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Proposed Residential Development
150 Dun Skipper Drive, Ottawa

Transportation Impact Assessment

Proposed Residential Development
150 Dun Skipper Drive

Transportation Impact Assessment

Prepared By:

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

Dated: January 2025
Revised: April 2025

Novatech File: 124107
Ref: R-2024-132

NOVATECH
Engineers, Planners & Landscape Architects

April 24, 2025

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

Attention: Ms. Josiane Gervais
Transportation Project Manager, Infrastructure Approvals

Dear Ms. Gervais:

Reference: 150 Dun Skipper Drive
Revised Transportation Impact Assessment
Novatech File No. 124107

We are pleased to submit the following revised Transportation Impact Assessment (TIA), in support of a Site Plan Control application at 150 Dun Skipper Drive, 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).

The original TIA in support of this development was submitted in January 2025, and has since been revised to reflect updates to the proposed site plan and address City comments.

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

Yours truly,

NOVATECH

Joshua Audia, 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 24th day of April, 20 25.

Name: Brad Byvelds, P.Eng.

Professional Title: Senior 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, Suite 200
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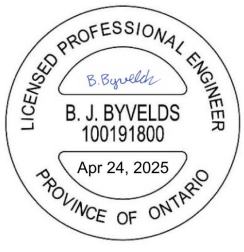
Stamp



[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 application for the western portion of the property located at 150 Dun Skipper Drive. The entire property is approximately 2.93 hectares in area, with frontages to Bank Street, Dun Skipper Drive, and Cedar Creek Drive and is currently vacant. The subject portion of the property is approximately 1.00 hectares in area.

The subject site is surrounded by the following:

- Residential and commercial uses, followed by Miikana Road to the north,
- Dun Skipper Drive, followed by commercial uses or vacant land to the south,
- Planned commercial development, followed by Bank Street to the east, and
- Cedar Creek Drive, followed by residential uses to the west.

The proposed development consists of two six-storey residential buildings, and will be served a single full-movement access to Cedar Creek Drive. The northern building will include 106 apartment dwellings and the southern building will include 131 apartment dwellings, for a total of 237 dwellings. The development will be constructed in a single phase, with a buildout year of 2027.

A total of 284 parking spaces are proposed within the subject site, including 39 surface parking spaces and 245 underground parking spaces for residents. Each residential building is proposed to include a separate underground parking garage.

The eastern section of the property (i.e. between Bank Street and the subject site) is not part of the subject application. A separate Site Plan Control application has been submitted for the commercial development, which will include a 32,700 ft^2 supermarket and 25,600 ft^2 of other retail spaces.

The subject site is designated as 'Evolving Neighbourhood' on Schedule B7 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'General Mixed Use' (GM), and the site is within the Leitrim Community Design Plan (CDP) area.

The study area for this report includes the boundary roadways Dun Skipper Drive and Cedar Creek Drive, as well as the signalized intersection at Bank Street/Dun Skipper Drive. As the eastern portion of the subject property is not part of this application, Bank Street has not been considered a boundary street for this study.

The selected time periods for the analysis are the weekday AM and PM peak hours, as these hours represent the 'worst case' combination of site-generated traffic and adjacent roadway traffic. The buildout year 2027 and horizon year 2032 have been considered in this TIA.

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

Site-Generated Traffic

- The proposed development is estimated to generate 95 person trips (including 55 vehicle trips) during the AM peak hour, and 96 person trips (including 56 vehicle trips) during the PM peak hour.

Access Design

- The proposed development includes one full-movement access to Cedar Creek Drive, aligned directly across from Pingwi Place. The design of the proposed access meets the relevant requirements of the City's *Private Approach By-Law* (PABL) and *Zoning By-Law* (ZBL), and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

- Cedar Creek has marginal horizontal and vertical curvatures, and therefore no sightline concerns are identified at the proposed access. Any proposed landscaping and planting is recommended to be maintained such that adequate sightlines are maintained.

Development Design and Parking

- On-site pedestrian walkways will be provided along both proposed buildings, and will connect all building entrances to sidewalks on Dun Skipper Drive and Cedar Creek Drive. A pedestrian walkway is also proposed between the subject development and the proposed commercial development directly to the east (also at 150 Dun Skipper Drive). The walkway will provide a direct connection for future residents of the subject site to the proposed supermarket at the northwestern corner of the commercial development.

- 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. The subject site is within 400m walking distance of OC Transpo bus stops #0496, #0497, and #1069, and within 600m of stops #0490 and #0491.

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

- No on-site fire route is proposed as part of the development. The fire route for the proposed development is along Cedar Creek Drive, as the principal entrances will be within 15m of Cedar Creek Drive.

- A loading space for move-ins/move-outs is proposed at the northeast corner of the southern building. Moving vehicles are anticipated to drive forward into the site, reverse into the loading space, and drive forward out of the site.

- A garbage pad is proposed at the eastern end of the main drive aisle, in line with the proposed access to Cedar Creek Drive. Garbage trucks are anticipated to collect garbage by driving forward into the site, front-loading at the garage pad, reverse into the loading space, and drive forward out of the site.

- Based on the previous table, the proposed number of resident vehicle parking spaces does not meet the requirement as outlined in the City's ZBL, and a variance is required. The proposed number of visitor parking spaces and bicycle parking spaces are proposed to meet the requirements.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
    - Both boundary streets meet the target pedestrian level of service (PLOS);
    - Neither boundary street meets the target bicycle level of service (BLOS);
    - Dun Skipper Drive achieves a transit level of service (TLOS) D;
    - Dun Skipper Drive achieves a truck level of service (TkLOS) B.

- Dun Skipper Drive and Cedar Creek Drive do not meet the target BLOS D, as no dedicated cycling facilities are provided. Curbside bike lanes with a minimum width of 1.2m or combined bike/parking lanes with a minimum width of 4.0m would be required to meet the target. Alternatively, a reduction in the operating speed to 50 km/h would allow both roadways to achieve the target. It is noted that both roadways are recently constructed.

Transportation Demand Management

- The list of measures to be considered by the proponent is summarized as follows:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Unbundle parking cost from monthly rent;
    - Provide a multimodal travel option information package to new residents.

- The proposed development is recommended from a transportation perspective.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan Control application for the western portion of the property located at 150 Dun Skipper Drive. The entire property is approximately 2.93 hectares in area, with frontages to Bank Street, Dun Skipper Drive, and Cedar Creek Drive and is currently vacant. The subject portion of the property is approximately 1.00 hectares in area.

The subject site is surrounded by the following:

- Residential and commercial uses, followed by Miikana Road to the north,
- Dun Skipper Drive, followed by commercial uses or vacant land to the south,
- Planned commercial development, followed by Bank Street to the east, and
- Cedar Creek Drive, followed by residential uses to the west.

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

Figure 1: View of the Subject Site

1.2 Proposed Development

The proposed development consists of two six-storey residential buildings, and will be served a single full-movement access to Cedar Creek Drive. The northern building will include 106 apartment dwellings and the southern building will include 131 apartment dwellings, for a total of 237 dwellings. The development will be constructed in a single phase, with a buildout year of 2027.

A total of 284 parking spaces are proposed within the subject site, including 39 surface parking spaces and 245 underground parking spaces for residents. Each residential building is proposed to include a separate underground parking garage.

The eastern section of the property (i.e. between Bank Street and the subject site) is not part of the subject application. A separate Site Plan Control application has been submitted for the commercial development, which will include a 32,700 ft^2 supermarket and 25,600 ft^2 of other retail spaces.

The subject site is designated as 'Evolving Neighbourhood' on Schedule B7 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'General Mixed Use' (GM), and the site is within the Leitrim Community Design Plan (CDP) area.

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 – None of the safety triggers listed on the TIA Screening Form are met by the proposed development; 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.

Bank Street is an arterial roadway that generally runs on a north-south alignment between Wellington Street and Belmeade Road/Marionville Road. South of Belmeade Road/Marionville Road, the roadway continues as Ottawa Regional Road 34. Within the study area, Bank Street has a two-lane undivided rural cross-section, paved shoulders, and a posted speed limit of 80 km/h. Bank Street is classified as a truck route, allowing full loads. On-street parking is permitted, as paved shoulders are provided.

Dun Skipper Drive is a local roadway that generally runs on an east-west alignment between Bank Street and Miikana Road. Within the study area, Dun Skipper Drive has a two-lane undivided urban cross-section and an unposted speed limit of 50 km/h. Sidewalks are provided discontinuously on the north side of the roadway, and continuously on the south side of the roadway. Dun Skipper Drive is not classified as a truck route. On-street parking is permitted on both sides of the roadway. The ROW of Dun Skipper Drive is approximately 24m along the subject site's frontage. Schedule C16 of the City's *Official Plan* does not identify a ROW protection for Dun Skipper Drive, and therefore no widening is anticipated.

Cedar Creek Drive is a local roadway that generally runs on a north-south alignment between Miikana Road and Dun Skipper Drive. Within the study area, Cedar Creek Drive has a two-lane undivided urban cross-section with a sidewalk on the east side, and an unposted speed limit of 50 km/h. Cedar Creek Drive is not classified as a truck route. On-street parking is permitted on both sides of the roadway. The ROW of Cedar Creek Drive is approximately 20m along the subject site's frontage. Schedule C16 of the City's *Official Plan* does not identify a ROW protection for Cedar Creek Drive, and therefore no widening is anticipated.

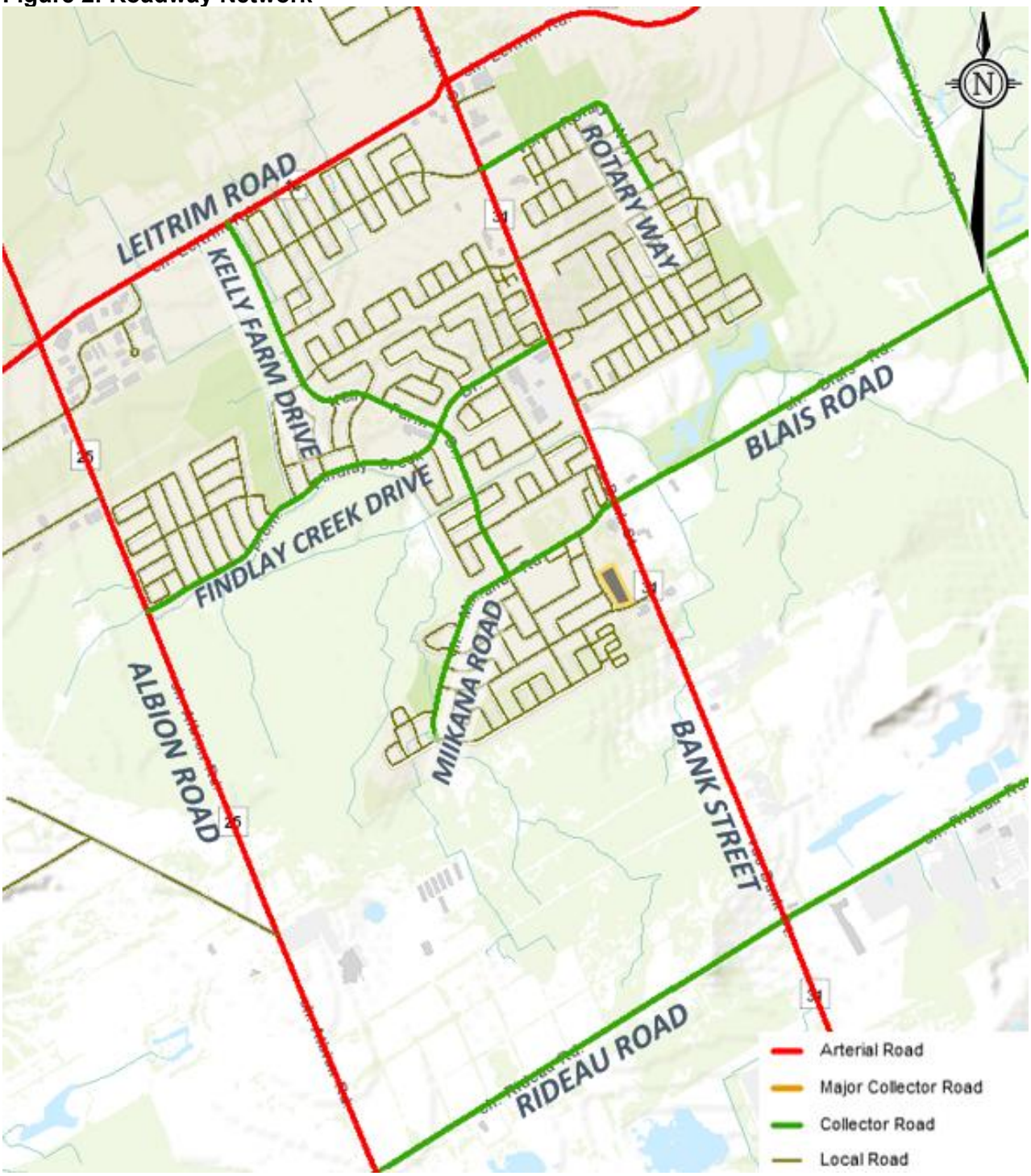
The roadway of the greater area surrounding the subject site is illustrated in **Figure 2**.

2.1.2 Intersections

Bank Street/Dun Skipper Drive

- Signalized protected three-legged intersection
- North Approach (Bank Street):
  one through lane and one right turn lane
- South Approach (Bank Street):
  one left turn lane and one through lane
- West Approach (Dun Skipper Drive):
  one left turn lane and one right turn lane
- Zebra-striped crosswalks on all approaches
- Crossrides on north and east approaches, plus a jug handle for northbound left-turning cyclists

Figure 2: Roadway Network



2.1.3 Driveways

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

Dun Skipper Drive, north side
- One driveway to a residence at 112 Dun Skipper Drive

Dun Skipper Drive, south side
- Ten driveways to residences at 113-131 Dun Skipper Drive

Cedar Creek Drive, east side
- Ten driveways to residences at 1020-1054 Cedar Creek Drive

Cedar Creek Drive, west side
- Eight driveways to residences at 1017-1047 Cedar Creek Drive

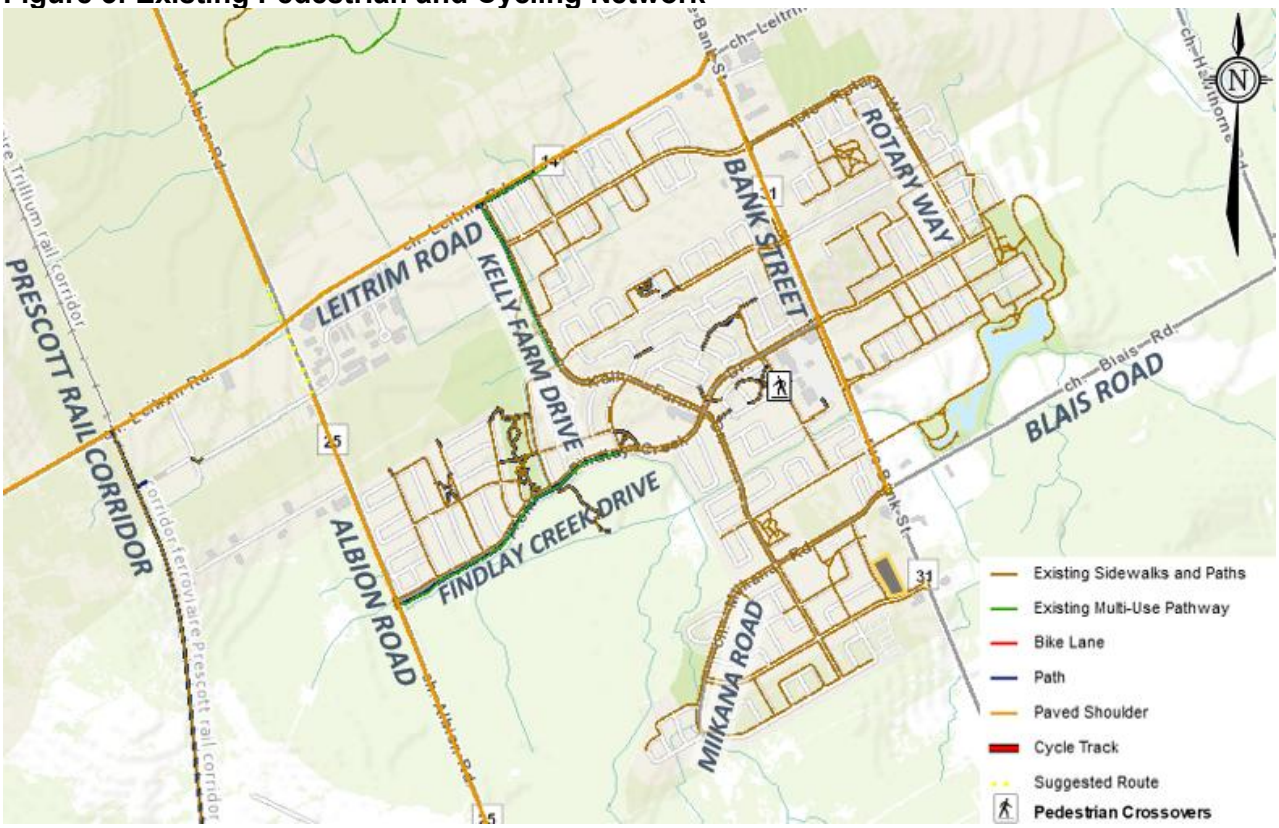
2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided continuously on both sides of Dun Skipper Drive and the east side of Cedar Creek Drive. Paved shoulders are provided on both sides of Bank Street.

