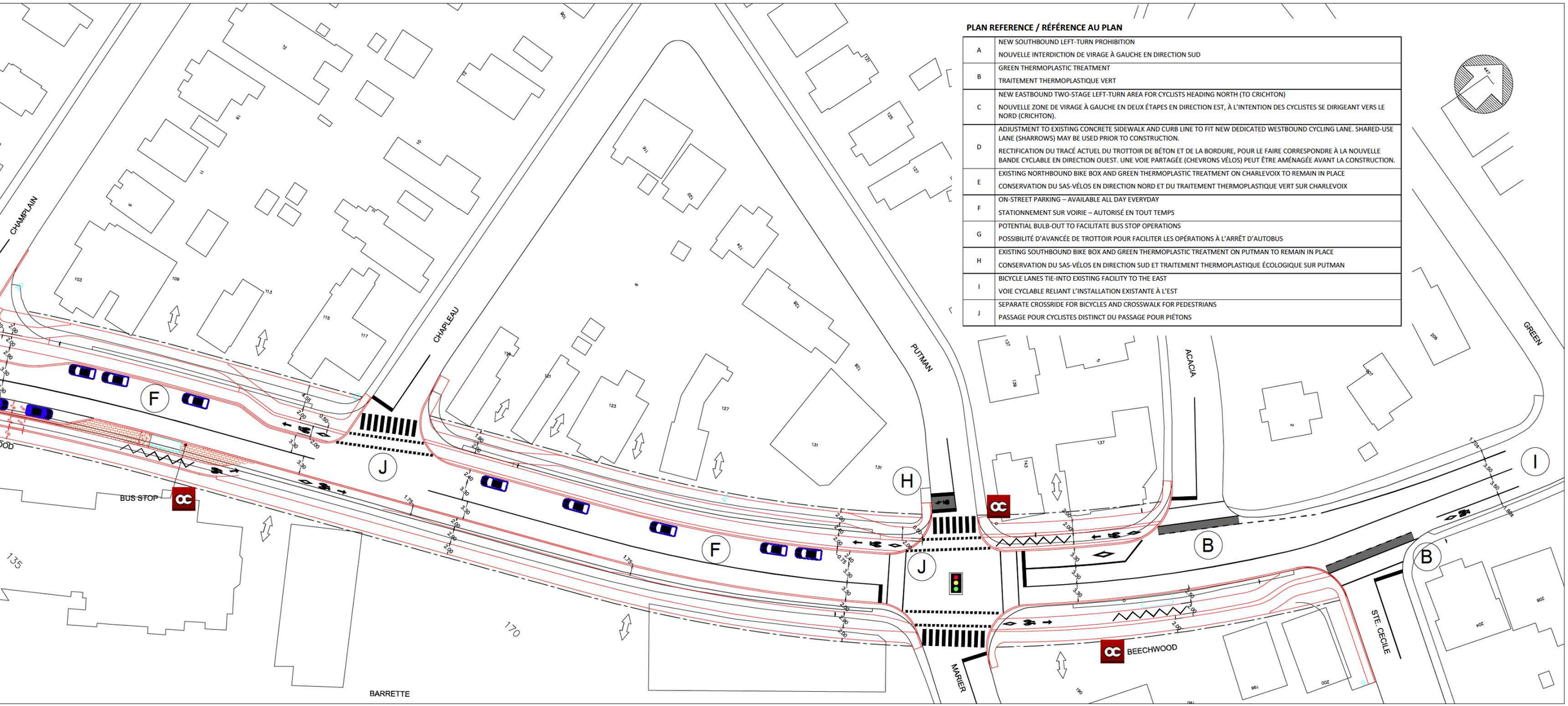
Beechwood Avenue Reference Design Plan



BEECHWOOD AVENUE COMPLETE STREET - REFERENCE DESIGN PLAN
RUE COMPLÈTE DE L'AVENUE BEECHWOOD - PLAN DE CONCEPTION DE RÉFÉRENCE


