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Proposed Residential Development

615 Mikinak Road (Wateridge Village Block 105)

Transportation Impact Assessment

Engineering excellence. Planning progress. Liveable landscapes.

Proposed Residential Development
615 Mikinak Road (Wateridge Village Block 105)

Transportation Impact Assessment

Prepared By:

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

May 2025

Novatech File: 124199
Ref: R-2025-033

NOVATECH
Engineers, Planners & Landscape Architects

May 1, 2025

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Avenue West, 4th Floor
Ottawa, ON K1P 1J1

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

Dear Mr. Dubyk:

Reference: **615 Mikinak Road (Wateridge Village Block 105)**
Transportation Impact Assessment
Novatech File No. 124199

We are pleased to submit the following Transportation Impact Assessment (TIA), in support of Site Plan Control and Draft Plan of Condominium application at 615 Mikinak Road, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Revised Transportation Impact Assessment Guidelines* (June 2023).

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 1st day of May, 20 25.

Name: Jennifer Luong, P.Eng.

Professional Title: Senior Project Manager

_____

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
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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 a Site Plan Control and Draft Plan of Condominium applications for the property located at 615 Mikinak Road. The subject property is approximately 2.18 hectares in area, and is currently vacant.

The subject site is Block 105 of the Wateridge Village subdivision, which is a partially developed community that is generally north of Montreal Road, south of Sir George-Étienne Cartier Parkway, east of Aviation Parkway, and west of the National Research Council (NRC) Canada campus. The subject site is immediately surrounded by the following:

- Hemlock Road, followed by Oshedinaa Street and future residential to the north,
- Mikinak Road, followed by Avro Circle and residences to the south,
- Alliance Park, followed by Codd's Road to the east, and
- Vedette Way, followed by Mishi Private and residences to the west.

The subject site is designated as 'Corridor – Minor' (Hemlock Road) and 'Evolving Neighbourhood' on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Residential Fourth-Density' and 'Minor Institutional' (R4UC[2311] / I1A), and the site is located within the 'Former CFB Rockcliffe' Community Design Plan area and 'Wateridge Village' Secondary Plan area.

In the initial plan of subdivision, the subject site was reserved as a future school block. The proposed development is now residential in nature, and includes a total of 111 townhouse dwellings. Access to the proposed development will be provided via two full-movement driveways to Vedette Way (opposite the two ends of Mishi Private). The development will be constructed in a single phase, with a buildout year of 2026.

The study area for this report includes the boundary roadways Hemlock Road, Mikinak Road, and Vedette Way. The selected time periods for this report are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. A buildout year 2026 and horizon year 2031 are identified.

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

Site-Generated Traffic

- The proposed development is estimated to generate 77 person trips (including 33 vehicle trips) during the AM peak hour, and 79 person trips (including 34 vehicle trips) during the PM peak hour.

Access Design

- The proposed accesses to Vedette Way meet all relevant provisions of the City's *Private Approach By-Law*.

- The proposed accesses generally meet the relevant provisions of the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.

Development Design and Parking

- An east-west pedestrian walkway with a width of 1.8m is proposed through the centre of the site, providing the potential for direct connectivity between Vedette Way and Alliance Park. The subject site is bound by concrete sidewalks to the north and west (i.e. along Hemlock Road and Vedette Way) and asphalt pathways to the south and east (i.e. along Mikinak Road and the western limit of Alliance Park).

- Measuring from the centroid of the subject site, the proposed development is within 400m walking distance of stop #4998. This stop is served by route 27 currently, and will be served by routes 17 and 25 (per the 'New Ways to Bus' network). The proposed development is also within 600m walking distance of stop #4976, which are served by the same routes as above.

- All applicable required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.

- The on-site fire route and garbage collection route include all internal roadways. All on-site roadways are private and have a minimum width of 6.7m, and all internal intersections and curves have a minimum centreline radius of 12.0m.

- The proposed number of vehicle parking spaces meets all requirements. There is no minimum bicycle parking requirement, as each dwelling includes its own garage.

Boundary Streets

- All boundary frontages meet the target pedestrian level of service (PLOS) C and target bicycle level of service (BLOS) B/D.

Transportation Demand Management

- The list of TDM measures to be considered by the proponent is summarized as follows:
    - Display local area maps with walking/cycling access routes and key destinations (provided to residents at move-in);
    - Display relevant transit schedules and route maps (provided to residents at move-in).

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan Control and Draft Plan of Condominium applications for the property located at 615 Mikinak Road. The subject property is approximately 2.18 hectares in area, and is currently vacant.

The subject site is Block 105 of the Wateridge Village subdivision, which is a partially developed community that is generally north of Montreal Road, south of Sir George-Étienne Cartier Parkway, east of Aviation Parkway, and west of the National Research Council (NRC) Canada campus. The subject site is immediately surrounded by the following:

- Hemlock Road, followed by Oshedinaa Street and future residential to the north,
- Mikinak Road, followed by Avro Circle and residences to the south,
- Alliance Park, followed by Codd's Road to the east, and
- Vedette Way, followed by Mishi Private and residences to the west.

An aerial of the vicinity around the subject site is provided in **Figure 1**. The location of the subject site within the Wateridge Village subdivision is shown in **Figure 2**.

Figure 1: View of the Subject Site

Figure 2: Location of Site within Wateridge Village

Source: Canada Lands Company

1.2 Proposed Development

The subject site is designated as 'Corridor – Minor' (Hemlock Road) and 'Evolving Neighbourhood' on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Residential Fourth-Density' and 'Minor Institutional' (R4UC[2311] / I1A), and the site is located within the 'Former CFB Rockcliffe' Community Design Plan area and 'Wateridge Village' Secondary Plan area.

In the initial plan of subdivision, the subject site was reserved as a future school block. The proposed development is now residential in nature, and includes a total of 111 townhouse dwellings. Access to the proposed development will be provided via two full-movement driveways to Vedette Way (opposite the two ends of Mishi Private). The development will be constructed in a single phase, with a buildout year of 2026.

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

1.3 Screening Form

The City's *Revised 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 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 – The proposed development does not meet any safety triggers; further assessment is **not 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.

Hemlock Road within the study area is a collector roadway that generally runs on an east-west alignment between Vedette Way and Wanaki Road. It is planned to connect to the other existing section of Hemlock Road/Hemlock Private that is west of the Wateridge Village subdivision (running as an arterial between Juliana Road and St. Laurent Boulevard, and as a collector between St. Laurent Boulevard and Aviation Parkway). West of Juliana Road, the roadway continues as Beechwood Avenue. The section of Hemlock Road within the Wateridge Village subdivision that has been constructed includes a two-lane undivided urban cross-section, with sidewalks and cycle tracks on both sides. Area speed limit signage indicates a speed limit of 40 km/h. Hemlock Road is not designated as a truck route. Parking lay-bys are provided on one or both sides of Hemlock Road within the subdivision. Adjacent to the site, on-street parking is permitted on the north side of Hemlock Road. The right-of-way (ROW) of Hemlock Road is 26m, consistent with the Wateridge Village Secondary Plan. A widening is not required as part of this application.

Mikinak Road is a collector roadway that generally runs on an east-west alignment between Vedette Way and Wanaki Road. Mikinak Road has a two-lane undivided urban cross-section, with a sidewalk on one side and a multi-use pathway (MUP) on the other. West of Codd's Road and along the subject site's frontage, the MUP runs along the north side of Mikinak Road and the sidewalk runs along the south side. East of Codd's Road, the MUP runs along the south side of Mikinak Road and the sidewalk runs along the north side. Area speed limit signage indicates a speed limit of 40 km/h. Mikinak Road is not designated as a truck route. Parking lay-bys are generally provided adjacent to the sidewalk, and on-street parking is generally prohibited on the side with the MUP. The ROW of Mikinak Road is 26m, consistent with the Wateridge Village Secondary Plan. A widening is not required as part of this application.

Vedette Way is a local roadway that generally runs on a north-south alignment between Hemlock Road and Avro Circle. Vedette Way has a two-lane undivided urban cross-section, with sidewalks on both sides of the roadway. Area speed limited signage indicates a speed limit of 40 km/h. Vedette Way is not designated as a truck route. A parking lay-by is provided on the east side of Vedette Way south of Hemlock Road. On-street parking is generally permitted on both sides between Hemlock Road and Mikinak Road, and on the west side between Mikinak Road and Avro Circle. The ROW of Vedette Way is 20m, consistent with the Wateridge Village Secondary Plan. A widening is not required as part of this application.

The roadway network of the greater area surrounding the subject site is illustrated in **Figure 3**.

Figure 3: Roadway Network

Source: GeoOttawa

2.1.2 Intersections

Hemlock Road/Vedette Way

- Future minor stop-controlled intersection
- Two existing approaches and one future approach, each consisting of a single lane per direction
- Existing South Approach (Vedette Way): existing right turn lane, which will become a future shared left turn/right turn lane
- Existing East Approach (Hemlock Road): existing left turn, which will become a future shared left turn/through lane
- Future West Approach (Hemlock Road): future shared through/right turn lane

Mikinak Road/Vedette Way

- Stop-controlled intersection
- Free-flow on Vedette Way and stop-controlled on Mikinak Road
- Three existing approaches and one future approach, each consisting of a single lane per direction
- All approaches will include one shared left turn/ through/right turn lane

2.1.3 Driveways

In accordance with the *TIA Guidelines*, the existing adjacent driveways along the boundary roadway Vedette Way are summarized as follows. There are no adjacent driveways to Hemlock Road or Mikinak Road.

Vedette Way, east side

- One rear lane to residential garages at 600-626 Mikinak Road and 267-293 Avro Circle.

Vedette Way, west side

- Two driveways to residences at 101 Vedette Way (both driveways named Mishi Private).

2.1.4 Pedestrian and Cycling Facilities

In general, pedestrian facilities are provided on both sides of most public roadways within the Wateridge Village subdivision, and are primarily concrete sidewalks. Asphalt pathways are provided on one side of Mikinak Road and Codd's Road, as well as within the larger parks (such as Alliance Park, immediately east of the subject site). Cycle tracks are provided on both sides of Hemlock Road.

Hemlock Road is identified in the City's Crosstown Bikeway Network, connecting to Wanaki Road to the east, and the existing Hemlock Road/Hemlock Private corridor to the west.

2.1.5 Area Traffic Management

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

Area speed limit signs of 40 km/h and 'traffic calmed neighbourhood' signage are provided on Codd's Road, and apply to the study area. Centreline flex posts are also provided on Codd's Road. Throughout the study area and surrounding community, midblock and intersection narrowings have been implemented. These narrowings also serve to delineate on-street parking areas.

A Monitoring Program was developed in April 2019 for Phase 2A and 2B of Wateridge Village, to monitor the following:

- Cut-through traffic from Wateridge Village;
- Transit shares for Wateridge Village;
- Constrained network intersections.

2.1.6 Transit

The locations of OC Transpo bus stops relevant to the subject site are described in **Table 1**, and are shown in **Figure 4**. The stops are served by Route 27 (Wateridge ↔ St-Laurent), which operates during select time periods from Monday to Friday.

