1815 Montreal Road

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

Prepared for:

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PN: 2024-117

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support a zoning bylaw amendment application. Based on the exemption review provided in Section 5, the scope of review required the design review components only.

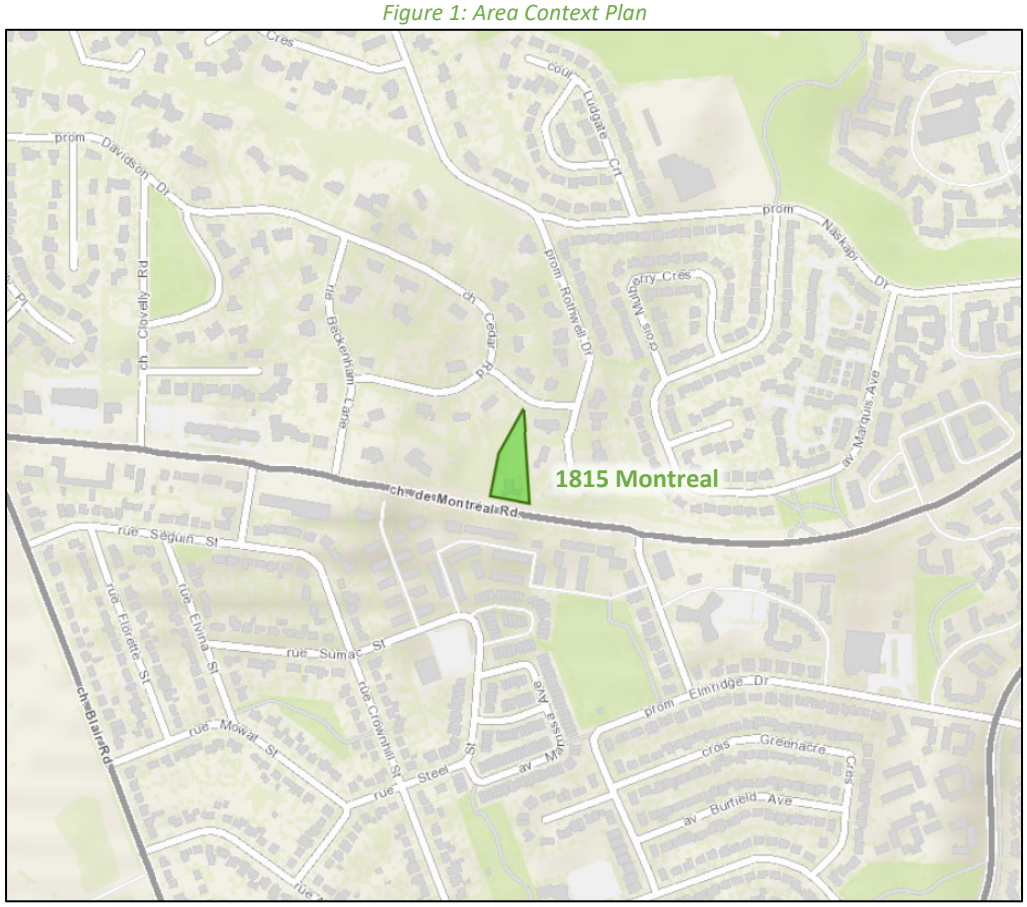
2 Existing and Planned Conditions

2.1 Proposed Development

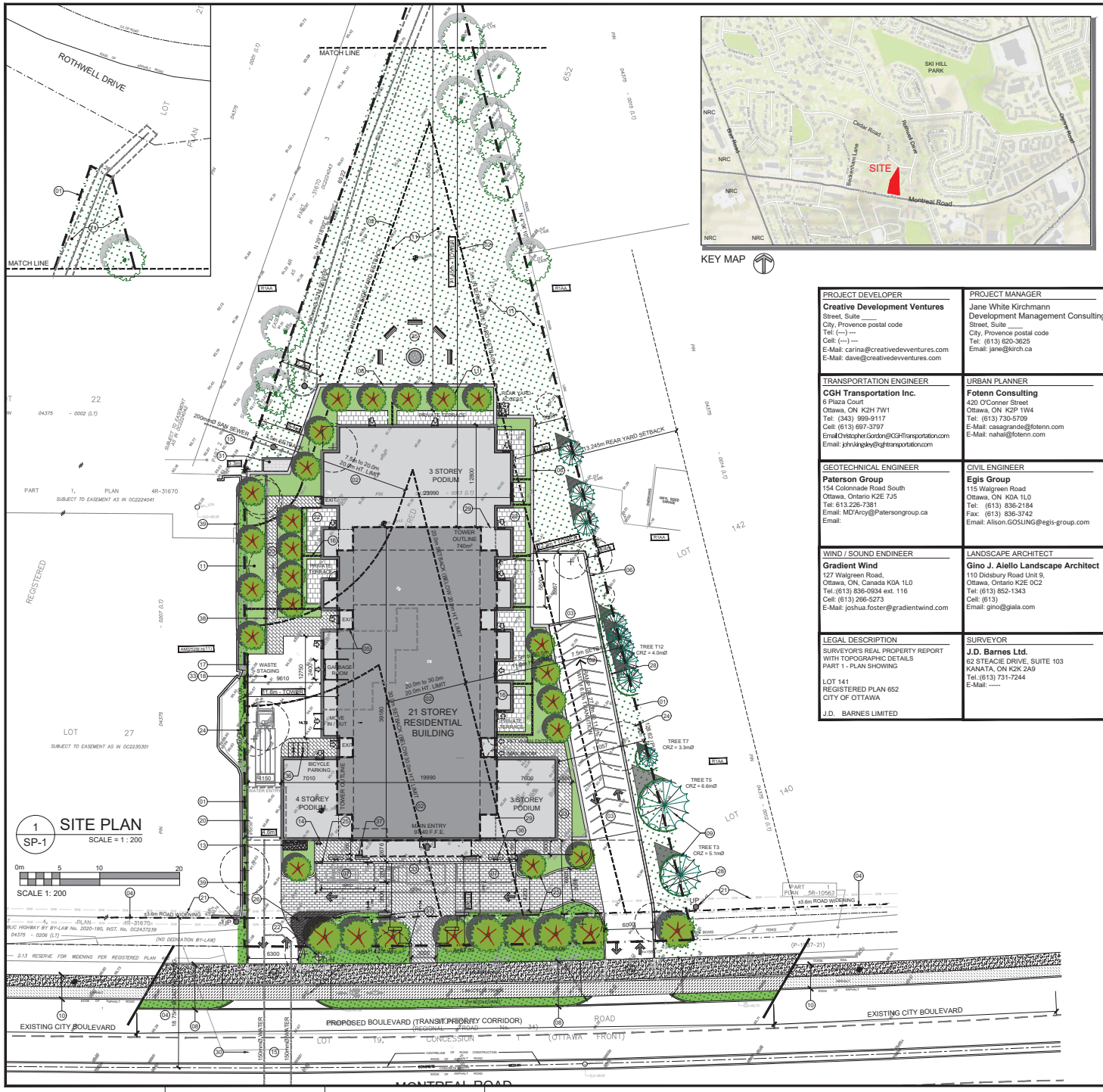
The existing site, located at 1815 Montreal Road, is zoned as Residential First Density Zone (R1AA). The site currently includes a single dwelling unit with a driveway onto Montreal Road. The proposed redevelopment consists of a 21-storey residential building comprising 191 dwelling units. The site is proposed to be accessed by two right-in/right-out connections onto Montreal Road, where the western access will function primarily as an outbound access with respect to vehicular traffic, outside of occasional loading/garbage collection use. One hundred sixty vehicle parking spaces and 156 bicycle parking spaces are proposed. The anticipated full build-out and occupancy horizon is 2028 with construction occurring in a single phase.

Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: September 26, 2024



PROJECT INFORMATION

Zoning By-law 2008-250 Consolidation R1AA — SITE AREA 0.44 ha. 4,361.3 sq. m 46,945 sq. ft