No study area roadways are identified in the City's cycling network.

The existing pedestrian and cycling network of the greater area surrounding the subject site is illustrated in **Figure 3**.

Figure 3: Existing Pedestrian and Cycling Network



2.1.5 Area Traffic Management

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

Signage on Kelly Farm Drive indicates that the neighbourhood to the north of the subject site is traffic-calmed. Street-level photography from September 2021 shows that flex posts and max 50 km/h line painting have been implemented on Kelly Farm Drive north of Miikana Road.

2.1.6 Transit

The locations of OC Transpo bus stops in the vicinity of the subject site are described in **Table 1**, and are shown in **Figure 4**. A summary of the various routes which serve the study area is included in **Table 2**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Table 1: OC Transpo Transit Stops

Stop	Location	Routes Serviced
#0490	West side of Kelly Farm Drive, north of Zaatiik Grove	294
#0491	East side of Kelly Farm Drive, north of Dun Skipper Drive	294
#0496	South side of Dun Skipper Drive, east of Cedar Creek Drive	None
#0497	North side of Dun Skipper Drive, east of Cedar Creek Drive	294
#1069	East side of Bank Street, south of Dun Skipper Drive	93, 304

Figure 4: OC Transpo Bus Stop Locations

Table 2: OC Transpo Route Information

Route	From ↔ To	Frequency
93	Hurdman / Greenboro ↔ Leitrim / Blossom Park	Stop #1069 only served on Sundays at 10:50am and 14:32pm (Hindu Temple service)
294	Hurdman ↔ Findlay Creek	Peak period and peak direction service only; Monday to Friday, 30-minute headways
304	Billings Bridge ↔ Metcalfe, Greely, Osgoode	Stop #1069 only served on Thursdays at 9:41am (inbound rural shopping route)

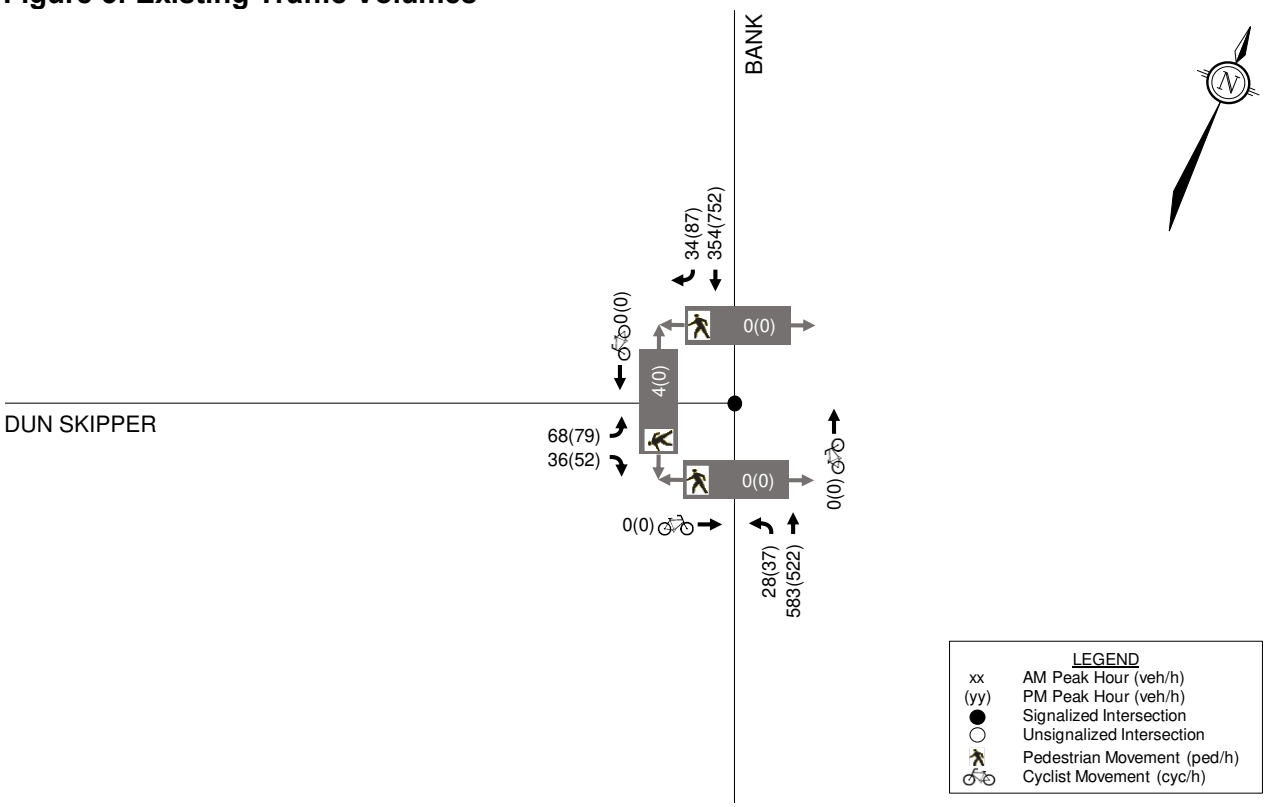
2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa have been used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersection Bank Street/Dun Skipper Drive. The weekday counts were completed on Thursday, September 14, 2023.

Based on the weekday count at Bank Street/Dun Skipper Drive, the average annual daily traffic (AADT) volumes on Bank Street and Dun Skipper Drive are approximately 16,290 vehicles per day and 3,210 vehicles per day, respectively.

Traffic count data for the weekday peak hours are included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 5**.

Figure 5: Existing Traffic Volumes



2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *Revised TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2017 to December 31, 2021 is summarized in **Table 3**.

Table 3: Reported Collisions

Intersection or Segment	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Movement	SMV[1]/ Other	
Bank St/ Dun Skipper Dr	-	-	1	-	1	1	**3**
Bank St btwn Blais Rd & Dun Skipper Dr	-	-	2	-	-	-	**2**
Dun Skipper Dr btwn Bank St & Cedar Creek Dr	-	-	-	-	-	-	**0**
Cedar Creek Dr btwn Miikana Rd & Dun Skipper Dr	-	-	-	-	-	-	**0**

1. SMV = Single Motor Vehicle

Bank Street/Dun Skipper Drive
A total of three collisions were reported at this intersection in the last five years, consisting of a rear-end impact, one turning movement impact, and one single vehicle/other impact. No collisions resulted in injuries or fatalities. One of the collisions (33%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Bank Street between Blais Road/Miikana Road & Dun Skipper Drive
A total of two collisions were reported along this segment in the last five years. Both collisions were rear-end impacts involving southbound vehicles, did not result in injuries or fatalities, and occurred in fair driving conditions.

Dun Skipper Drive between Bank Street & Cedar Creek Drive
No collisions were reported along this segment in the last five years.

Cedar Creek Drive between Miikana Road & Dun Skipper Drive
No collisions were reported along this segment in the last five years.

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

The City's *2013 Transportation Master Plan (TMP)* identify roadway improvement projects within the study area in its Affordable Road Network. In the Affordable Road Network, the 2013 TMP identifies the widening of Bank Street from two to four lanes between Leitrim Road and Blais Road as a Phase 2 (2020-2025) project, and this project is underway at the time of writing. Further widening between Blais Road and Rideau Road is identified as a Phase 3 (2026-2031) project. In the 2031 Network Concept, widening of Bank Street is further identified from Rideau Road to south of the urban boundary.

An Environmental Assessment (EA) study has been completed for the Bank Street widening. The widening will include a four-lane cross-section within the study area, sidewalks and cycle tracks in each direction, and a raised median. Pavement marking plans of the widening within the study area are included in **Appendix F**. The *Bank Street Widening Class EA Study from Leitrim Road to Rideau Road Environmental Study Report* (ESR), prepared by AECOM in July 2014, identifies a future posted speed limit of 70 km/h on Bank Street.

South of the study area, an EA study was prepared in support of an extension of Earl Armstrong Road from Albion Road to Bank Street, and presented to Transportation Committee and City Council in June 2019, where the functional design was approved. This project is not included in the 2013 TMP Affordable Network, but is included in the Network Concept.

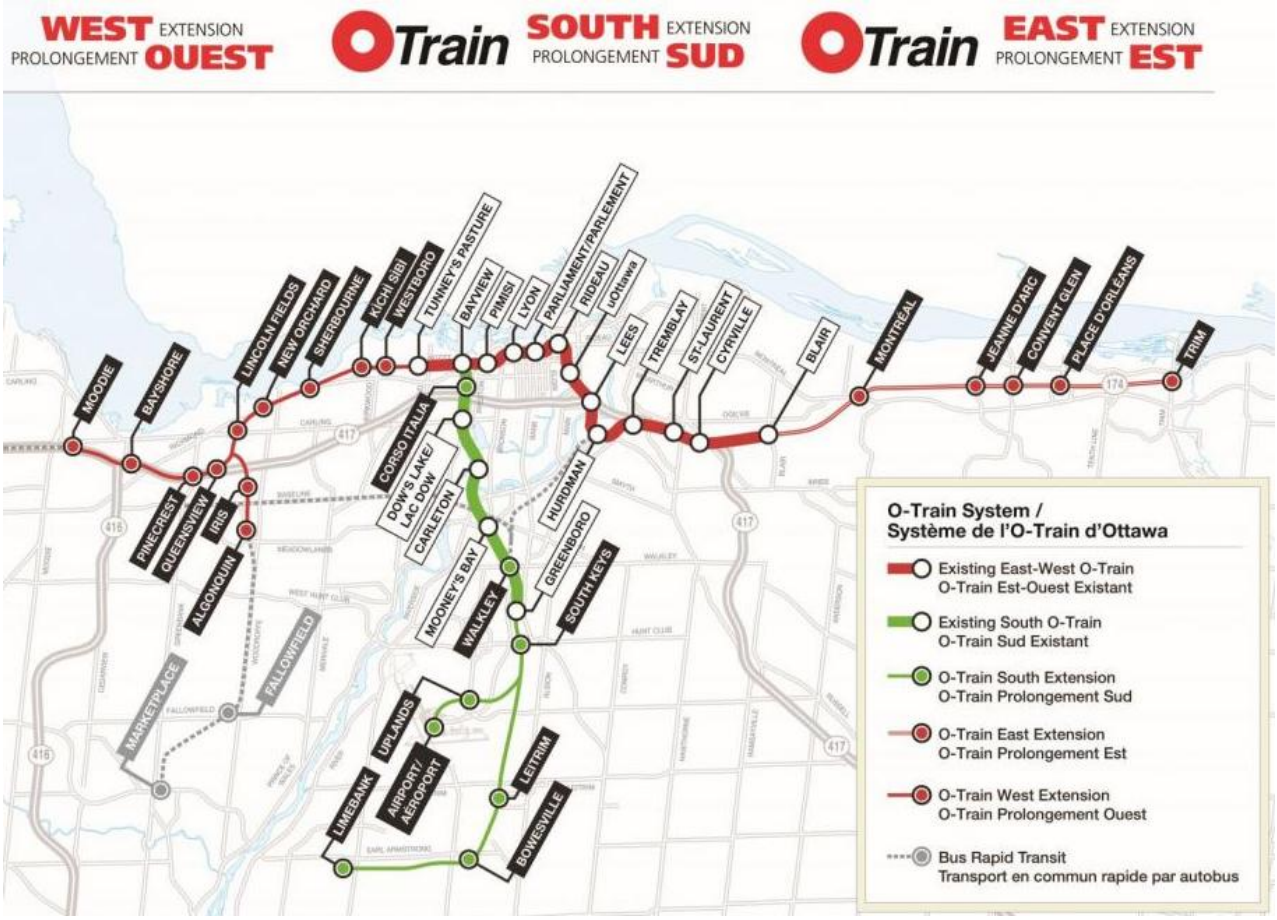
The 2013 TMP does not identify any RTTP projects within the study area. West of the subject site, the O-Train South Extension will continue the Trillium Line from Greenboro Station to Limebank Road in Riverside South, along with a link to the Ottawa Macdonald-Cartier International Airport. Construction is anticipated to be complete in 2025. A figure of the proposed O-Train station locations is included in **Figure 6**.

OC Transpo will be revising transit service with the opening of the O-Train Lines 2 and 4. The future transit network, including revised routes, is described within the City's 'New Ways to Bus' network. Within the study area, Route 93 will continue to serve the site only on Sundays, a new Route 94 will operate between Leitrim Station and Dun Skipper Drive during peak periods, and Route 294 will be removed from the study area.

The City's *TMP – Part 1* includes a list of upcoming active transportation projects, superseding the *2013 Ottawa Cycling Plan* and *2013 Ottawa Pedestrian Plan*. North of the study area, the *TMP – Part 1* identifies a pavement markings and signage project to provide bike lanes on Findlay Creek Drive wherever feasible.

West of the study area, the Rural Active Transportation Network identifies Albion Road being as a roadway in the proposed Paved Shoulder Network, and includes a major pathway is planned from Miikana Road (west of Kelly Farm Drive) to Findlay Creek Drive, continuing to Albion Road, the Prescott Rail Corridor, and the Riverside South Rail Corridor.

Figure 6: O-Train South Extension



2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple other developments that have recently been completed, are under construction, approved, or are in the approval process. These developments are summarized as follows.

150 Dun Skipper Drive (Eastern Portion)
The eastern portion of the subject address is subject to a separate development application. A TIA was submitted in October 2024 by Novatech in support of a commercial development consisting of a 32,700 ft^2 supermarket and 25,600 ft^2 of other retail spaces. The TIA identified a buildout year of 2026.

820 Miikana Road (Findlay Creek School)
A one-storey elementary school has opened at this property. A TIA was prepared by Novatech in June 2022 in support of this school, which was completed for the 2024-2025 school year.

4781 Bank Street
A total of 96 stacked apartment dwellings are proposed at this property. A TIA Screening Form was submitted in January 2022, and no TIA study was prepared.

4800 Bank Street (Remer Lands)
A Community Transportation Study (CTS) was prepared by IBI Group in May 2016, in support of the subdivision that includes the subject site. A majority of the subdivision has been constructed. Full buildout of the subdivision was estimated to occur in 2025.

4835 Bank Street
An assembly hall is proposed at the current Hindu Temple of Ottawa-Carleton. A Transportation Brief and Addendum were prepared by D.J. Halpenny & Associates in October 2017 and July 2020, respectively. The assembly hall was anticipated initially to be completed in 2020, but has construction has not yet occurred. Analysis was completed for the Sunday peak hour, and this development is not anticipated to generate any trips during the AM and PM peak hours.

4836 Bank Street
Approximately 125 hotel suites, a 2,997 m^2 hardware store, a 502 m^2 restaurant, and a 987 m^2 commercial building are proposed at this property, which is located at the southwestern corner of Bank Street/Dun Skipper Drive. A TIA was prepared by IBI Group in April 2019 in support of this development, and estimated that the hardware store would be built out by 2021, with the remainder of the development being built out by 2023.

4840 Bank Street
A total of 80 back-to-back townhouses are proposed at this property, which is located south of Dun Skipper Drive and east of Rallidale Street. No transportation study was prepared in support of this development.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Dun Skipper Drive and Cedar Creek Drive, as well as the signalized intersection at Bank Street/Dun Skipper Drive. As the eastern portion of the subject property is not part of this application, Bank Street has not been considered a boundary street for this study.

The selected time periods for the analysis are the weekday AM and PM peak hours, as these hours represent the 'worst case' combination of site-generated traffic and adjacent roadway traffic. The buildout year 2027 and horizon year 2032 have been considered in this TIA.

2.4 Access Design

The proposed development includes one full-movement access to Cedar Creek Drive, aligned directly across from Pingwi Place. The design of the proposed access has been evaluated using the relevant provisions of the City's *Private Approach By-Law* (PABL) and *Zoning By-Law* (ZBL), and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(1)(c) of the PABL identifies a maximum width requirement of 9m for two-way private approaches. Section 107(1) of the ZBL identifies that a two-way driveway providing access to a parking lot or parking garage with more than 20 spaces shall have a minimum width of 6.0m and a maximum width of 6.7m. The proposed access is 6.7m in width at the street line and within the site, meeting these requirements. Considering the 5m curb radii, the proposed access is 16.7m in width at the roadway edge. This width cannot be reduced, as curb radii are required to accommodate fire trucks and vehicles for garbage collection and moving.

Section 25(1)(p) of the PABL identifies a minimum separation requirement of 3m between the nearest edge of a private approach and the nearest property line. The proposed access is approximately 68m from the nearest property line, and meets this requirement.

Section 25(1)(u) of the PABL identifies that a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. A grade of 2% is proposed for the first 9m within the property, meeting this requirement.