DOUGLAS
LANGEVIN
CHAMPLAIN
CHAPLEAU
LOYER
ST. CHARLES
BEECHWOOD
BUS STOP
BARRETTE
135
170
J
F

RENCE



PLAN REFERENCE / RÉFÉRENCE AU PLAN

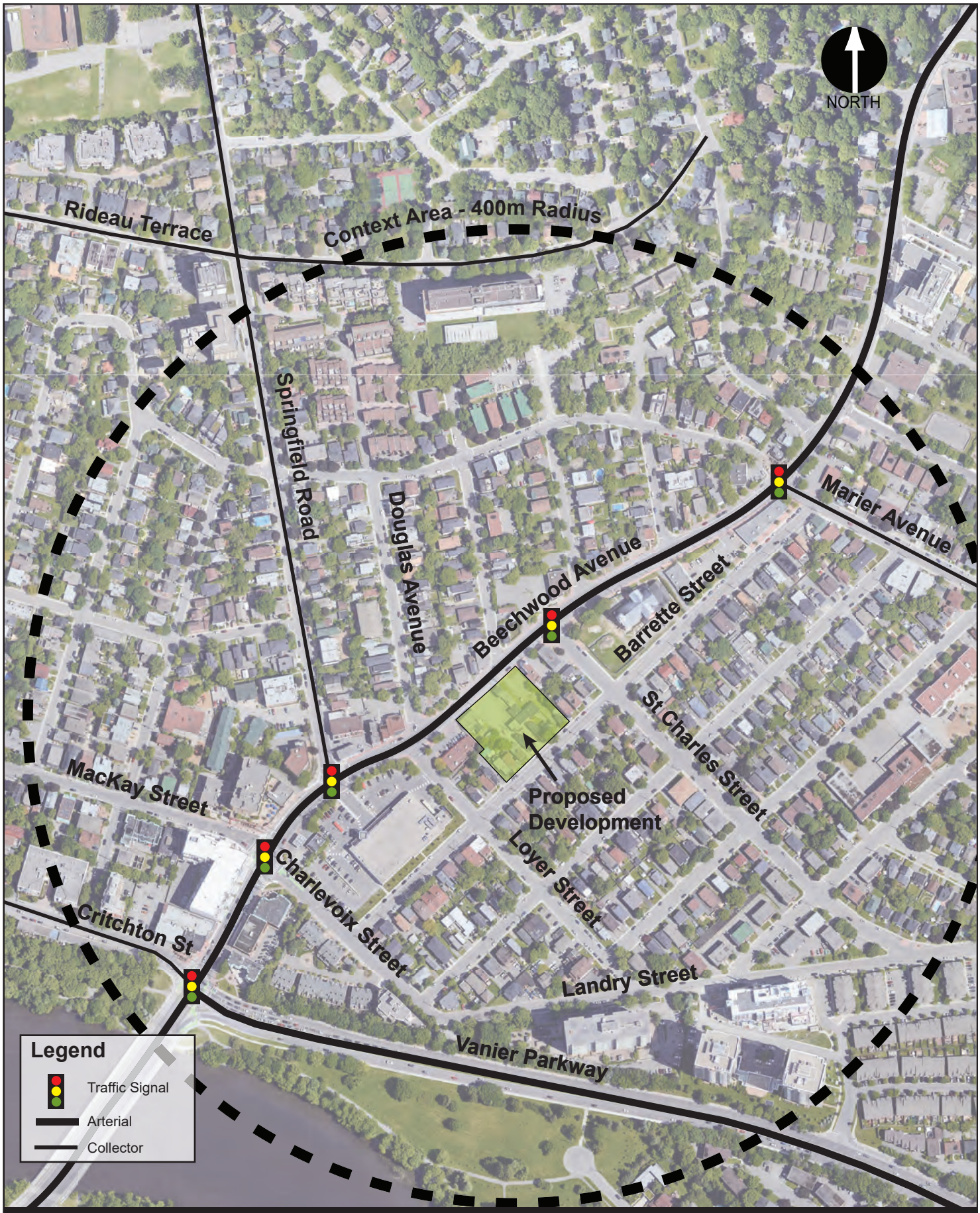
A	NEW SOUTHBOUND LEFT-TURN PROHIBITION NOUVELLE INTERDICTION DE VIRAGE À GAUCHE EN DIRECTION SUD
B	GREEN THERMOPLASTIC TREATMENT TRAITEMENT THERMOPLASTIQUE VERT
C	NEW EASTBOUND TWO-STAGE LEFT-TURN AREA FOR CYCLISTS HEADING NORTH (TO CRICHTON) NOUVELLE ZONE DE VIRAGE À GAUCHE EN DEUX ÉTAPES EN DIRECTION EST, À L'INTENTION DES CYCLISTES SE DIRIGEANT VERS LE NORD (CRICHTON).
D	ADJUSTMENT TO EXISTING CONCRETE SIDEWALK AND CURB LINE TO FIT NEW DEDICATED WESTBOUND CYCLING LANE. SHARED-USE LANE (SHARROWS) MAY BE USED PRIOR TO CONSTRUCTION. RECTIFICATION DU TRACÉ ACTUEL DU TROTTOIR DE BÉTON ET DE LA BORDURE, POUR LE FAIRE CORRESPONDRE À LA NOUVELLE BANDE CYCLABLE EN DIRECTION OUEST. UNE VOIE PARTAGÉE (CHEVRONS VÉLOS) PEUT ÊTRE AMÉNAGÉE AVANT LA CONSTRUCTION.
E	EXISTING NORTHBOUND BIKE BOX AND GREEN THERMOPLASTIC TREATMENT ON CHARLEVOIX TO REMAIN IN PLACE CONSERVATION DU SAS-VÉLOS EN DIRECTION NORD ET DU TRAITEMENT THERMOPLASTIQUE VERT SUR CHARLEVOIX
F	ON-STREET PARKING – AVAILABLE ALL DAY EVERYDAY STATIONNEMENT SUR VOIRIE – AUTORISÉ EN TOUT TEMPS
G	POTENTIAL BULB-OUT TO FACILITATE BUS STOP OPERATIONS POSSIBILITÉ D'AVANCÉE DE TROTTOIR POUR FACILITER LES OPÉRATIONS À L'ARRÊT D'AUTOBUS
H	EXISTING SOUTHBOUND BIKE BOX AND GREEN THERMOPLASTIC TREATMENT ON PUTMAN TO REMAIN IN PLACE CONSERVATION DU SAS-VÉLOS EN DIRECTION SUD ET TRAITEMENT THERMOPLASTIQUE ÉCOLOGIQUE SUR PUTMAN
I	BICYCLE LANES TIE-INTO EXISTING FACILITY TO THE EAST VOIE CYCLABLE RELIANT L'INSTALLATION EXISTANTE À L'EST
J	SEPARATE CROSSRIDE FOR BICYCLES AND CROSSWALK FOR PEDESTRIANS PASSAGE POUR CYCLISTES DISTINCT DU PASSAGE POUR PIÉTONS

