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Proposed Residential Development

3400 and 3428 Woodroffe Avenue

Transportation Impact Assessment

Prepared for: Phoenix Homes

Proposed Residential Development

3400 and 3428 Woodroffe Avenue

Transportation Impact Assessment

Prepared By:

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

September 26, 2025

Novatech File: 124147
Ref: R-2025-44

NOVATECH
Engineers, Planners & Landscape Architects

September 26, 2025

City of Ottawa
Planning, Development & Building Services Department
110 Laurier Ave. W. 4th Floor
Ottawa, Ontario K1P 1J1

Attention: **Josiane Gervais**
Project Manager, Transportation Approvals

Dear Ms. Gervais:

Reference: **3400 and 3428 Woodroffe Avenue**
Transportation Impact Assessment
Novatech File No.: 124147

We are pleased to submit the following Transportation Impact Assessment (TIA) Report in support of the Zoning By-law Amendment and Site Plan Control applications for the above noted properties, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa 2017 TIA Guidelines and its 2023 revisions.

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

Yours truly,

NOVATECH

Mohammed Talha
Engineering Intern | 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 11 day of November, 20 25.

Name: Brad Byvelds

Professional Title: P. Eng. Senior Transportation Project Manager

B.Byvelds

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)	
Address:	240 Michael Cowpland Drive
City / Postal Code:	K2M 1P6
Telephone / Extension:	613-254-9643 EXT 286
E-Mail Address:	b.byvelds@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) report has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for the proposed residential development at 3400 and 3428 Woodroffe Avenue in Ward 24, Barrhaven East, in Ottawa. The subject site has an area of approximately 2.37 hectares (5.85 acres) and is currently a vacant land.

The proposed development will include 160 residential units with the following breakdown: 108 terra flats, 32 back-to-back 3-storey townhomes, and 20 2-storey townhomes. The development is anticipated to be constructed in a single phase with full occupancy in 2029. The proposed development will be accessed via one driveway to Woodroffe Avenue.

The subject site currently is surrounded by the following:

- Longfields Community Church and single detached dwellings followed by Paul Métivier Dr to the north;
- Single detached dwellings to the south;
- Woodroffe Ave followed by low density residential units, and Stoneleigh St to the east;
- Single detached dwellings to the west.

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

Trip Generation

- The proposed development is anticipated to generate 78 AM peak hour person trips (including 40 vehicle trips), and 82 PM peak hour person trips (including 43 vehicle trips).

Access Intersection Design

- The proposed development will be served by one proposed full movement access off Woodroffe Avenue.
- The proposed driveway adheres to all provisions of the PABL, except Section 25(u).
- The proposed access will have a grade of 5.5% within the first 9m. As the 5.5% downgrade is not anticipated to impact sight lines or create a traffic hazard, a waiver to Section 25(u) of the PABL is requested.
- The proposed access meets the roadway at perpendicular angle and no vertical or horizontal curves impact sightlines, based on desktop review the requirements of sight distances are met.
- Based on TAC's Geometric Design Guidelines for Canadian Roads, the minimum clear throat length requirement for a driveway connecting to a collector roadway is satisfied.

Development Design

- The proposed roadway modifications along the site frontage will provide a 9.4m road platform which will allow for two travel lanes and a parking lane. A new sidewalk will be provided in front of hydro poles with a 3.0m boulevard to allow for the future construction of a southbound cycle track by others.
- As the sidewalk on the west side of Woodroffe Avenue will be discontinuous, and there is a desire line for pedestrians to Berry Glen Park southeast of the site, a new Type D Pedestrian Crossover (PXO) and mid-block narrowing is proposed near the southern limits of the site.
- An on-site pathway network will be provided to connect all dwellings to the new sidewalk on the west side of Woodroffe Avenue.

- The closest OC Transpo bus stops are #3764, and #3353, which are approximately at a 200m walking distance from the subject site.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

Circulation and Access

- Vehicles for garbage collection and deliveries will be accommodated within the subject site.
- A fire access route in accordance with the Ontario Building Code (OBC) standards is provided via the site's only access off Woodroffe Avenue.

Parking

- A total of 222 vehicle parking spaces are proposed, adhering to the requirements of the ZBL.
- A total of 57 bicycle parking spaces are proposed, of which 30 will be indoor and 27 will be surface spaces. The proposed bicycle parking adheres to the requirements of the ZBL.

Boundary Street Design

- The west side of Woodroffe Avenue doesn't have a sidewalk, which earns it a PLOS F. The proposed roadway modifications will include a 2.0m sidewalk with 3.0m boulevard along the site frontage, achieving a PLOS A.
- The existing mixed-use lanes along Woodroffe Avenue do not meet the target BLOS B. To achieve the target BLOS B, either a reduced operating speed or a separated cycling facility is required. The proposed roadway modifications will include a mid-block narrowing and will assist in lowering the operating speed in proximity of the site. Additionally, a 3.0m boulevard is proposed between the curb and the sidewalk to allow for future implementation of a southbound cycle track (by others).

Transportation Demand Management

- The proponent has agreed to implement the following measures as part of the TDM program:
    - Display local area maps with walking/cycling access routes and key destinations (In Sales Centre);
    - Display relevant transit schedules and route maps (In Sales Centre); and
    - Provide a multimodal travel option information package to new residents.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) report has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for the proposed residential development at 3400 and 3428 Woodroffe Avenue in Ward 24, Barrhaven East, in Ottawa. The subject site has an area of approximately 2.37 hectares (5.85 acres) and is currently a vacant land.

An aerial view of the subject site's vicinity is shown in **Figure 1.** The subject site currently is surrounded by the following:

- Longfields Community Church and single detached dwellings followed by Paul Métivier Dr to the north;
- Single detached dwellings to the south;
- Woodroffe Ave followed by low density residential units, and Stoneleigh St to the east;
- Single detached dwellings to the west.

Figure 1: Aerial View of the Subject Site's Vicinity

Source: Aerial Snapshot from Google Earth

1.2 Proposed Development

The subject site has frontage on Woodroffe Ave and is in the Suburban (Southwest) Transect. Within the study area and as per Schedule B6 of the City's Official Plan (OP), Woodroffe Ave is designated as Corridor – Minor and as evolving neighbourhood overlay.

The proposed development will include 160 residential units with the following breakdown:

- 108 Terra Flats;
- 32 Back-to-Back Townhomes; and
- 20 Townhomes.

The development is anticipated to be constructed in a single phase with full occupancy in 2029. The proposed development will be accessed via one driveway to Woodroffe Avenue. Within the site, a circular drive aisle will be constructed to provide surface parking and accesses to the proposed buildings' driveway & garage. A total of 222 parking spaces including resident and visitor parking will be provided.

The site plan is included in **Appendix A**.

1.3 Screening Form

The City's *Revised TIA Guidelines* identify three triggers to satisfy the requirements for the need of a TIA report, including trip generation, location, and safety. The minimum 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 anticipated to generate over 60 peak hour person trips; further assessment is **required** based on this trigger.

- Location Triggers – The development does not propose a new connection to a designated Rapid Transit or Transit Priority (RTTP) corridor or a Crosstown Bikeway, and is not located within a Hub, Protected Major Transit Station Area (PMTSA), or Design Priority Area (DPA); further assessment is **not required** based on this trigger.

- Safety Triggers – None of the listed triggers are satisfied; further assessment is **not required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

Woodroffe Avenue falls under the jurisdiction of the City of Ottawa and runs on a north-south alignment from Kichi Zībī Mīkan Parkway to the north and ends in a dead-end approximately 900m south of the subject site. Based on the Schedule C4 of the City's Official Plan, it is classified as an arterial road between Kichi Zībī Mīkan Parkway and Strandherd Drive, as a major collector road between Strandherd Drive and Brean-Maur Road, and as a local road south of Bren-Maur Road. In the study area it has two-lane undivided semi-urban cross section with a posted speed

limit of 50 kmph. South of Paul Métivier Dr/Cresthaven Dr, it has a curb/sidewalk only on the east side, and on the west side it has a gravel shoulder. Within the study area, it is not classified as a truck route. On street parking is permitted. The City's OP's Schedule C16 identifies a Right-of-Way (ROW) protection for Woodroffe Avenue of 26m between Strandherd Dr and Bren Maur Rd.

2.1.2 Study Intersections

<u>Woodroffe Ave/Cresthaven Dr/ Paul Métivier Dr</u>

- Unsignalized four-legged intersection.
- Stop control sign on all approaches.
- Northbound Approach (Woodroffe Ave): one left turn lane, and one shared through/right turn lane.
- Southbound Approach (Woodroffe Ave): one left turn lane, and one shared through/right turn lane.
- Eastbound Approach (Paul Métivier Dr): one left turn lane, and one shared through/right turn lane.
- Westbound Approach (Cresthaven Dr): one left turn lane, and one shared through/right turn lane.
- Standard crosswalk on all approaches:

2.1.3 Driveways

A review of existing adjacent driveways along the boundary roads are provided as follows:

<u>Woodroffe Avenue (West Side)</u>

- One driveway to Longfields Community Church.
- Three private driveways to residential units at 3436, 3440, 3448 Woodroffe Ave.

<u>Woodroffe Avenue (East Side)</u>

- Between Cresthaven Dr and Shady Grove St: Five private driveways to residential units at 3373, 3375, 3377, 3379, and 3381 Woodroffe Avenue.
- Between Shady Grove St and Stoneleigh St: Three private driveways to residential units at 3387, 3389, and 3391 Woodroffe Avenue.
- Between Stoneleigh St and Whitewater St: Eleven private driveways to residential units at 3405, 3407, 3409, 3411, 3413, 3415, 3417, 3419, 3421, 3423, and 3425 Woodroffe Avenue.

2.1.4 Pedestrian and Cycling Facilities

Sidewalks

- Woodroffe Avenue south of Paul Métivier Dr/Cresthaven Dr has sidewalk only on the east side; north of it, it has sidewalk on both sides.
- Paul Métivier Dr and Cresthaven Dr have sidewalks on both sides.

Cycling Facilities

- No cycling facilities currently exist within the study area. Within the study area, Woodroffe Avenue, Paul Métivier Dr, and Cresthaven Dr are suggested cycling routes.

2.1.5 Transit

There are several OC Transpo bus stops in the vicinity of the subject site including the Nepean Woods Rapid Transit Station. The closest bus stops are shown in **Figure 2**. The location of the bus stops including the routes they service are summarized in **Table 1**. The routes that serve the study area are summarized in **Table 2**. Detailed route information from OC Transpo Map is summarized in **Appendix C**.

Table 1: OC Transpo Transit Stops

Road	Side	Stop No.	Location	Routes Serviced
Paul Métivier Dr	North Side	0724	West of Woodroffe Avenue	277
	South Side	0725		277
Cresthaven Dr	North Side	3764	East of Woodroffe Avenue	80, 277
	South Side	3353		80, 277
Chapman Mills Dr/Transitway	North Side	3048 – 2A	East of Woodroffe Avenue	70, 74, 80, 99, 110
	South Side	3048 – 1A		70, 74, 80, 99, 110, 277

Figure 2: OC Transpo Bus Stop Locations

Source: Aerial Snapshot from Google Earth

Table 2: OC Transpo Route Information

Route Details	Frequency
Route 70 – Local Limebank ↔ Fallowfield	Weekday: 15-30 mins headway depending on peak/off-peak hours. Weekend: 30 mins headway.
Route 74 – Frequent Tunney's Pasture ↔ Limebank	Weekday: 15-30 mins headway depending on peak/off-peak hours. Weekend: 30 mins headway.
Route 80 – Frequent Tunney's Pasture ↔ Barrhaven Centre	Weekday: 15-30 mins headway depending on peak/off-peak hours. Every alternate bus starts/ends at Nepean Woods. Weekend: 30 mins headway.

Route Details	Frequency
Route 99 – Local Limebank ↔ Barrhaven Centre/Weybridge	Weekday: 30 mins headway. Every alternate bus extends to Weybridge till 17:36. Weekend: 30 mins headway.
Route 110 – Local Limebank ↔ Innovation/Briarbrook	Weekday: 30 mins headway. Weekend: Only Two buses in the morning and evening between 6-7 AM and 5-6 PM. They have 30 mins headway.
Route 277 – Connection Nepean Woods ↔ Tunney's Pasture	Weekday: Only six buses with 30 minutes headway in the morning to Tunney's Pasture. And six buses with 30 minutes headway in the evening to Nepean Woods. Weekend: Not serviced.

2.1.6 Area Traffic Management

The following signages are posted on Woodroffe Avenue in the vicinity of the study area:

- Children playing signage;
- School bus stop signage.

Within the study area, there are no Traffic Calming Studies (TCS) studies that are in progress and/or completed recently.