A review of stopping sight distance (SSD) and intersection sight distance (ISD) at the proposed access has been conducted, in accordance with the minimums outlined in TAC's *Geometric Design Guide*. The design speed has been taken as the posted speed limit plus 10 km/h. Therefore, a design speed of 60 km/h has been considered for Cedar Creek Drive. TAC outlines a minimum required SSD of 85m and minimum desired ISDs of 130m for outbound drivers turning left and 110m for outbound drivers turning right.

Cedar Creek has marginal horizontal and vertical curvatures, and therefore no sightline concerns are identified at the proposed access. Any proposed landscaping and planting is recommended to be maintained such that adequate sightlines are maintained.

TAC's *Geometric Design Guide* does not outline a minimum clear throat length for residential accesses to local roadways. A clear throat length of approximately 10m is provided at the proposed access. Queueing back onto Cedar Creek Drive is not anticipated, as traffic volumes generated by the site and adjacent traffic volumes on Cedar Creek Drive are both anticipated to be low.

2.5 Development-Generated Travel Demand

2.5.1 Trip Generation

The proposed residential development has a total of 237 apartment dwellings. The number of peak hour person trips generated by the proposed development has been estimated using the *TRANS Trip Generation Manual* (prepared in October 2020 by WSP), 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 High-Rise Multifamily Housing land use, the following process converts the trip generation estimates from peak period to peak hour.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the South Gloucester/Leitrim district, which has the following observed mode shares for high-rise multifamily housing during the peak periods:

- Auto Driver: 50% in AM peak, 53% in PM peak;
- Auto Passenger: 15% in AM peak, 17% in PM peak;
- Transit: 25% in AM peak, 21% in PM peak;
- Cyclist: 1% in AM peak, 1% in PM peak;
- Pedestrian: 9% in AM peak, 9% in PM peak.

A single set of mode shares have been assumed for this proposed development. The mode shares above have been adjusted to marginally increase the auto driver and auto passenger shares and decrease the transit share, reflecting the relatively limited transit service that currently serves the study area. Therefore, the assumed mode shares are assumed as 60% auto driver, 20% auto passenger, 10% transit, 0% cyclist, and 10% pedestrian. This is considered conservative, and it is acknowledged that the frequency of transit service will improve in the future as the surrounding communities continue to develop.

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 4**. A breakdown of these trips by mode share is shown in **Table 5**.

Table 4: Proposed Residential – Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	237	59	131	*190*	124	89	*213*

1. ppp: Person Trips per Peak Period

Table 5: 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		**59**	**131**	***190***	**124**	**89**	***213***
Auto Driver	60%	35	79	*114*	75	53	*128*
Auto Passenger	20%	12	26	*38*	25	18	*43*
Transit	10%	6	13	*19*	12	9	*21*
Cyclist	0%	-	-	*0*	-	-	*0*
Pedestrian	10%	6	13	*19*	12	9	*21*

The estimated number of trips generated by the proposed development, broken down by mode share, is included in **Table 6**.

Table 6: 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	17	38	*55*	33	23	*56*
Auto Passenger	0.48	0.44	6	13	*19*	11	8	*19*
Transit	0.55	0.47	3	7	*10*	6	4	*10*
Cyclist	0.58	0.48	-	-	*0*	-	-	*0*
Pedestrian	0.58	0.52	3	8	*11*	6	5	*11*
Peak Hour Person Trips			**29**	**66**	***95***	**56**	**40**	***96***

From the previous table, the proposed development is estimated to generate 95 person trips (including 55 vehicle trips) during the AM peak hour, and 96 person trips (including 56 vehicle trips) during the PM peak hour.

2.5.2 Trip Distribution and Assignment

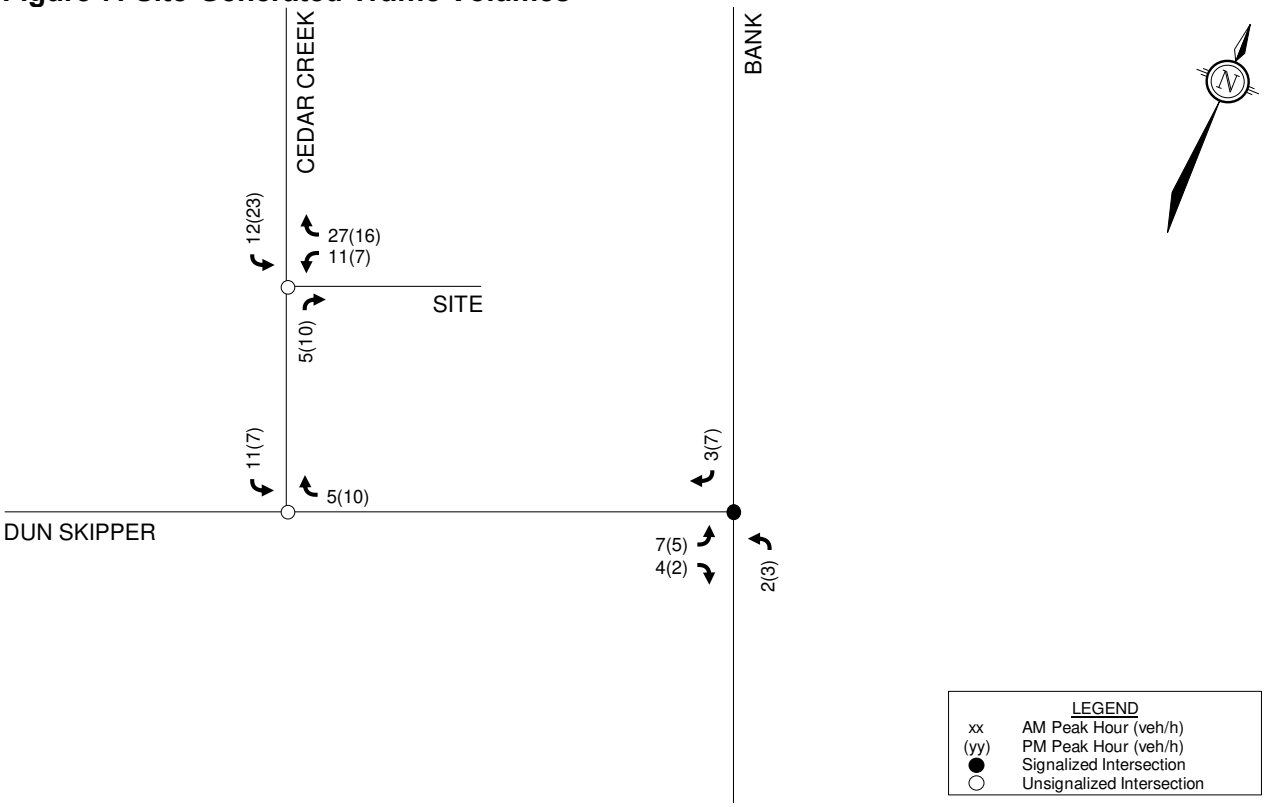
As the proposed development is projected to generate less than 75 vehicle trips during the peak hours, intersection analysis is exempt from analysis. Site-generated trips have still been distributed to the study area for the purposes of other traffic studies that may need to account for this development as future background traffic.

The distribution of site-generated trips is based on the observed traffic volumes at Bank Street/Dun Skipper Drive (outbound trips during the AM peak hour and inbound trips during the PM peak hour, consistent with commuter patterns), and the general proportion of destinations north and south of the study area. All trips are assigned to the one proposed access to Cedar Creek Drive. The assumed distribution can be summarized as follows:

- 70% to/from the north on Cedar Creek Drive (via Miikana Road to Bank Street and Kelly Farm Drive);
- 30% to/from the south on Cedar Creek Drive (via Dun Skipper Drive to Bank Street);
    - 20% to/from the north on Bank Street;
    - 10% to/from the south on Bank Street.

The distribution of site-generated trips are shown in **Figure 7**.

Figure 7: Site-Generated Traffic Volumes



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 7**.

Table 7: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	*4.1.2* Circulation and Access	• Required for site plan control and zoning by-law amendment applications	Not Exempt
	4.1.3 New Street Networks	• Required for draft plan of subdivision applications	Exempt
4.2 Parking	*All elements*	• Required for site plan control and zoning by-law amendment applications	Not Exempt
4.6 Neighbourhood Traffic Calming	*All elements*	• If all of the following criteria are met: 1. Access is provided to a collector or local roadway 2. Application is for zoning by-law amendment or draft plan of subdivision 3. Proposed development generated more than 75 vehicle trips 4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50%+ 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 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 200+ person trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt
4.9 Intersection Design	*All elements*	• Required when proposed development generates more than 75 vehicle trips	Exempt

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

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

3.0 BACKGROUND NETWORK TRAVEL DEMAND

3.1 General Background Growth Rate

A review of the City's *Strategic Long-Range Model* has been conducted, comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes. The long-range snapshots are included in **Appendix G**.

The long-range snapshots generally projects traffic growth on Bank Street (south of Leitrim Road) between 0% and 2% per annum. An annual background growth rate of 1% has been assumed for volumes on Bank Street and no background growth rate has been assumed for Dun Skipper Drive, consistent with other traffic studies in the study area.

3.2 Other Area Developments

There are multiple other developments in proximity of the subject site that are under construction, approved, or are in the approval process, and are significant enough to have included traffic projections. A summary of each significant development is included below, and relevant excerpts of the studies/projections in support of these developments are included in **Appendix H**.

150 Dun Skipper Drive (Commercial Block)
A TIA was prepared by Novatech in October 2024 in support of this development. The TIA considered a 32,700 ft^2 supermarket and 25,600 ft^2 of other retail spaces. Projected traffic generated by this development has been added to the 2027 and 2032 background volumes.

As the TIA considered traffic generated during the PM and Saturday peak hours, the AM peak hour volumes have been estimated by pro-rating the PM peak hour traffic with a factor of 0.32. This factor represents the ratio between the AM peak trip generation rate and PM peak trip generation rate, per the *ITE Trip Generation Manual, 11th Edition*.

820 Miikana Road (Findlay Creek School)
A one-storey elementary school has opened for the 2024-2025 school year. A TIA was prepared by Novatech in June 2022 in support of this school. Projected traffic generated by the school has been added to the 2027 and 2032 background volumes.

4800 Bank Street (Remer Lands)
A Community Transportation Study (CTS) was prepared by IBI Group in May 2016, in support of the subdivision that includes the subject site. The CTS considered a subdivision with 422 single-detached homes, 399 townhomes, 82 apartment dwellings, an elementary school with 400 students, and approximately 158,761 ft^2 of commercial space across two blocks. Full buildout of the subdivision was estimated to occur in 2025.

For the purposes of this study, it has been assumed that approximately 90% of the projected traffic generated by the subdivision has been captured by the 2024 traffic counts, and the remaining 10% has been added to the 2027 and 2032 background volumes.

4836 Bank Street

A TIA was prepared by IBI Group in April 2019 in support of this development. The TIA considered a development with 125 hotel suites, a 2,997 m^2 hardware store, a 502 m^2 restaurant, and a 987 m^2 commercial building. The TIA estimated that the hardware store would be built out by 2021, with the remainder of the development being built out by 2023. Therefore, projected traffic generated by this development has been added to the 2027 and 2032 background volumes.

3.3 Future Traffic Conditions

The figures below present the following future traffic conditions at Bank Street/Dun Skipper Drive:

- Other area development-generated volumes in 2027/2032 are shown in **Figure 8**;
- Background traffic volumes in 2027 are shown in **Figure 9**;
- Background traffic volumes in 2032 are shown in **Figure 10**.