SCALE
5m 0 10m

Ottawa

APPENDIX G

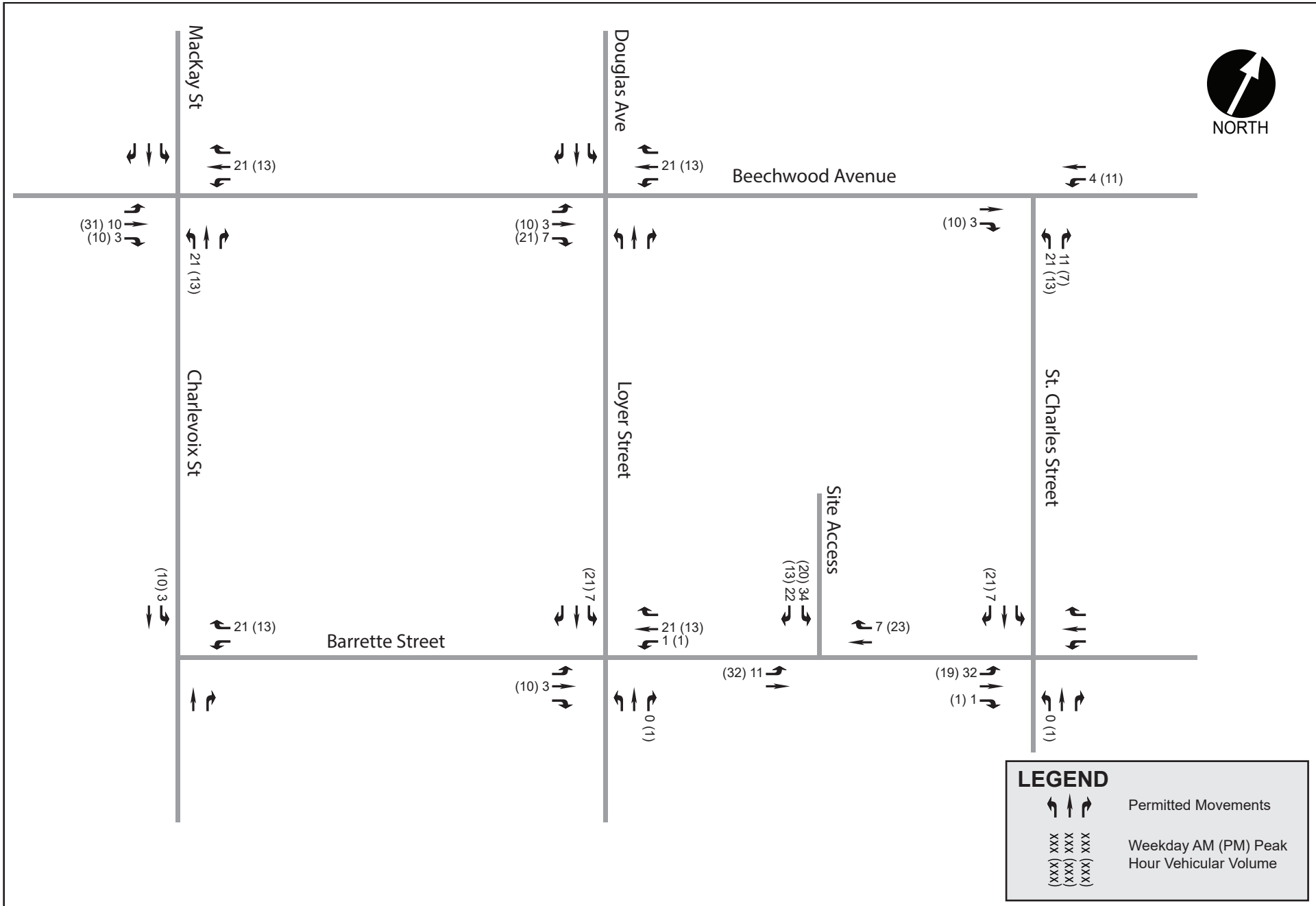
Other Area Development



Mid-Rise Residential Development
78-90 Beechwood/ 69-93 Barrette
Transportation Impact Assessment

Exhibit 1:
Site Location

PROJECT No. 125192