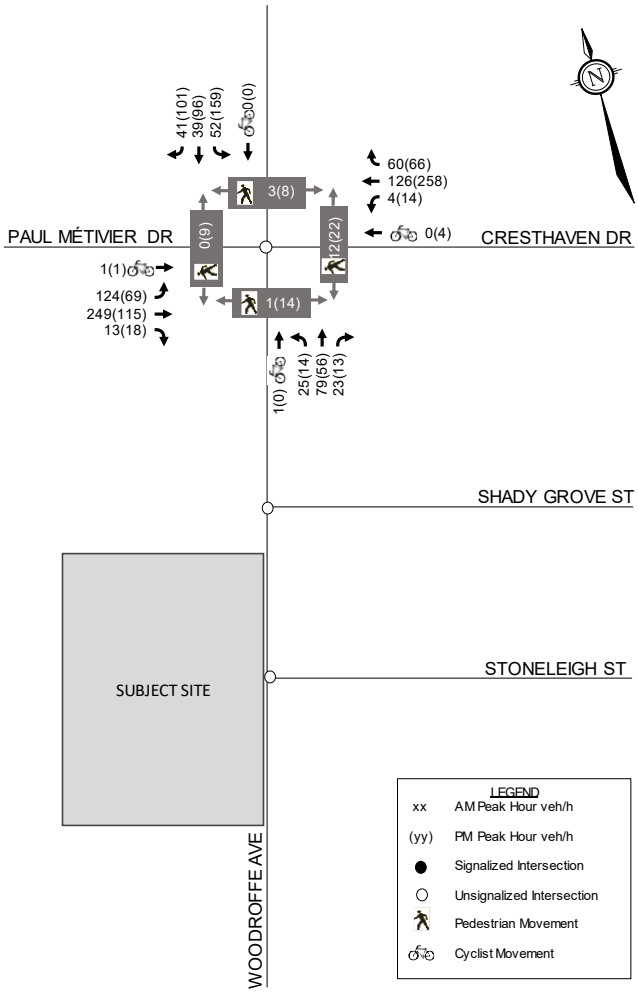
2.1.7 Existing Traffic Volumes

A weekday traffic count was obtained from the City of Ottawa and was used to determine the existing pedestrian, cyclist and vehicular traffic volumes at the study area intersection. The traffic count was completed on the following date:

- Woodroffe Ave/Cresthaven Dr/ Paul Métivier Dr March 18, 2025

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

Figure 3: Existing Traffic Volumes



2.1.8 Collision History

Historical collision data from 2018-2022 was obtained from the City's Traffic Services Department for the study area intersection. Copies of the collision summary reports are included in **Appendix E**. It was found that the segment of Woodroffe Ave between Cresthaven Dr/ Paul Métivier Dr and Whitewater Street did not have any collisions during the period being analyzed.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The number of collisions at the study area intersection and segment from January 1, 2018, to December 31, 2022, is summarized in **Table 3**.

Table 3: Collision History

Intersection/Street Segment	Impact Types					Total
	Angle	Rear End	Sideswipe	Turning Movement	SMV[(1)]/ Other	
Intersection						
Woodroffe Ave/Cresthaven Dr/ Paul Métivier Dr	9	1	0	0	1	11
Segment						
Woodroffe Ave between Cresthaven Dr/ Paul Métivier Dr and Whitewater Street	0	0	0	0	0	0

Woodroffe Ave/Cresthaven Dr/ Paul Métivier Dr

A total of eleven collisions occurred at this intersection, nine of which were angle collisions, one was rear-end collision and was single vehicle collision. Three of the eleven collisions caused injuries, but none caused fatalities. None of the collisions involved a cyclist or a pedestrian.

Of the eleven collisions, ten occurred in clear conditions and one occurred in rain conditions. Additionally, five occurred in daylight conditions, two in dusk, one in dawn, and three in dark conditions.

Of the nine angle collisions:

- six involved northbound and eastbound vehicles;
- two involved southbound and eastbound vehicles; and
- one involved a southbound and westbound vehicle.

Most of the angle collisions involved vehicles approaching from the northbound and eastbound approaches of the intersection. The eastbound approach has a downgrade but has clear sightlines. The northbound approach also has clear sightlines.

2.2 Planned Conditions

2.2.1 Transportation Projects

Within the *2013 Transportation Master Plan (TMP)* and the *Draft 2025 TMP Capital Infrastructure Plan Highlights Report*, no planned transportation projects were identified within the study area.

2.2.2 Other Area Developments

No projects in the vicinity of the subject site were identified that are under construction, approved, or in the approval process.

2.3 Study Area and Time Periods

As the proposed development is not anticipated to generate 75 vehicle trips, the study area for this report has been limited to the site frontage. The study area includes the boundary street Woodroffe Avenue and the intersection at:

- Woodroffe Ave/Paul Métivier Dr/Cresthaven Dr

2.4 Development Generated Travel Demand

2.4.1 Trip Generation

The *TRANS Trip Generation Manual Summary Report* (October 2020, WSP) was used to estimate the traffic generated by the proposed development. Peak period person trips generated by the proposed development have been estimated based on the recommended residential person-trip rates in Table 3 of the *TRANS Manual*.

The TRANS Trip Generation Manual Summary Report (October 2020, WSP) was used to estimate the traffic generated by the proposed development. Peak period person trips generated by the proposed development have been estimated based on the Multi-Unit (Low-Rise) rates for the 2-storey townhomes and 3-storey back-to-back townhomes, and Multi-Unit (High-Rise) rates for the terra flats. The directional distribution of the peak period trips is identified in Table 9 of TRANS Trip Generation Manual. The peak period person trips generated by the proposed residential development during the weekday AM and PM peak periods are estimated in **Table 4**.

Table 4: Peak Period Person Trips Generated

Land Use	TRANS Rate per Unit	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp[1])		
			IN	OUT	TOT	IN	OUT	TOT
Multi-Unit (Low-Rise)	AM: 1.35 PM: 1.58	52	21	48	69	46	35	81
Multi-Unit (High-Rise)	AM: 0.80 PM: 0.90	108	26	60	86	55	42	97
Total		160	47	108	155	101	77	178

1. ppp = person trips per peak period

Table 6, and table 7 of *TRANS Trip Generation Manual* include recommended AM and PM peak period modal shares by district based on the type of residential dwelling. Figure 1 of TRANS Trip Generation Manual identifies the subject site as being within the South Nepean district and therefore recommends the following modal shares:

For Multi–Unit (Low-Rise)

- Auto Driver: 49% AM, 49% PM
- Transit: 26% AM, 24% PM
- Pedestrian: 9% AM, 12% PM
- Auto Passenger: 13% AM, 13% PM
- Cyclist: 2% AM, 2% PM

For Multi–Unit (High-Rise)

- Auto Driver: 58% AM, 54% PM
- Transit: 30% AM, 25% PM
- Pedestrian: 4% AM, 7% PM
- Auto Passenger: 6% AM, 15% PM
- Cyclist: 2% AM, 0% PM

For the purposes of this report, the above-mentioned AM and PM rates were averaged, and a single set of modal shares were applied. The modal shares assumed are as follows:

- Auto Driver: 55%
- Transit: 25%
- Pedestrian: 10%
- Auto Passenger: 10%
- Cyclist: 0%

Table 5: Proposed Development - Peak Period Person Trips

Modal Split	Modal Share	AM Peak Period (ppp[1])			PM Peak Period (ppp[1])		
		IN	OUT	TOT	IN	OUT	TOT
	Person Trips	*47*	*108*	*155*	*101*	*77*	*178*
Auto Driver	55%	25	59	84	55	42	97
Auto Passenger	10%	5	11	16	10	8	18
Transit	25%	12	27	39	26	19	45
Cyclist	0%	0	0	0	0	0	0
Pedestrian	10%	5	11	16	10	8	18

1. ppp = person trips per peak period

Table 4 of TRANS Trip Generation Manual includes adjustment factors to convert the estimated peak period person trips to peak hour person trips. A breakdown of the estimated peak hour person trips with site development is shown in **Table 6**.

Table 6: Peak Hour Person Trips Generated

Modal Split	Peak Hour Factor	AM Peak Hour (pph[1])			PM Peak Hour (pph[1])		
		IN	OUT	TOT	IN	OUT	TOT
Auto Driver	AM: 0.48 PM: 0.44	12	28	40	25	18	43
Auto Passenger	AM: 0.48 PM: 0.44	2	6	8	5	3	8
Transit	AM: 0.55 PM: 0.48	6	15	21	13	9	22
Cyclist	AM: 0.58 PM: 0.48	0	0	0	0	0	0
Pedestrian	AM:0.58 PM: 0.52	3	6	9	5	4	9
Total		23	55	78	48	34	82

1. pph = person trips per peak hour

The proposed development is anticipated to generate 78 AM peak hour person trips (including 40 vehicle trips), and 82 PM peak hour person trips (including 43 vehicle trips).

2.4.2 Trip Distribution

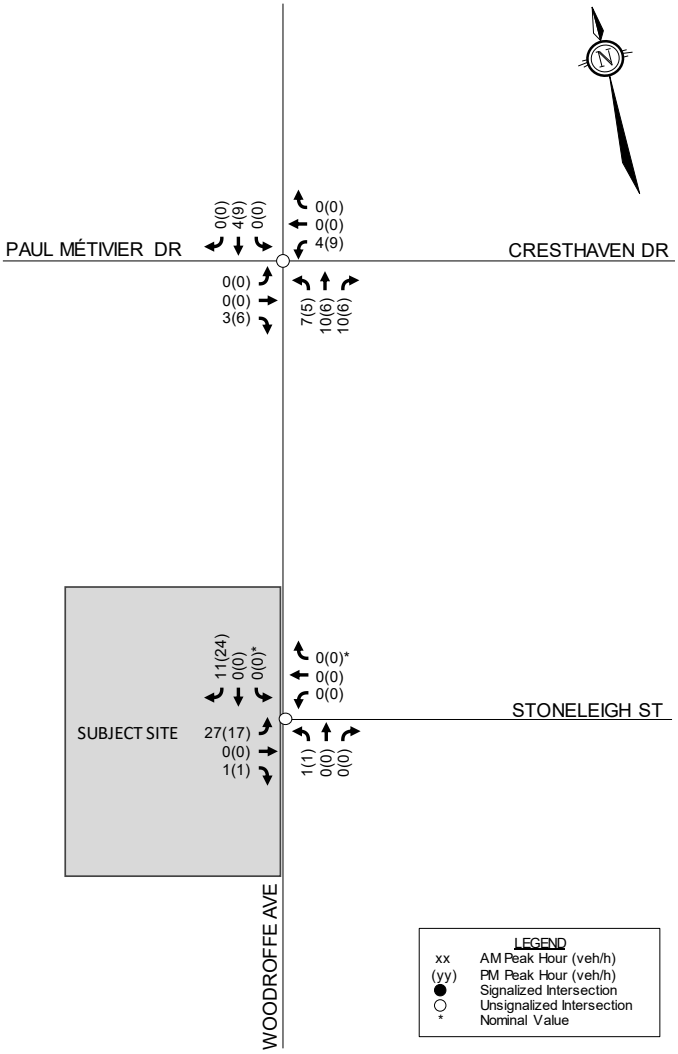
The trip distribution has been assumed based on the existing traffic pattern of the study area. The anticipated trip distribution is:

- 35% to/from North via Woodroffe Ave;
- 5% to/from south via Whitewater St/Grovemont Dr/Rocky Hill Dr
- 35% to/from east via Cresthaven Dr; and
- 25% to/from west via Paul Métivier Dr

2.4.3 Trip Assignment

The subject site is accessible via the proposed access on Woodroffe Avenue. All trips have been assigned from this proposed access. The assignment of trips generated by the development is shown in **Figure 4**.

Figure 4: Site Generated Traffic Volumes



2.5 Access Design

The proposed development will be served by one full movement access along Woodroffe Avenue. The proposed access will have a width of 6.7m and will be located across from the Stoneleigh Street, forming a four-legged intersection. The design of the access has been evaluated using the relevant provisions of the City's Private Approach By-law (PABL) and Zoning By-law (ZBL).

Section 25(c) of the PABL states that two-way accesses to have a width no greater than 9m, as measured at the street line. Furthermore, the City of Ottawa's ZBL identifies a minimum width of

6.0m and maximum width of 6.7m for two-way driveway leading to a residential parking garage/lot with more than 20 spaces. Based on the site plan, the proposed site access adheres to both these requirements.

Section 25(s) of the PABL requires that the grade not exceed 2% on the private approach descending in the direction of the roadway. The proposed site access adheres to this requirement.

Section 25(u) of the PABL identifies a requirement that any private approach serving a parking lot area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. The proposed access will have a grade of 5.5% within the first 9m. As the 5.5% downgrade is not anticipated to impact sight lines or create a traffic hazard, a waiver to section 25(u) of the PABL is requested.

The Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads* identifies minimum intersection sight distance (ISD) and stopping sight distance (SSD) requirements, based on the roadway grade and design speed (taken as the speed limit plus 10 kmph). The required ISD and SSD for the proposed access is summarized below:

ISD: 130m to turn left
110 to turn right
SSD: 85m

As the proposed access meets the roadway at a perpendicular angle and no vertical or horizontal curves impact sightlines, based on desktop review the requirements are met.

TAC's Geometric Design Guidelines for Canadian Roads also identifies the minimum clear throat length for major driveways. A driveway serving apartments with 100 – 200 units require a minimum of 15m clear throat length when the driveway connects to a collector road. The proposed site access has a clear throat length of approximately 40m and adheres to the minimum requirement.

The site's only access of Woodroffe Avenue is recommended to be stop controlled (side street).

2.6 Exemptions Review

As per the city's 2023 revisions to the TIA Guidelines, Table 7 summarizes the exemptions applicable to the subject site.

Table 7: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	*4.1.2* Circulation and Access	Required for site plan and zoning by-law applications.	Not Exempt
	4.1.3 New Street Networks	Required for plans of subdivision.	Exempt
4.2 Parking	*All elements*	Required for site plan and zoning by-law applications.	Not Exempt

Module	Element	Exemption Criteria	Status
4.3 Boundary Street Design	*All elements*	Required for all.	Not Exempt
4.5 Transportation Demand Management	*All Elements*	All	Not Exempt
4.6 Neighbourhood Traffic Calming	*All elements*	Required if all the below 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 generates more than 75 vehicle trips. 4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50%+ along the route between the site and an arterial road. 5. The subject street segment is adjacent to two or more of the following significant sensitive land uses: ○ School (within 250m walking distance) ○ Park ○ Retirement/older adult facility ○ Licensed childcare centre ○ Community centre ○ 50+% of adjacent properties along the route(s) are occupied by residential lands and at least ten dwellings are occupied	Exempt
4.7 Transit	*4.7.1* Transit Route Capacity	Required when the proposed development generates more than 75 transit trips.	Exempt
	4.7.2 Transit Priority Requirements	Required when the proposed development generates more than 75 vehicle trips.	Exempt
4.8 Network Concept	*All elements*	Required when the proposed development generates >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 the proposed development generates more than 75 vehicle trips.	Exempt

3.0 FORECASTING

3.1 Background Traffic

3.1.1 Other Area Developments

As mentioned in section 2.2.2, no projects in the vicinity of the subject site were identified that are under construction, approved, or in the approval process.

3.1.2 Background Growth Rate

Within the study area, Woodroffe Avenue is classified as a major collector road and serves low density residential developments in the area. No growth rate has been applied to the study area intersection since the traffic is not anticipated to increase given the characteristics of the roadways.

3.1.3 Future Traffic Conditions

The figures listed below present the following future traffic conditions:

- Background traffic volumes in 2029 and 2034 are shown in **Figure 5**;
- Total traffic volumes in 2029 and 2034 are shown in **Figure 6**.

Figure 5: Background 2029 and 2034 Traffic Volumes

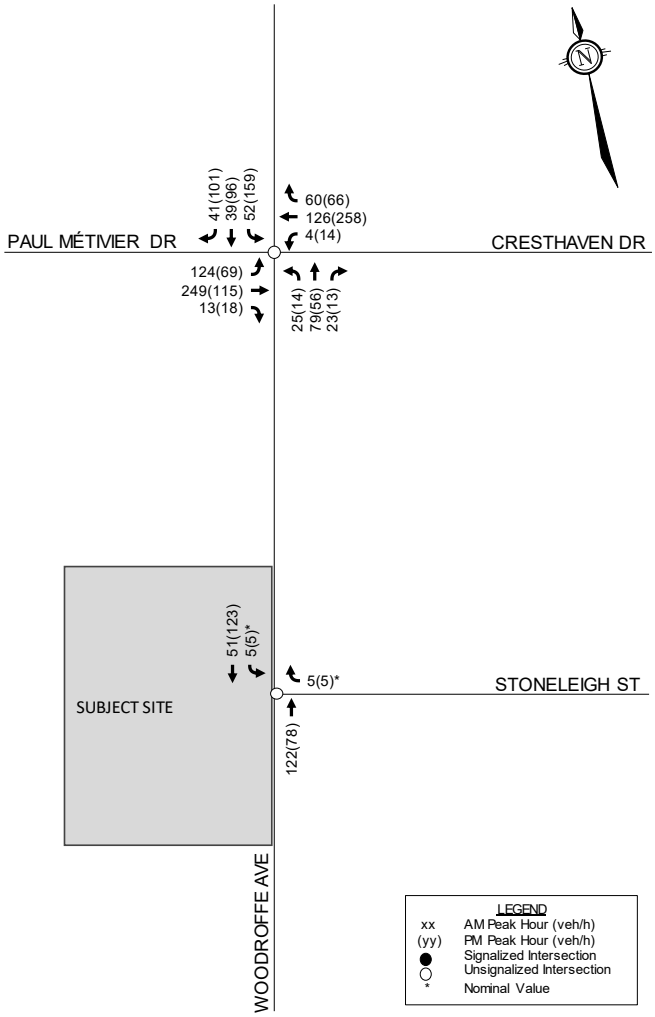
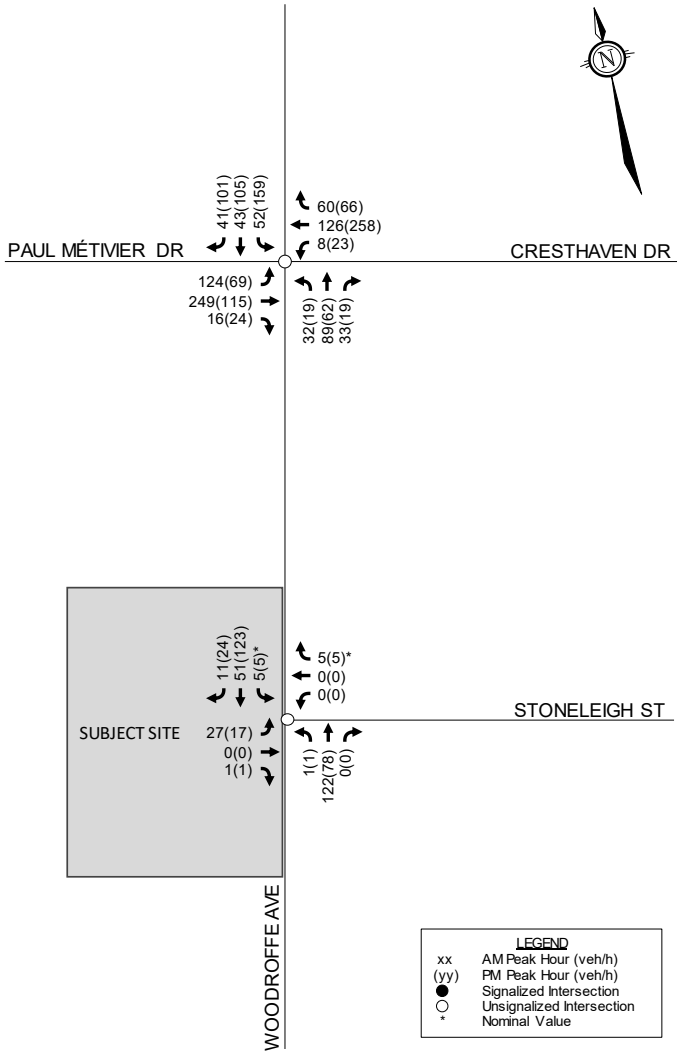


Figure 6: Total 2029 and 2034 Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

The west side of Woodroffe Avenue is currently rural with a gravel shoulder. As part of the proposed development, the west side of Woodroffe Avenue will be urbanized along the site frontage. As Woodroffe Avenue is classified as a major collector roadway, the City's Standard Neighborhood Collector Roadway cross sections have been reviewed.

Although the City's Official Plan protects for a 26m ROW, the ROW opposite to the subject site is unlikely to be taken, as it would require the expropriation from numerous single-family detached dwellings on the east side of the road. As such, the available ROW along the site frontage is effectively 22m.

As Woodroffe Avenue currently contains overhead hydro/utilities on the west side of the road, and the existing road platform is not centered within the available 22m ROW, the City's standard 22m collector roadway cross section is not achievable. However, consistent with the City's standard cross sections, the proposed roadway modification will provide a 9.4m road platform, measured from the existing curb on the east side of the road. The proposed road platform will allow for two travel lanes and a parking lane. A new sidewalk will be provided in front of the hydro poles with a 3.0m boulevard to allow for the future construction of a southbound cycle track (by others).

As the sidewalk on the west side of Woodroffe Avenue will be discontinuous, and there is a desire line for pedestrians from the proposed development to Berry Glen Park southeast of the site, a new Pedestrian Crossover (PXO) is proposed. Based on the Ontario Traffic Manual (OTM) Book 15, PXO's are recommended to be a minimum of 200m from the nearest controlled crossing. To maintain 200m between the proposed PXO and the existing Woodroffe Avenue/Paul Metivier Drive/Cresthaven Drive all-way stop controlled intersection, the PXO will be located near the southern limits of the site. A mid-block narrowing is proposed on the west side to reduce the width of the crossing, as well as provide traffic calming. Based on the Pedestrian Crossover Selection Matrix presented in the OTM Book 15, a PXO D is recommended.

A functional design of the roadway modifications is included in **Appendix F**. A Roadway Modification Approval (RMA) letter will be submitted under a separate cover.

An on-site pathway network will be provided to connect all dwellings to the new sidewalk on the west side of Woodroffe Avenue.

A total of 57 bicycle parking spaces will be provided, of which 30 spaces are indoor spaces and 27 spaces are surface spaces.

OC Transpo guidelines recommend that all developments within the vicinity of a bus route should have at least one bus stop within a walking distance of 400m, roughly a 5-minute walk. The closest OC Transpo bus stops are #3764, and #3353, which are approximately at a 200m walking distance from the subject site. The Nepean Woods transit station (of Southwest Transitway) is also located at approximately 800m walking distance from the subject site.

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

- Locate building close to the street, and do not locate parking area between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Provide safe, direct and attractive walking routes from building entrances to nearby transit stops;

4.1.2 Circulation and Access

Vehicles for garbage collection and deliveries will be accommodated within the subject site.

A fire access route in accordance with the Ontario Building Code (OBC) standards is provided via the site's only access off Woodroffe Avenue and the main circulating roadway.

Turning Movements for a Medium Single Unit (MSU) Truck accessing/egressing the subject site, and circulating within the site's circulating roadway are shown in **Figure 7** to **Figure 9**.

4.2 Parking

The subject site is located in Area C of Schedule 1 and 1A of the Zoning By-law (ZBL). The parking requirements are partially influenced by the 600m buffer of the Nepean Woods Transit Station as per Schedule 2A of the ZBL. This 600m buffer approximately divides the site into two halves. This is reflected in the minimum parking requirement calculations and the rates for Area X has been applied as per the ZBL.

The maximum number of parking spaces near rapid transit stations is limited by section 103 of the ZBL. For the subject site the 60 units of B2B Stacked Terrace Homes that fall within the 600m buffer of the Nepean Woods Transit Station are influenced by this requirement. The ZBL limits the maximum number of parking spaces at the rate of 1.75 parking spaces per dwelling unit (combined total of resident and visitor parking). This equates to a maximum limit of 105 parking spaces for the 60 units of B2B Stacked Terrace Homes. A total of 64 parking spaces are provided within this influence area, thus meeting the maximum parking requirements.

The parking requirements for the subject site are summarized in **Table 8**.

Table 8: Parking Requirements

Land Use	Minimum Parking Rate	Units	Required	Provided
Vehicle Parking				
Apartment Dwelling High Rise *(Area X rates)*	Resident = 0.5 per dwelling unit Visitor = 0.1 per dwelling unit (not required for first 12 units)	60 units (Terra Flats)	30+5 = 35 spaces	118 spaces
Apartment Dwelling High Rise *(Area C rates)*	Resident = 1.2 per dwelling unit Visitor = 0.2 per dwelling unit	48 units (Terra Flats)	58+10= 68 spaces	
B2B 3-Storey Townhomes *(Area X rates)*	Resident = 0.75 per dwelling unit Visitor = not required for units with driveways	13 units	10 spaces	64 spaces (driveway + garage)
B2B 3-Storey Townhomes *(Area C rates)*	Resident = 1 per dwelling unit Visitor = not required for units with driveways	19 units	19 spaces	
2-Storey Townhomes *(Area X rates)*	Resident = 0.75 per dwelling unit Visitor = not required for units with driveways	6 units	5 spaces	40 spaces (driveway + garage)
2-Storey Townhomes *(Area C rates)*	Resident = 1 per dwelling unit Visitor = not required for units with driveways	14 units	14 spaces	

Land Use	Minimum Parking Rate	Units	Required	Provided
Bicycle Parking				
Apartment Dwelling High Rise	0.5 per dwelling unit	108 units (Terra Flats)	54 spaces	57 spaces (30 indoor + 27 surface)

A total of 222 vehicle parking spaces are proposed, adhering to the requirements of the ZBL.