Figure 8: 2027/2032 Other Area Development-Generated Traffic Volumes

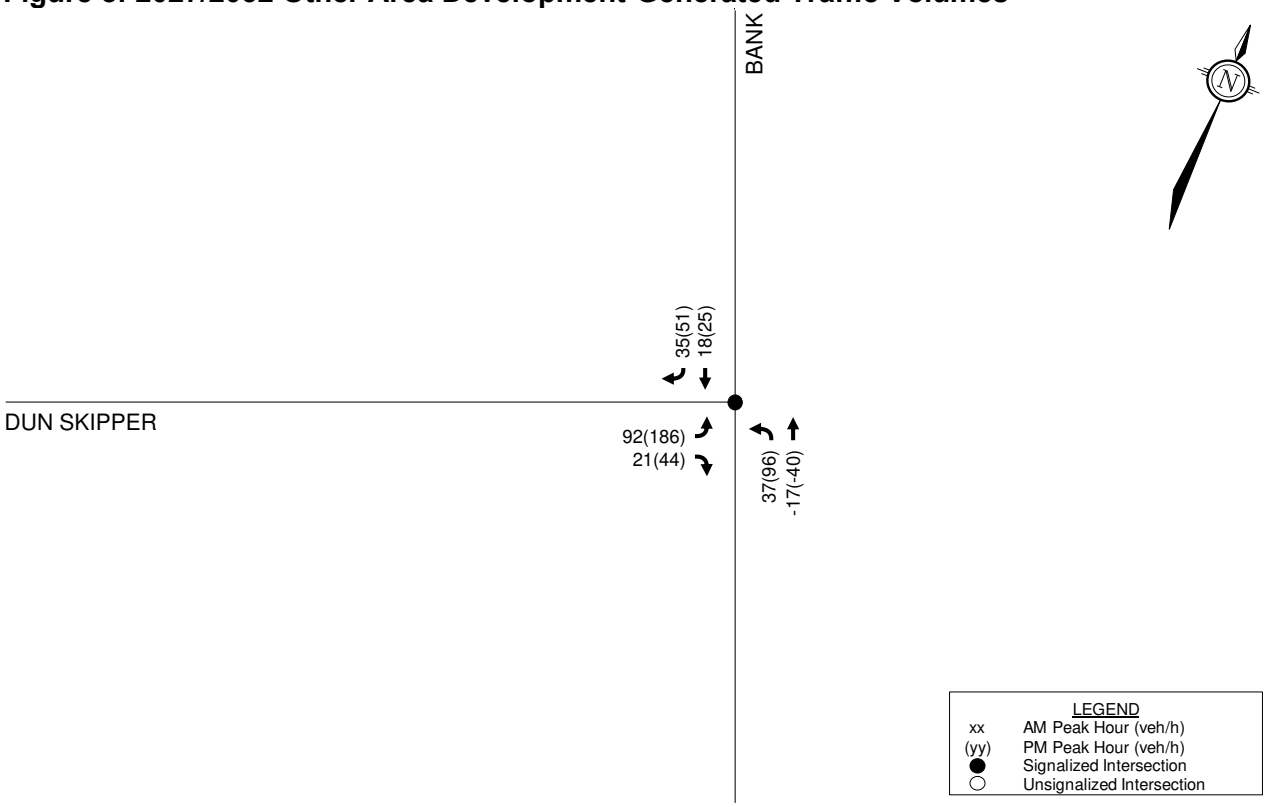


Figure 9: 2027 Background Traffic Volumes

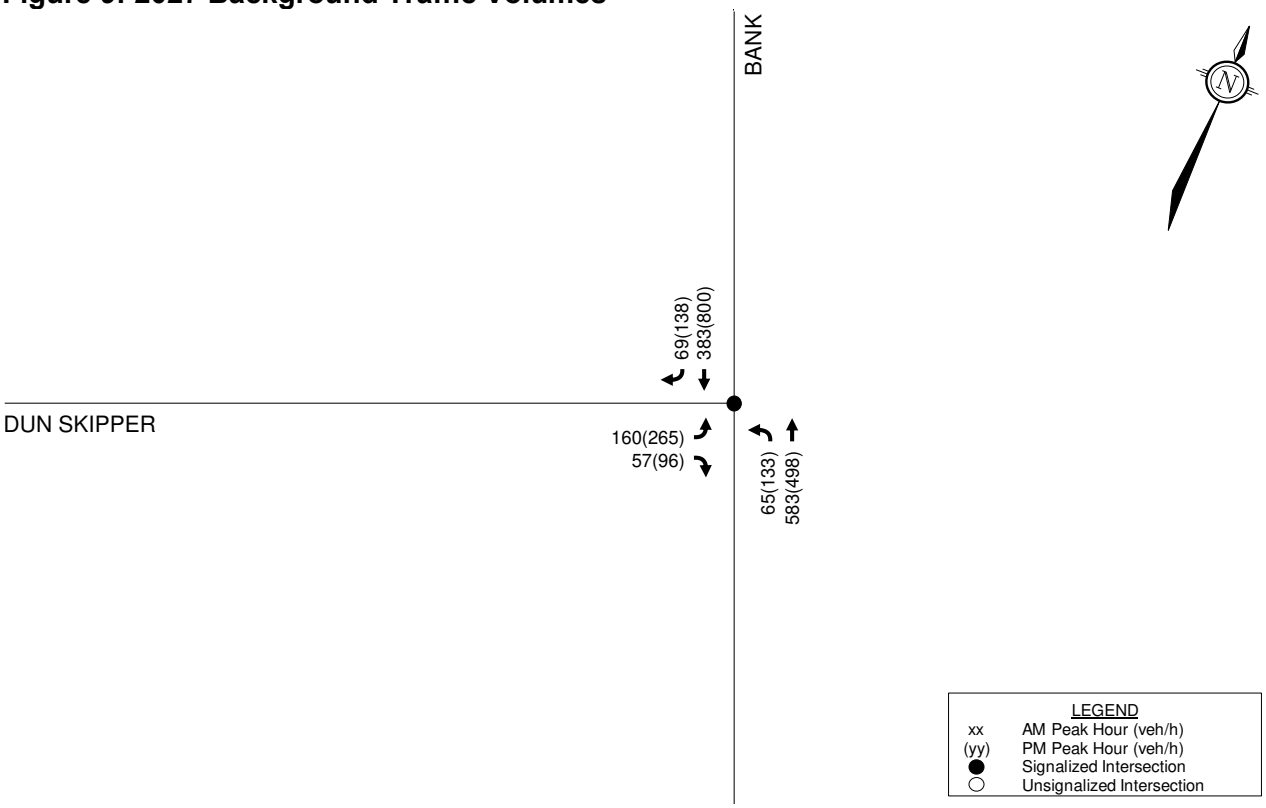
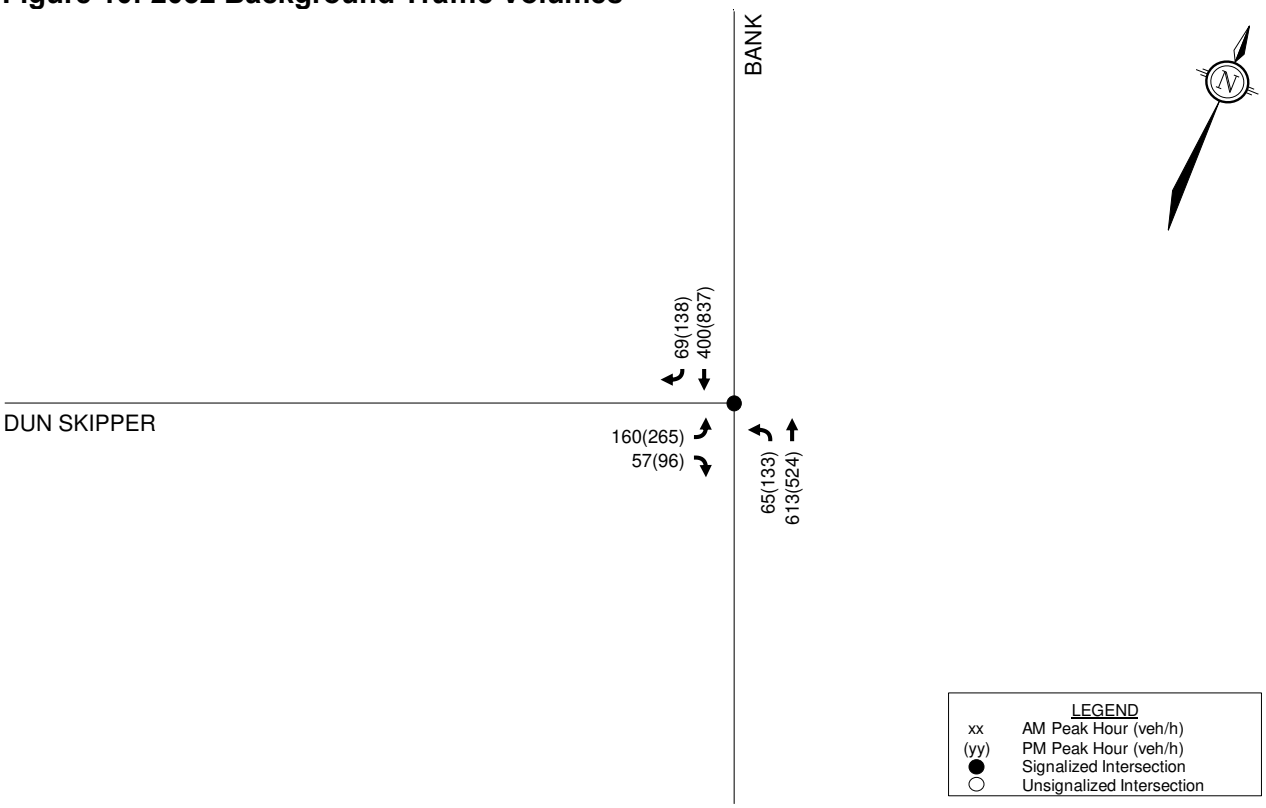


Figure 10: 2032 Background Traffic Volumes



3.4 Demand Rationalization

The Demand Rationalization module includes identifying any locations and approaches where total auto demand is projected to exceed capacity, and what reduction in peak hour volumes are required for demand to meet capacity. However, determining whether any approach has volumes that exceed capacity requires intersection capacity analysis, which is outside the scope of this TIA (as shown in **Table 7**).

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

On-site pedestrian walkways will be provided along both proposed buildings, and will connect all building entrances to sidewalks on Dun Skipper Drive and Cedar Creek Drive. The sidewalk across the proposed access will be depressed and continuous, per City of Ottawa Specification 7.1.

A pedestrian walkway is also proposed between the subject development and the proposed commercial development directly to the east (also at 150 Dun Skipper Drive). The walkway will provide a direct connection for future residents of the subject site to the proposed supermarket at the northwestern corner of the commercial development.

Bicycle parking will be provided in areas adjacent to each proposed building and within the parking garages. A total of 119 bike parking spaces will be provided, consisting of 28 exterior spaces and 91 interior spaces. The required number of bike parking spaces is reviewed 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. The subject site is within 400m walking distance of OC Transpo bus stops #0496, #0497, and #1069, and within 600m of stops #0490 and #0491.

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

4.1.2 Circulation and Access

No on-site fire route is proposed as part of the development. The fire route for the proposed development is along Cedar Creek Drive, as the principal entrances will be within 15m of Cedar Creek Drive.

A loading space for move-ins/move-outs is proposed at the northeast corner of the southern building. Moving vehicles are anticipated to drive forward into the site, reverse into the loading space, and drive forward out of the site.

A garbage pad is proposed at the eastern end of the main drive aisle, in line with the proposed access to Cedar Creek Drive. Garbage trucks are anticipated to collect garbage by driving forward into the site, front-loading at the garage pad, reverse into the loading space, and drive forward out of the site.

Turning movements for moving and garbage trucks have been prepared, using a Medium Single Unit (MSU) design vehicle to represent loading and garbage trucks, which are anticipated to make the same on-site manoeuvres. Turning movements are included in **Figure 11** and **Figure 12**.

4.2 Parking

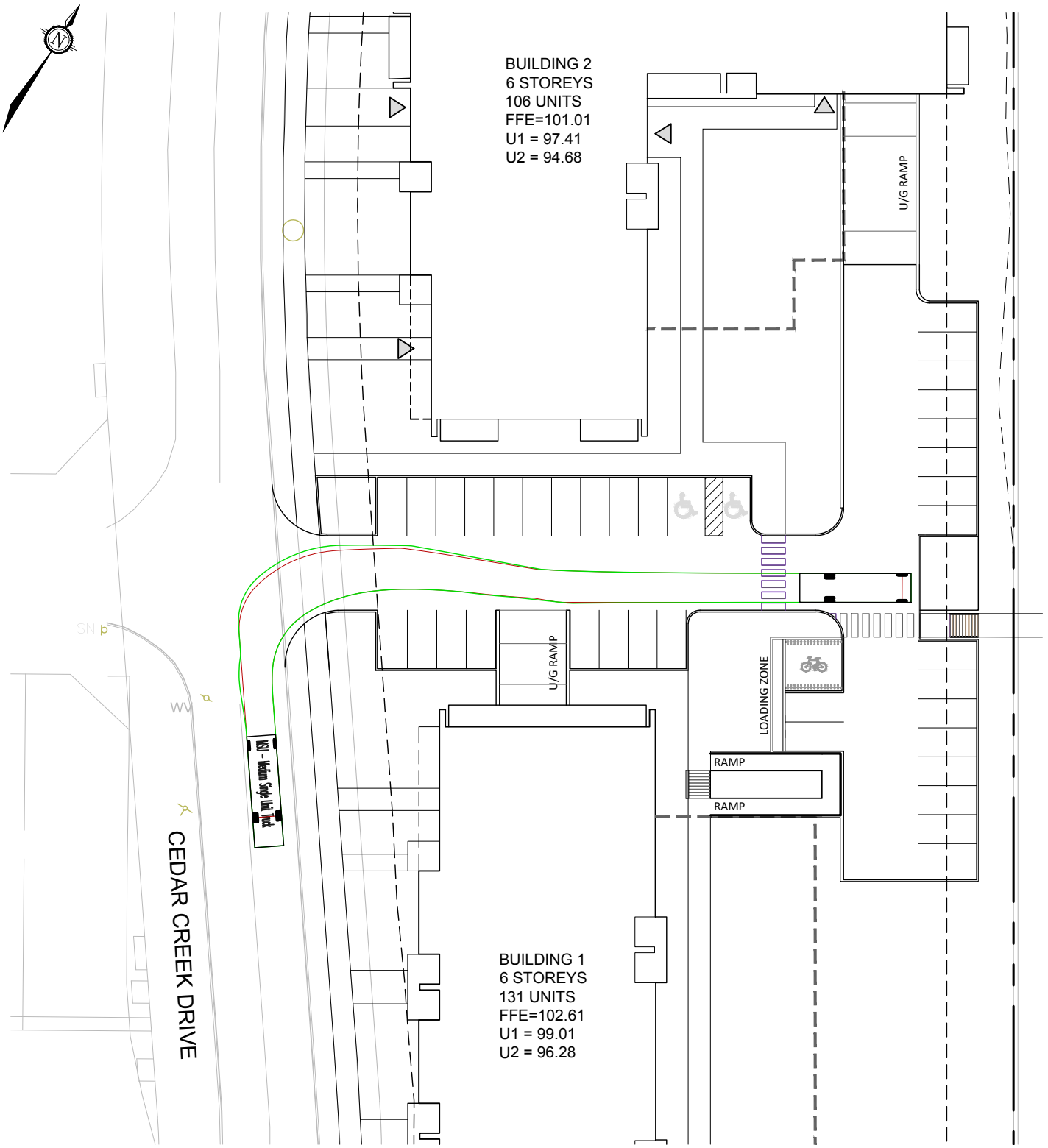
The subject site is located within Area C on Schedules 1 and 1A of the City's ZBL. The required parking supply and proposed parking supply for the proposed residential development are summarized in **Table 8**.

Table 8: Required and Proposed Parking

Land Use	Rate	Units	Required	Provided
Minimum Vehicle Parking (Section 101/102 of ZBL)				
Dwelling, Mid-/High-Rise	1.2 spaces per dwelling (residents)	237 units	284	237
	0.2 spaces per dwelling (visitors)		47	47
		Total	**331**	**284**
Minimum Bicycle Parking (Section 111 of ZBL)				
Apartment Dwelling	0.5 spaces per dwelling	237 units	119	119

Based on the previous table, the proposed number of resident vehicle parking spaces does not meet the requirement as outlined in the City's ZBL, and a variance is required. The proposed number of visitor parking spaces is proposed to meet the requirement. Of the 47 proposed public parking spaces, two will be allocated as accessible parking spaces (consisting of one Type A space and one Type B space). The City's *Accessibility Design Standards* identifies that a minimum of two accessible parking spaces should be provided for this supply, and therefore the requirement is met.

Section 111(12) of the ZBL identifies that, where the number of bicycle parking spaces required for a single residential building exceeds 50 spaces, a minimum of 25% of the required total must be located within a building or structure, a secure area, or bicycle lockers. This requirement is met, as 91 of the 119 spaces are proposed within the proposed building.



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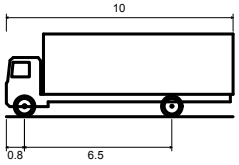

MSU - Medium Single Unit Truck

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

150 DUN SKIPPER DRIVE

TURNING MOVEMENT (MSU / GARBAGE TRUCK)

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

DATE DEC 2024 | JOB 124107 | FIGURE FIGURE 11

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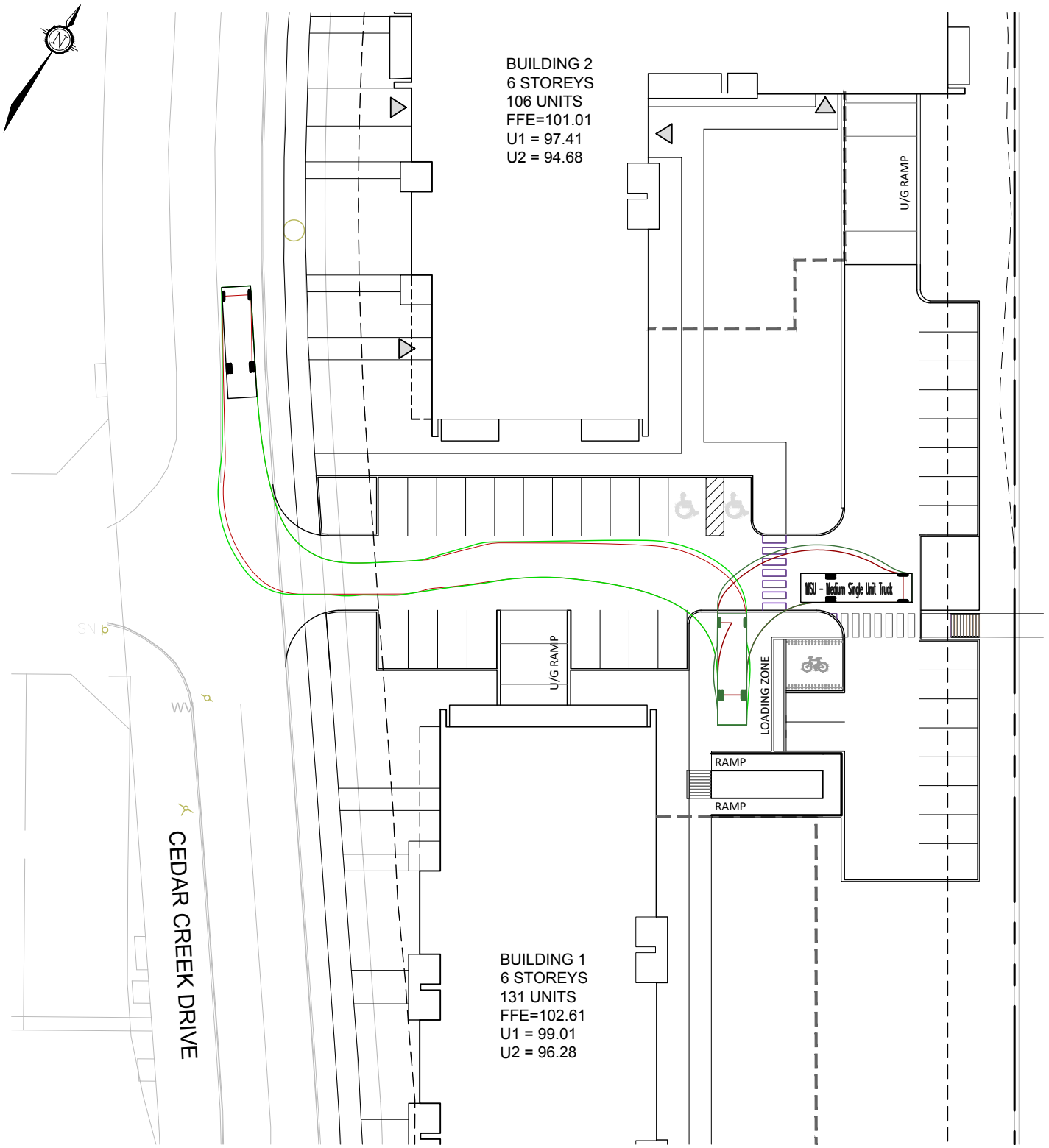

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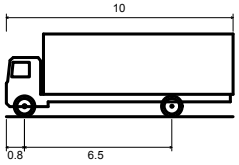

MSU - Medium Single Unit Truck

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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

150 DUN SKIPPER DRIVE

TURNING MOVEMENT (MSU / GARBAGE TRUCK)

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

DATE DEC 2024 | JOB 124107 | FIGURE FIGURE 12

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4.3 Boundary Streets

This section provides a review of the boundary frontages to Dun Skipper Drive and Cedar Creek Drive, 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 streets have been evaluated based on the targets for roadways within the General Urban Area.

A detailed segment MMLOS review is included in **Appendix J**. 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
Dun Skipper Drive	A	C	**F**	D	D	-	B	-
Cedar Creek Drive	A		**F**		-		-	

The results of the segment MMLOS analysis can be summarized as follows:

- Both boundary streets meet the target pedestrian level of service (PLOS);
- Neither boundary street meets the target bicycle level of service (BLOS);
- Dun Skipper Drive achieves a transit level of service (TLOS) D;
- Dun Skipper Drive achieves a truck level of service (TkLOS) B.

Dun Skipper Drive and Cedar Creek Drive do not meet the target BLOS D, as no dedicated cycling facilities are provided. Exhibit 11 of the *MMLOS Guidelines* identifies that curbside bike lanes with a minimum width of 1.2m or combined bike/parking lanes with a minimum width of 4.0m would be required to meet the target. Alternatively, a reduction in the operating speed to 50 km/h would allow both roadways to achieve the target BLOS. It is noted that both roadways are recently constructed.