DATE: July 2020
SCALE: 0m 50m 100m



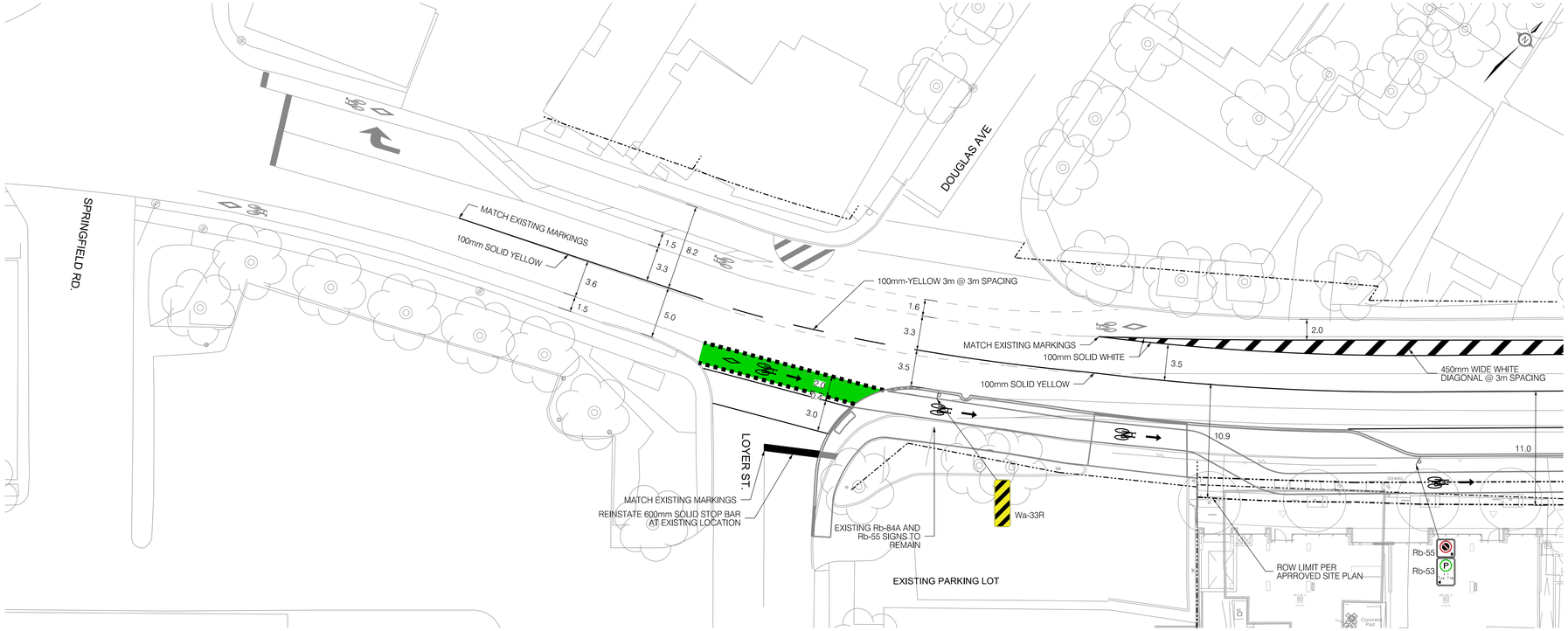
Mid-Rise Residential Development
78-90 Beechwood/ 69-93 Barrette
Transportation Impact Assessment

Exhibit 6:
Site-Generated Traffic

PROJECT No. 125192
DATE: July 2020
SCALE: N.T.S.