A total of 57 bicycle parking spaces are proposed, of which 30 will be indoor and 27 will be surface spaces. The proposed bicycle parking adheres to the requirements of the ZBL.

4.3 Boundary Streets

This section provides a review of boundary street using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI group in 2015 were used to evaluate the LOS of the boundary roadway for each mode of transportation. Woodroffe Avenue within the study area falls within 600m of Nepean Woods Transit Station.

Targets for the Pedestrian Level of Service (PLOS), and Bicycle Level of Service (BLOS) for the study area roadway are based on the targets for roadways within 600m of a rapid transit station, as identified in exhibit 22 of the MMLOS guidelines. As Woodroffe Avenue within the study area is not classified as truck route, and does not service transit, the Transit Level of Service (TLOS) and Truck Level of Service (TkLOS) have not been reviewed.

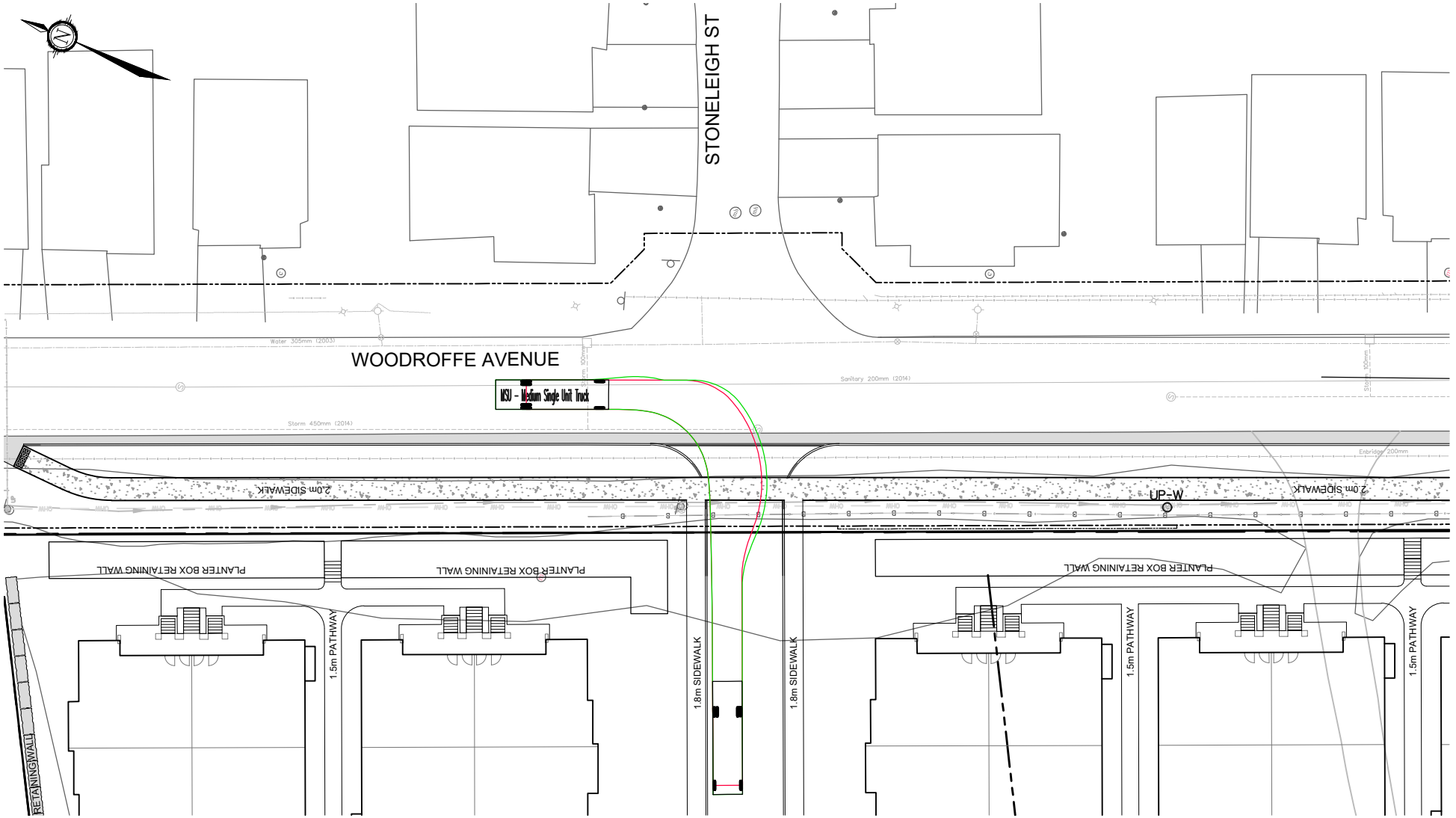
A summary of the results of the segment MMLOS analysis for boundary roadway is provided in **Table 9**. Detailed segment MMLOS calculations can be found in **Appendix H**.

Table 9: Segment MMLOS Summary

Segment	PLOS	BLOS	TLOS	TkLOS
Woodroffe Avenue	F	F	-	-
Target	A	B	-	-

The west side of Woodroffe Avenue doesn't have a sidewalk, which earns it a PLOS F. As described in section 4.1.1, the proposed roadway modifications will include a 2.0m wide sidewalk with a 3.0m boulevard along the site frontage, achieving a PLOS A.

The existing mixed-use lanes along Woodroffe Avenue do the not meet the target BLOS B. To achieve the target BLOS B, either a reduced operating speed or a separated cycling facility is required. As described in section 4.1.1, the proposed roadway modifications will include a mid-block narrowing and a PXO along the site frontage. The proposed modifications will assist in achieving a lower operating speed in proximity of the site. Additionally, a 3m boulevard is proposed between the curb and the sidewalk to allow for future implementation of a southbound cycle track (by others).



NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
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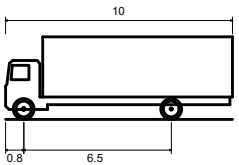
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com



MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

3400 & 3428 WOODROFFE AVE

TURNING MOVEMENTS (MSU / GARBAGE TRUCK)

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

DATE SEP 2025 | JOB 124147 | FIGURE FIGURE 7

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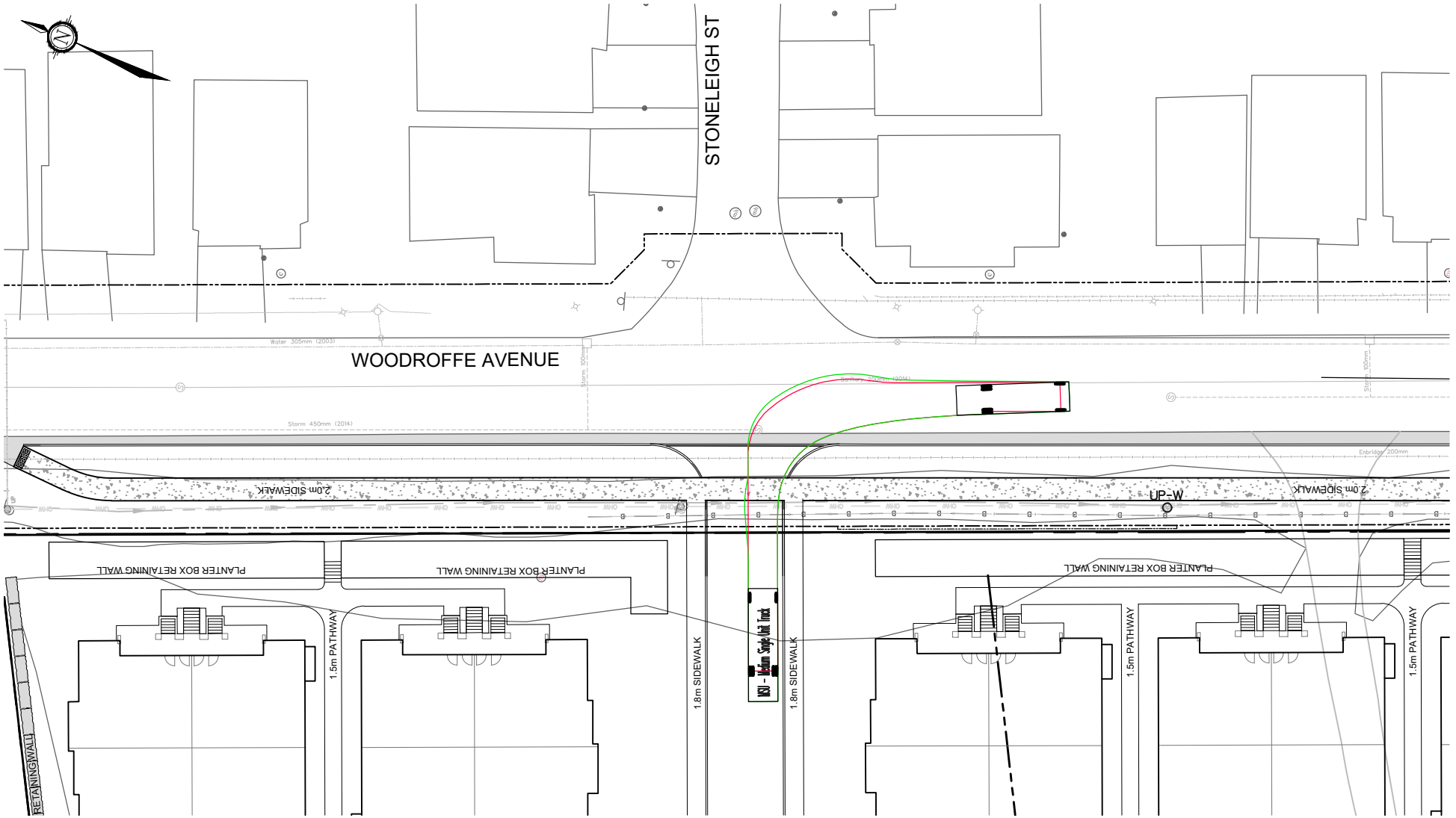

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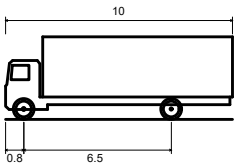

MSU - Medium Single Unit Truck

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Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

3400 &3428 WOODROFFE AVE

TURNING MOVEMENTS (MSU / GARBAGE TRUCK)

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

DATE SEP 2025 | JOB 124147 | FIGURE FIGURE 8

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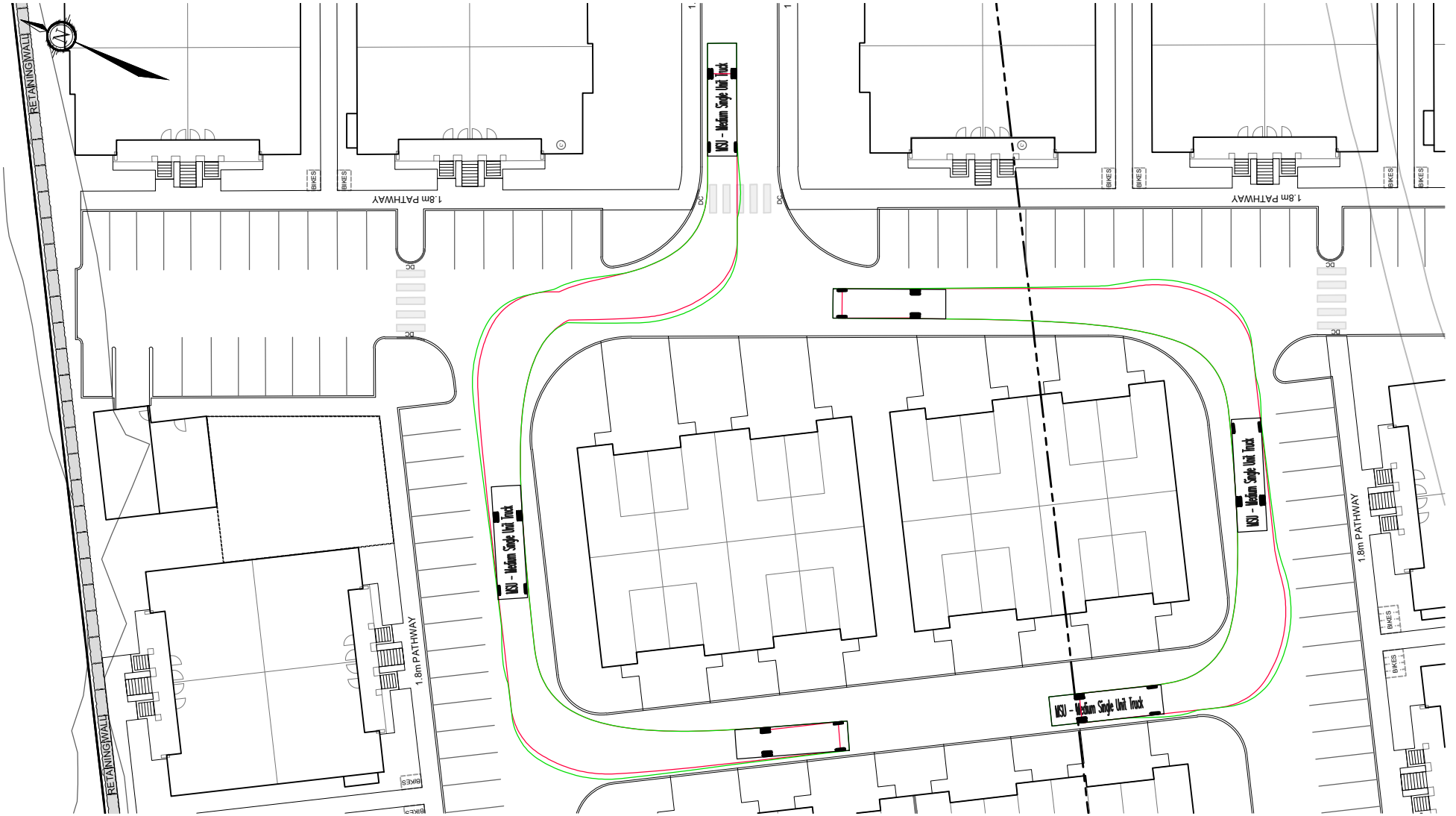