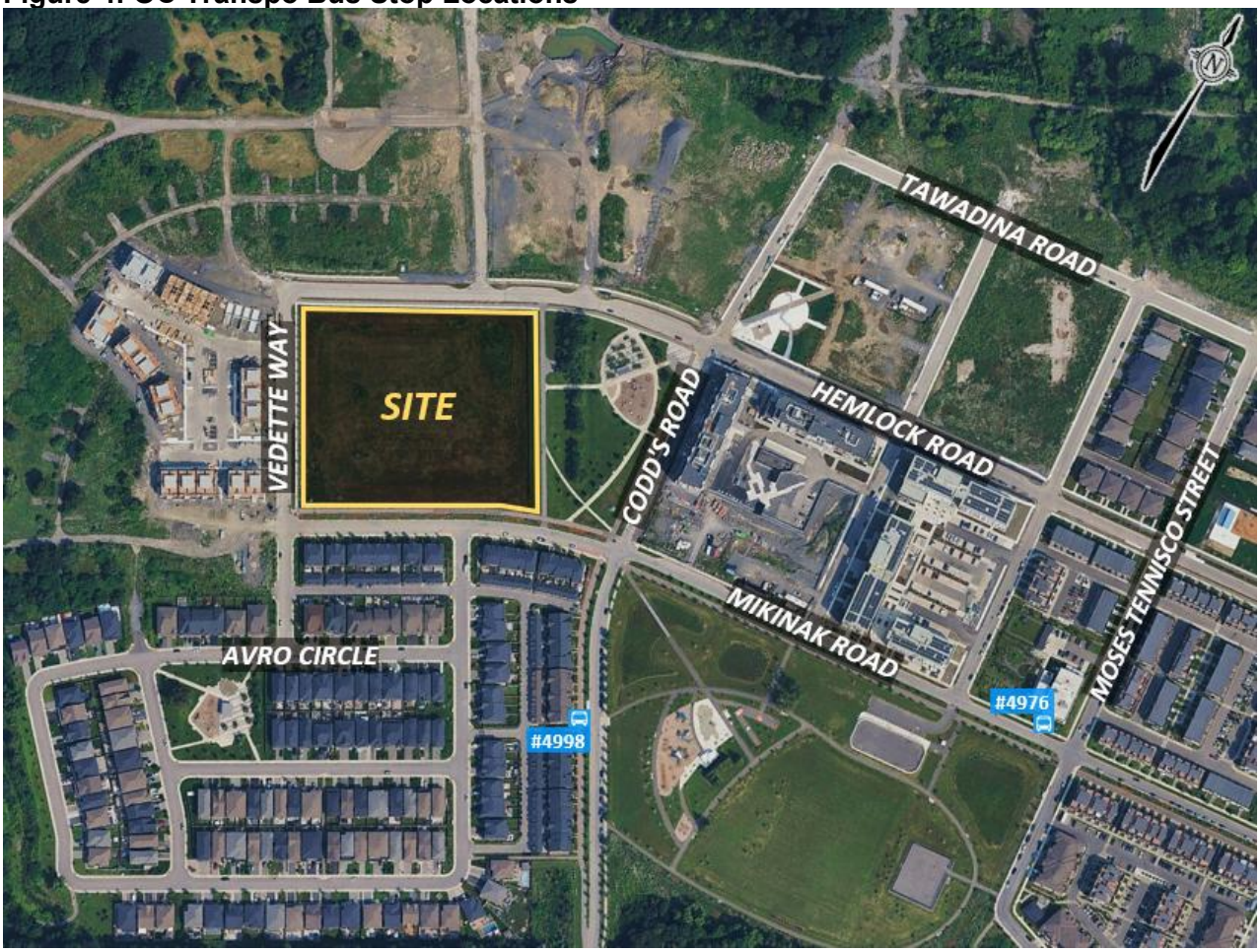
Table 1: OC Transpo Transit Stops

Stop	Location	Routes Serviced
#4976	North side of Mikinak Road, west of Moses Tennisco Street	27
#4998	West side of Codd's Road, south of Mikinak Road	27

OC Transpo's future transit network (referred to as 'New Ways to Bus') will include changes to bus service within the study area. OC Transpo has announced that this service will begin April 27, 2025. Route 27 will be removed and replaced by Route 17 (Wateridge ↔ Parliament) and Route 25 (Wateridge ↔ Blair). Route 17 will operate during peak periods from Monday to Friday. Route 25 will provide all-day service, but will only serve the study area from Monday to Friday.

Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Figure 4: OC Transpo Bus Stop Locations



2.1.7 Existing Traffic Volumes

Weekday traffic counts have not been conducted within the study area, as the community is still developing. Hemlock Road and Mikinak Road currently terminate at Vedette Way. The Wateridge Village Phases 3 and 5 TIA (prepared by J.L. Richards in November 2021) includes existing traffic volumes at Mikinak Road/Codd's Road, and the 101 Vedette Way TIA (prepared by Novatech in August 2022) includes projected traffic generated by those residences, some of which are constructed. These traffic studies have been considered in estimating the existing traffic volumes on the boundary streets. Relevant excerpts of these TIAs are included in **Appendix D**.

Neither source includes existing traffic volumes on the section of Hemlock Road west of Codd's Road, but existing volumes are anticipated to be minimal. For the purposes of this review, volumes on Hemlock Road and Vedette Way are assumed to be equal. The approximate existing two-way traffic volumes on the boundary streets are estimated in **Table 2**.

Table 2: Estimated Existing Traffic Volumes

Roadway	AM Peak(1)	PM Peak(1)	AADT(2)
Hemlock Road (Vedette Way to Codd's Road)	25 vph	25 vph	250 vpd
Mikinak Road (Vedette Way to Codd's Road)	105 vph	107 vph	1,070 vpd
Vedette Way (Hemlock Road to Mikinak Road)	25 vph	25 vph	250 vpd

1. AM and PM peak hour volumes, in vehicles per hour (vph)
2. Average annual daily traffic (AADT), in vehicles per day (vpd); estimated as ten times the PM peak volumes

2.1.8 Collision Records

Historical collision data from the City's Open Ottawa database have been reviewed for the study area, to determine if there are any identifiable collision patterns, which are defined in the *Revised TIA Guidelines* as 'more than six collisions in five years' for any one movement.

No collisions have been identified at the Hemlock Road/Vedette Way or Mikinak Road/Vedette Way intersections, and no midblock collisions have been identified on Hemlock Road (between Vedette Way and Codd's Road), Mikinak Road (between Vedette Way and Codd's Road), or Vedette Way (between Hemlock Road and Mikinak Road).

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

The City's *2013 Transportation Master Plan (TMP)* does not include any study area roadway projects in the City's 2031 Affordable Road Network and 2031 Network Concept. The extension of Hemlock Road from Vedette Way to the existing Hemlock Road/Hemlock Private corridor is planned to be constructed as part of Phase 2 of the Wateridge Village subdivision.

The 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network and 2031 Network Concept identify exclusive bus lanes and transit signal priority on Hemlock Road from St. Laurent Boulevard to Codd's Road, and on Codd's Road from Hemlock Road to Montreal Road. It is noted that the designation of Hemlock Road/Codd's Road in the RTTP Network has been superseded by the 'Former CFB Rockcliffe' CDP, and both roadways have been designed to support local transit only. Isolated transit priority measures are identified on Hemlock Road west of St. Laurent Boulevard.

South of the proposed development, the 2031 Affordable RTTP Network and 2031 Network Concept identify continuous bus lanes on Rideau Street and Montreal Road. An Environmental Study Report (ESR) was prepared by Parsons in February 2022.

As part of development of the Wateridge Village subdivision, a new northbound off-ramp from Aviation Parkway onto Hemlock Road has been approved as part of the Draft Plan of Subdivision. The Wateridge Village Phases 3 and 5 TIA included sensitivity analysis, and determined that Phases 3 and 5 will not trigger the need for the new northbound off-ramp.

Approved by City Council in April 2023, the City's *TMP – Part 1* includes a list of upcoming active transportation projects, and supersedes the City's *2013 Ottawa Cycling Plan* and *2013 Ottawa Pedestrian Plan*. The *TMP – Part 1* identifies no active transportation projects within the study area.

2.2.2 Other Area Developments

The City's Development Application Search Tool identifies the following development applications that are in proximity of the subject site that are under construction, approved, or are in the approval process:

125-135 Oshedinaa Street
A technical memorandum was prepared by Arcadis in February 2025, in support of two four-storey apartment buildings with a total of 200 dwellings. This development is located north of the subject site, and within the Phase 4 boundary of the Wateridge Village subdivision. The technical memo did not identify a buildout year.

1000-1050 Tawadina Road
A TIA and technical memorandum were prepared by IBI Group in June 2022 and November 2022, respectively, in support of five nine-storey apartment buildings with ground-floor commercial space and a total of 736 dwellings. This development is located northeast of the subject site, and within the Phase 2 boundary of the Wateridge Village subdivision. Per the 2022 TIA, a buildout year of 2026 is identified for this development.

Additionally, the following applications are noted:

Wateridge Village, Phases 3 & 5
As stated in Section 2.1.7, a TIA was prepared by J.L. Richards in November 2021, in support of Phases 3 and 5 of the Wateridge Village subdivision. These phases include approximately 745 low- to mid-rise residential dwellings, 1,081 high-rise residential dwellings, and mixed-use commercial/ retail space. Per the TIA, buildout years of 2023 and 2025 were identified for Phases 3 and 5, respectively. However, as of writing, construction has not commenced for either phase.

Wateridge Village, Phase 4
A TIA was prepared by Dillon Consulting in February 2023, in support of Phase 4 of the Wateridge Village subdivision. This phase includes approximately 642 high-rise residential dwellings and 37,000 ft^2 of ground-floor commercial space. Per the TIA, a buildout year of 2028 is identified for this phase.

101 Vedette Way
A TIA was prepared by Novatech in August 2022, in support of a residential development with a total of 172 dwellings. Per the TIA, a buildout year of 2024 was identified. This development is located immediately west of the subject site, and within the Phase 3 boundary of the Wateridge Village subdivision. As of writing, the development is under construction, with some dwellings completed and occupied.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Hemlock Road, Mikinak Road, and Vedette Way.

The selected time periods for this report are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. A buildout year of 2026 and horizon year 2031 are identified.

2.4 Access Design

Two full-movement accesses are proposed to Vedette Way, opposite the two ends of Mishi Private. These accesses have been evaluated using the relevant provisions of the City's *Private Approach By-Law* (PABL) and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(1)(a) of the PABL identifies that a minimum of 35m of frontage is required to permit two two-way private approaches to one street. As the subject site has approximately 135m of frontage to Vedette Way, this requirement is met.

Section 25(1)(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach. The proposed accesses are approximately 7.0m and 8.0m in width at the street line, meeting this requirement.

Section 25(1)(g) of the PABL identifies a minimum separation distance of 9m between any two two-way private approaches to the same property, as measured at the street line. Since the two accesses are approximately 65m apart (measuring nearest edge to nearest edge), this requirement is met.

Section 25(1)(o) of the PABL identifies that no private approach shall be within 1.5m of the point of tangency of a corner radius at an intersection, or within 6m of the intersecting street line. Both accesses are a minimum of 25m from the intersecting street lines of Hemlock Road or Mikinak Road. Therefore, these requirements are met.

Section 25(1)(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% to 6% for the first 9m inside the property line. This requirement is met, as the maximum grade within the first 9m is 2.0%.

TAC's *Geometric Design Guide* identifies minimum corner clearance distances between the nearest edge of a private approach and the nearest edge of an crossing roadway. When accessing a local roadway, TAC identifies a minimum corner clearance requirement of 15m to the nearest unsignalized intersection. Measuring nearest edge to nearest edge, the proposed accesses are approximately 32m from Hemlock Road and 41m from Mikinak Road. Therefore, this requirement is met.

A review of stopping sight distance (SSD) and intersection sight distance (ISD) requirements at the proposed accesses has been conducted, in accordance with the minimum requirements outlined in TAC's *Geometric Design Guide*. For the purposes of this review, a design speed of 50 km/h has been assumed (i.e. 10 km/h greater than the posted speed limit of 40 km/h). Therefore, TAC outlines the following SSD and ISD requirements for the accesses to Vedette Way.