4.4 Transportation Demand Management

4.4.1 Context for TDM

The proposed development consists of a total of 237 apartment dwellings. Broken down by unit type, the proposed development includes the following:

- 116 one-bedroom (55 in northern building, 61 in southern building);
- 29 one-bedroom plus den (11 in northern building, 18 in southern building);
- 92 two-bedroom (40 in northern building, 52 in southern building).

4.4.2 Need and Opportunity

The subject site is designated as 'Evolving Neighbourhood' on Schedule B7 of the City of Ottawa's Official Plan. The implemented zoning for the property is 'General Mixed Use' (GM), and the site is within the Leitrim Community Design Plan (CDP) area.

As first discussed in Section 2.5.1, the assumed driver share of 60% for the proposed development is marginally greater than the surveyed residential driver shares of the South Gloucester/Leitrim district (as outlined in the *TRANS Trip Generation Manual*). It is anticipated that the driver share of the proposed development may be reduced in the future as the surrounding communities develop, more amenities and nearby commercial opportunities are built (including the commercial application on the eastern portion of the site), and transit service improves in the area. Failure to meet the assumed driver share by 10% would equate to an additional six 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 I**. The list of measures to be considered is summarized as follows:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Unbundle parking cost from monthly rent;
- 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:

Site-Generated Traffic

- The proposed development is estimated to generate 95 person trips (including 55 vehicle trips) during the AM peak hour, and 96 person trips (including 56 vehicle trips) during the PM peak hour.

Access Design

- The proposed development includes one full-movement access to Cedar Creek Drive, aligned directly across from Pingwi Place. The design of the proposed access meets the relevant requirements of the City's *Private Approach By-Law* (PABL) and *Zoning By-Law* (ZBL), and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

- Cedar Creek has marginal horizontal and vertical curvatures, and therefore no sightline concerns are identified at the proposed access. Any proposed landscaping and planting is recommended to be maintained such that adequate sightlines are maintained.

Development Design and Parking

- On-site pedestrian walkways will be provided along both proposed buildings, and will connect all building entrances to sidewalks on Dun Skipper Drive and Cedar Creek Drive. A pedestrian walkway is also proposed between the subject development and the proposed commercial development directly to the east (also at 150 Dun Skipper Drive). The walkway will provide a direct connection for future residents of the subject site to the proposed supermarket at the northwestern corner of the commercial development.

- 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. The subject site is within 400m walking distance of OC Transpo bus stops #0496, #0497, and #1069, and within 600m of stops #0490 and #0491.

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

- No on-site fire route is proposed as part of the development. The fire route for the proposed development is along Cedar Creek Drive, as the principal entrances will be within 15m of Cedar Creek Drive.

- A loading space for move-ins/move-outs is proposed at the northeast corner of the southern building. Moving vehicles are anticipated to drive forward into the site, reverse into the loading space, and drive forward out of the site.

- A garbage pad is proposed at the eastern end of the main drive aisle, in line with the proposed access to Cedar Creek Drive. Garbage trucks are anticipated to collect garbage by driving forward into the site, front-loading at the garage pad, reverse into the loading space, and drive forward out of the site.

- Based on the previous table, the proposed number of resident vehicle parking spaces does not meet the requirement as outlined in the City's ZBL, and a variance is required. The proposed number of visitor parking spaces and bicycle parking spaces are proposed to meet the requirements.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
    - Both boundary streets meet the target pedestrian level of service (PLOS);
    - Neither boundary street meets the target bicycle level of service (BLOS);
    - Dun Skipper Drive achieves a transit level of service (TLOS) D;
    - Dun Skipper Drive achieves a truck level of service (TkLOS) B.

- Dun Skipper Drive and Cedar Creek Drive do not meet the target BLOS D, as no dedicated cycling facilities are provided. Curbside bike lanes with a minimum width of 1.2m or combined bike/parking lanes with a minimum width of 4.0m would be required to meet the target. Alternatively, a reduction in the operating speed to 50 km/h would allow both roadways to achieve the target. It is noted that both roadways are recently constructed.

Transportation Demand Management

- The list of measures to be considered by the proponent is summarized as follows:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Unbundle parking cost from monthly rent;
    - Provide a multimodal travel option information package to new residents.

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

NOVATECH

Prepared by:

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Reviewed by:

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

APPENDIX A

Site Plan

1 SITE PLAN
1 : 300

SITE INFORMATION & DEVELOPMENT STATISTICS

LOTS		PIN
		04328 - 4465 (LT)
ZONING		GM[2615]
SITE AREA		
TOTAL SITE AREA:		~10,009.87 m² (1ha)
UNITS		
BUILDING 1:		
RESIDENTIAL:		131 UNITS
BUILDING 2:		
RESIDENTIAL:		106 UNITS
TOTAL NUMBER OF UNITS:		237 UNITS

SPECIFIC PROVISIONS	REQUIRED	PROVIDED
MINIMUM LOT AREA	NO MIN.	10,009.87 m²
MINIMUM LOT WIDTH	NO MIN.	-
SETBACKS		
MINIMUM FRONT YARD:	3 m	3 m
MINIMUM CORNER SIDE YARD:	3 m	3 m
MINIMUM INTERIOR SIDE YARD:		
NON-RESIDENTIAL OR MIXED-USE:	5 m	-
RESIDENTIAL HEIGHT ≤ 11m :	1.2 m	-
RESIDENTIAL HEIGHT > 11m :	3 m	6.09 m
MINIMIM REAR YARD:		
ABUTTING A STREET:	3 m	-
FROM A RESIDENTIAL ZONE:	7.5 m	7.5 m
FOR A RESIDENTIAL BUILDING:	7.5 m	7.5 m
MAXIMUM BUILDING HEIGHT	18 m	19.5 m
MAXIMUM FLOOR SPACE INDEX	2	1.71

PARKING RATES	REQUIRED	PROVIDED
BUILDING 1:		
R12 - APARTEMENTS	1.2 p/unit = 157	131 (1.0 p/unit)
VISITOR:	0.2 p/unit = 26	26 (0.2 p/unit)
BUILDING 2:		
R12 - APARTEMENTS	1.2 p/unit = 127	106 (1.0 p/unit)
VISITOR:	0.2 p/unit = 21	21 (0.2 p/unit)
		TOTAL: 284

BIKE PARKING	REQUIRED	PROVIDED
BUILDING 1:	0.5 p/unit = 66	66
BUILDING 2:	0.5 p/unit = 53	53

AMENITY AREA	REQUIRED	PROVIDED
BUILDING 1:		
PRIVATE:	3m² p/unit = 393m²	1,040m²
SHARED:	3m² p/unit = 393m²	987m²
BUILDING 2:		
PRIVATE:	3m² p/unit = 318m²	927m²
SHARED:	3m² p/unit = 318m²	567m²

GFA - CITY OF OTTAWA	PROVIDED
BUILDING 1:	9,538m²
BUILDING 2:	7,537m²

WASTE CALCULATIONS	REQUIRED	PROVIDED
BUILDING 1 (131 UNITS):		
GARBAGE (COMPACTED):	0.053v³ p/unit = 6.94v³	2 x 4v³ CONTAINER
RECYCLING (FEL GMP):	0.018v³ p/unit = 2.36v³	1 x 4v³ CONTAINER
RECYCLING (FEL FIBRE):	0.038v³ p/unit = 4.98v³	2 x 4v³ CONTAINER
ORGANICS:	240L p/50 units = 2.62	3 x 240L CONTAINER
BUILDING 2 (106 UNITS):		
GARBAGE (COMPACTED):	0.053v³ p/unit = 5.62v³	2 x 4v³ CONTAINER
RECYCLING (FEL GMP):	0.018v³ p/unit = 1.91v³	1 x 4v³ CONTAINER
RECYCLING (FEL FIBRE):	0.038v³ p/unit = 4.02v³	1 x 4v³ CONTAINER
ORGANICS:	240L p/50 units = 2.12	3 x 240L CONTAINER

*EACH BUILDING HAS AN UNDERGROUND COLLECTION ROOM (SEE UNDERGROUND PARKING PLANS. THE COLLECTION DAY, THE CONTAINER ARE BRING UP TO THE COLLECTION PAD.

NOTE

1. ASSUME TYPICAL RESIDENTIAL FLOOR HEIGHT OF 3m.

2. THE BASE PLAN (LOT LINES, EXISTING ROADS AND SURROUNDING AREAS) IS BASED ON THE TOPOGRAPHICAL PLAN OF SURVEY OF J.D. BARNES LIMITED - REFERENCE NUMBER 24-10-059-00.

3. DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0,3048.

SITE PLAN LEGEND

- LOT LINE
- SETBAKCS
- ELECTRICS LINES
- EASEMENTS
- PROTECTION ZONE
- 0000 GEO — GEO ELEVATION
- EXISTING BUILDING
- BUILDING TO BE DEMOLISHED
- GRASS
- CONCRETE
- CONCRETE BALCONY
- TWSI
- PAVERS
- RADIANT ZONE
- PEA GRAVEL
- ASPHALT
- LANDSCAPE
- NEW DECIDUOUS TREE
- NEW SHRUBS
- NEW CONIFEROUS TREE

PROJECT

FINDLAY CREEK DEVLEOPMENT

150 DUN SKIPPER DRIVE, GLOUCESTER, ON K1X 0G2

OWNER

MAVERICK DEVELOPMENT CORPORATION

MAVERICK DEVELOPMENT CORPORATION
209 WICKSTEED AVENUE, SUITE 30
TORONTO, ON M4G 0B1

ARCHITECT

PMA ARCHITECTES

(418) 651-8954
INFO@PMAARCHITECTES.COM

3070, CHEMIN DES QUATRE-BOURGEOIS
QUÉBEC (QC) G1W 2K4
PMAARCHITECTES.COM

CIVIL / LANDSCAPE / PLANNER

NOVATECH
Engineers, Planners & Landscape Architects

NOVATECH
240 MICHAEL COWPLAND DRIVE, SUITE 200,
OTTAWA, ON K2M 1P6

SURVEYOR

J.D. BARNES LIMITED
62 STEACIE DRIVE, SUITE 103,
KANATA, ON K2K 2A9

STRUCTURAL

MECHANICAL

KEY PLAN

ARCHITECT SEAL

ONTARIO ASSOCIATION OF ARCHITECTS
PIERRE MARTIN
LICENCE
8757

REVISIONS

NO	DESCRIPTION	DATE
3	FOR CITY REVIEW	2025-04-23
2	FOR CITY REVIEW	2025-01-17
1	FOR COORDINATION	2024-12-17

NOTE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON THE SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT. ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS. DO NOT SCALE DRAWINGS.

DO NOT USE FOR CONSTRUCTION

DATE	DESIGNED
2025-04-23	P.POMERLEAU
	DRAWN
	P.POMERLEAU
PROJECT No	CHECKED
24061	P.MARTIN

SHEET TITLE

SITE PLAN

SHEET No

A101

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	150 Dun Skipper Drive
Description of Location	NE corner of Dun Skipper/Cedar Creek
Land Use Classification	Multifamily Housing (6 storeys)
Development Size (units)	237 dwellings
Development Size square metre (m^2)	-
Number of Accesses and Locations	1 (to Cedar Creek)
Phase of Development	1
Buildout Year	2027

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).

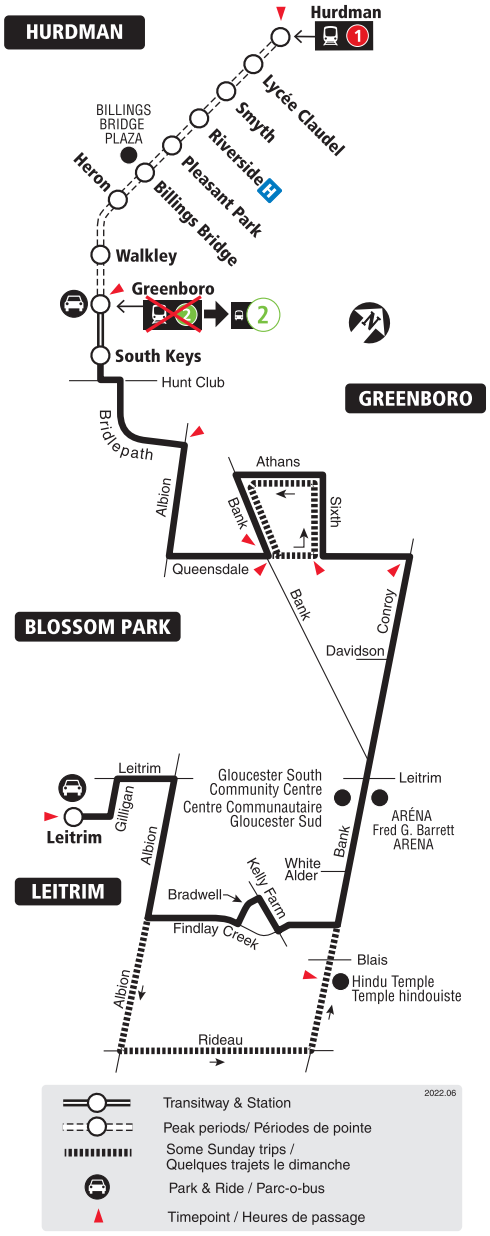
APPENDIX C

OC Transpo Route Maps

93 Local

LEITRIM BLOSSOM PARK
GREENBORO HURDMAN

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



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

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

Effective June 26, 2022
En vigueur 26 juin 2022

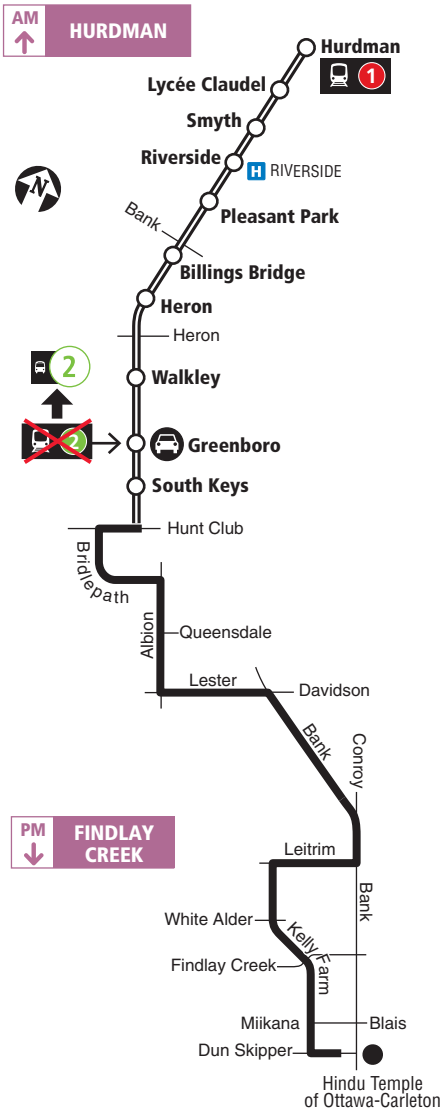
OC Transpo
INFO 613-560-5000
octranspo.com

294 Connexion

HURDMAN
FINDLAY CREEK

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



Transitway & Station

Park & Ride / Parc-o-bus

2021.06

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

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

Effective June 20, 2021
En vigueur 20 juin 2021

OC Transpo
INFO 613-741-4390
octranspo.com

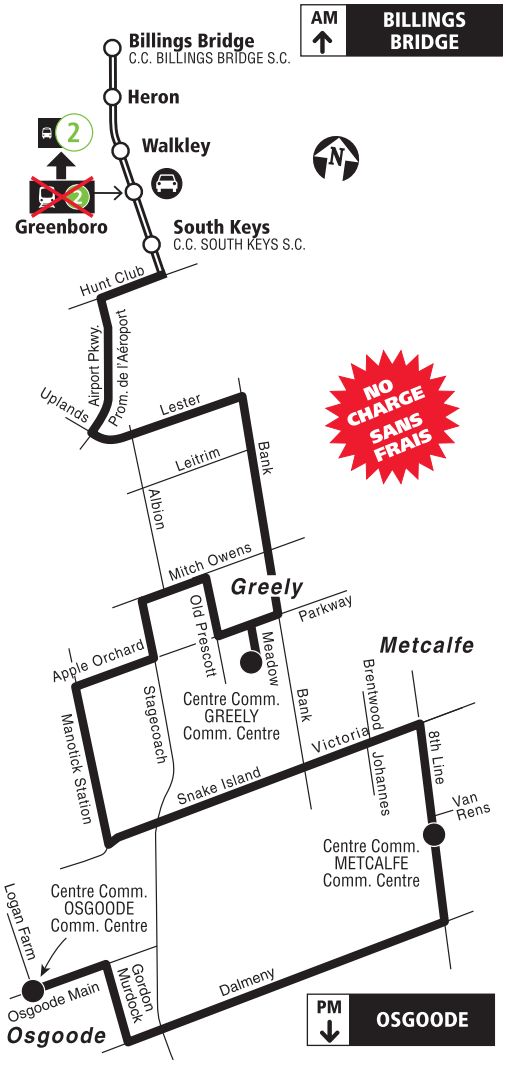
304

BILLINGS BRIDGE
METCALFE, GREELY OSGOODE

Local

Thursday only / Jeudi seulement

Selected time periods
Périodes sélectionnées



Transitway & Station

Park & Ride / Parc-o-bus

2020.04

Schedule / Horaire.....613-560-1000
Text / Texto 560560

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

Customer Relations
Service à la clientèle **613-842-3600**

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

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

Effective May 3, 2020
En vigueur 3 mai 2020

OC Transpo

INFO 613-741-4390
octranspo.com


Conroy
Davidson
294
Bank
93
Barrett Farm
White Alder
Bank
Findlay Creek
Kelly Farm
Miikana
Blais
Sunday only
Dimanche seulement
SITE
93
Dun Skipper
294
Hindu Temple
Temple hindouiste
304
Thursday only
Jeudi seulement
Bank