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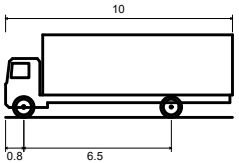

MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

3400 &3428 WOODROFFE AVE

TURNING MOVEMENTS (MSU / GARBAGE TRUCK)

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

DATE SEP 2025 | JOB 124147 | FIGURE FIGURE 9

SHT8X11.DWG - 216mmx279mm

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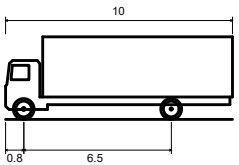

MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

3400 &3428 WOODROFFE AVE

TURNING MOVEMENTS (MSU / GARBAGE TRUCK)

SCALE 1 : 750 (0 10 20 30)

DATE SEP 2025 | JOB 124147 | FIGURE FIGURE 10

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4.4 Transportation Demand Management

4.4.1 Context for TDM

The proposed residential development consists of a total of 155 residential units. The breakdown of the proposed units are as follows:

- B2B Stacked Terrace Homes: 108 units
- B2B Townhomes: 32 units
- Townhomes: 13 units
- Bungalows: 6 units

4.4.2 Need and Opportunity

The proposed development is located at an approximate 800m walking distance from the Nepean Woods Rapid Transit Station. The anticipated modal shares in section 2.4.1, which are 55% auto driver, 10% auto passenger, 25% transit, 0% cyclist, and 10% pedestrian are based on the *TRANS Trip Generation Manual* rates for the South Nepean district. Therefore, it is anticipated that the assumed driver share target will not be exceeded.

4.4.3 TDM Program

A review of the City's TDM Measures Checklist has been conducted by the proponent. The checklist is included in **Appendix G**. The proponent has agreed to implement the following measures as part of the TDM program:

- Display local area maps with walking/cycling access routes and key destinations (In Sales Centre);
- Display relevant transit schedules and route maps (In Sales Centre); and
- Provide a multimodal travel option information package to new residents.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Trip Generation

- The proposed development is anticipated to generate 78 AM peak hour person trips (including 40 vehicle trips), and 82 PM peak hour person trips (including 43 vehicle trips).

Access Intersection Design

- The proposed development will be served by one proposed full movement access off Woodroffe Avenue.
- The proposed driveway adheres to all provisions of the PABL, except Section 25(u).
- The proposed access will have a grade of 5.5% within the first 9m. As the 5.5% downgrade is not anticipated to impact sight lines or create a traffic hazard, a waiver to Section 25(u) of the PABL is requested.
- The proposed access meets the roadway at perpendicular angle and no vertical or horizontal curves impact sightlines, based on desktop review the requirements of sight distances are met.

- Based on TAC's Geometric Design Guidelines for Canadian Roads, the minimum clear throat length requirement for a driveway connecting to a collector roadway is satisfied.

Development Design

- The proposed roadway modifications along the site frontage will provide a 9.4m road platform which will allow for two travel lanes and a parking lane. A new sidewalk will be provided in front of hydro poles with a 3.0m boulevard to allow for the future construction of a southbound cycle track by others.
- As the sidewalk on the west side of Woodroffe Avenue will be discontinuous, and there is a desire line for pedestrians to Berry Glen Park southeast of the site, a new Type D Pedestrian Crossover (PXO) and mid-block narrowing is proposed near the southern limits of the site.
- An on-site pathway network will be provided to connect all dwellings to the new sidewalk on the west side of Woodroffe Avenue.
- The closest OC Transpo bus stops are #3764, and #3353, which are approximately at a 200m walking distance from the subject site.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

Circulation and Access

- Vehicles for garbage collection and deliveries will be accommodated within the subject site.
- A fire access route in accordance with the Ontario Building Code (OBC) standards is provided via the site's only access off Woodroffe Avenue.

Parking

- A total of 222 vehicle parking spaces are proposed, adhering to the requirements of the ZBL.
- A total of 57 bicycle parking spaces are proposed, of which 30 will be indoor and 27 will be surface spaces. The proposed bicycle parking adheres to the requirements of the ZBL.

Boundary Street Design

- The west side of Woodroffe Avenue doesn't have a sidewalk, which earns it a PLOS F. The proposed roadway modifications will include a 2.0m sidewalk with 3.0m boulevard along the site frontage, achieving a PLOS A.
- The existing mixed-use lanes along Woodroffe Avenue do not meet the target BLOS B. To achieve the target BLOS B, either a reduced operating speed or a separated cycling facility is required. The proposed roadway modifications will include a mid-block narrowing and will assist in lowering the operating speed in proximity of the site. Additionally, a 3.0m boulevard is proposed between the curb and the sidewalk to allow for future implementation of a southbound cycle track (by others).

Transportation Demand Management

- The proponent has agreed to implement the following measures as part of the TDM program:
    - Display local area maps with walking/cycling access routes and key destinations (In Sales Centre);
    - Display relevant transit schedules and route maps (In Sales Centre); and
    - Provide a multimodal travel option information package to new residents.

NOVATECH

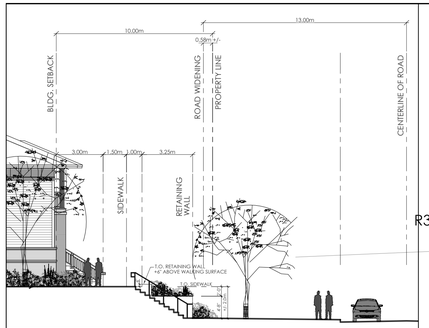
Prepared by:

Mohammed Talha, M. Eng.
Engineering Intern | Transportation

Reviewed by:

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

Appendix A: Site Plan



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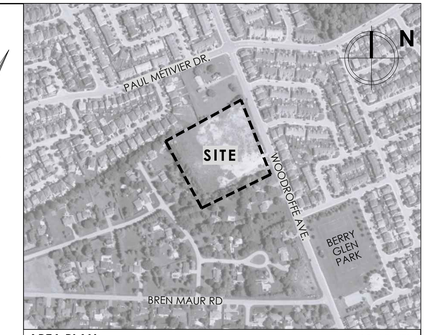
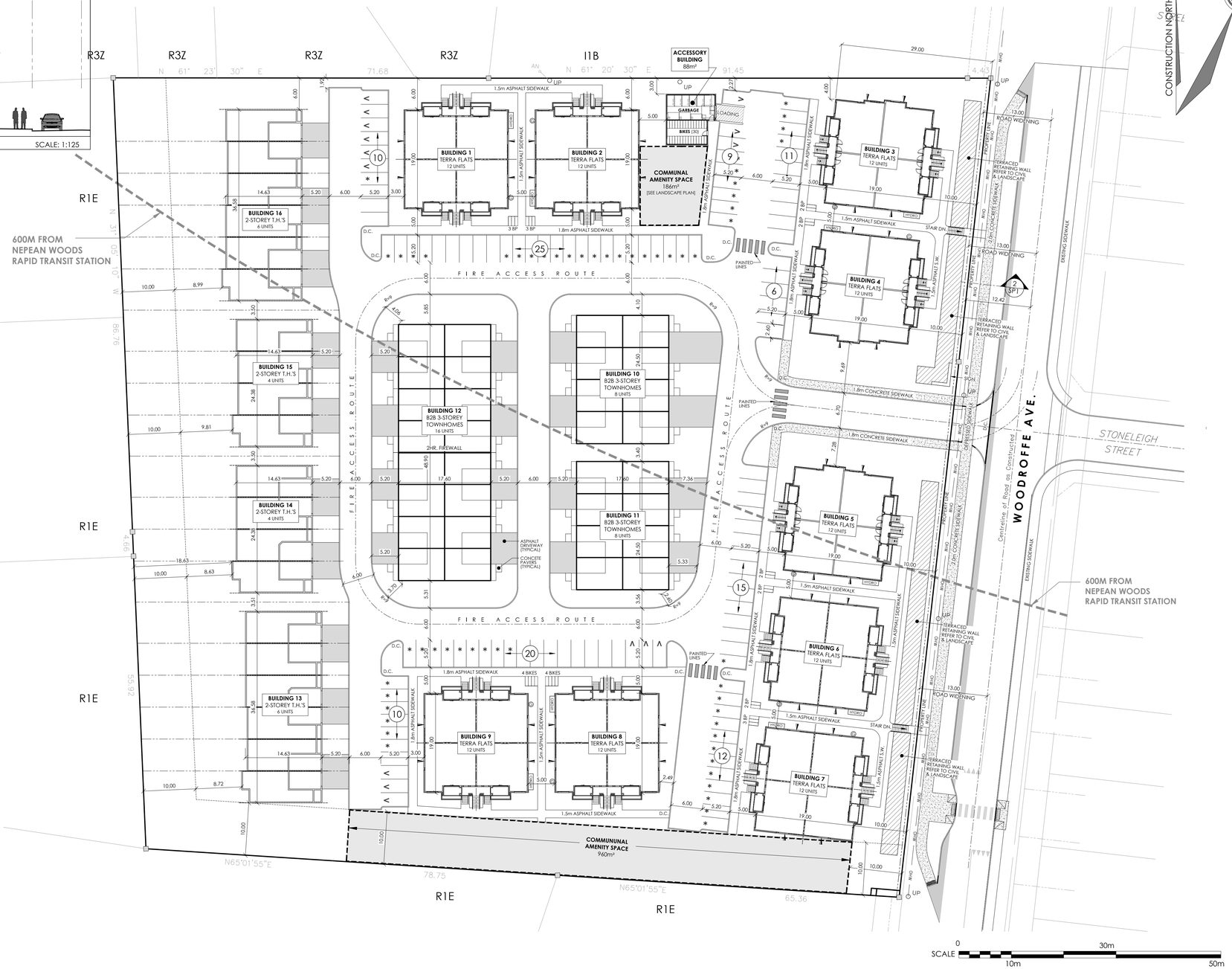


AREA PLAN: SCALE: NTS



SITE INFORMATION:

SITE AREA = 2.37ha (5.85 Acres.)
ZONING: R1VV[636]
PROPOSED ZONING: R4Z PUD

		REQUIRED :	PROVIDED :
LOT WIDTH (MIN.):		18.00 m	157.39 m
LOT AREA (MIN.):		1,400 m²	23,661.35 m²
BUILDING HEIGHT (MAX.):	TOWNHOUSE:	10.00 m	9.37 m
	STACKED DWELLING:	11.00 m	10.02 m
FRONT YARD (MIN.) :		3.00 m	10.00 m
REAR YARD (MIN.) :		6.00 m	18.63 m
INTERIOR SIDE YARD (MIN.) :	TOWNHOUSE:	6.00 m	6.00 m
	STACKED DWELLING:	1.50 m (1ST 21.0m)	4.00 m
		6.00 m	6.00 m
ACCESSORY BLDG. SIZE (MAX.) :		55.00 m²	88.00 m²
ACCESSORY BLDG. HEIGHT (MAX.) :		3.60 m	3.545 m
ACCESSORY BLDG.INTERIOR SIDE YARD (MIN.) :		6.00 m	3.00 m

UNIT COUNTS:

		TERRA FLATS	B2B TOWNS	2-STOREY TOWNS
BUILDING 1=	TERRA FLATS	12 UNITS		
BUILDING 2=	TERRA FLATS	12 UNITS		
BUILDING 3=	TERRA FLATS	12 UNITS		
BUILDING 4=	TERRA FLATS	12 UNITS		
BUILDING 5=	TERRA FLATS	12 UNITS		
BUILDING 6=	TERRA FLATS	12 UNITS		
BUILDING 7=	TERRA FLATS	12 UNITS		
BUILDING 8=	TERRA FLATS	12 UNITS		
BUILDING 9=	TERRA FLATS	12 UNITS		
BUILDING 10=	B2B 3-STOREY TOWNHOMES		8 UNITS	
BUILDING 11=	B2B 3-STOREY TOWNHOMES		8 UNITS	
BUILDING 12=	B2B 3-STOREY TOWNHOMES		16 UNITS	
BUILDING 13=	2-STOREY TOWNHOMES			6 UNITS
BUILDING 14=	2-STOREY TOWNHOMES			4 UNITS
BUILDING 15=	2-STOREY TOWNHOMES			4 UNITS
BUILDING 16=	2-STOREY TOWNHOMES			6 UNITS
TOTAL =		108 UNITS	32 UNITS	20 UNITS
TOTAL ALL UNITS =		**160 UNITS**		

RESIDENT PARKING REQUIRED:

AREA 'X' (WITHIN 600m (800m WALKING) TO RAPID TRANSIT)	**AREA 'C'**	**TOTAL**
TERRA FLATS [60 UNITS] PARKING REQUIRED= 0.5/ d.u. = 30 SPACES	TERRA FLATS [48 UNITS] PARKING REQUIRED= 1.2/ d.u. = 58 SPACES	**88 SPACES**
B2B TOWNHOMES [13 UNITS] PARKING REQUIRED= 0.75/ d.u. = 10 SPACES	B2B TOWNHOMES [19 UNITS] PARKING REQUIRED= 0.75/ d.u. = 14 SPACES	**24 SPACES**
TOWNHOMES [6 UNITS] PARKING REQUIRED= 0.75/ d.u. = 5 SPACES	TOWNHOMES [14 UNITS] PARKING REQUIRED= 0.75/ d.u. = 11 SPACES	**16 SPACES**
TOTAL RESIDENT PARKING REQ.: 128 SPACES		

VISITOR PARKING REQUIRED:

AREA 'X' (NONE REQUIRED FOR FIRST 12 UNITS) (NONE REQUIRED FOR UNITS WITH DRIVEWAYS).	**AREA 'C'**
TERRA FLATS [60 UNITS (-12)] PARKING REQUIRED= 0.1/ d.u. = 5 SPACES	TERRA FLATS [48 UNITS] PARKING REQUIRED= 0.2/ d.u. = 10 SPACES
TOTAL VISITOR PARKING REQ.: 15 SPACES	

PARKING PROVIDED:

TERRA FLATS [108 UNITS]
PARKING REQUIRED = 88 RESIDENT + 15 VISITOR
TOTAL PROVIDED = **103 RESIDENT + 15 VISITOR**

B2B TOWNHOMES [32 UNITS]
PARKING REQUIRED = 24 SPACES
TOTAL PROVIDED = **64 SPACES** (DRIVEWAYS/ GARAGES)

TOWNHOMES [20 UNITS]
PARKING REQUIRED = 16 SPACES
TOTAL PROVIDED = **40 SPACES** (DRIVEWAYS/ GARAGES)

PARKING SPACE DIMENSIONS ARE 2.6m X 5.2m STANDARD.
PARKING SPACES MARKED WITH ✱ ARE 2.4m X 5.2m (59 SPACES) (50% max.)

BICYCLE PARKING REQUIREMENTS:

BICYCLE PARKING REQUIRED= 0.5/d.u. x 108 d.u. = 54 SPACES
BICYCLE PARKING PROVIDED = 57 SPACES (30 INDOORS, 27 SURFACE)

ALL EXTERIOR BIKE SPACES ARE 0.60m X 1.80m HORIZONTAL w/ MIN. 1.50m ACCESS AISLE.
ALL INTERIOR BIKE SPACES ARE 0.50m X 1.50m VERTICAL w/ MIN. 1.50m ACCESS AISLE.
PROVIDE FIXED PARKING RACKS FOR ALL BIKE SPACES.

AMENITY SPACE REQUIREMENTS:

AMENITY SPACE REQUIRED = 6m²/ d.u. x 108 d.u. =	648m²
50% COMMUNAL AMENITY AREA REQUIRED =	324m²
COMMUNAL AMENITY AREA PROVIDED =	1,146m²
PRIVATE AMENITY AREA PROVIDED =	432m² (4m²/BALCONY/d.u.)
TOTAL AMENITY AREA PROVIDED =	1,578m²

LEGEND/ ABREVIATIONS:

D.C. DEPRESSED CURB
CRW CONCRETE RETAINING WALL
W.I. WROUGHT IRON
TWSI TACTILE WALKING SURFACE INDICATOR
CONC. CONCRETE
ASPH. ASPHALT
GAS METERS LOCATION
WATER/ SANITARY CONNECTION
STORM CONNECTION
SIAMESE CONNECTIONS
FIRE HYDRANT
LIGHT STANDARD
WALL MOUNTED LIGHT FIXTURE
TRANSFORMER
TWSI
BICYCLE PARKING (BP) SPACE
VISITOR PARKING SPACE

NOTE:
SITE PLAN TO BE READ IN CONJUNCTION WITH :
- SITE SERVICING AND GEADING PLANS PREPARED BY NOVATECH ENGINEERING CONSULTANTS.
- LANDSCAPE PLAN PREPARED BY JAMES B. LENNOX AND ASSOCIATES INC.

NOTE:
SITE BOUNDARIES DERIVED FROM: PLAN 4R-37128
PLAN OF SURVEY OF PART OF LOT 12 CONCESSION 2 (RIDEAU FRONT)
Geographic Township of Nepean CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

M. David Blakely Architect Inc.
2200 Prince of Wales Dr. Suite 101 Ottawa, Ontario
Phone (613) 226-8811 Fax (613) 226-7942 K2E 6Z9

GENERAL NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS. ANY DISCREPANCY MUST BE REPORTED TO M. DAVID BLAKELY ARCHITECT INC.
2. ALL WORK AND MATERIALS TO BE IN COMPLIANCE WITH ALL CODES, REGULATIONS, & BY-LAWS
3. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST THE PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE PLANS IN CONTRACT DOCUMENTS
4. DO NOT SCALE DRAWINGS.
5. THIS DRAWING SHALL NOT BE USED OR COPIED WITHOUT THE AUTHORIZATION OF THE ARCHITECT
6. THIS DRAWING SHALL NOT BE USED FOR PERMIT OR CONSTRUCTION UNLESS THE DRAWING BEARS THE ARCHITECT'S SEAL AND SIGNATURE

OWNER: PHOENIX HOMES, 18A BENTLEY AVE. OTTAWA, ON K2E 6T8 (613) 723-9227
ARCHITECT: M. DAVID BLAKELY ARCHITECT INC. 2200 PRINCE OF WALES DR., SUITE 101 OTTAWA, ON K2E 6Z9 (613) 226-8811
CIVIL ENGINEER: NOVATECH ENGINEERING CONSULTANTS 240 MICHAEL COWPLAND DR. SUITE 101 Kanata, ON K2M 0H7 (613) 254-9643
LANDSCAPE ARCHITECT: JAMES B. LENNOX AND ASSOCIATES INC. 3332 CARLING AVE. NEPEAN, ON K2H 5A8 (613) 722-5168
SURVEYOR: ANNIS O'SULLIVAN VOLLEBEKK LTD. 14 CONCOURSE GATE. SUITE 500 NEPEAN, ON K2E 7S6 (613) 727-0850

SEAL

No.	DATE (D/M/Y)	DESCRIPTION	INIT.
12.			MB
11.			MB
10.			MB
9.			MB
8.			MB
7.			MB
6.	22/10/25	2-STOREY T.H'S REVISED/ FOR COORDINATION	MB
5.	17/09/25	ROAD WIDENING AS PER SURVEY/ FOR COORDINATION	MB
4.	15/09/25	AS PER CLIENT	MB
3.	16/07/25	REVISED AS PER CLIENT/ FOR REVIEW	MB
2.	01/04/25	AS PER CITY COMMENTS/ FOR COORDINATION	MB
1.	24/09/24	FOR REVIEW	MB

REVISIONS

No.	DATE	DESCRIPTION	INIT.
24.			
23.			
22.			
21.			
20.			
19.			
18.			
17.			
16.			
15.			
14.			
13.			

REVISIONS

A - DETAIL NUMBER
B - SHEET NUMBER (DETAIL REQUIRED)
C - SHEET NUMBER (DETAIL LOCATION)

PROJECT: 3400 WOODROFFE AVE. PLANNED UNIT DEVELOPMENT OTTAWA, ONTARIO

CLIENT: PHOENIX HOMES 18A Bentley Ave Ottawa, ON K2E 6T8

DRAWING TITLE: SITE PLAN

DATE: SEPT. 2024
SCALE: 1 : 400
DRAWN BY: mdb
CHECKED: MDB
SHEET No.: SP1

Appendix B: TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	3400 & 3428 Woodroffe
Description of Location	west of Woodroffe opposite Stoneleigh
Land Use Classification	residential
Development Size (units)	160 units
Development Size square metre (m^2)	
Number of Accesses and Locations	1 access to Woodroffe opposite Stoneleigh
Phase of Development	1
Buildout Year	2029

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?	☐	☑

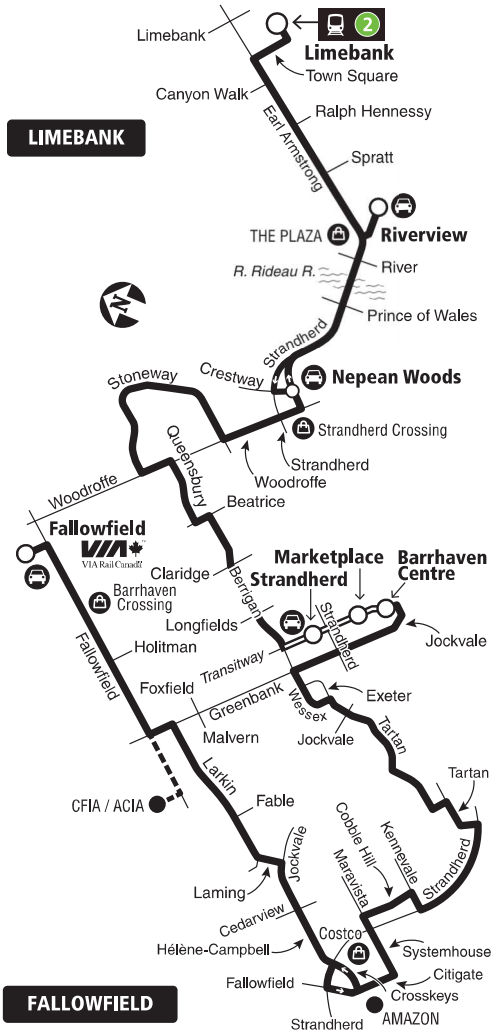
If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

Appendix C: OC Transpo System Maps

70 LIMEBANK / FALLOWFIELD

Local

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



05.2025

- Transitway & Station
- Some trips / Quelques trajets
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