- SSD: 65m required;
- ISD, looking right to turn left out of access: 105m required;
- ISD, looking left to turn right out of access: 95m required.

As Vedette Way is a straight and level roadway, it is anticipated that adequate sightlines will be provided at both accesses, provided any vegetation along Vedette Way is trimmed and maintained.

TAC's *Geometric Design Guide* does not identify a minimum clear throat length requirement for accesses to local roadways. For the purposes of this TIA, a minimum clear throat length of 8m has been considered. Both accesses to Vedette Way provides approximately 8m of clear throat length, measuring from the nearest driveway to the edge of the road.

2.5 Development-Generated Travel Demand

2.5.1 Trip Generation

The number of peak hour person trips generated by the proposed development has been estimated using the *TRANS Trip Generation Manual*, which present peak period trip generation rates and mode shares for different types of housing for the AM and PM peak periods. The data is divided into trip generation rates and mode shares for Single-Family Detached Housing, Low-Rise Multifamily Housing (one or two storeys), and High-Rise Multifamily Housing (three or more storeys). For the Low-Rise Multifamily Housing land use, the process of converting the trip generation estimates from peak period to peak hour is shown below.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Beacon Hill district, which has the following observed mode shares for low-rise multifamily housing during the peak periods:

- Auto Driver: 45% in AM peak, 48% in PM peak;
- Auto Passenger: 9% in AM peak, 16% in PM peak;
- Transit: 35% in AM peak, 24% in PM peak;
- Cyclist: 1% in AM peak, 1% in PM peak;
- Pedestrian: 10% in AM peak, 11% in PM peak.

The mode shares for this proposed development are assumed to generally follow the mode shares observed in Beacon Hill. A single set of mode shares have been assumed for the purposes of this TIA, and can be summarized as: 45% driver, 15% passenger, 30% transit, 0% 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 development during the AM and PM peak periods are shown in **Table 3**. A breakdown of these trips by mode share is shown in **Table 4**.

Table 3: 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
Low-Rise Multifamily Housing	AM: 1.35 PM: 1.58	111	45	105	*150*	98	77	*175*

1. ppp: Person Trips per Peak Period

Table 4: 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		**45**	**105**	***150***	**98**	**77**	***175***
Auto Driver	45%	20	47	*67*	44	35	*79*
Auto Passenger	15%	7	16	*23*	15	11	*26*
Transit	30%	13	32	*45*	29	23	*52*
Cyclist	0%	-	-	*0*	-	-	*0*
Pedestrian	10%	5	10	*15*	10	8	*18*

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 5**.

Table 5: 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	10	23	*33*	19	15	*34*
Auto Passenger	0.48	0.44	3	8	*11*	6	5	*11*
Transit	0.55	0.47	7	17	*24*	14	11	*25*
Cyclist	0.58	0.48	-	-	*0*	-	-	*0*
Pedestrian	0.58	0.52	3	6	*9*	5	4	*9*
Peak Hour Person Trips			**23**	**54**	***77***	**44**	**35**	***79***

From the previous table, the proposed development is estimated to generate 77 person trips (including 33 vehicle trips) during the AM peak hour, and 79 person trips (including 34 vehicle trips) during the PM peak hour.

2.6 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the *2023 Revised TIA Guidelines*. The applicable exemptions for this site are shown in **Table 6**.

Table 6: 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

Module	Element	Exemption Criteria	Status
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. Development generates more than 75 vehicle trips 4. Site trip infiltration is expected, and site-generated traffic will increase peak volumes by 50% or more along the route between the site and an arterial 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 child care 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 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 peak hour person trips 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 BACKGROUND NETWORK TRAVEL DEMAND

Background traffic volumes have been estimated for the horizon year 2031, based on traffic projections for Phases 3 and 5 of Wateridge Village, Phase 4 of Wateridge Village, and 101 Vedette Way. Relevant excerpts of the studies prepared in support of those developments are included in **Appendix D**. A summary of the trip projections in each study is provided below.

Wateridge Village, Phases 3 & 5
The projected volumes generated by Phases 3 and 5 of Wateridge Village were estimated to equal 1,154 person trips (including 519 vehicle trips) during the AM peak hour, and 1,177 person trips (including 531 vehicle trips) during the PM peak hour.

The 2021 TIA prepared by J.L. Richards included traffic projections for two scenarios (one with a new northbound off-ramp at Aviation Parkway/Hemlock Road, and one without). The TIA states that a new northbound off-ramp from Aviation Parkway onto Hemlock Road is not recommended as part of Phases 3 and 5. Therefore, the scenario without a new off-ramp has been considered in this TIA.

Wateridge Village, Phase 4
The projected volumes generated by Phase 4 of Wateridge Village were estimated to equal 348 person trips (including 174 vehicle trips) during the AM peak hour, and 383 person trips (including 206 vehicle trips) during the PM peak hour. The 2023 TIA prepared by Dillon included reductions to account for pass-by and internally captured trips, which reduced the vehicle trip generation to 144 vehicle trips during the AM peak hour and 120 vehicle trips during the PM peak hour.

101 Vedette Way
The projected volumes generated by the development at 101 Vedette Way were estimated to equal 71 person trips (including 25 vehicle trips) during the AM peak hour, and 70 person trips (including 25 vehicle trips) during the PM peak hour. These volumes were initially accounted for in the estimated existing traffic volumes.

Consistent with the studies listed above, the extension of Hemlock Road is anticipated by the horizon year 2031. Background volumes on Hemlock Road have been estimated by adding the projected Phase 4-generated volumes at Oshedinaa Street (as shown in the Phase 4 TIA) to the projected total volumes at Madjibizo Place/Kijigong Terrace (as shown in the Phase 3 and 5 TIA). Background volumes on Mikinak Road have been estimated by adding the projected trips generated by 101 Vedette Way (as shown in that TIA) to the projected total volumes at Mikinak Road/Codd's Road (as shown in the Phase 3 and 5 TIA).

The approximate background two-way traffic volumes on the boundary streets are estimated in **Table 7**.

Table 7: Estimated Background Traffic Volumes

Roadway	AM Peak[1]	PM Peak[1]	AADT[2]
Hemlock Road (Vedette Way to Codd's Road)	220 vph	190 vph	1,900 vpd
Mikinak Road (Vedette Way to Codd's Road)	391 vph	399 vph	3,990 vpd
Vedette Way (Hemlock Road to Mikinak Road)	25 vph	25 vph	250 vpd

1. AM and PM peak hour volumes, in vehicles per hour (vph)
2. Average annual daily traffic (AADT), in vehicles per day (vpd); estimated as ten times the PM peak volumes

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

An east-west pedestrian walkway with a width of 1.8m is proposed through the centre of the site, providing the potential for direct connectivity between Vedette Way and Alliance Park. It is understood that the City will confirm if a panel of the fence along the west side of Alliance Park can be removed to facilitate a formal connection. The subject site is bound by concrete sidewalks to the north and west (i.e. along Hemlock Road and Vedette Way) and asphalt pathways to the south and east (i.e. along Mikinak Road and the western limit of Alliance Park).

No exterior bicycle parking spaces are proposed as part of this development, as each dwelling includes a garage. Bicycle parking requirements are discussed further in Section 4.2.

OC Transpo's service design guideline for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. Measuring from the centroid of the subject site, the proposed development is within 400m walking distance of stop #4998. This stop is served by route 27 currently, and will be served by routes 17 and 25 (per the 'New Ways to Bus' network). The proposed development is also within 600m walking distance of stop #4976, which are served by the same routes as above.

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

- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h.

4.1.2 Circulation and Access

The on-site fire route and garbage collection route include all roadways within the proposed development. All on-site roadways are private and have a minimum width of 6.7m, and all internal intersections and curves have a minimum centreline radius of 12.0m. Turning movement figures have been prepared for fire trucks and Medium Single Unit (MSU) vehicles entering, exiting, and circulating the site. These figures are included as **Figure 5** and **Figure 6**.

HEMLOCK ROAD

MIKINAK ROAD

1.8m CONC. SIDEWALK

1.8m CONC. SIDEWALK

Pumper Fire Truck

2131
calc MH6380

2132
calc direction

3.6m MUP PATH

1.8m CONC. SIDEWALK

1.8m CONC. SIDEWALK

VEDETTE WAY

Pumper Fire Truck

1.8m CONC. SIDEWALK

1.8m CONC. SIDEWALK

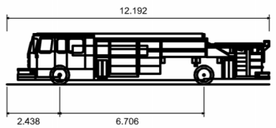
1.8m CONC. SIDEWALK

DC

DC

DC

DC



Pumper Fire Truck

Overall Length	12.192m
Overall Width	2.489m
Overall Body Height	2.361m
Min Body Ground Clearance	0.200m
Track Width	2.489m
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

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

WATERIDGE VILLAGE BLOCK 105

TURNING MOVEMENT (FIRE TRUCK)

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

DATE APR 2025 | JOB 124199 | FIGURE FIGURE 5

SHT11X17.DWG - 279mmX432mm

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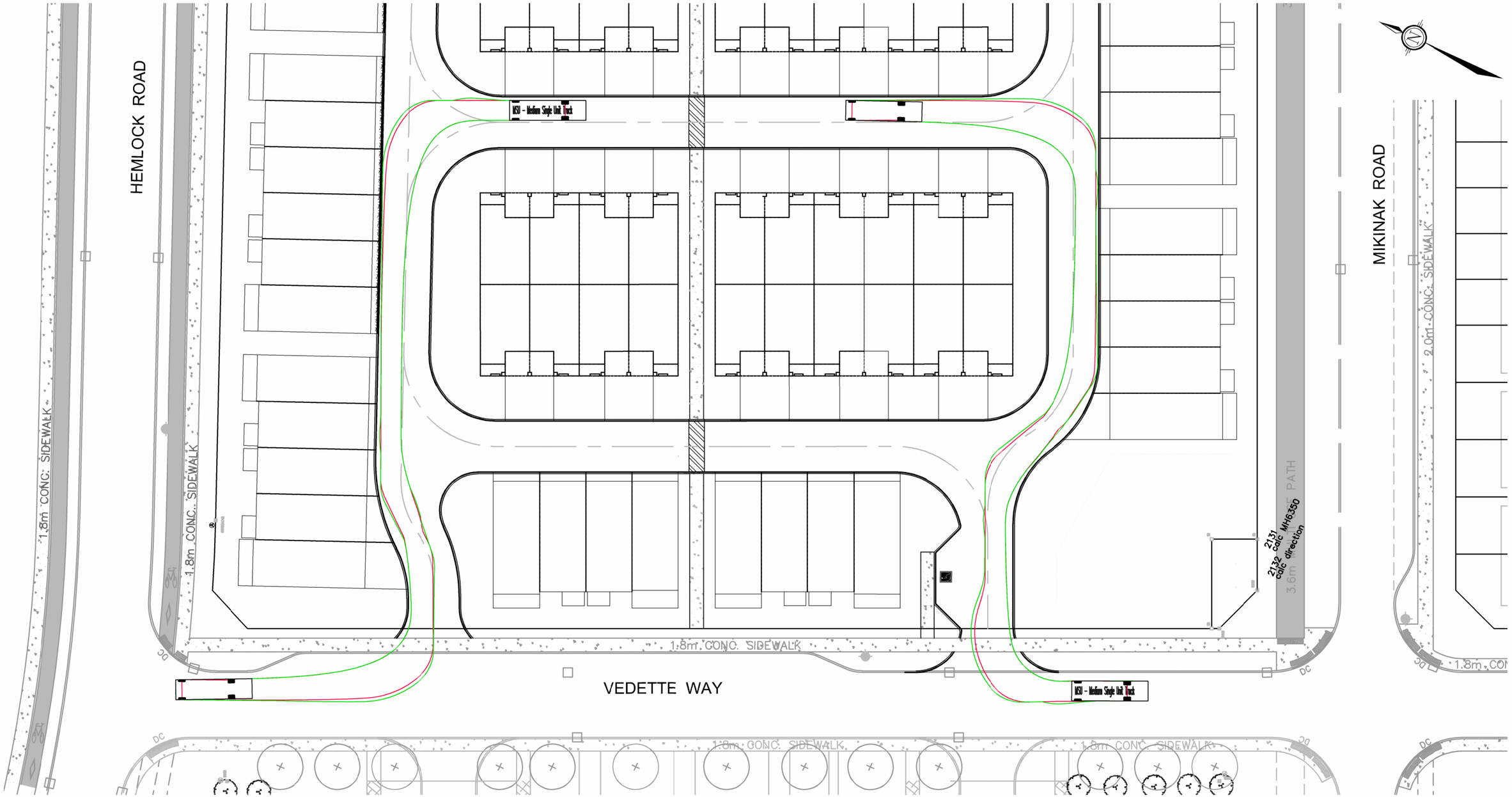

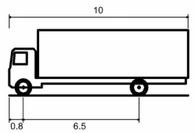

MSU - Medium Single Unit Truck

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

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Website www.novatech-eng.com

WATERIDGE VILLAGE BLOCK 105

TURNING MOVEMENT (MSU/GARBAGE TRUCK)

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

DATE APR 2025 | JOB 124199 | FIGURE FIGURE 6

SHT11X17.DWG - 279mmX432mm

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4.2 Parking

The subject site is located within Area B on Schedule 1 and Area X on Schedule 1A of the City's *Zoning By-Law* (ZBL). The required parking supply and proposed parking supply for the proposed residential development are summarized in **Table 8**.