DRAWING FRAME: 790mm x 534mm City of Ottawa 2008

Consultant Drawing Number



BEECHWOOD AVENUE CYCLING FACILITIES LOYER STREET TO ST. CHARLES STREET

PAVEMENT MARKINGS AND SIGNS

STA. 1+000 TO STA. 1+145

IBI

Contract No.	125192
Dwg. No.	007
Sheet	7 of 8
Asset No.	
Asset Group	---
Des.	V.B.
Chk'd.	D.H.
Dwn.	Y.L.
Chk'd.	L.Y.
Utility Circ. No.	--
Index No.	--
Const. Inspector	--

Scale: HORIZONTAL 0m 2.5 5 10; 0m 0.5 1 VERTICAL

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yyyy)
1	ISSUED FOR MUNICIPAL CONSENT	V.B.	16/09/2022
2	ISSUED FOR FINAL MUNICIPAL CONSENT	V.B.	17/03/2023
3	ISSUED FOR MUNICIPAL CONSENT	V.B.	12/04/2023
4	ISSUED FOR MUNICIPAL CONSENT	V.B.	18/04/2023

TRANSPORTATION ENGINEERING SERVICES SIGNS / PAVEMENT MARKINGS

☐ REVIEWED / RESUBMIT FOR CHANGES

☒ REVIEWED and ACCEPTED

By Chris Simmons Date 2023 / 07 / 12

Ottawa

2020-06-18 10:48:31 AM J:\125192_78Beechwood\7.0_Production\7.03_Design\04_Civil\Sheets\Trasnportation\Drawing Frame.dgn

APPENDIX H

Strategic Long-Range Model and Intersection Traffic Growth Rates

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Beechwood/Springfield area

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: March, 2023
EMME Scenario: 21713

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

50 100 150 200 250

N

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

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

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

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Beechwood/Springfield area

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: March, 2023
EMME Scenario: 21715

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

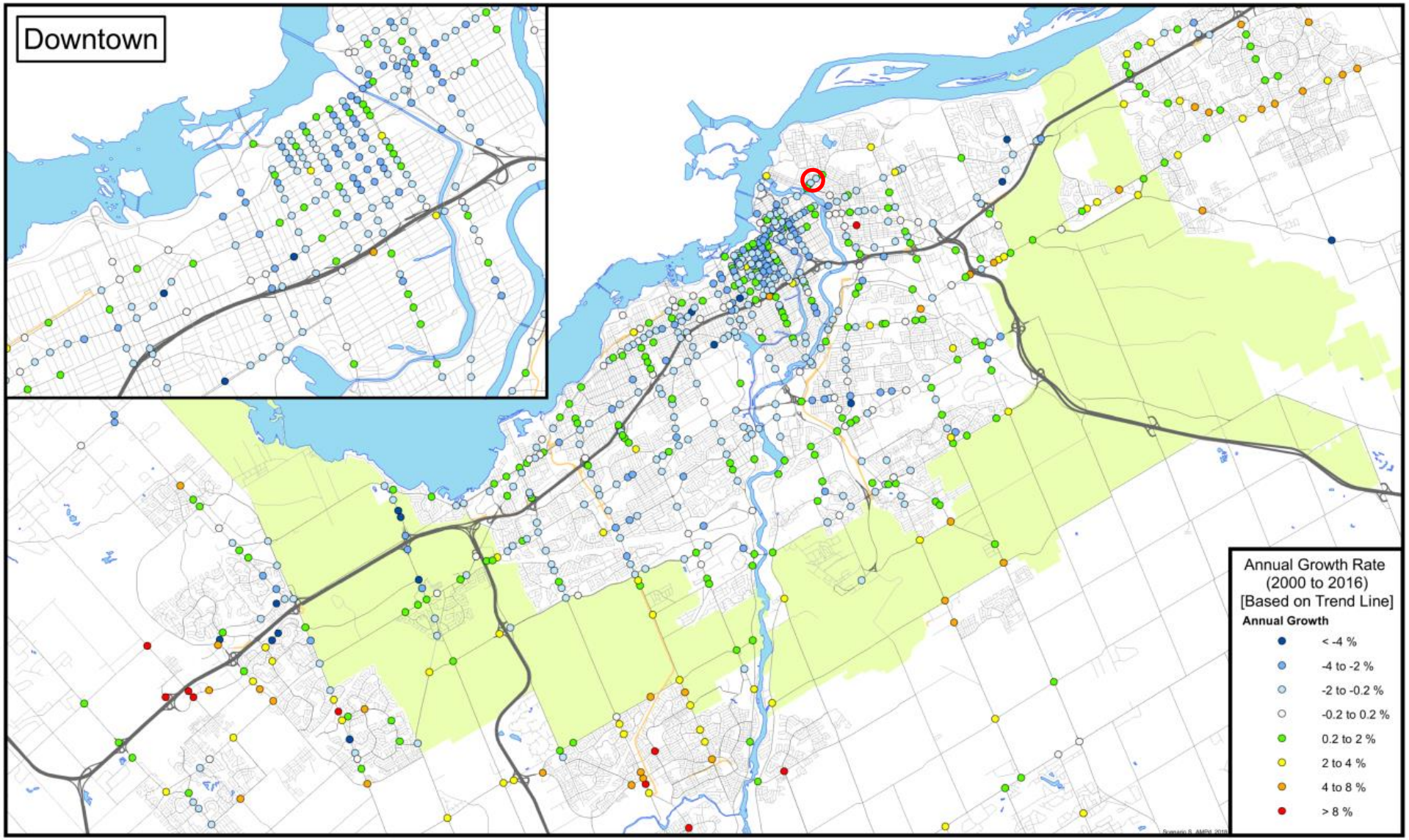
The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and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