APPENDIX D

Traffic Count Data

Transportation Services - Traffic Services

Turning Movement Count - Study Results

BANK ST @ DUN SKIPPER DR

Survey Date: Thursday, September 14, 2023 **WO No:** 41167

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, September 14, 2023

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	BANK ST									DUN SKIPPER DR									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	29	547	0	**576**	0	286	37	**323**	**899**	58	0	35	**93**	0	0	0	**0**	**93**	**992**
08:00 09:00	20	507	0	**527**	0	395	41	**436**	**963**	83	0	28	**111**	0	0	0	**0**	**111**	**1074**
09:00 10:00	20	457	0	**477**	0	395	70	**465**	**942**	65	0	29	**94**	0	0	0	**0**	**94**	**1036**
11:30 12:30	15	459	0	**474**	0	466	80	**546**	**1020**	75	0	30	**105**	0	0	0	**0**	**105**	**1125**
12:30 13:30	21	409	0	**430**	0	512	72	**584**	**1014**	61	0	25	**86**	0	0	0	**0**	**86**	**1100**
15:00 16:00	27	442	0	**469**	0	604	82	**686**	**1155**	78	0	49	**127**	0	0	0	**0**	**127**	**1282**
16:00 17:00	37	522	0	**559**	0	752	87	**839**	**1398**	79	0	52	**131**	0	0	0	**0**	**131**	**1529**
17:00 18:00	27	475	0	**502**	0	601	85	**686**	**1188**	64	0	31	**95**	0	0	0	**0**	**95**	**1283**
Sub Total	196	3818	0	**4014**	0	4011	554	**4565**	**8579**	563	0	279	**842**	0	0	0	**0**	**842**	**9421**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	196	3818	0	**4014**	0	4011	554	**4565**	**8579**	563	0	279	**842**	0	0	0	**0**	**842**	**9421**
EQ 12Hr	272	5307	0	**5579**	0	5575	770	**6345**	**11925**	783	0	388	**1170**	0	0	0	**0**	**1170**	**13095**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	272	5307	0	**5579**	0	7304	1009	**6345**	**11925**	783	0	388	**1170**	0	0	0	**0**	**1170**	**13095**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	356	6952	0	**7308**	0	9568	1322	**8312**	**15622**	1026	0	508	**1533**	0	0	0	**0**	**1533**	**17154**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

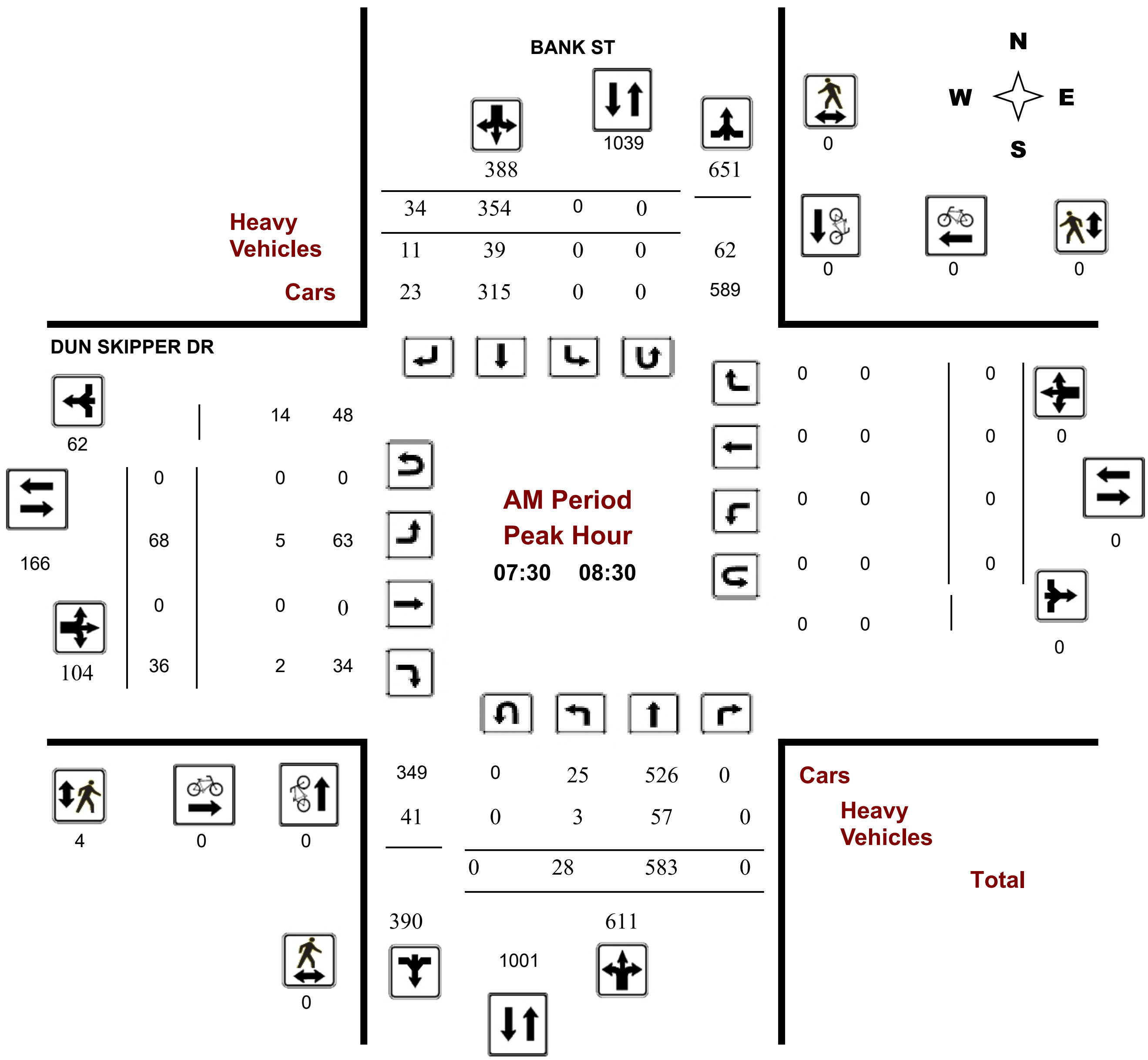
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ DUN SKIPPER DR

Survey Date: Thursday, September 14, 2023 **WO No:** 41167

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



Comments

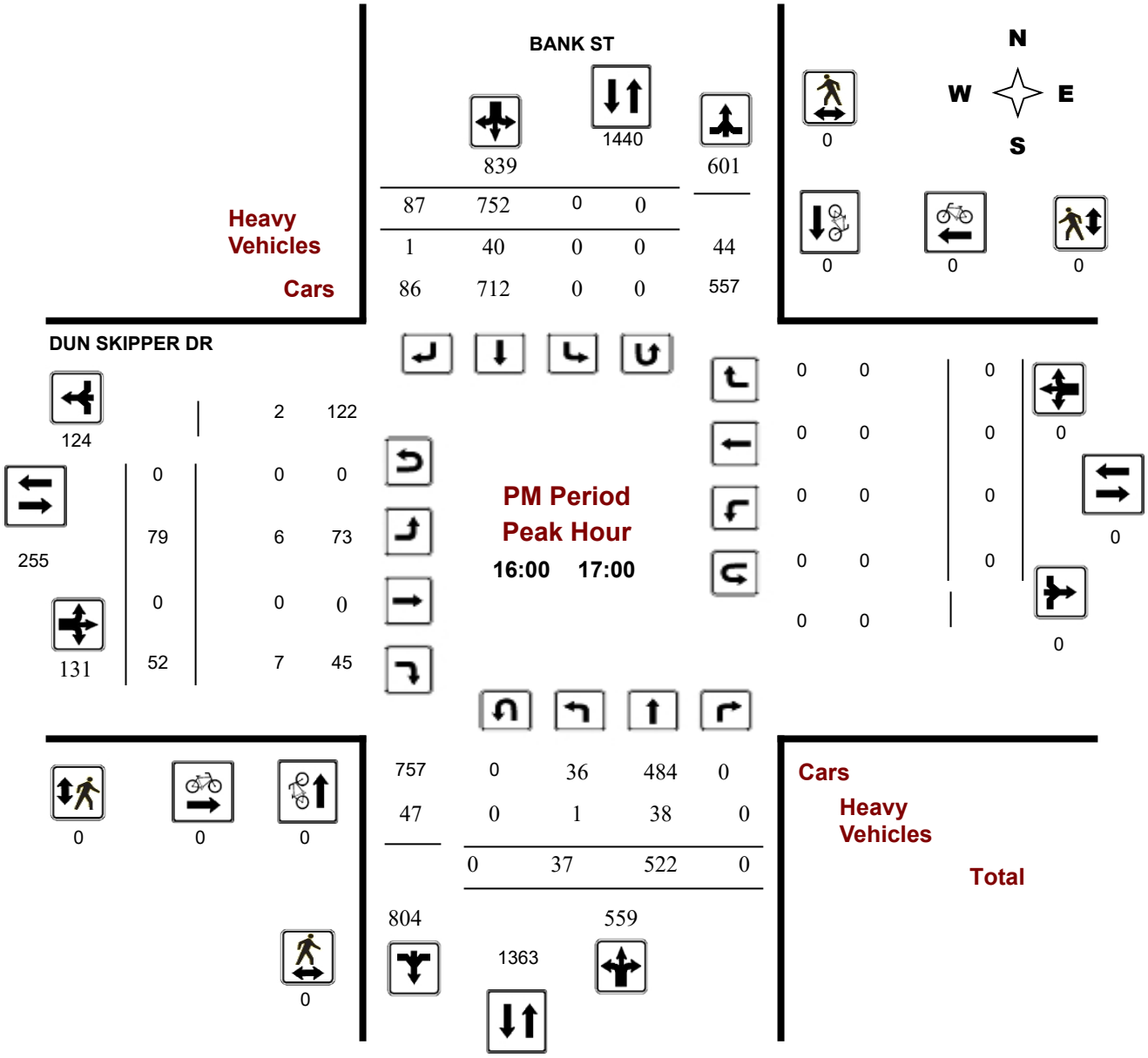
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

BANK ST @ DUN SKIPPER DR

Survey Date: Thursday, September 14, 2023 **WO No:** 41167

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



Comments

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: BANK ST @ DUN SKIPPER DR

Traffic Control: Traffic signal **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jun-04, Thu,15:20	Clear	Turning movement	P.D. only	Dry	East	Turning right	Truck - dump	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Jan-02, Sat,10:11	Snow	SMV other	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
2021-Oct-05, Tue,15:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: BANK ST btwn BLAIS RD & DUN SKIPPER DR

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Feb-14, Thu,15:20	Clear	Rear end	P.D. only	Loose snow	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jul-07, Tue,08:36	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Provisional Version

The Provisional Data report is subject to change at anytime. No business decisions are to be made using this data, it is only for internal discussion purposes. This data, in some cases, has not been fully validated.

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

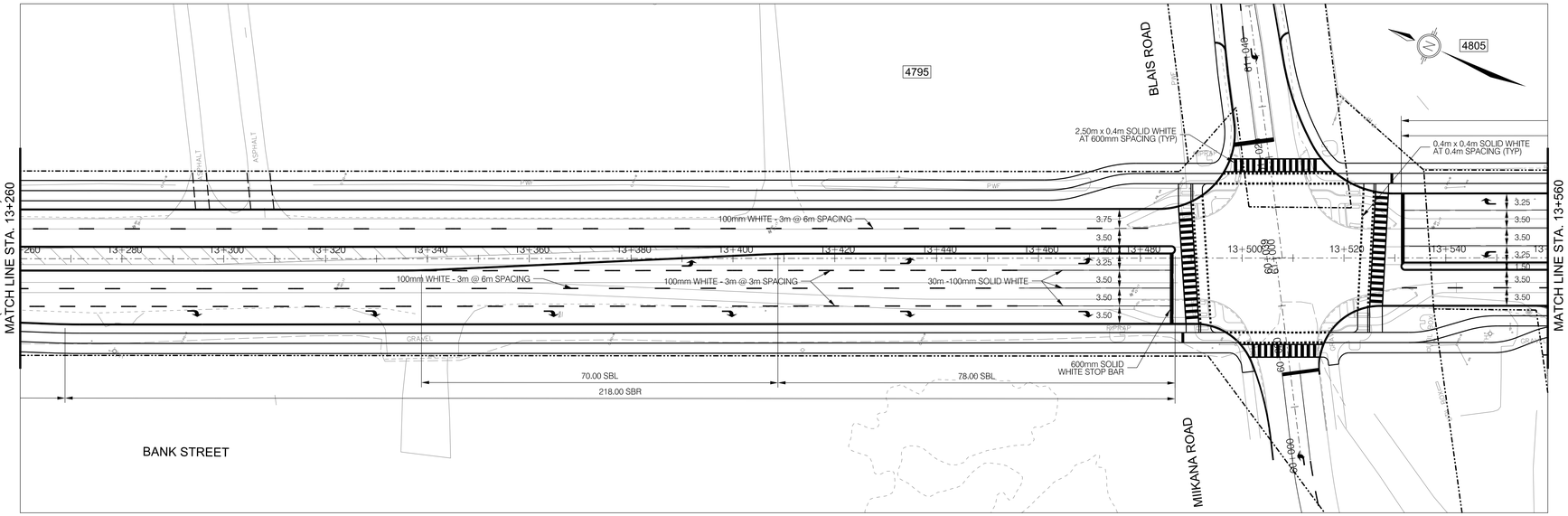
Location ..... BANK ST @ DUN SKIPPER DR

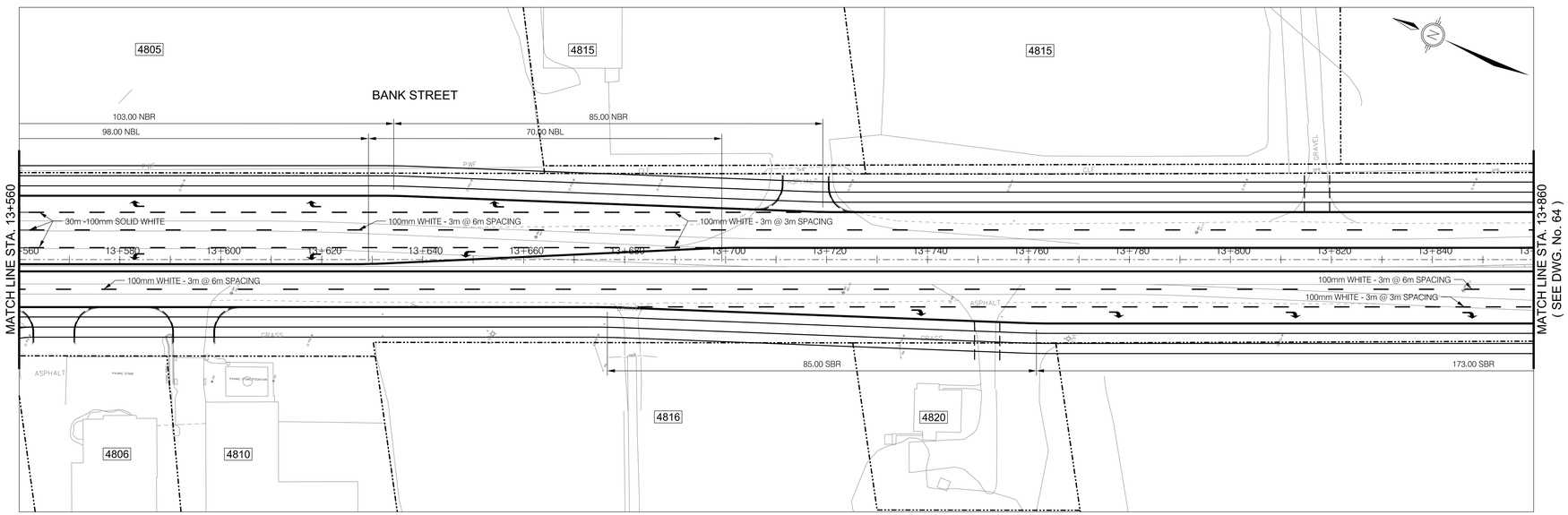
Traffic Control.... Traffic signal **Total Collisions....** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Nov-05, Sat,16:15	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	

APPENDIX F

Excerpts from Bank Street Widening EA





BANK STREET WIDENING

LEITRIM RD. TO DUN SKIPPER DR.