2025.05

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

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

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

Security / Sécurité **613-741-2478**

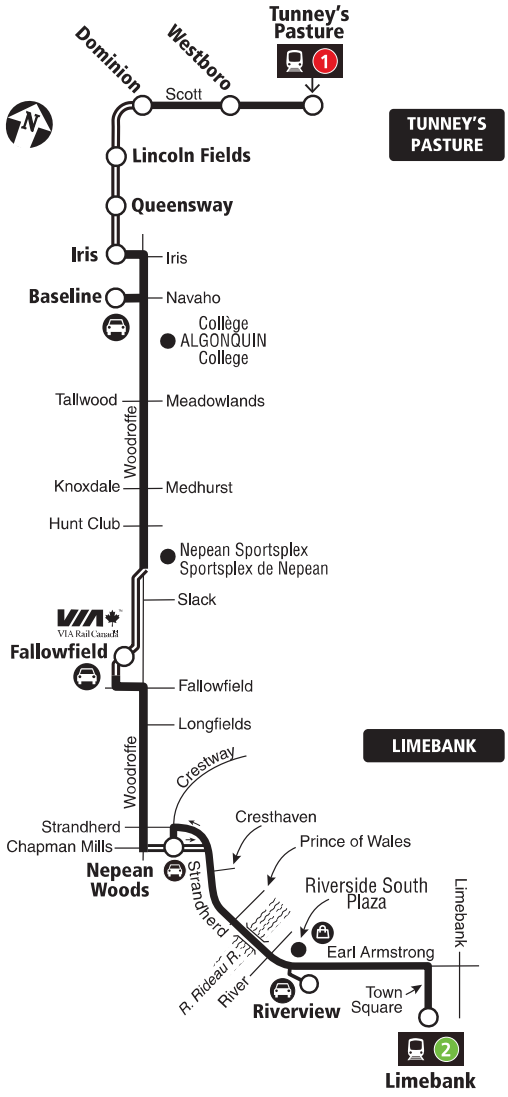
OC Transpo **octranspo.com**

74 Fréquent

TUNNEY'S PASTURE
LIMEBANK

7 days a week / 7 jours par semaine

All day service
Service toute la journée



05.2025

Transitway & Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

2025.05

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

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

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

Security / Sécurité **613-741-2478**

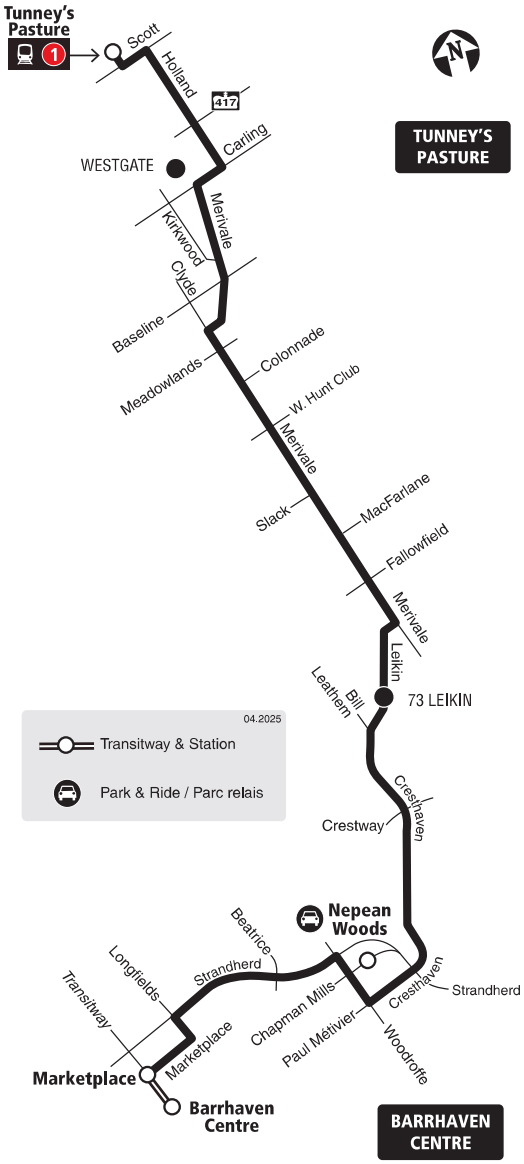
OC Transpo **octranspo.com**

80 Fréquent

TUNNEY'S PASTURE
BARRHAVEN CENTRE

7 days a week / 7 jours par semaine

All day service
Service toute la journée



2025.04

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

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

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

Security / Sécurité 613-741-2478

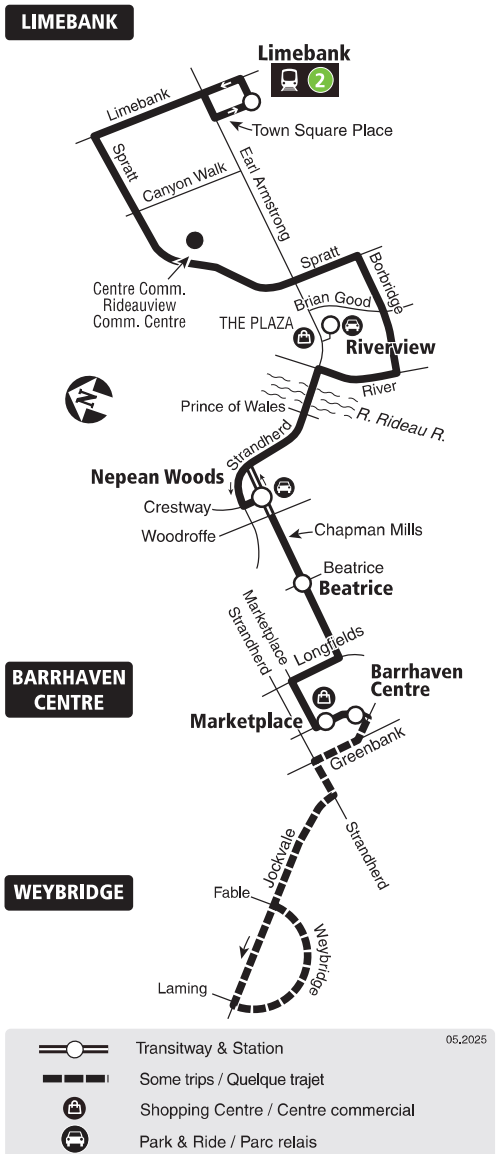
OC Transpo octranspo.com

99 LIMEBANK
BARRHAVEN CENTRE
WEYBRIDGE

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



2025.05

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

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

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

Security / Sécurité **613-741-2478**

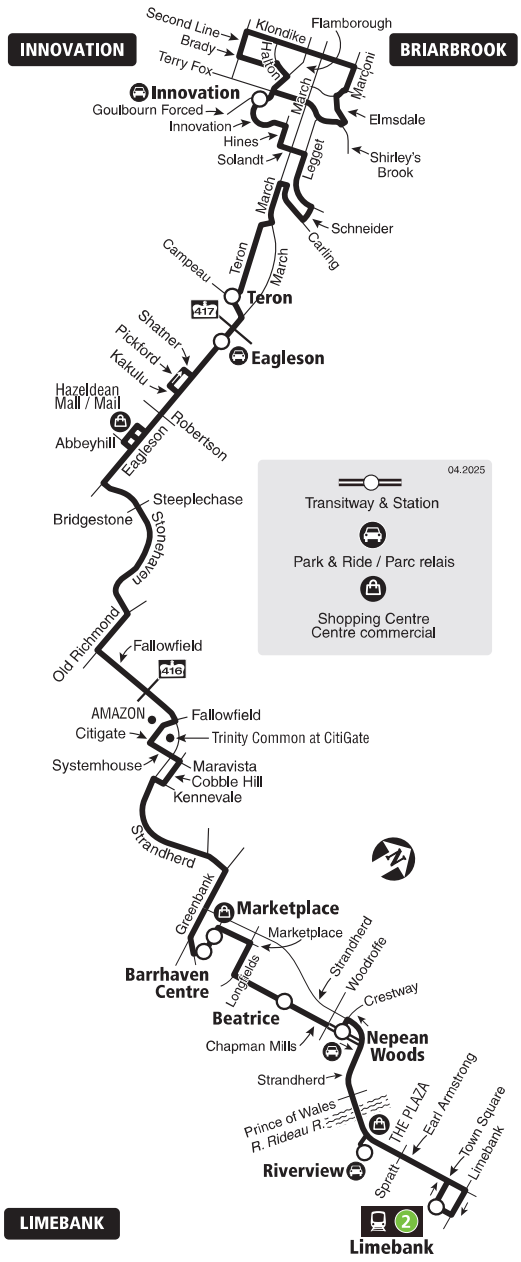
OC Transpo **octranspo.com**

110 LIMEBANK / INNOVATION / BRIARBROOK

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



2025.05

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

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

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

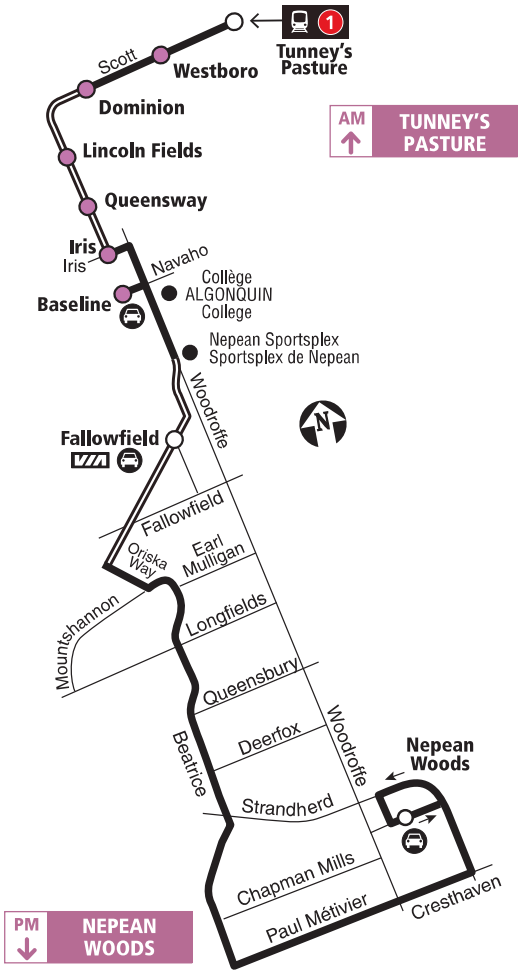
Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