Table 8: Required and Proposed Parking

Land Use	Rate	Units	Required	Provided
Minimum Vehicle Parking (Section 101/102 of ZBL)				
Dwelling, Townhouse	0.75 spaces per dwelling, after the first 12 dwellings (residents)	111 units	74	111
	0.1 spaces per dwelling without driveways, after the first 12 dwellings (visitor)(1)	51 units	4	8
		Total	**78**	**119**
Minimum Bicycle Parking (Section 111 of ZBL)				
Dwelling, Townhouse	No requirement, as each dwelling includes its own garage	111 units	0	N/A

1. The 60 central dwellings include driveways that are long enough to count as visitor parking spaces. Therefore, only the 51 dwellings proposed along the perimeter have been considered in determining the visitor parking requirement.

Based on the previous table, the proposed number of vehicle parking spaces meets all requirements. There is no minimum bicycle parking requirement, as each dwelling includes its own garage.

4.3 Boundary Streets

This section provides a review of the boundary frontages to Hemlock Road, Mikinak Road, and Vedette Way, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines* were used to evaluate the levels of service for each alternative mode of transportation. The boundary frontages have been evaluated based on the targets for roadways within the General Urban Area.

A detailed segment MMLOS review is included in **Appendix F**. A summary of the segment MMLOS analysis is provided below in **Table 9**.

Table 9: Segment MMLOS Summary

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Hemlock Road	A	C	A	B	D	-	C	-
Mikinak Road	A		A	D	D		C	
Vedette Way	B		B		-		-	

From the previous table, all boundary frontages meet the target pedestrian level of service (PLOS) C and target bicycle level of service (BLOS) B/D. No targets are identified for transit level of service (TLOS) or truck level of service (TkLOS).

4.4 Transportation Demand Management

4.4.1 Context for TDM

The proposed development consists of a total of 111 townhouse dwellings. All dwellings will have individual entrances (i.e. no lobby entrances are proposed).

4.4.2 Need and Opportunity

The subject site is located within the 'Former CFB Rockcliffe' Community Design Plan area and 'Wateridge Village' Secondary Plan area. The implemented zoning for the property is 'Residential Fourth-Density' and 'Minor Institutional' (R4UC[2311] / I1A).

As first discussed in Section 2.5.1, the assumed drive share of 45% for the proposed development is based on the surveyed residential driver shares of the Beacon Hill district (as outlined in the *TRANS Trip Generation Manual*). The driver share of the proposed development may reduce as Wateridge Village develops, more amenities and nearby commercial opportunities are built, and transit service improves in the area. Additionally, the future Hemlock Road corridor will complete the Crosstown Bikeway, and therefore connectivity for active transportation will also improve.

Based on the trip generation estimates in Section 2.5.1, failure to meet the driver share by 10% equates to an additional three vehicle trips during each peak hour.

4.4.3 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 E**. The list of measures to be considered is summarized as follows:

- Display local area maps with walking/cycling access routes and key destinations (provided to residents at move-in);
- Display relevant transit schedules and route maps (provided to residents at move-in).

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Site-Generated Traffic

- The proposed development is estimated to generate 77 person trips (including 33 vehicle trips) during the AM peak hour, and 79 person trips (including 34 vehicle trips) during the PM peak hour.

Access Design

- The proposed accesses to Vedette Way meet all relevant provisions of the City's *Private Approach By-Law*.

- The proposed accesses generally meet the relevant provisions of the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.

Development Design and Parking

- An east-west pedestrian walkway with a width of 1.8m is proposed through the centre of the site, providing the potential for direct connectivity between Vedette Way and Alliance Park. The subject site is bound by concrete sidewalks to the north and west (i.e. along Hemlock Road and Vedette Way) and asphalt pathways to the south and east (i.e. along Mikinak Road and the western limit of Alliance Park).

- Measuring from the centroid of the subject site, the proposed development is within 400m walking distance of stop #4998. This stop is served by route 27 currently, and will be served by routes 17 and 25 (per the 'New Ways to Bus' network). The proposed development is also within 600m walking distance of stop #4976, which are served by the same routes as above.

- All applicable required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.

- The on-site fire route and garbage collection route include all internal roadways. All on-site roadways are private and have a minimum width of 6.7m, and all internal intersections and curves have a minimum centreline radius of 12.0m.

- The proposed number of vehicle parking spaces meets all requirements. There is no minimum bicycle parking requirement, as each dwelling includes its own garage.

Boundary Streets

- All boundary frontages meet the target pedestrian level of service (PLOS) C and target bicycle level of service (BLOS) B/D.

Transportation Demand Management

- The list of TDM measures to be considered by the proponent is summarized as follows:
    - Display local area maps with walking/cycling access routes and key destinations (provided to residents at move-in);
    - Display relevant transit schedules and route maps (provided to residents at move-in).

NOVATECH

Prepared by:

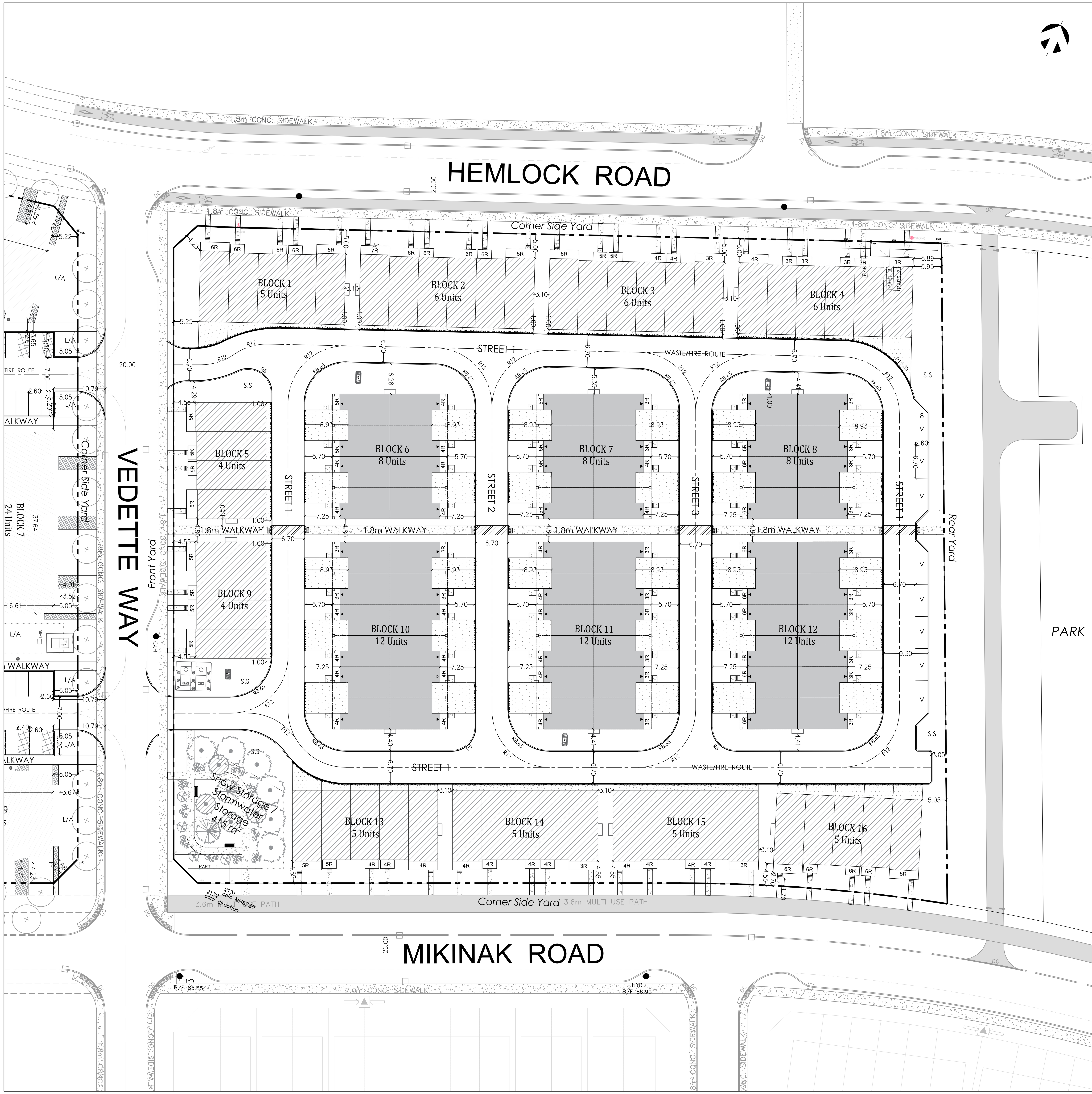
Joshua Audia, P.Eng.
Project Engineer | Transportation

Reviewed by:

Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

APPENDIX A

Preliminary Site Plan

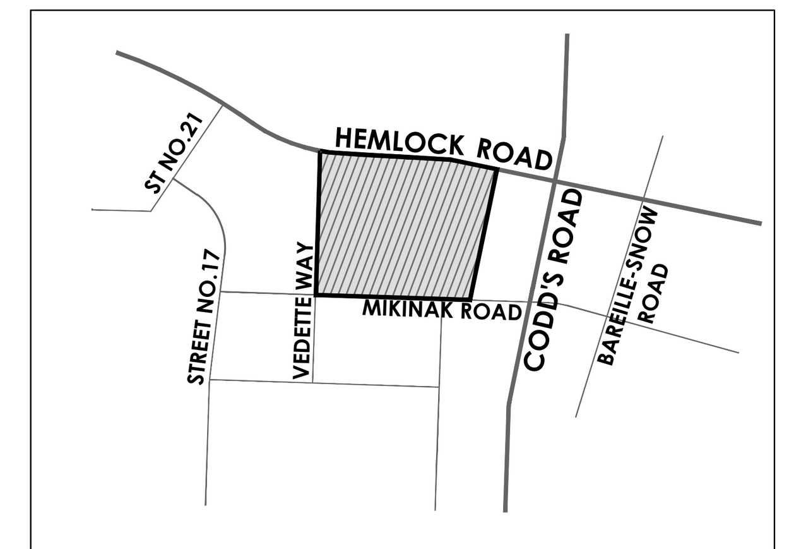


SITE STATISTICS AND DEVELOPMENT DATA

SITE AREA	21,760 m² (2.17 ha)
PAVED AREA	7,204m² (33%)
LANDSCAPED AREA	5,579m² (26%)
TOTAL BUILDING COVERAGE	8,977m² (41%)
TOTAL APPROXIMATE GROSS FLOOR AREA	TBD
TOTAL UNITS	111
NET DENSITY (UPH)	77 UPH
ZONE CATEGORY	R4UC[2311]