PAVEMENT MARKINGS AND SIGNS IV

STA. 13+260 TO 13+560
STA. 13+560 TO 13+860

ALAIN GONTHIER, P.ENG.	MIKE GIAMPA, P. ENG.
Director	*Project Manager*

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

IBI Project No.	Dwg. No.
106262	63

Sheet 63 of 71

Asset No.	----------
Asset Group	----
Des. S.L.	Chk'd. J.D.
Dwn. C.R.	Chk'd. S.L.
Utility Circ. No. ------	Index No. ------
Const. Inspector	----------

Scale:
HORIZONTAL
0m 5 10 20
0m 1 2
VERTICAL

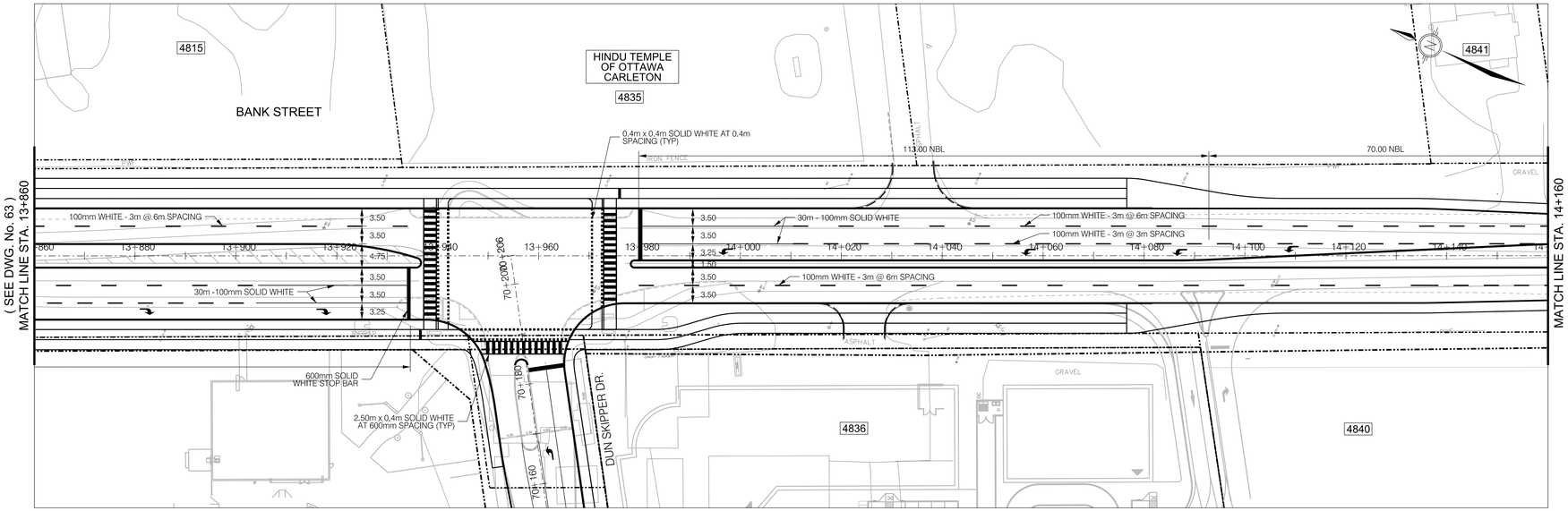
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

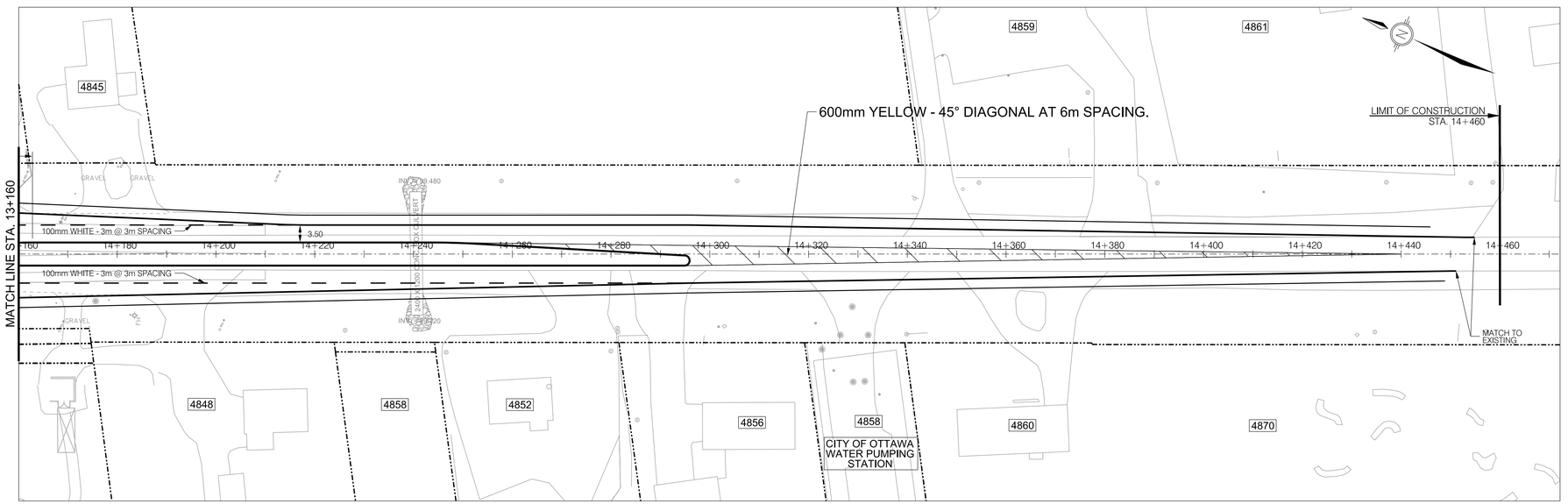
REVISIONS

No.	Description	By	Date (dd/mm/yy)
1.	ISSUED FOR PRELIMINARY DESIGN	S.L.	30/04/19

DRAWING FRAME: 796mm x 534mm City of Ottawa 2008

Consultant Drawing Number





BANK STREET WIDENING

LEITRIM RD. TO DUN SKIPPER DR.

PAVEMENT MARKINGS AND SIGNS V

STA. 13+860 TO 14+160
STA. 14+160 TO 14+450

ALAIN GONTHIER, P.ENG.	MIKE GIAMPA, P.ENG.
Director	*Project Manager*

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Ottawa

IBI Project No.	Dwg. No.
106262	64

Sheet 64 of 71

Asset No. ---------

Asset Group ---

Des.	Chk'd.
S.L.	J.D.
Dwn.	Chk'd.
C.R.	S.L.
Utility Circ. No. ------	Index No. ------

Const. Inspector ----------

Scale:
HORIZONTAL
0m 5 10 20
0m 1 2
VERTICAL

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

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1.	ISSUED FOR PRELIMINARY DESIGN	S.L.	30/04/19

May 6, 2019 08:39:29 J:\106262.2_BankStWideng\5.9 Drawings\59civil\layouts\64-PM 5.dgn

APPENDIX G

Long-Range Model Snapshots

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Findlay Creek Area

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: April, 2022
EMME Scenario: 21713

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

500 1000 1500 2000

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Findlay Creek Area

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: April, 2022
EMME Scenario: 21715

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

500 1000 1500 2000

+1.7%

+1.7%

+1.7%

JOHNSTON CORNERS

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

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

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

APPENDIX H

Other Area Developments

The estimated number of trips generated by the proposed development, broken down by mode share, is included in **Table 5**.

Table 5: Peak Hour Trips by Mode Share

Travel Mode	Mode Share	PM Peak Hour			SAT Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
Shopping Plaza Trips		**348**	**376**	***724***	**371**	**350**	***721***
Auto Driver	70%	243	263	*506*	260	245	*505*
Auto Passenger	20%	70	75	*145*	74	70	*144*
Transit	0%	-	-	*0*	-	-	*0*
Cyclist	0%	-	-	*0*	-	-	*0*
Pedestrian	10%	35	38	*73*	37	35	*72*

From the previous table, the proposed development is estimated to generate 724 person trips (including 506 vehicle trips) during the PM peak hour, and 721 person trips (including 505 vehicle trips) during the Saturday peak hour.

Pass-by Trips

The proposed development is anticipated to generate two types of external peak hour trips: primary trips and pass-by trips. Primary trips are made for the specific purpose of visiting the site, while pass-by trips are made as intermediate stops on the way to another destination. The *ITE Trip Generation Manual* includes PM peak hour and Saturday peak hour pass-by percentages for the Shopping Plaza and Supermarket land uses. For the purposes of this TIA, the percentages of both land uses have been blended, to reflect that the proposed supermarket is anticipated to be the largest trip generator of the development.

The pass-by percentages identified in the *ITE Trip Generation Manual* and the blended pass-by rates assumed in this TIA are summarized as follows:

- PM Peak Hour: 40% (Shopping Plaza) and 24% (Supermarket) = 32% (blended rate)
- SAT Peak Hour: 31% (Shopping Plaza) and 19% (Supermarket) = 25% (blended rate)

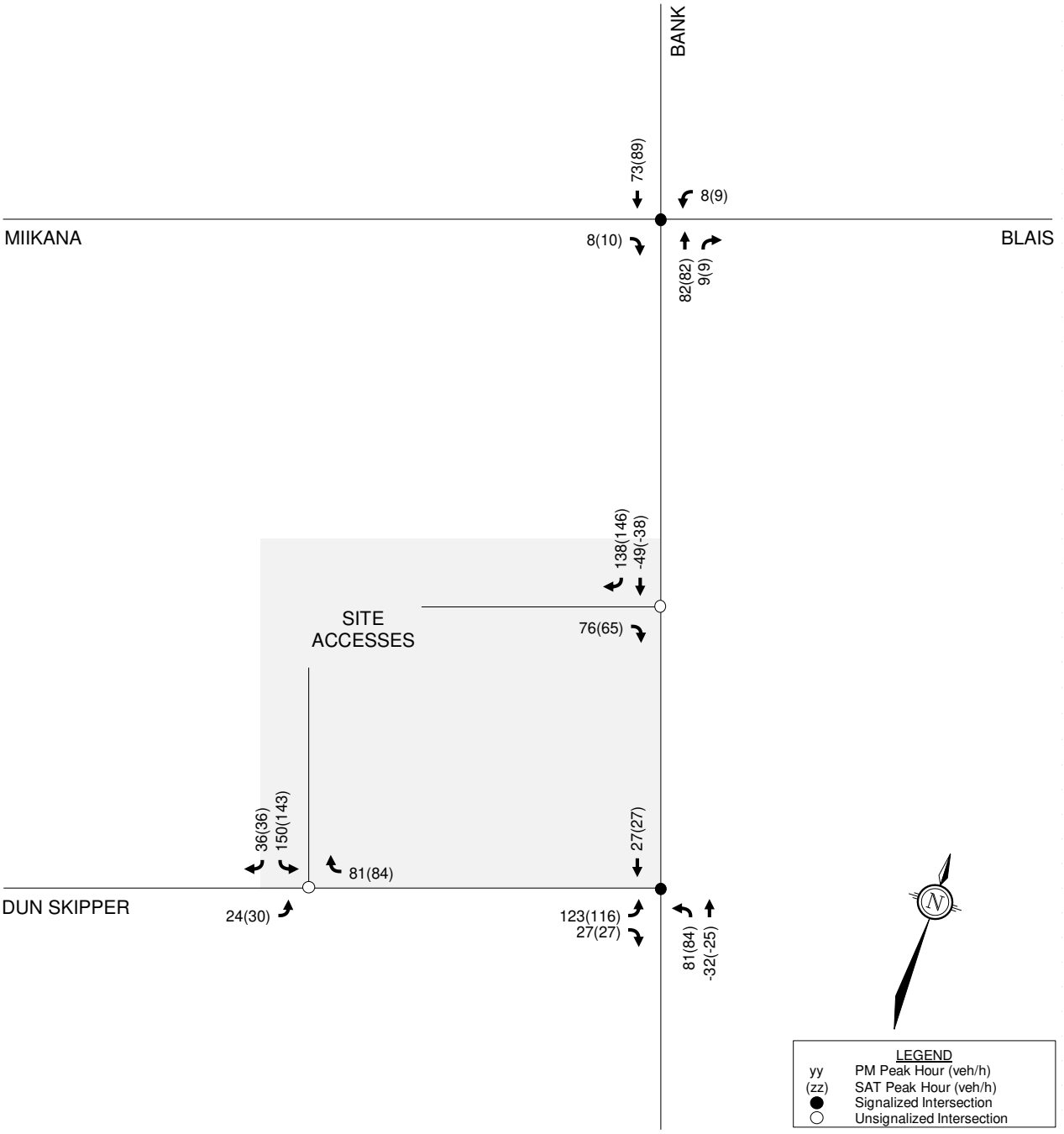
The projected primary and pass-by trips generated by the proposed development are summarized in **Table 6**.

Table 6: Primary and Pass-by Trips

Trip Type	PM Peak Hour (vph)			SAT Peak Hour (vph)		
	IN	OUT	TOT	IN	OUT	TOT
Shopping Plaza Trips						
Total Vehicle Trips	243	263	*506*	260	245	*505*
Pass-by Adjustment (32% PM, 25% SAT)	-81	-81	*-162*	-63	-63	*-126*
Primary Trips (68% PM, 75% SAT)	**162**	**182**	***344***	**197**	**182**	***379***

From the previous table, the proposed development is estimated to generate 344 primary vehicle trips during the PM peak hour and 379 primary vehicle trips during the Saturday peak hour.

Figure 9: Total Site-Generated Traffic Volumes



2.5 Access Design

The proposed development includes two accesses to Bank Street and one access to Dun Skipper Drive. The loading access to Bank Street is limited to right-in operations only, the primary access to Bank Street is limited to right-in/right-out operations, and the access to Dun Skipper Drive is full-movement.

Table 5: Proposed School – Person Trip Generation

Land Use	ITE Code	AM Peak Hour (pph[1])			PM Peak Hour (pph)		
		IN	OUT	TOT	IN	OUT	TOT
Elementary School	520	107	88	*195*	40	41	*81*

1. pph: Person Trips per Hour

From the previous table, the proposed school is estimated to generate 195 person trips during the AM peak hour and 81 person trips during the PM peak hour.

The 2016 CTS assumed that 70% of all person trips generated by the proposed school would be vehicle trips. Therefore, the proposed elementary school is estimated to generate 137 vehicle trips during the AM peak hour (including 75 inbound trips and 61 outbound trips), and 57 vehicle trips during the PM peak hour (including 28 inbound trips and 29 outbound trips).

3.1.2 Trip Distribution

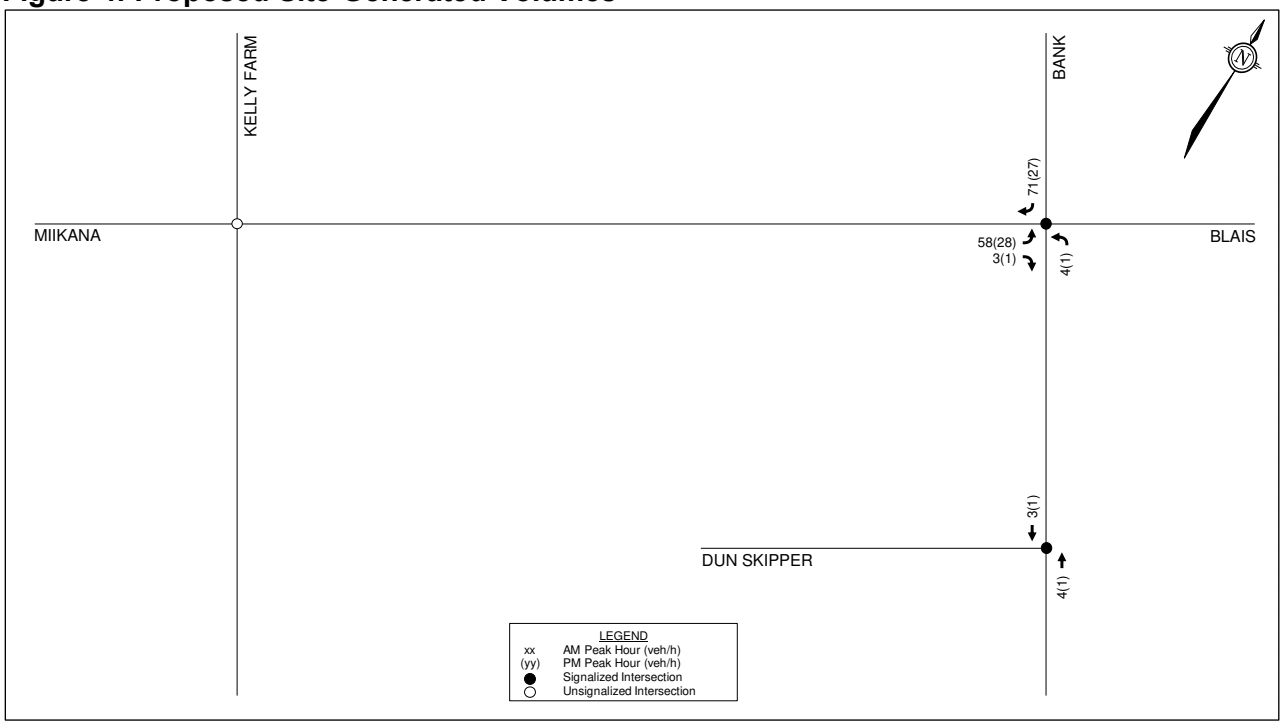
The 2016 Remer Lands CTS included trip distribution assumptions for all trips generated by the subdivision, which can be summarized as 95% to/from the north via Bank Street and 5% to/from the south via Bank Street.