ZONING	REQUIRED	PROVIDED
ZONE	AM	AM(___) S___
BUILDING HEIGHT - 0m TO 20m FROM "R1, R2 & R3" ZONE	11.0m	21 STOREYS / 68.0m
BUILDING HEIGHT - 20m TO 30m FROM "R1 to R4" ZONE	20.0m	21 STOREYS / 68.0m
BUILDING HEIGHT - AFTER 30m FROM "R1 to R4" ZONE	9 STOREYS / 30.0m	21 STOREYS / 68.0m
GRADE: TAKEN FROM EXPOSED PARKING GARAGE	94.40m ASL	94.40m ASL
DENSITY - GFA	n/a	2.75
FRONT YARD SETBACK	3.0m	11.0m
INTERIOR YARD SETBACK EAST (MAIN BUILDING) - ABUTTING "R" ZONE	7.5m	7.2m
INTERIOR YARD SETBACK EAST (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	1.4m
INTERIOR YARD SETBACK WEST (MAIN BUILDING) - ABUTTING "R" ZONE	7.5m	8.4m
INTERIOR YARD SETBACK WEST (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	5.2m
INTERIOR YARD SETBACK WEST (MAIN BUILDING) - ABUTTING "AM" ZONE	0.0m	4.6m
INTERIOR YARD SETBACK WEST (PARKING GARAGE) - ABUTTING "AM" ZONE	0.0m	0.3m
REAR YARD SETBACK (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	53.5m
AMENITY AREA - TOTAL 6.0m² PER UNIT	1,146.0m²	2,385.0m²
AMENITY AREA - 50% COMMUNAL PER UNIT	573.0m²	1,275.0m²
VEHICLE PARKING: RESIDENTIAL - 1.2 PER UNIT	229	141
VEHICLE PARKING: VISITOR - 0.2 PER UNIT	38	19
BICYCLE PARKING - RESIDENTIAL - 0.5 PER UNIT	96	156
AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH	6.0m / 6.7m	6.0m

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (##) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- <A> INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDULE.
- (##) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (###) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER
- TITLE / SHEET
- DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

SITE PLAN SYMBOLS:

- SOFT LANDSCAPE PLANTING
- ENTRANCE BOULEVARD / WALKWAYS
- PRIVATE PATIOS
- PAVERS @ TERRACE LEVEL
- PROPOSED CITY BOULEVARD: CONCRETE SIDEWALK & ASPHALT CYCLE TRACK
- BIKE RACK
- MAIN ENTRANCE DOOR
- SERVICE / EXIT DOOR
- VEHICULAR DIRECTION
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- SIAMESE CONNECTION
- FIRE HYDRANT

DRAWING NOTES

1. PROPERTY LINE
2. AM ZONING BUILDING SETBACK LINES
3. HEATED RAMP TO U/G GARAGE WITH TRENCH DRAIN
4. PROPOSED 37.5m R.O.W.
5. OUTLINE OF TOWER ABOVE
6. OUTLINE OF PARKING GARAGE
7. SHORT TERM LAY-BY PARKING
8. FUTURE PROPOSED CITY SIDEWALK & CYCLE TRACK AS PER TRANSIT PRIORITY CORRIDOR DESIGN
9. EXISTING TREE TO REMAIN, PROTECT AS REQUIRED
10. EX. SIDEWALK & ASPHALT BOULEVARD TO REMAIN
11. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
12. BELOW GRADE CISTERN IN PARKING GARAGE
13. 1.2 X 3.0 CONCRETE PAD FOR GAS EQUIPMENT WITH BOLLARDS AS REQUIRED (GAS BLOW OFF)
14. SIAMESE CONNECTION
15. PROPOSED UTILITIES, SEE CIVIL
16. PRIVACY SCREEN / GATE
17. 2.1m HT. SOLID WOOD PRIVACY FENCE
18. TEMPORARY SNOW STORAGE
19. CONCRETE SIDEWALK, CONTINUOUS & DEPRESSED THROUGH DRIVEWAY, SEE CIVIL
20. 150mm HT CONCRETE BARRIER CURB
21. EXISTING HYDRO POLE & OVERHEAD WIRES
22. FIRE HYDRANT
23. UNIT PAVER WALK
24. EXISTING TREE TO BE REMOVED
25. FLUSH CURB AROUND ENTRY AREA
26. MOUNTABLE APRON
27. EXISTING UTILITY POLE
28. TREE / HEDGE PROTECTION ZONE
29. BALCONY ABOVE
30. 6.0m WIDE FIRE ROUTE
31. METAL GRATE - INTAKE / EXHAUST AIR SHAFT
32. PRIVATE TERRACES AT GROUND LEVEL
33. ACCESSIBLE PASSENGER LOADING AREA
34. GARBAGE BIN PICKUP AREA
35. FIRE PIT WITH SEATING
36. SURFACE MOUNTED BIKE RACK
37. BENCH: SEE LANDSCAPE
38. TRENCH DRAIN: SEE CIVIL
39. RETAINING WALL ON NEIGHBORING PROPERTY

BUILDING STATISTICS

GROSS BUILDING - AREA (CITY OF OTTAWA'S DEFINITION)