DWELLING BLOCK	DWELLING TYPE	GROSS FLOOR AREA m²	UNITS
BLOCK 1	REAR LANE TOWNS	TBD	5
BLOCK 2	REAR LANE TOWNS	TBD	6
BLOCK 3	REAR LANE TOWNS	TBD	6
BLOCK 4	REAR LANE TOWNS	TBD	6
BLOCK 5	REAR LANE TOWNS	TBD	4
BLOCK 6	BACK TO BACK TOWNS	TBD	8
BLOCK 7	BACK TO BACK TOWNS	TBD	8
BLOCK 8	BACK TO BACK TOWNS	TBD	8
BLOCK 9	REAR LANE TOWNS	TBD	4
BLOCK 10	BACK TO BACK TOWNS	TBD	12
BLOCK 11	BACK TO BACK TOWNS	TBD	12
BLOCK 12	BACK TO BACK TOWNS	TBD	12
BLOCK 13	REAR LANE TOWNS	TBD	5
BLOCK 14	REAR LANE TOWNS	TBD	5
BLOCK 15	REAR LANE TOWNS	TBD	5
BLOCK 16	REAR LANE TOWNS	TBD	5
	TOTAL	**TBD**	**111**

SECTION	ZONE PROVISION - PLANNED UNIT DEVELOPMENT	REQUIRED	PROPOSED
162A(Table)	MIN. LOT AREA (m²):		
	PLANNED UNIT DEVELOPMENT	1,400m²	21,760m²
162A(Table)	MIN. LOT WIDTH (m):		
	PLANNED UNIT DEVELOPMENT	No minimum	134m
Table 162A & 135(1)	MIN. FRONT YARD SETBACK (m):		
	PLANNED UNIT DEVELOPMENT	4.5m	4.55m
Table 162A & 135(1)	MIN. REAR YARD SETBACK (m):		
	PLANNED UNIT DEVELOPMENT	4.5m	5.05m
162A(Table)	MIN. CORNER SIDE YARD SETBACK (m):		
	PLANNED UNIT DEVELOPMENT	4.5m	4.55m
162A(Table)	MAX. BUILDING HEIGHT (m):		
	PLANNED UNIT DEVELOPMENT	As per dwelling type	TBD
	TOWNHOUSE	10m	TBD
2311	MIN. LOT LINE SETBACK FOR LOT LINES THAT ABUT PARKS (m):	5m	5m
2311	MAX. FRONT, REAR AND SIDE YARD SETBACKS (m):	6m	5.95m
101(3) & 101 (Table)	MIN. RESIDENT PARKING (TOWNHOUSE) - (99 UNITS @ 0.75 SPACES AFTER THE FIRST 12 UNITS)	71	111
102(Table)	MIN. VISITOR PARKING (REAR LANE TH) - (51 Units @ 0.1 SPACES AFTER THE FIRST 12 UNITS)	4	8
131(Table)(1)	MIN. WIDTH OF PRIVATE WAY/ PARKING AISLE (m)	6.0m	6.7m
131(Table)(2)	MIN. SETBACK FOR ANY WALL OF A RESIDENTIAL USE BUILDING TO A PRIVATE WAY (m)	1.8m	1.0m
131(Table)(3)	MIN. SETBACK FOR ANY GARAGE OR CARPORT ENTRANCE FROM A PRIVATE WAY (m):	5.2m	1.0m
2311	MIN. SEPARATION DISTANCE BETWEEN BUILDINGS WITHIN A PLANNED UNIT DEVELOPMENT (m)	3m	3.1m
131(Table)(5)(b)	REQUIRED VISITOR PARKING MAY BE PROVIDED AS PARALLEL PARKING ON A PRIVATE WAY, PROVIDED THE PRIVATE WAY HAS A MINIMUM WIDTH OF 8.5m:	8.5m	9.3m
139(1)(Table)	MIN. AGGREGATED SOFT LANDSCAPED AREA % WHERE THE FRONT/ SIDE YARD SETBACK IS MORE THAN 3m	40%	TBD
139(4)(c)	MAX. WIDTH OF A WALKWAY IN THE CASE OF ANY OTHER RESIDENTIAL USE BUILDING (m)	1.2m	1.0m
	ADDITIONAL PROVISIONS		
65(Table)	PERMITTED PROJECTIONS INTO REQUIRED YARDS:		
65(Table)(5)	FIRE ESCAPES, OPEN STAIRWAYS, STOOP, WHERE AT OR BELOW THE FIRST FLOOR LEVEL (m):		
	INTERIOR SIDE YARD OR REAR YARD (m)	No Limit	n/a
	FRONT YARD OR CORNER SIDE YARD (m)	>0.6m to lot line	1.70m
	OTHER CASES:	>1.0m to lot line 1.5m (Max)	1.70m
65(Table)(6)	COVERED OR UNCOVERED BALCONY, PORCH, DECK, WHERE THE WALKING SURFACE IS NOT HIGHER THAN 0.6m ABOVE ADJACENT GRADE:		
	INTERIOR SIDE YARD OR REAR YARD (m)	No Limit	5.89m
	FRONT YARD OR CORNER SIDE YARD (m)	>1.0m to lot line 2.25m (Max)	2.70m
106(2)(a)	MIN. PARALLEL PARKING SPACE SIZE (m)	2.6m x 6.7 m	2.6m x 6.7 m



KEY MAP
N.T.S.
Subject Lands

SCALE 1:400 — 0 4 8 12 16 20 24

LEGEND

- REAR LANE TOWNS
- BACK TO BACK TOWNS
- CROSSWALK
- CURB (0.2m)
- WALKWAY TO ENTRY (Pavers)
- DEPRESSED CURB
- MOUNTABLE CURB
- PORCH
- PROJECTION (STAIRS)
- S.S SNOW STORAGE AREA
- L/A LANDSCAPED AREA
- BLOCK BOUNDARY
- TACTILE WALKING SURFACE INDICATOR
- NEW LED LIGHT POLE
- STREET TREE
- CONCRETE/ASPHALT PAD
- ENTRANCE
- ASPHALT DRIVEWAY
- V VISITOR PARKING
- BARRIER FREE PARKING
- BENCH
- SHRUB
- CONIFEROUS TREE
- DECIDUOUS TREE
- TRANSFORMER
- MINI SUBS (HYDRO)
- SWITCHBOARD
- HYDRO CABINET
- R RISERS

DATE [D.M.Y]	REVISION	BY
04/28/25	Site Plan Revisions	WS
25/02/25	Draft site plan	AS

GENERAL NOTES

1. DO NOT SCALE DRAWINGS FOR PRINT.
2. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF KORSIAK URBAN PLANNING. COPYRIGHT RESERVED.
3. WALKWAYS AND CURBS TO BE TIED INTO PUBLIC ROW WHERE APPLICABLE.
4. REFERENCES CITY OF OTTAWA T.W.S.I. DETAIL SC7.3

PROJECT TEAM

SITE PLAN DESIGN: KORSIAK Urban Planning
LANDSCAPE ARCHITECTURE: NAK design strategies
TRANSPORTATION: NOVATECH Engineers, Planners & Landscape Architects
PLANNING: Stantec
CIVIL ENGINEER: Stantec
NOISE: GRADIENTWIND ENGINEERS & SCIENTISTS
ARCHITECTURE:
MECHANICAL/ ELECTRICAL:
GEOTECHNICAL & STRUCTURAL:

mattamyHOMES
50 Hines Road, Suite 100, Ottawa, ON Canada K2K 2M5

Wateridge
Block 105
615 MIKINAK ROAD
PART OF LOT 24 CONCESSION 1 (OTTAWA FRONT)
REGISTERED PLAN 4M-1559
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA

TITLE: SITE PLAN

DATE: April 28, 2025
DRAWN BY: WS
CHECKED BY: JH
DRAWING NO. A
FILE NO.: #
JOB NO.: WATERIDGE PHASE 3A

#18683

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	615 Mikinak Road
Description of Location	southeast of Hemlock/Vedette
Land Use Classification	low-rise residential
Development Size (units)	111 units
Development Size square metre (m^2)	
Number of Accesses and Locations	2 accesses to Vedette Way
Phase of Development	1
Buildout Year	2026

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

2. Trip Generation Trigger

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

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).

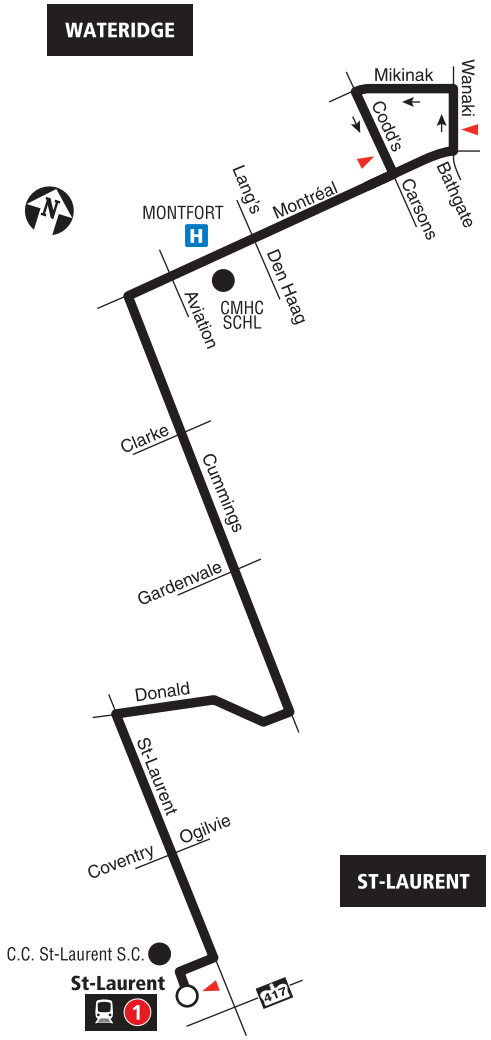
APPENDIX C

OC Transpo Route Maps

27 WATERIDGE / ST-LAURENT

Local

Monday to Friday / Lundi au vendredi
Selected time periods
Périodes sélectionnées



2022.06

Station

Timepoint / Heures de passage

2022.06

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

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

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

Security / Sécurité **613-741-2478**

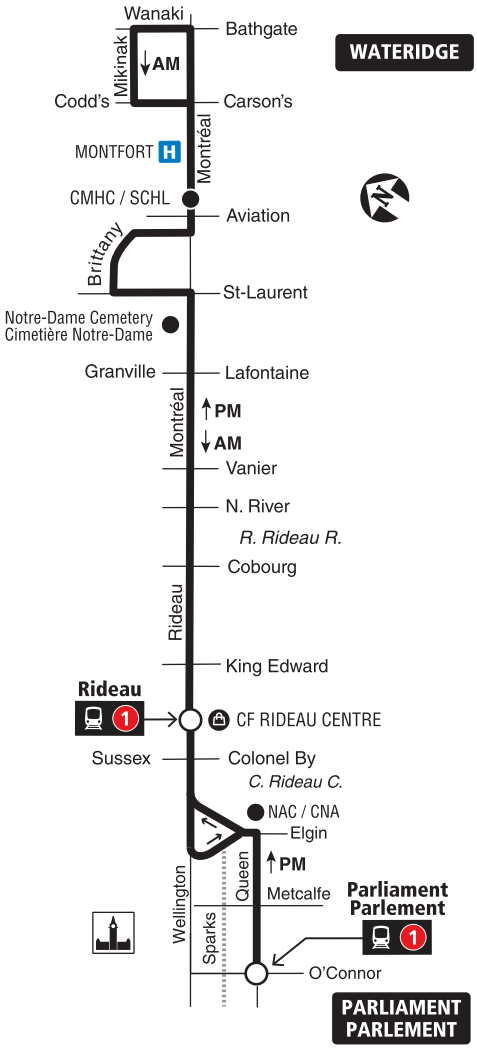
Effective June 26, 2022
En vigueur 26 juin 2022