At the time of writing of the 2016 CTS, Kelly Farm Drive did not extend to Leitrim Road from the Findlay Creek subdivision, and the CTS estimated that approximately 20% of vehicle trips to/from the north on Bank Street would utilize Kelly Farm Drive as an alternative north-south route upon opening. While Kelly Farm Drive now connects to Leitrim Road north of the study area, the analysis included in the 2016 CTS did not consider this reduction in traffic on Findlay Creek Drive and Bank Street.

As the school will serve residents of Findlay Creek and the surrounding community, it is acknowledged that some vehicle trips will arrive and depart to/from the north and south via Kelly Farm Drive. However, to maintain consistency with the 2016 Remer Lands CTS and to provide a conservative representation of signalized intersection operations within the area, the distribution presented in the parent study has been carried forward.

Vehicle trips generated by the proposed school are shown in **Figure 4**.

Figure 4: Proposed Site-Generated Volumes



3.2 Background Traffic

3.2.1 Other Area Developments

As first discussed in Section 2.2.2, there is one TIA for another proposed development in the study area (for 4836 Bank Street). Approximately 125 hotel suites, a 2,997 m^2 hardware store, a 502 m^2 restaurant, and a 987 m^2 commercial building are proposed at this property, which is located at the southwestern corner of Bank Street/Dun Skipper Drive. A TIA was prepared by IBI Group in April 2019 in support of this development, and estimated that the hardware store would be built out by 2021, with the remainder of the development being built out by 2023. Traffic generated by this development was not considered in the 2016 Remer Lands CTS. Relevant excerpts of this TIA are included in **Appendix G**. However, the 4836 Bank Street TIA accounted for traffic by the Remer Lands development.

3.2.2 General Background Growth Rate

A review of snapshots of the City's *Strategic Long-Range Model* has been conducted, and the snapshots are included in **Appendix H**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes on Bank Street south of Leitrim Road, the *Strategic Long-Range Model* generally identifies projected growth between 0% and 2% per annum. This is generally consistent with the 2016 Remer Lands CTS, which assumed an annual growth rate of 1% for traffic volumes on Bank Street.

The 2016 Remer Lands CTS included future traffic volumes for the Phase 1 year 2020 (including the proposed school) and full buildout year 2025. The future traffic volumes for both years as estimated in the 2016 CTS and the site-generated volumes described above are included in **Figure 5** and **Figure 6**.

TABLE 8 – Remer Lands Development Vehicle Trip Generation

LAND USE	SIZE	SOURCE	RATE	PERIOD	SPLIT		GENERATED TRAFFIC (VPH)		
					IN	OUT	IN	OUT	TOTAL
Single Family	422 DU	ITE 210	Formula 1	AM	25%	75%	76	229	305
				PM	63%	37%	242	142	384
Apartment	84 DU	ITE 220	Formula 2	AM	20%	80%	9	36	45
				PM	65%	35%	42	22	64
Townhomes/ Semi-Detached	399 DU	ITE 230	Formula 3	AM	17%	83%	21	100	121
				PM	67%	33%	91	45	136
Elementary School	400 students	ITE 520	Formula 4	AM	55%	45%	79	65	144
				PM	49%	51%	29	31	60
Commercial Block 1	84,326 ft²	Local Rate	Formula 5	AM	58%	42%	150	109	259
				PM	48%	52%	236	256	492
Commercial Block 2	74,435 ft²	Local Rate	Formula 5	AM	58%	42%	133	96	229
				PM	48%	52%	208	226	434
TOTAL VEHICLE TRIPS				AM			474	664	1,138
				PM			882	738	1,620

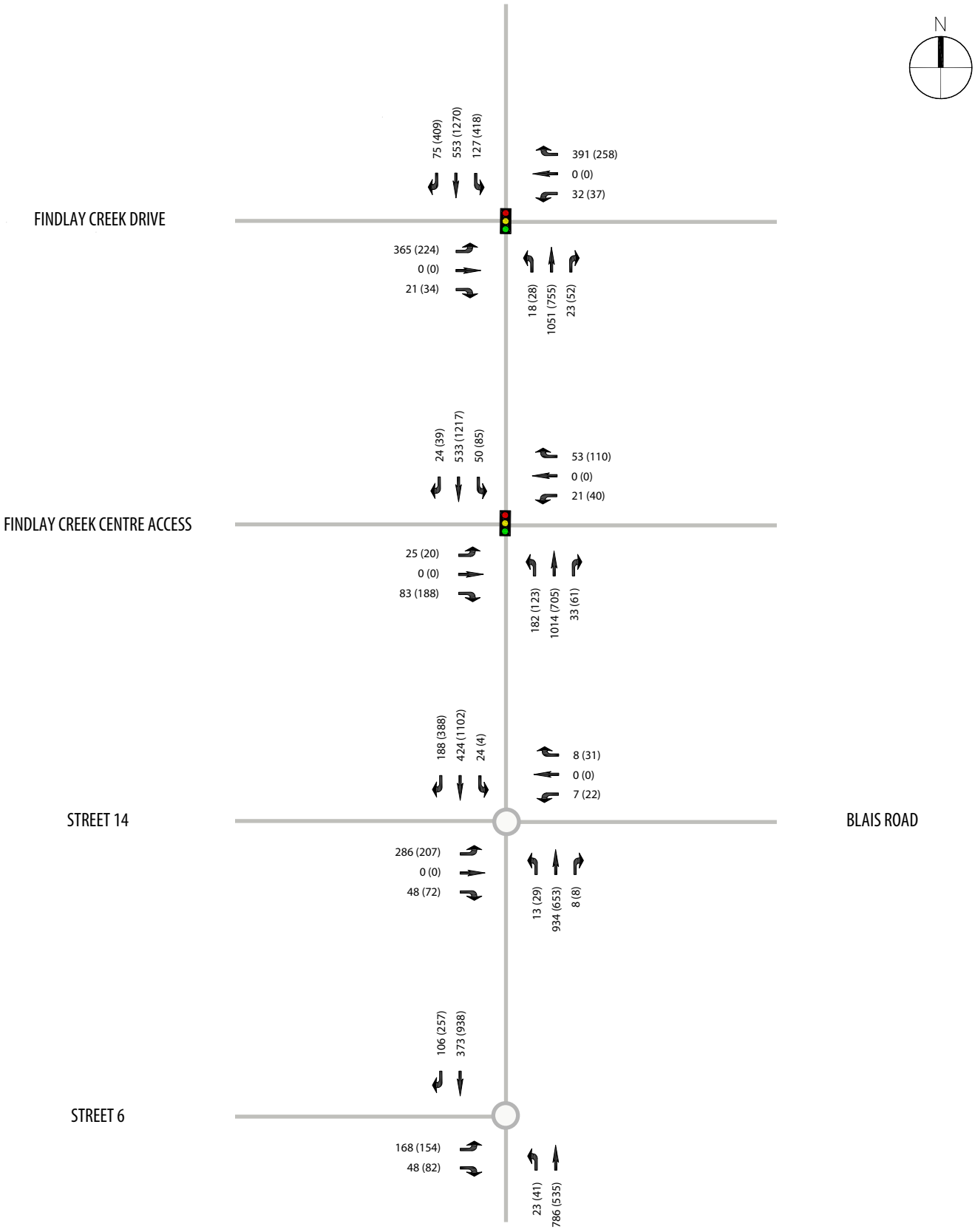
Notes:
vph = vehicles per hour; DU = Dwelling Units
1 - Formula Rate for Single Family Detached Land Use:
AM T= 0.70(X) + 9,74
PM T= e^(0.90Ln(X) + 0.51)
2 - Formula Rate for Apartment Land Use:
AM T= 0.49*(X) + 3.73
PM T= 0.55*(X) + 17.65
3 - Formula Rate for Condo/ Townhouse Land Use:
AM T= e^(0.80Ln(X) + 0.26)
PM T= e^(0.82Ln(X) + 0.32)
4 – Formula Rate for Elementary School Land Use
AM T= e^(1.14Ln(X)-1.86)
PM T= 0.15(X)
5 – Formula Rate for Commercial Land Use from Findlay Creek Centre Local Count
AM T= 3.07(X/1000)
PM T= 5.83(X/1000)

The ITE trip generation rates are based on data collected from traffic surveys conducted across North America, but mostly in suburban areas of the United States where the level of transit use is traditionally very low (estimates show that ITE rates average approximately 96% auto mode split). This statistic was not considered representative in the City of Ottawa that has a well-established transit system and pedestrian/ cycling network. Therefore, the ITE trip generation results in Table 3 were converted into person trips and adjusted for observed modal share percentages based on the 2011 TRANS O-D Survey Report specific to the South Gloucester/ Leitrim TRANS district.

To convert the ITE vehicle trip rates to person trip rates, two adjustment factors have been applied:

- Vehicle Occupancy Factor: 1.29 (TRANS Survey)
- Non-Auto Usage Factor: 1.05 (Conservatively assumes ITE trips rates have 5% non-auto mode share)

Therefore, the vehicle to person trip conversion factor is approximately 1.35. This factor was applied to the results in Table 8 to generate the corresponding person trips per hour. Table 9 shows this conversion of estimated vehicular trips per hour to person trips per hour for the proposed development.



LEGEND

XX (XX) - AM (PM) PEAK HOUR TRAFFIC VOLUMES

IBI

Regional Group - Remer Lands
Community Transportation Study

EXHIBIT 15
Future (2025) Total AM & PM Peak
Hour Traffic Volumes

PROJECT No. 33956
DATE: MAY 2016
SCALE: NTS

3.1.2 Land Use Details

The proposed development is indicated in **Exhibit 2**. The land is currently the location of the Leitrim Home Hardware, and is zoned as Rural Commercial within the Official Plan Amendment (OPA) 8a. The proposed development will consist of hotel, hardware and commercial land uses, as shown in **Table 1**.

Table 1 – Land Use Statistics

LAND USE	BUILDING	UNITS/ GROSS FLOOR AREA (GFA)
Hardware Store (incl. Drive-Thru Shed)	Building 'A'	2,997 m^2
Hotel	Building 'B'	Approx. 125 Suites
Restaurant (incl. Drive-Thru Facility)	Building 'C'	502 m^2
Commercial	Building 'D'	987 m^2

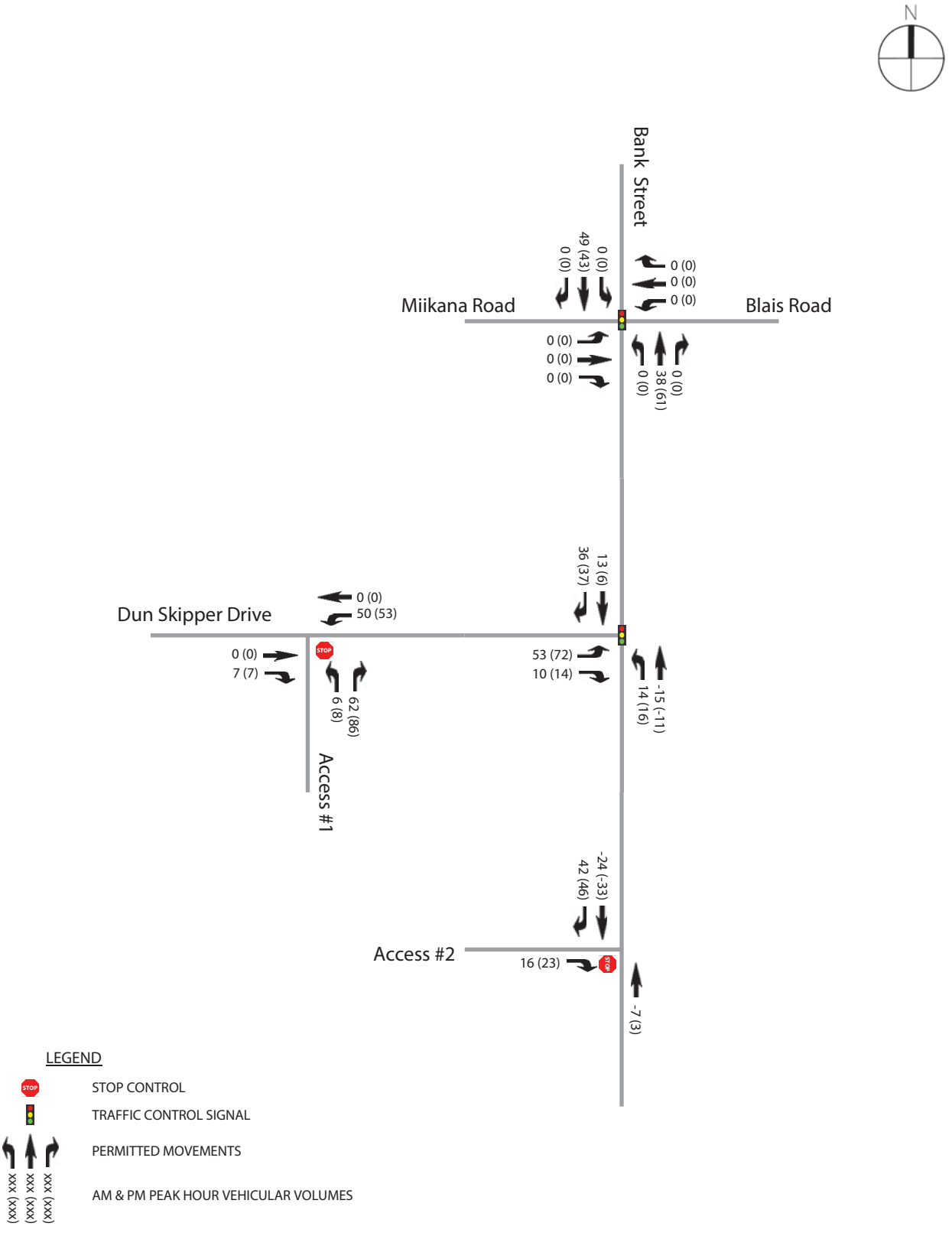
The Home Hardware is expected to be built and occupied by 2021, while the remainder of the site is expected to be built and occupied by 2023.

3.1.3 Site Layout

The proposed development will provide a total of 280 surface parking stalls including 11 accessible spaces and 14 oversized spaces.

The development will be served by two private approaches: an all-movements access proposed off of Dun Skipper Drive along the northern limits of the property, as well as a right-in/ right-out access proposed off of Bank Street along the eastern limits of the property.

The Draft Plan for the proposed development is illustrated in **Exhibit 2**.



IBI

4836 Bank Street
Transportation Impact Assessment

Exhibit 6:
Net Site-Generated Traffic

PROJECT No. 119351
DATE: April 2019
SCALE: N.T.S.

APPENDIX I

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)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

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

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

Legend

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

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

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

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

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

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

APPENDIX J

MMLOS Analysis

Segment MMLOS Analysis

This section provides a review of the boundary frontages, 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. Dun Skipper Drive and Cedar Creek Drive have been evaluated based on the targets for the General Urban Area.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* identifies a target PLOS C for all roadways in the General Urban Area. The results of the PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the bicycle level of service (BLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* identifies a target BLOS D for roadways in the General Urban Area with no cycling route designation. The results of the BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the transit level of service (TLOS) of the boundary streets. Within the General Urban Area, Exhibit 22 of the *MMLOS Guidelines* identifies no target TLOS for roadways without a RTTP designation. The TLOS of Dun Skipper Drive has been evaluated, as transit service is provided on that roadway. The results of the TkLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the truck level of service (TkLOS) of the boundary streets. Within the General Urban Area, Exhibit 22 identifies no target TkLOS for local roadways. The TkLOS of Dun Skipper Drive has been evaluated to reflect future transit service. The results of the 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
Dun Skipper Drive (north side, Bank Street to Cedar Creek Drive)					
2.0m	0.5m to 2.0m	≤ 3,000 vpd	N/A	60 km/h	A
Cedar Creek Drive (east side, north of Dun Skipper Drive)					
2.0m	0.5m to 2.0m	≤ 3,000 vpd	N/A	60 km/h	A

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

Table 2: BLOS Segment Analysis

Road Class	Route Type	Bikeway Type	Travel Lanes	Operating Speed	BLOS
Dun Skipper Drive (Bank Street to Cedar Creek Drive)					
Local	No Class	Mixed Traffic	2	60 km/h	**F**
Cedar Creek Drive (north of Dun Skipper Drive)					
Local	No Class	Mixed Traffic	2	60 km/h	**F**

Table 3: TLOS Segment Analysis

Facility Type	Level of Congestion Delay, Friction and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Dun Skipper Drive (Bank Street to Cedar Creek Drive)				
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
Dun Skipper Drive (Bank Street to Cedar Creek Drive)		
> 3.7m	1	B