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

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

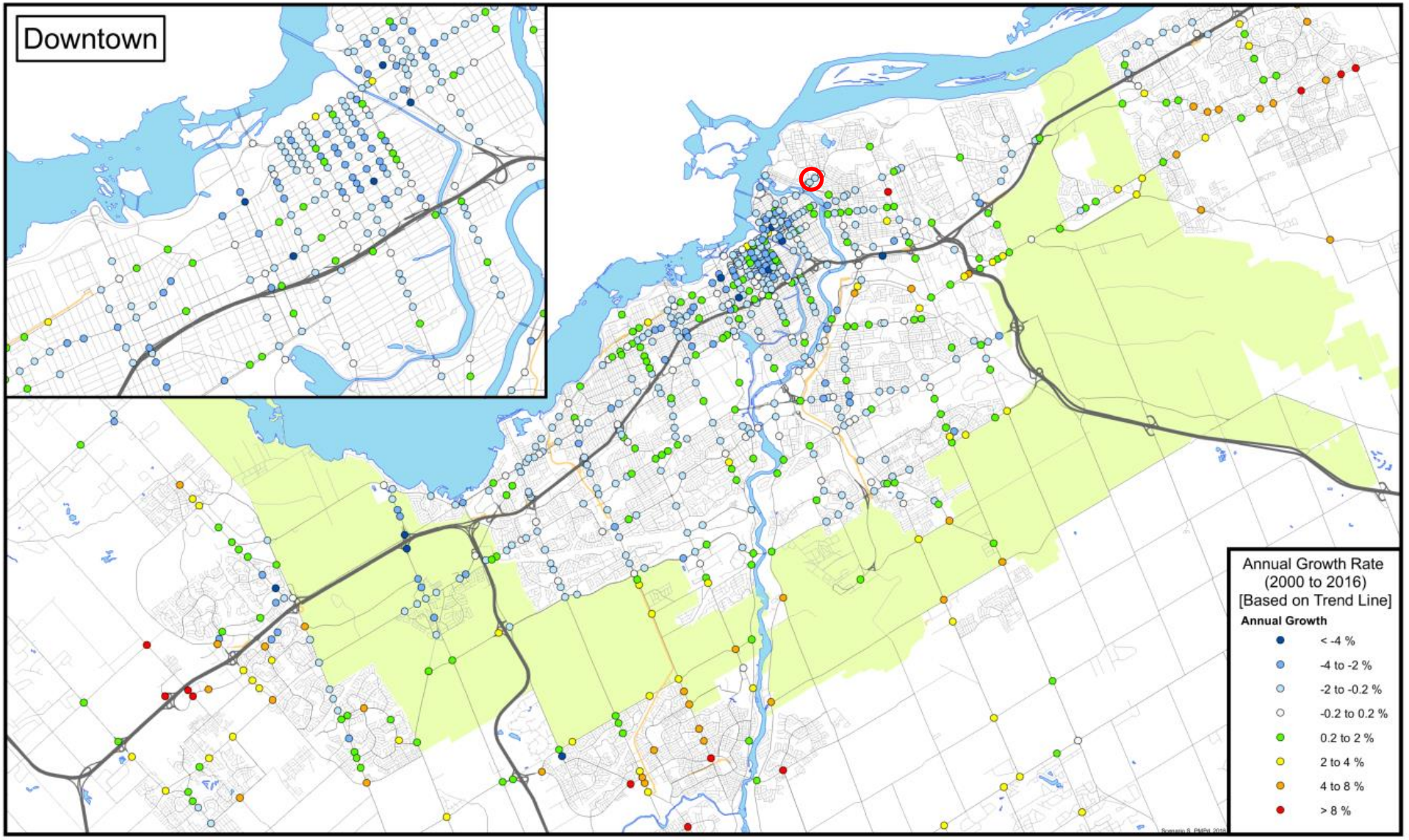
INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