OC Transpo
INFO 613-560-5000
octranspo.com

17 WATERIDGE / PARLIAMENT PARLEMENT

Local

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



04.2025

Station

Shopping Centre / Centre commercial

2025.04

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

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

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

Security / Sécurité **613-741-2478**

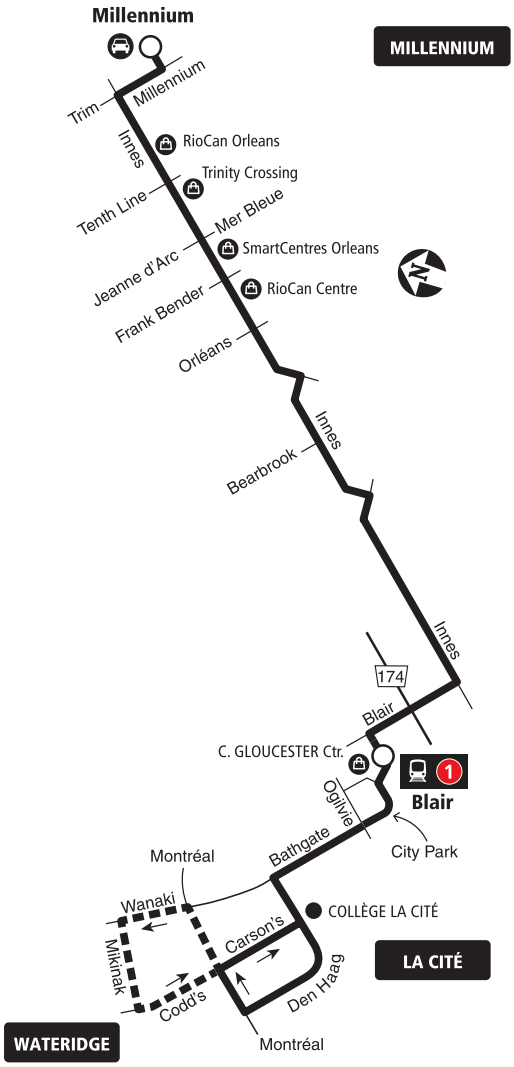
OC Transpo **octranspo.com**

25 Fréquent

WATERIDGE LA CITÉ
MILLENNIUM

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04.2025

- Station
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial
- Monday to Friday only
  Lundi au vendredi seulement

2025.04

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

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

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

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**


SITE
Montréal
39
24
30
34
35
38
21
32
33
Rideau Hall
Rockcliffe
Canada Aviation and Space Museum
Musée de l'aviation et de l'espace du Canada
Rockcliffe Airport
Aéroport de Rockcliffe
Ashbury
Maple
Springfield
Acacia
Lac McKay Lake
Birch
Sandridge
Beechwood
Hemlock
Aviation Parkway
prom. Sir-George-Étienne-Cartier
Sir George-Étienne Cartier Pkwy
Cimetière Beechwood Cemetery
Loyer
St-Charles
Prom Vanier Pkwy
Pères-Blancs
Richelieu
Centre d'accueil Champlain
Marier
Montfort
Granville
Cimetière Notre Dame Cemetery
Alfred
Cantin
Brittany
Montfort
prom. de l'Aviation
Mikinak
Codd's
Wanaki
Massey
Delong
Swan's Way
Wren
Coxford
Wick
Rothwell
La Vérendrye
Quincy
Colonel By
Deschamps
Montréal
Lacasse
Lafontaine
St-Laurent
Cummings
Den Haag
Samuel Genest
Carsons
Blair
Séguin
Mowat
Elwood
Eastvale
Shefford
Ogilvie
Loyola
Canotek
Beacon Hill
Gil O Julien
Heartwood House
Au Coeur De La Vie
McArthur
Donald
La Cité
Plumber
Vanier
North River
Montréal

APPENDIX D

Relevant Excerpts of Select Wateridge Village TIAs

J.L. Richards
& Associates Limited
864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
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Fax: 613 728 6012

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

Figure 1: Local Context

Peak Hour Travel Demands

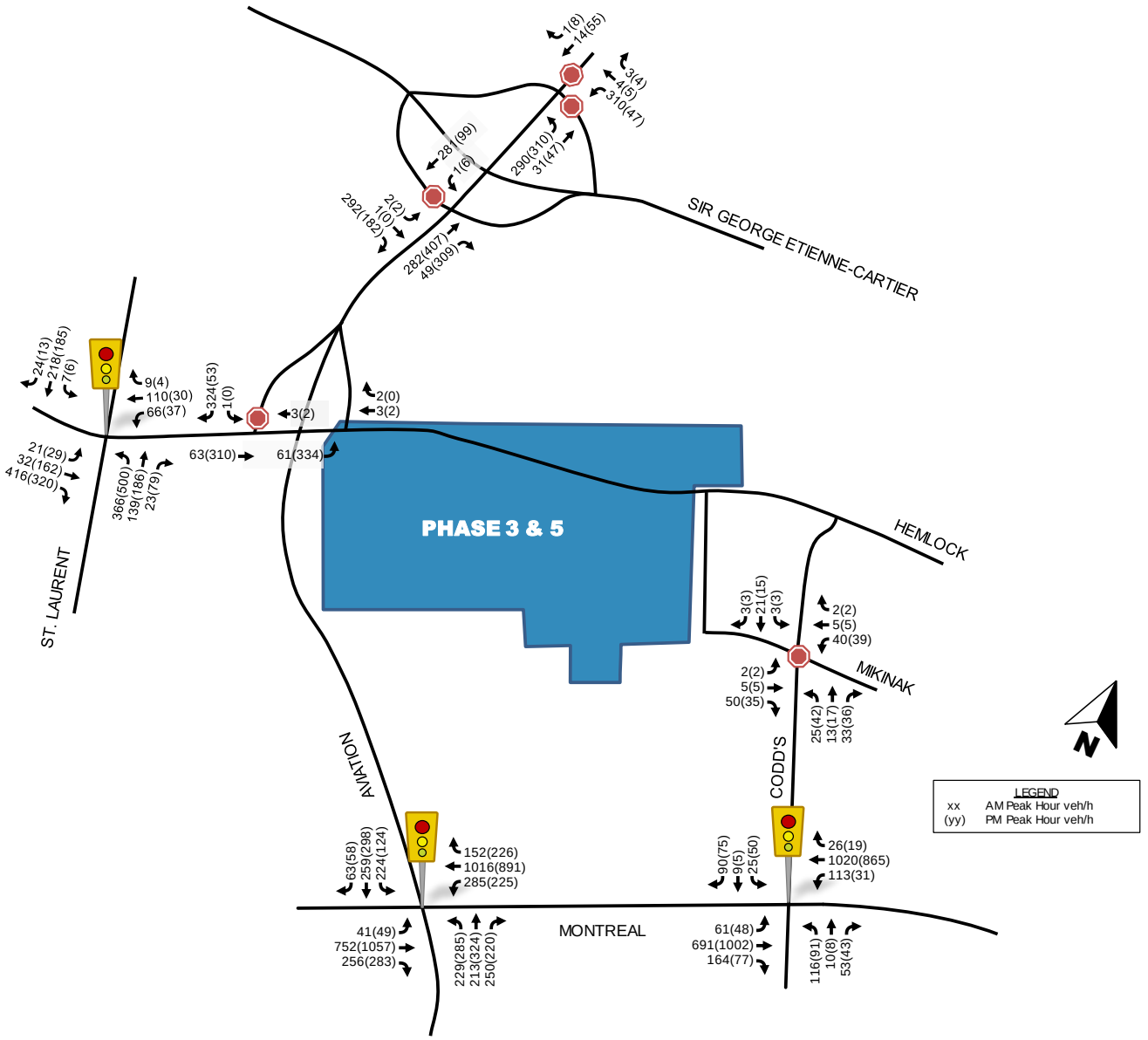
For the purpose of this assessment and based on discussions with the City staff, the following study area intersections have been identified for intersection capacity analysis:

- St. Laurent/Hemlock
- Hemlock/Aviation Off-ramp
- Hemlock/Aviation On-ramp
- Aviation/Sir George-Etienne-Cartier N
- Aviation/Sir George-Etienne-Cartier S
- Aviation/Montreal
- Montreal/Codd's
- Mikinak/Codd's

The following **Figure 10** depicts the observed (pre-pandemic) weekday morning and afternoon peak hour vehicular volumes at study area intersections, and **Figure 13** depicts pedestrian and cyclist movements over the same peak hours. Detailed traffic volume data provided by the City of Ottawa is provided as **Appendix A**.

It should be noted that given the impact of the COVID-19 pandemic on normal travel patterns, it was assumed that existing baseline traffic volumes at the road connections to Phases 3 and 5 are equivalent to the new site-generated traffic volumes sourced from the *Wateridge Village 2A 2B TIA* prepared by Dillion, dated February 2019. These volumes were carried through the network and are depicted in **Figure 11**. This is considered a reasonable assumption, as the anticipated full build-out of Phase 2 is anticipated to be complete by the year 2022. Relevant excerpts from the *Wateridge Village 2A 2B TIA* dated February 2019, are included as **Appendix B**.

Superimposing the 'new' site generated traffic from the *Wateridge Village 2A 2B TIA* (i.e. **Figure 11**) onto existing volumes (i.e. **Figure 10**), the result is **Figure 12**. For analysis purposes, the volumes depicted in **Figure 12** have been assumed as baseline existing volumes, to be compared against future traffic volume projections.



J.L.Richards
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J.L. Richards
& Associates Limited
864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

Figure 10: Existing Vehicular Volumes AM(PM)

Total Projected Conditions

The following **Figure 19** depicts 'total' projected volumes for the horizon year of 2025 and beyond, which were derived by superimposing site-generated traffic volumes onto projected background traffic volumes (e.g. summing together volumes depicted in **Figure 16** and **Figure 17**, resulting in **Figure 20**).