277 Connexion

NEPEAN WOODS
TUNNEY'S PASTURE

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



04.2025

Transitway & Station

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

Park & Ride / Parc relais

2025.04

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

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

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

Security / Sécurité 613-741-2478

OC Transpo octranspo.com

Appendix D: Traffic Count Data

Transportation Services - Traffic Services

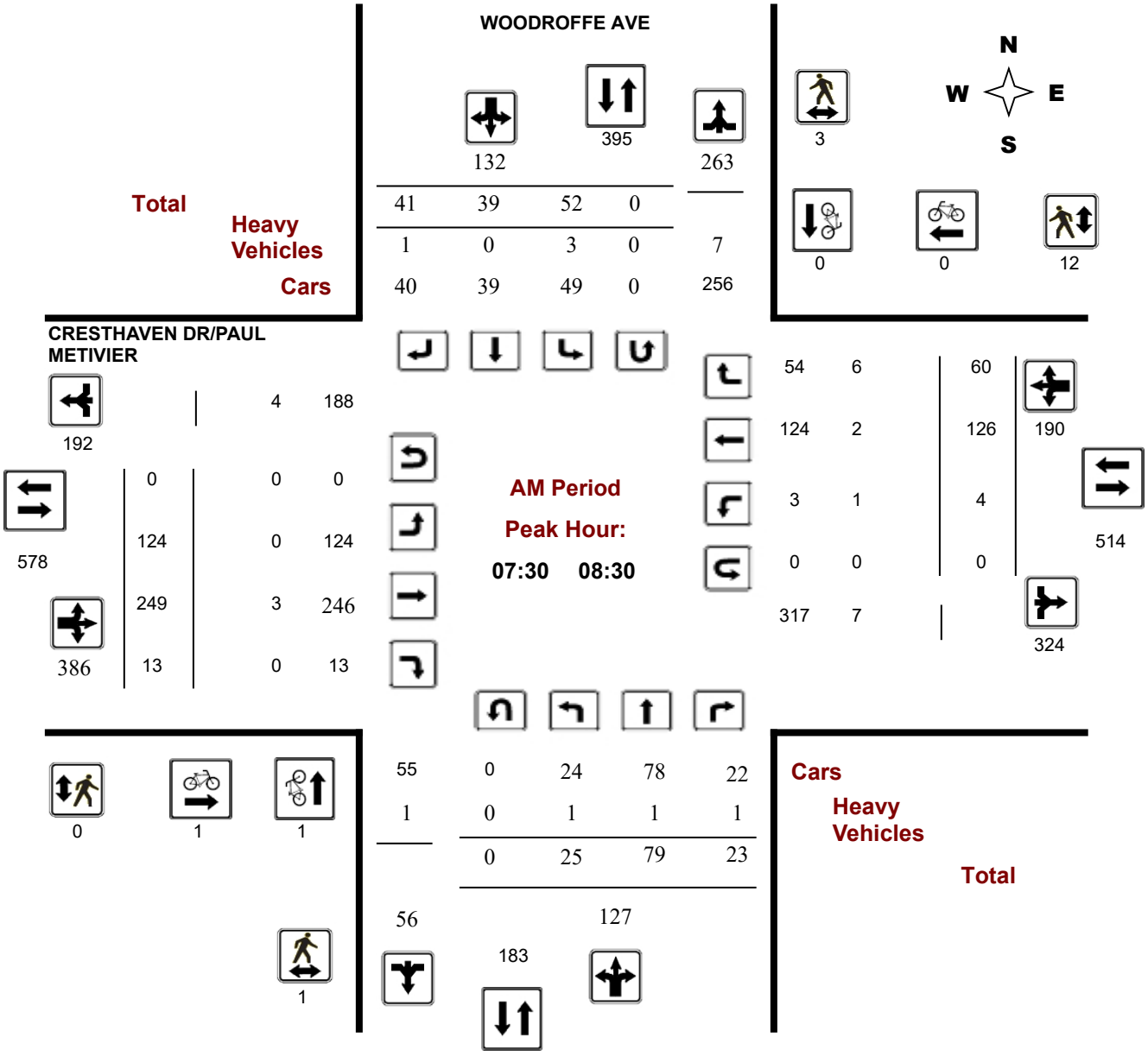
Turning Movement Count - Study Results

WOODROFFE AVE @ CRESTHAVEN DR/PAUL METIVIER

Survey Date: Tuesday, March 18, 2025 **WO No:** 42590

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

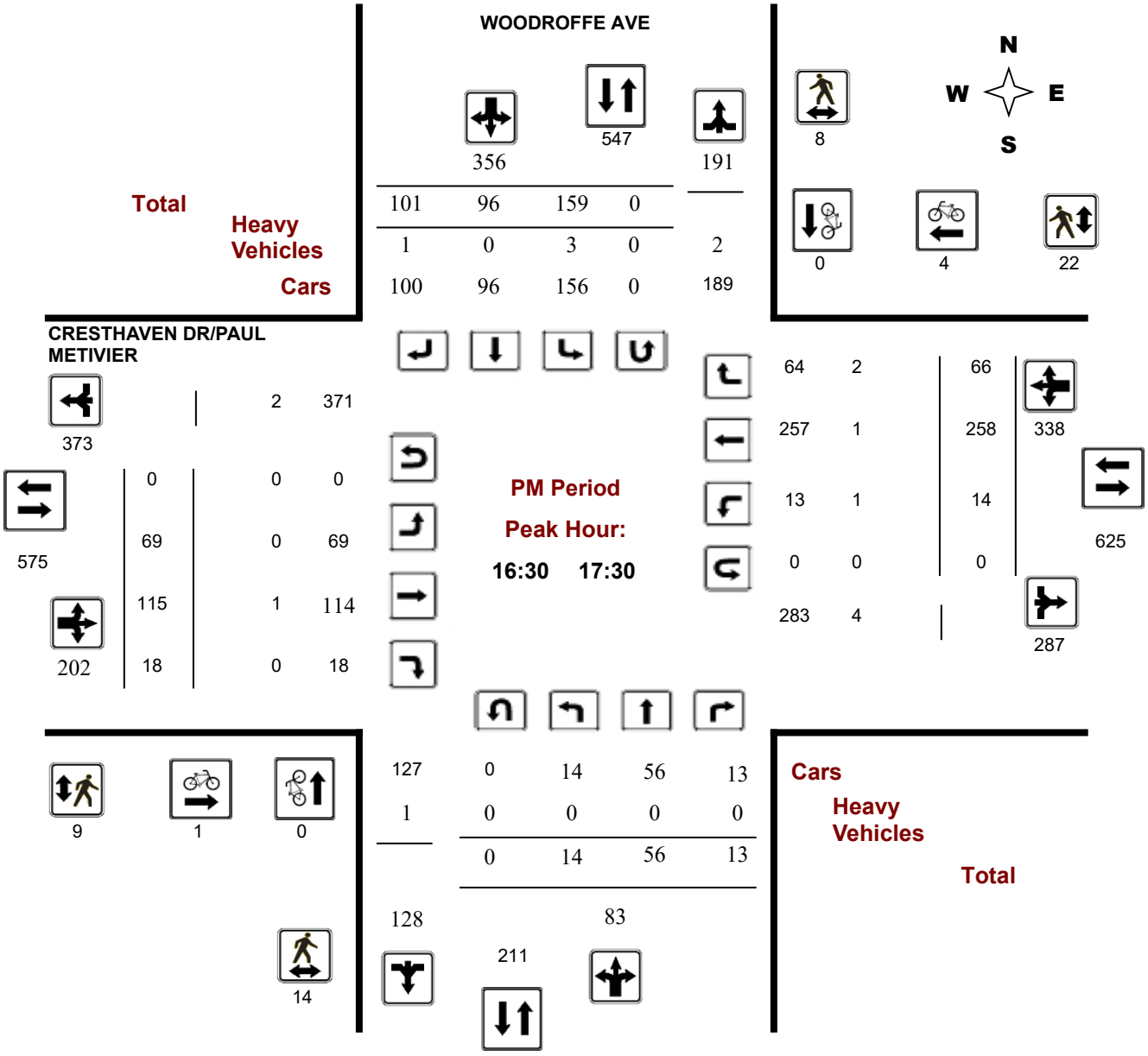
Turning Movement Count - Study Results

WOODROFFE AVE @ CRESTHAVEN DR/PAUL METIVIER

Survey Date: Tuesday, March 18, 2025 **WO No:** 42590

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

PM Period Peak Hour Diagram



Appendix E: Collision Data

Transportation Services - Traffic Services

Collision Details Report - Public Version

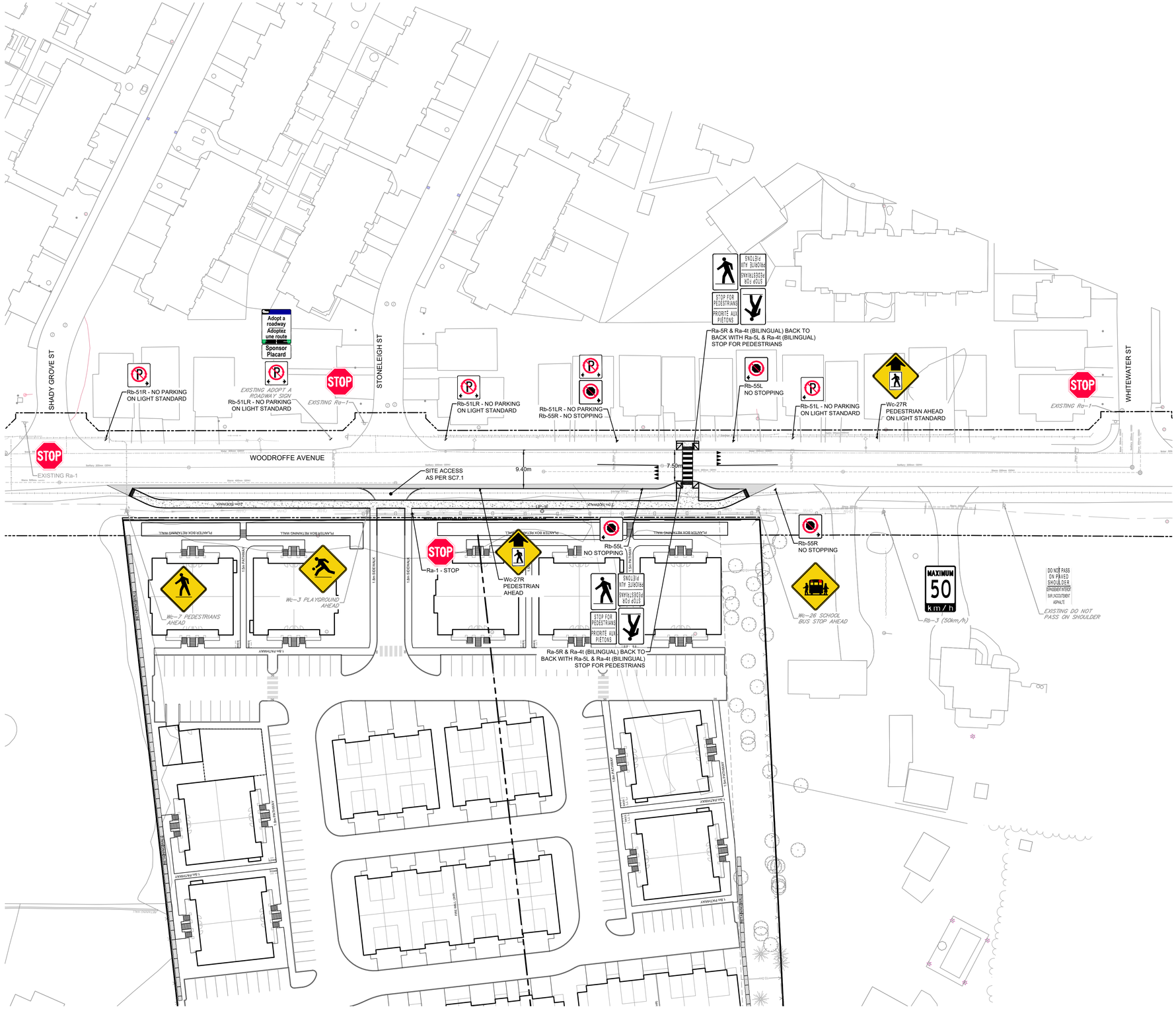
From: January 1, 2018 **To:** December 31, 2022

Location: WOODROFFE AVE @ CRESTHAVEN DR/PAUL METIVIER

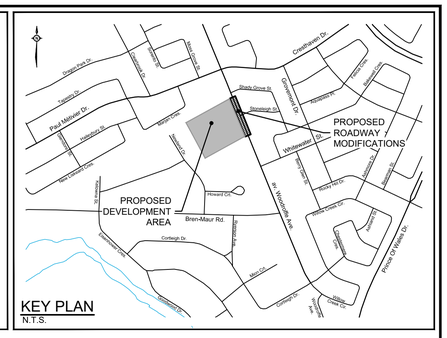
Traffic Control: Traffic signal **Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Aug-25, Sat,13:54	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-27, Thu,06:57	Clear	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-16, Sat,18:32	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-28, Fri,13:45	Clear	Other	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other	0
					West	Turning right	Automobile, station wagon	Debris falling off vehicle	
2019-Jul-02, Tue,09:34	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-25, Mon,17:45	Clear	Angle	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Municipal transit bus	Other motor vehicle	
2020-Aug-27, Thu,22:04	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-Sep-29, Tue,21:39	Rain	Angle	Non-fatal injury	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-30, Fri,15:24	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jan-23, Sun,17:20	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Oct-02, Sun,13:03	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix F: Functional Plan of the Proposed Roadway Modifications



NORTH



KEY PLAN
N.T.S.

LEGEND

- CONCRETE SIDEWALK RAMPING
- CONCRETE SIDEWALK
- TACTILE WALKING SURFACE INDICATOR (TWSI)
- DEPRESSED CURB
- BARRIER CURB

- *EXISTING SANITARY MANHOLE & SEWER*
- *EXISTING STORM MANHOLE & SEWER*
- *EXISTING CATCHBASIN*
- *EXISTING WATERMAIN*
- *EXISTING HYDRANT AND VALVE*
- *EXISTING OVERHEAD WIRE*
- *EXISTING GAS MAIN*
- *EXISTING LIGHT STANDARD*
- *EXISTING STREET LIGHT DUCT*
- *EXISTING TREE*

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 REVIEW	SEP 26/25	BJB

SCALE: 1:500

1:500
0 5 10 15 20

DESIGN: RCH
CHECKED: MT
DRAWN: RCH
CHECKED: MT
APPROVED: BJB

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY of OTTAWA
3400 & 3428 WOODROFFE AVENUE

DRAWING NAME
FUNCTIONAL DESIGN

PROJECT No. 124147
REV REV # 1
DRAWING No. 124147-FD

C:\Temp\AcPublish_628\124147-FD.dwg, FD, Sep 19, 2025 - 2:19pm, rhillier

PLANA1.DWG - 841mmx594mm

Appendix G: TDM Checklists

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)*	☒ Local area maps will be available in the sales centre
	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)*	☒ Transit schedules/maps will be available in the sales centre
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	☐

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

Legend

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

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

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

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

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

Appendix H: MMLOS Analysis

1.0 SEGMENT MMLOS

1.1.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Woodroffe Avenue. Targets for PLOS, and BLOS for the study area are based on the targets for roadways within 600m of a rapid transit station, as identified in Exhibit 22 of the MMLOS guidelines. The results of the segment PLOS analysis are summarized in **Table 1**.

Table 1: Segment PLOS

Sidewalk Width (m)	Boulevard Width (m)	Avg. Daily Curb Lane Traffic Volume	Prescence of On-Street Parking	Operating Speed	Segment PLOS	Target PLOS
Woodroffe Avenue (East Curb)						
2.0m	0m	< 3000	Yes	60 km/h	C	A
Woodroffe Avenue (West Curb)						
0.0m	0m	< 3000	Yes	60 km/h	F	A

1.1.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment PLOS of Woodroffe Avenue. Targets for PLOS, and BLOS for the study area are based on the targets for roadways within 600m of a rapid transit station, as identified in Exhibit 22 of the MMLOS guidelines. The results of the segment BLOS analysis are summarized in **Table 2**.

Table 2: Segment BLOS

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	Segment BLOS	Target BLOS
Woodroffe Avenue						
Major Collector Road	Local	Mixed Traffic	2	60 km/h	F	B

1.1.3 Transit Level of Service (TLOS)

Since the boundary streets do not serve transit, the TLOS has not been reviewed.

1.1.4 Truck Level of Service (TkLOS)

Since the boundary streets are not classified as truck routes, the TkLOS has not been reviewed.