APPENDIX I

Transportation Demand Management

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

Legend

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

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

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

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

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

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

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

Legend

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

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

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

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

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

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

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: *Non-residential developments*	Check if proposed & add descriptions
		1.	**TDM PROGRAM MANAGEMENT**	
		1.1	**Program coordinator**	
BASIC	★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
		1.2	**Travel surveys**	
BETTER		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2.	**WALKING AND CYCLING**	
		2.1	**Information on walking/cycling routes & destinations**	
BASIC		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances	☑
		2.2	**Bicycle skills training** *Commuter travel*	
BETTER	★	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3	**Valet bike parking** *Visitor travel*	
BETTER		2.3.1	Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☐
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☑
BETTER		3.1.3	Provide real-time arrival information display at entrances	☐
		3.2	**Transit fare incentives**	
			Commuter travel	
BETTER		3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
			Visitor travel	
BETTER		3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3	**Enhanced public transit service**	
			Commuter travel	
BETTER		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4	**Private transit service**	
			Commuter travel	
BETTER		3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7.	**TDM MARKETING & COMMUNICATIONS**	
		7.1	**Multimodal travel information**	
			Commuter travel	
BASIC	★	7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	☑
			Visitor travel	
BETTER	★	7.1.2	Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2	**Personalized trip planning**	
			Commuter travel	
BETTER	★	7.2.1	Offer personalized trip planning to new/relocating employees	☐
		7.3	**Promotions**	
			Commuter travel	
BETTER		7.3.1	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8.	**OTHER INCENTIVES & AMENITIES**	
		8.1	**Emergency ride home**	
			Commuter travel	
BETTER	★	8.1.1	Provide emergency ride home service to non-driving commuters	☐
		8.2	**Alternative work arrangements**	
			Commuter travel	
BASIC	★	8.2.1	Encourage flexible work hours	☐
BETTER		8.2.2	Encourage compressed workweeks	☐
BETTER	★	8.2.3	Encourage telework	☐
		8.3	**Local business travel options**	
			Commuter travel	
BASIC	★	8.3.1	Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4	**Commuter incentives**	
			Commuter travel	
BETTER		8.4.1	Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5	**On-site amenities**	
			Commuter travel	
BETTER		8.5.1	Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

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

Legend

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

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

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

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

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

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

APPENDIX J

MMLOS Analysis

This section provides a review of the boundary streets using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation. Beechwood Avenue and Springfield Road have been evaluated using the targets for roadways within 300m of a school. Douglas Avenue has been evaluated using the targets for roadways within the General Urban Area.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target PLOS A for roadways within 300m of a school (Beechwood Avenue, Springfield Road) and a target PLOS C for roadways within the General Urban Area (Douglas Avenue). The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target BLOS A for Crosstown Bikeways within 300m of a school (Beechwood Avenue), a target BLOS B for Local Routes within 300m of a school (Springfield Road), and a target BLOS D for General Urban Area roadways with no cycling route designation (Douglas Avenue). The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of Beechwood Avenue and Springfield Road, as these roadways are currently served by transit. Exhibit 22 of the *MMLOS Guidelines* suggest a target TLOS D for Transit Priority Corridors with Isolated Measures (Beechwood Avenue) and no target for roadways without a RTTP designation (Springfield Road). The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target TkLOS E for arterial roadways within 300m of a school that do not have a Truck Route designation (Beechwood Avenue), and no target for collector/local roadways without a Truck Route designation (Springfield Road, Douglas Avenue). The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed[1]	PLOS
Beechwood Avenue (Springfield Road to Douglas Avenue, north side)[2]					
1.5m	0.5m to 2.0m	> 3,000 vpd	Yes	60 km/h	**D**
Beechwood Avenue (Springfield Road to Douglas Avenue, south side)					
1.5m	0.5m to 2.0m	> 3,000 vpd	No	60 km/h	**E**
Springfield Road (Beechwood Avenue to Putman Avenue, east side)[2]					
1.5m	0m	N/A	N/A	60 km/h	**F**
Springfield Road (Beechwood Avenue to Putman Avenue, west side)					
1.5m	0m	N/A	N/A	60 km/h	**F**
Douglas Avenue (Beechwood Avenue to Putman Avenue, east side)					
1.5m	0m	N/A	N/A	60 km/h	**F**
Douglas Avenue (Beechwood Avenue to Putman Avenue, west side)[2]					
2.0m	0m	≤ 3,000 vpd	N/A	60 km/h	C