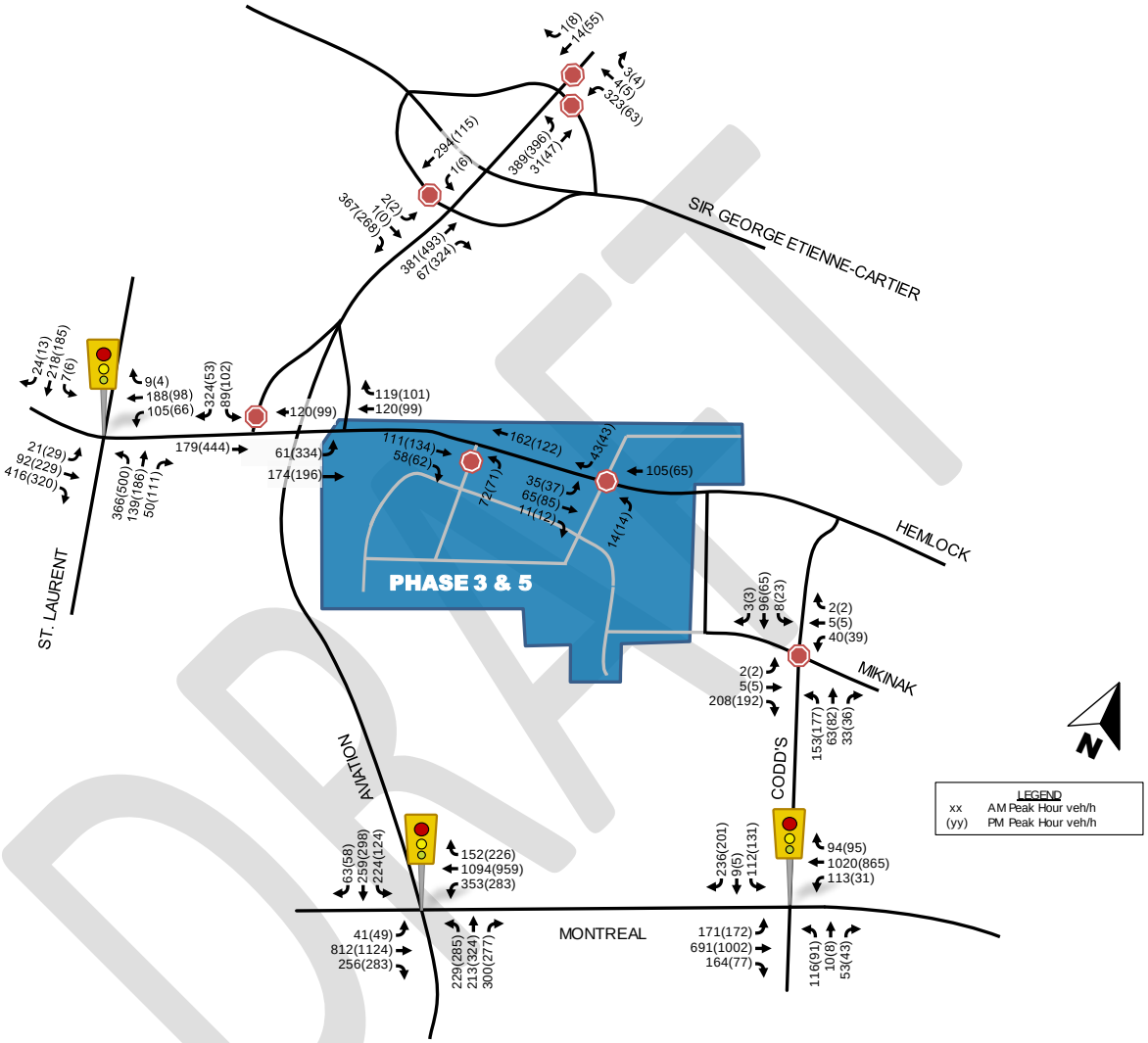
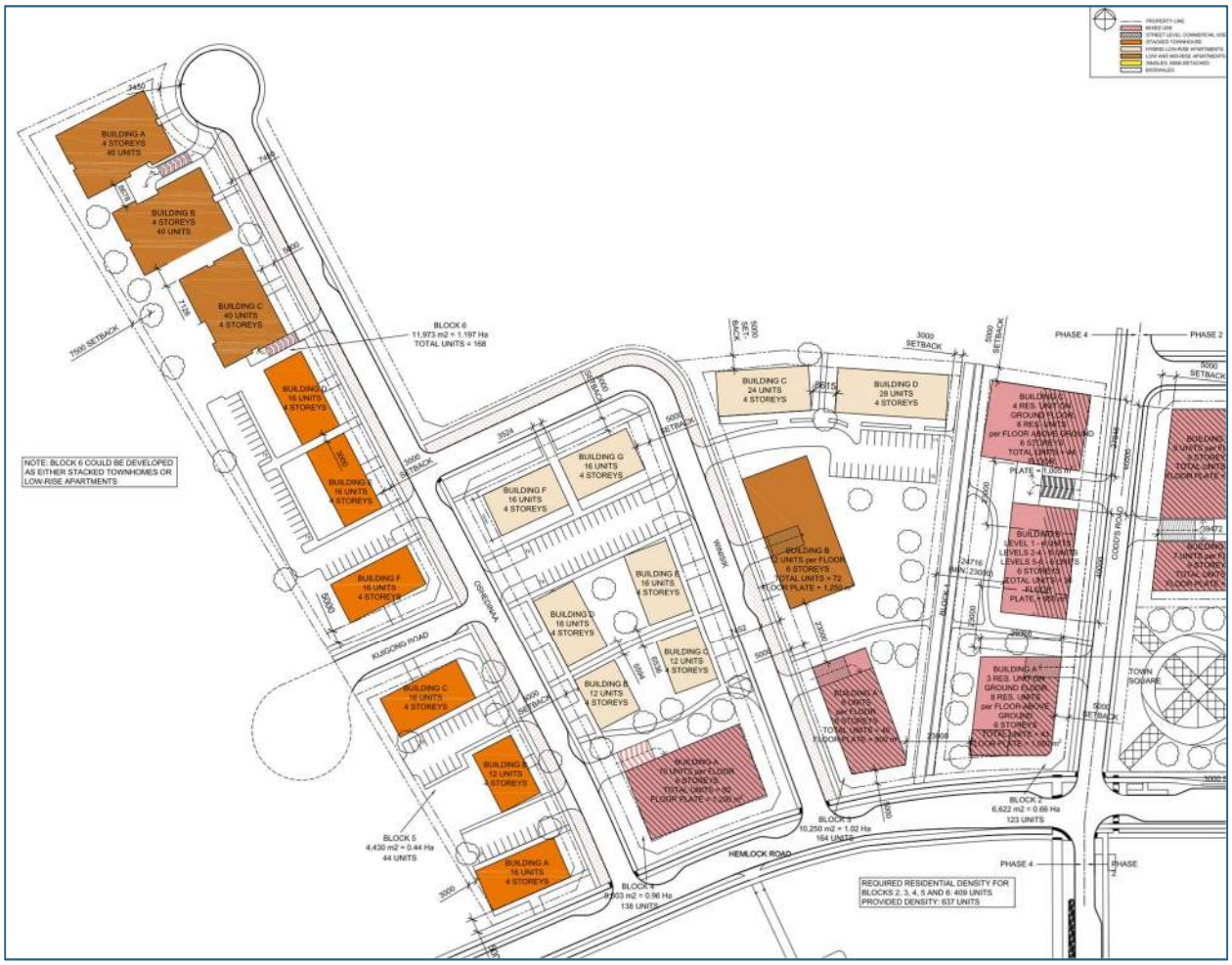


Figure 20: Total Projected Traffic Volumes (2025, 2030)

Similar to existing and future background conditions, total projected conditions were assessed using the intersection capacity analysis software Synchro (v10). Metrics such as Auto-LOS, V/C ratio, 95th percentile queue (metres) and vehicular delay (seconds) were analyzed. Assuming no intersection improvements, the following **Table 13** summarizes the intersection operational analysis of the study area intersections for the total projected 2025 horizon year.

Detailed Synchro output data for future total projected conditions is provided in **Appendix E**.

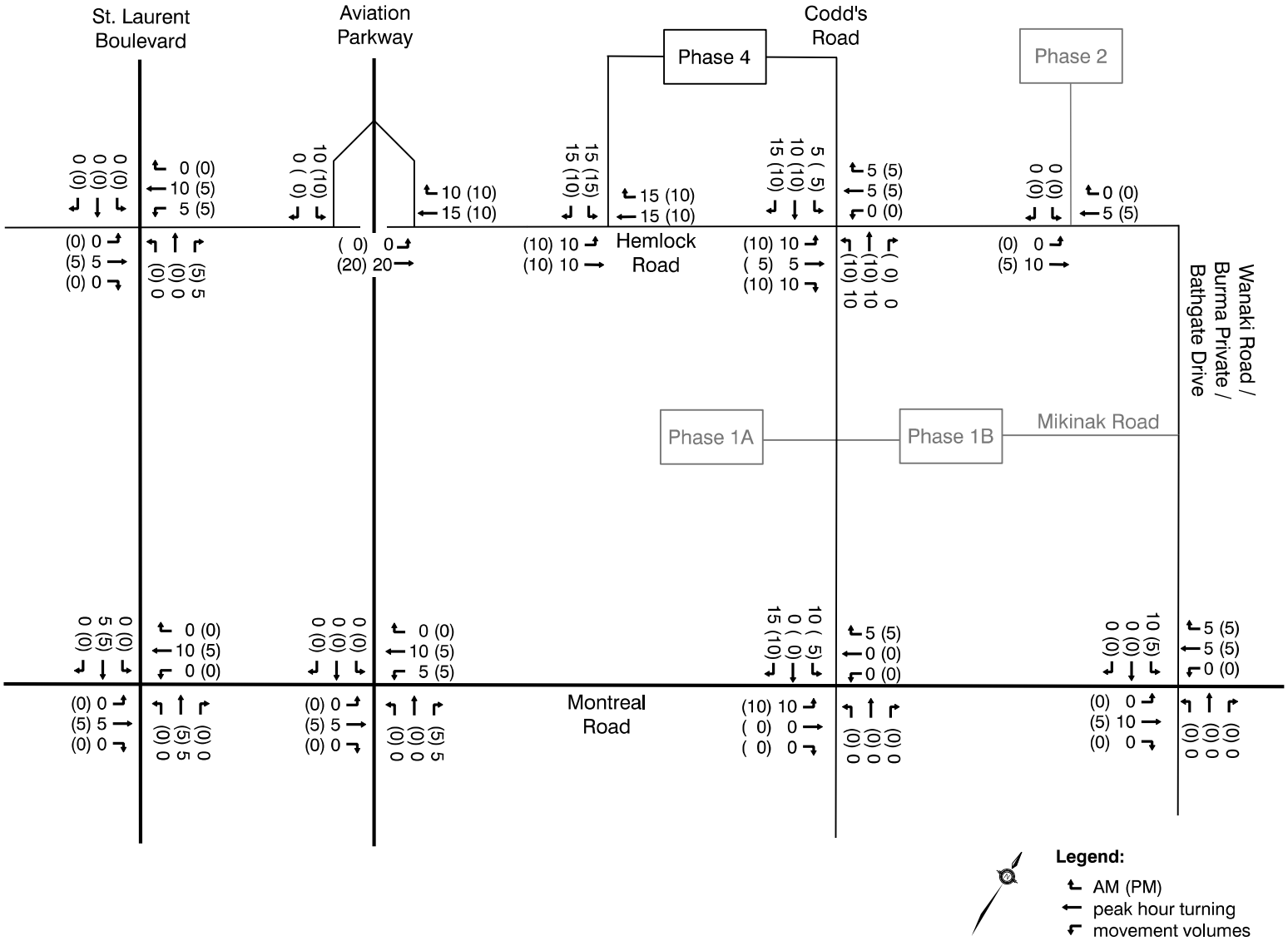
Figure 3: Preliminary Site Plan



The following intersections have been evaluated as part of this transportation analysis:

- Access Intersections:
  - Montreal Road/Codd's Road;
  - Montreal Road/Wanaki Road; and
  - Hemlock Road/Aviation Parkway Northbound Ramp.
- Network Impacts
  - St. Laurent Boulevard/Montreal Road;
  - St. Laurent Boulevard/Hemlock Road; and
  - Montreal Road/Aviation Parkway.
- Internal Roadways
  - Hemlock Road/Codd's Road.

Figure 15: Site Generated Traffic Volumes

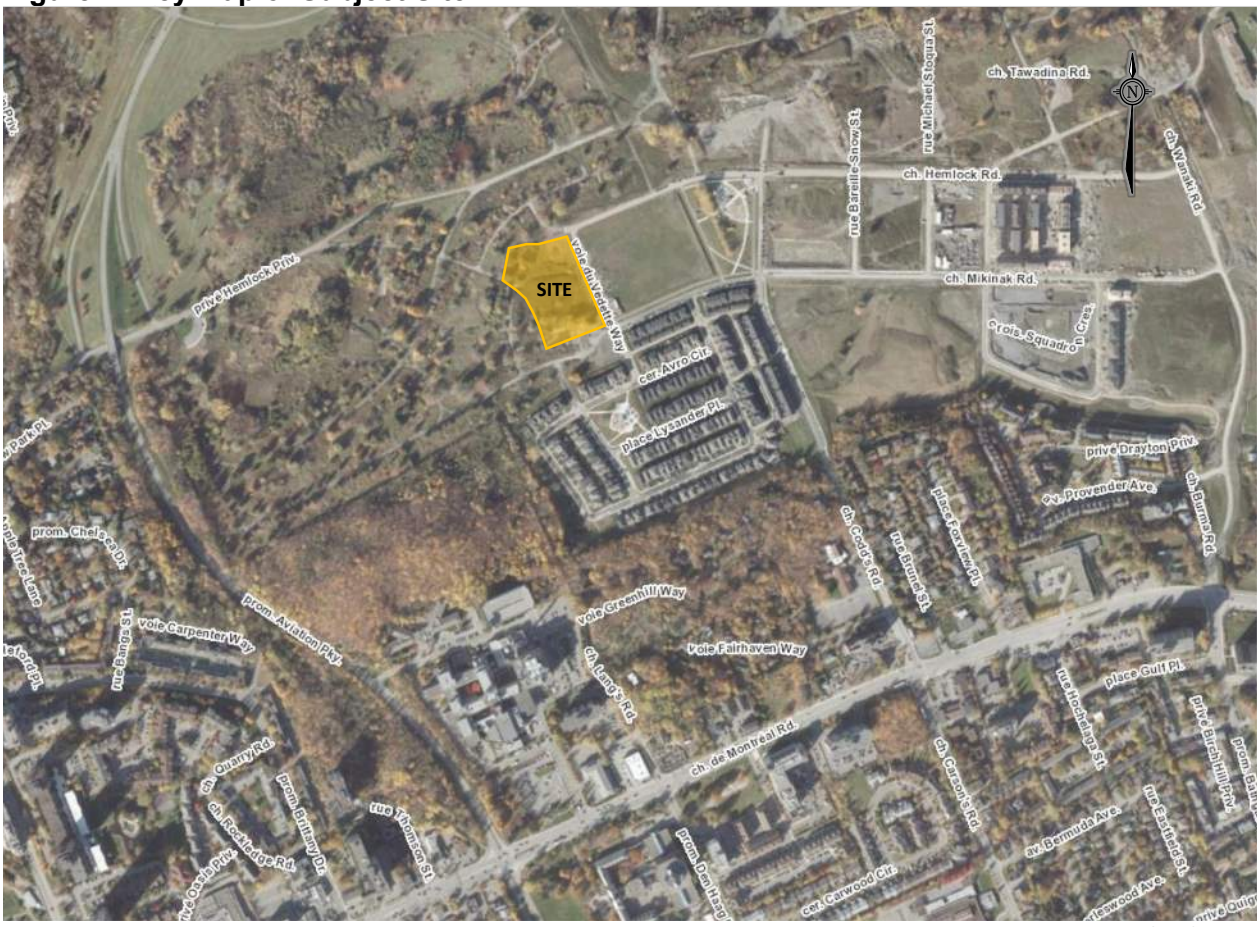


1.0 INTRODUCTION

This Transportation Impact Assessment (TIA) report has been prepared in support of a Site Plan Control application for 101 Vedette Way, located within Phase 3A of Wateridge Village at the Rockcliffe Subdivision. The Rockcliffe Subdivision is a Canada Lands Corporation (CLC) development, with the subject block developed by Mattamy Homes.

The subject lands, now 101 Vedette Way and previously Block 13 of the approved Plan of Subdivision, is bounded by Hemlock Road to the north, Vedette Way to the east, Mikinak Road to the south, and future Du Chene Way and Madjibizo Place to the west, as shown in **Figure 1**.

Figure 1: Key Map of Subject Site



GeoOttawa

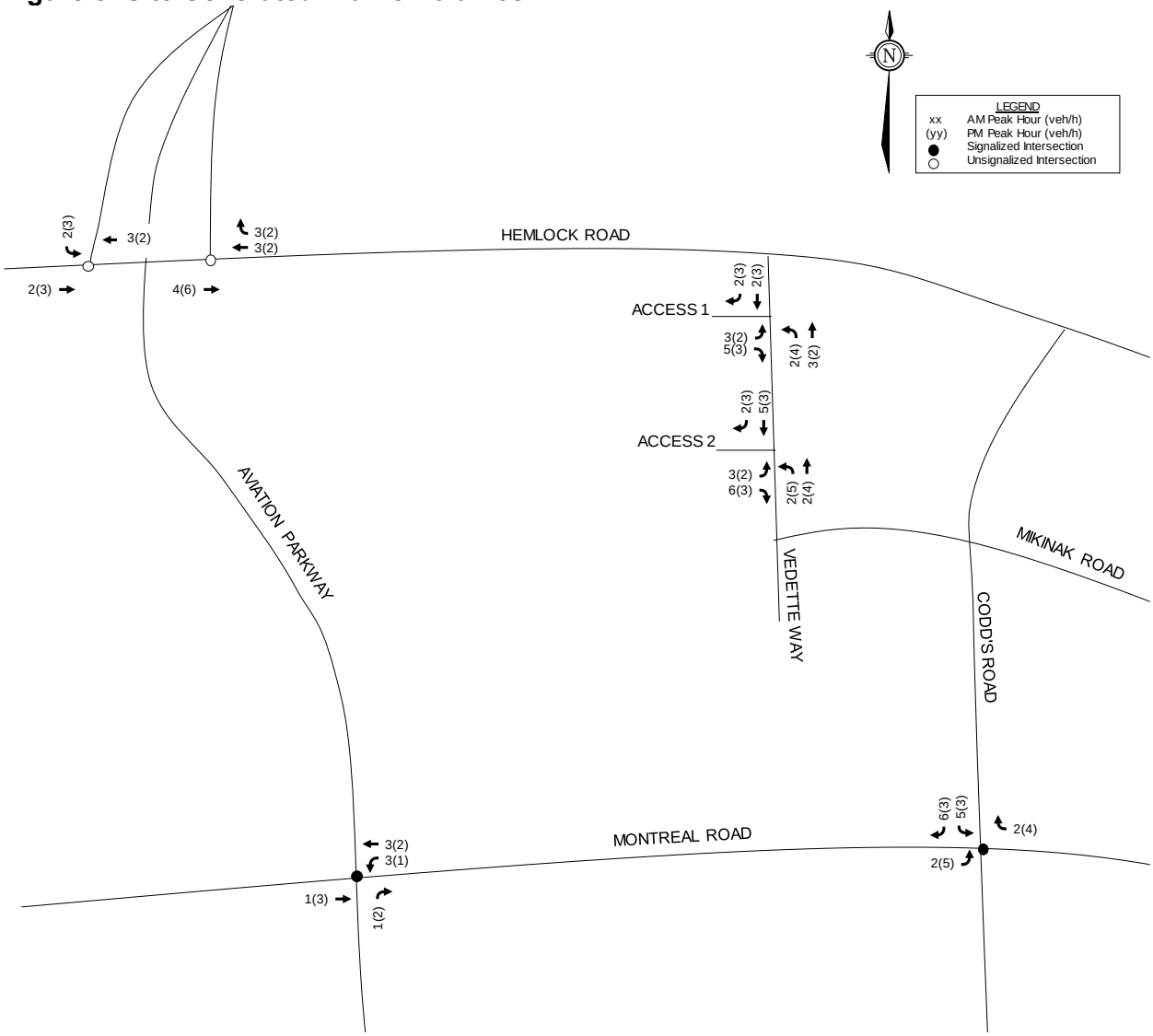
As part of the greater approved Plan of Subdivision, a Community Transportation Study was prepared by Parsons for the Former Canadian Forces Base (CFB) Rockcliffe Redevelopment in June 2014. A Transportation Impact Assessment was submitted in November 2021 for Phases 3 & 5 of the Wateridge Village development. The site traffic generated by the subject site was included in the overall traffic estimate presented in the June 2014 CTS and the November 2021 TIA. The Land Use and Phasing Plan for Wateridge Village is shown in **Figure 2**.

Trip distribution is summarized below:

- 20% to/from the north via Aviation Parkway
- 30% to/from the east via Montreal Road
- 15% to/from the south via Aviation Parkway
- 15% to/from the west via Montreal Road
- 20% to/from the west via Hemlock Road

Site generated traffic volumes are shown in **Figure 8**.

Figure 8: Site Generated Traffic Volumes



APPENDIX E

Transportation Demand Management

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)*	☑ - Garages provided for all units
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)*	☐ - N/A
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐ - Garages provided for all units
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

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

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

Legend

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

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

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

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

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

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

APPENDIX F

MMLOS Analysis

Segment MMLOS Analysis

This section provides a review of the boundary frontages to Hemlock Road, Mikinak Road, and Vedette Way, 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 on the boundary streets. Evaluation of the boundary frontages are based on 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). Exhibit 22 of the *MMLOS Guidelines* identifies a target PLOS C for all roadways within the General Urban Area. 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). Exhibit 22 of the *MMLOS Guidelines* identifies a target BLOS B for Hemlock Road, and a target BLOS D for Mikinak Road and Vedette Way. 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). Exhibit 22 of the *MMLOS Guidelines* does not identify a target TLOS for roadways that are not designated in the Rapid Transit and Transit Priority Network. Hemlock Road and Mikinak Road have been evaluated for TLOS, as future transit may be provided on either of these roadways as the community develops. 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). Exhibit 22 of the *MMLOS Guidelines* does not identify a target TkLOS for any roadway, as they have no truck route designation and are not arterial roadways. Hemlock Road and Mikinak Road have been reviewed, as future transit may be provided on either of these roadways as the community develops. 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
Hemlock Road, south side (Vedette Way to Codd's Road)					
1.8m	> 2.0m	≤ 3,000 vpd	N/A	50 km/h	A
Mikinak Road, north side (Vedette Way to Codd's Road)					
≥ 2.0m	> 2.0m	≤ 3,000 vpd	N/A	50 km/h	A
Vedette Way, east side (Hemlock Road to Mikinak Road)					
1.8m	0m	≤ 3,000 vpd	N/A	50 km/h	B

1. Operating speed is assumed to equal area speed limit plus 10 km/h

Table 2: BLOS Segment Analysis

Road Class	Route Type	Bikeway Type	Travel Lanes	Operating Speed	BLOS
Hemlock Road (Vedette Way to Codd's Road)					
Collector	Crosstown Bikeway	Cycle Track	2	50 km/h	A
Mikinak Road (Vedette Way to Codd's Road)					
Collector	No Class	MUP	2	50 km/h	A
Vedette Way (Hemlock Road to Mikinak Road)					
Local	No Class	Mixed Traffic	2	50 km/h	B

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Hemlock Road (Vedette Way to Codd's Road)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D
Mikinak Road (Vedette Way to Codd's Road)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Hemlock Road (Vedette Way to Codd's Road)		
≤ 3.5m	1	C
Mikinak Road (Vedette Way to Codd's Road)		
≤ 3.5m	1	C