1. Operating speed taken as the speed limit plus 10 km/h
2. Adjacent to subject site

Table 2: BLOS Segment Analysis

Road Class	Route Type	Bikeway Type	Travel Lanes	Operating Speed	Bike Lane Width	Bike Lane Blockage	BLOS
Beechwood Avenue (Springfield Road to Douglas Avenue, north side)							
Arterial	Crosstown Bikeway	Bike Lane + Parking Lane	2	60 km/h	≥ 4.5m (combined)	Rare	**D**
Beechwood Avenue (Springfield Road to Douglas Avenue, south side)							
Arterial	Crosstown Bikeway	Curbside Bike Lane	2	60 km/h	1.5m-1.8m	Rare	**C**
Springfield Road (Beechwood Avenue to Putman Avenue)							
Collector	Local Route	Mixed Traffic	2	60 km/h	-	-	**F**
Douglas Avenue (Beechwood Avenue to Putman Avenue)							
Local	No Class	Mixed Traffic	2	60 km/h	-	-	**F**

Table 3: TLOS Segment Analysis

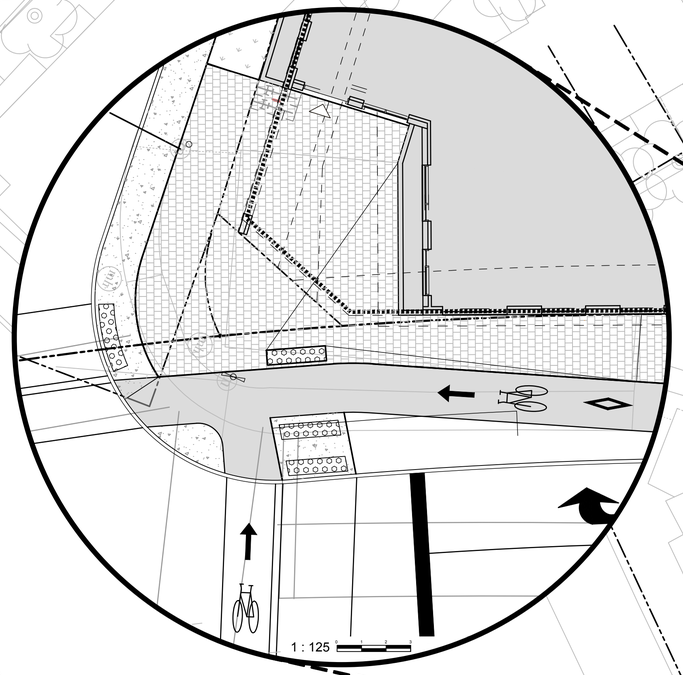
Facility Type	Level of Congestion Delay, Friction and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Beechwood Avenue (Springfield Road to Douglas Avenue)				
Mixed Traffic – Frequent Parking/Driveway Friction	Yes	High	High	**F**
Springfield Road (Beechwood Avenue to Putman Avenue)				
Mixed Traffic – Frequent Parking/Driveway Friction	Yes	High	High	F

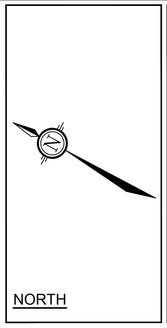
Table 4: TkLOS Segment Analysis

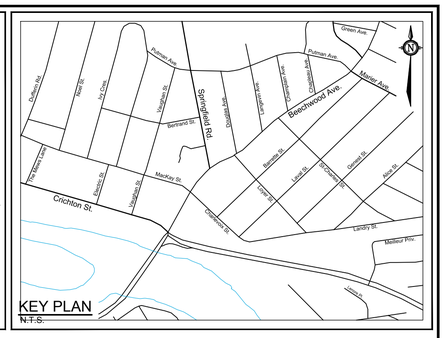
Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Beechwood Avenue (Glen Avenue/Belmont Avenue to Grove Avenue)		
≤ 3.5m	1	C
Springfield Road (Beechwood Avenue to Putman Avenue)		
≤ 3.5m	1	C
Douglas Avenue (Beechwood Avenue to Putman Avenue)		
> 3.7m	1	B

APPENDIX K

Functional Design of Cycle Tracks







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NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
1.	ISSUED FOR CITY REVIEW	MAY 22/24	JLL

SCALE
1:250
1:250
0 2 4 6 8 10

DESIGN RCH
CHECKED JRA
DRAWN RCH
CHECKED JRA
APPROVED JLL

FOR REVIEW ONLY

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LOCATION
CITY of OTTAWA
47 BEECHWOOD AVENUE

DRAWING NAME
FUNCTIONAL DESIGN
(ULTIMATE DESIGN)

PROJECT No. 122186
REV REV # 1
DRAWING No. 122186-FD1

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