PARKING LEVEL		0.0 sq. m. 000 sq. ft.
GROUND FLOOR		574.5 sq. m. 6,184 sq. ft.
2nd & 3rd FLOOR	2 x 1,096.6 sq. m. / 2 x 11,804 sq. ft.	2,193.3 sq. m. 23,608 sq. ft.
4th FLOOR		539.8 sq. m. 5,810 sq. ft.
5th FLOOR		600.5 sq. m. 6,464 sq. ft.
6th - 16th FLOOR - TOWER	11 x 593.6 sq. m. / 11 x 6,389 sq. ft.	6,529.1 sq. m. 70,279 sq. ft.
17th & 18th FLOOR	2 x 528.0 sq. m. / 2 x 5,683 sq. ft.	1,056.0 sq. m. 11,366 sq. ft.
19th FLOOR		455.0 sq. m. 4,897 sq. ft.
20th AMENITY / MECHANICAL PENTHOUSE		0.0 sq. m. 000 sq. ft.
TOTAL AREA		11,948.1 sq. m. 128,608 sq. ft.
TOWER FOOTPRINT AREA (NOT INCLUDING BALCONIES / PROJECTIONS)		738.7 sq. m. 7,951 sq. ft.

UNIT STATISTICS

STUDIO UNIT	1.6%	3
1 BEDROOM UNIT	14.7%	28
1 BEDROOM + DEN UNIT	40.3%	77
2 BEDROOM UNIT	31.4%	60
2 BEDROOM + DEN UNIT	4.2%	8
3 BEDROOM	7.9%	15
TOTAL		191

CAR PARKING AREA 'C' on SCHEDULE 1A

MINIMUM REQUIRED

RESIDENCE	- 1.2 PER DWELLING UNIT	229
VISITOR	- 0.2 PER DWELLING UNIT	38
TOTAL		267

PROVIDED

RESIDENCE	- 0.72 PER UNIT	141
VISITOR	- 0.1 PER UNIT	19
TOTAL		160

LOCATION

EXTERIOR - SHORT TERM	3
P3 LEVEL PARKING GARAGE	47
P2 LEVEL PARKING GARAGE	58
P1 LEVEL PARKING GARAGE	52

CAR PARKING — PARKING SPACE TYPE

STANDARD SPACE (2.60 x 5.20)	120
SMALL CAR SPACE (2.40 x 4.60)	33
PARALLEL SPACE - SHORT TERM (2.60 x 6.70)	3
BARRIER FREE SPACE TYPE A (3.40 x 5.20)	2
ELECTRIC VEHICLE SPACE (2.60 x 5.20)	2

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (191 UNITS)	96

PROVIDED

EXTERIOR	6
GROUND FLOOR	130
PARKING GARAGE	20
TOTAL	156

AMENITY SPACE

REAR YARD - COMMUNAL =	600.0 sq. m.
AT GRADE TERRACE - PRIVATE =	290.0 sq. m.
4th FLOOR INTERIOR - COMMUNAL =	200.0 sq. m.
4th FLOOR TERRACE - COMMUNAL =	300.0 sq. m.
ROOF TOP AMENITY ROOM =	175.0 sq. m.
ROOF TOP AMENITY TERRACE =	100.0 sq. m.
PRIVATE TERRACE =	220.0 sq. m.
PRIVATE BALCONIES =	500.0 sq. m.
TOTAL =	2,385.0 sq. m.
TOTAL COMMUNAL =	1,275.0 sq. m.
REQUIRED - 6.0m² PER UNIT (191) =	1,146.0 sq. m.
REQUIRED COMMUNAL @ 50% =	573.0 sq. m.

WASTE REQUIREMENT (191 UNITS)

GARBAGE	- 0.11 PER UNIT	21 YARDS
RECYCLING GMP	- 0.018 PER UNIT	4 YARDS
RECYCLING FIBER	- 0.038 PER UNIT	7 YARDS
COMPOST	- 240L PER 50 UNITS	4

LOT COVERAGE

PAVED SURFACE =	807.3 sq. m.	18.5%
BUILDING FOOTPRINT =	1,294.6 sq. m.	29.7%
LANDSCAPE OPEN SPACE =	2,259.4 sq. m.	51.8%
TOTAL =	4,361.3 sq. m.	100.0%

PROJECT DEVELOPER	PROJECT MANAGER
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WIND / SOUND ENDINEER	**LANDSCAPE ARCHITECT**
Gradient Wind 127 Walgreen Road, Ottawa, ON, Canada K0A 1L0 Tel.:(613) 836-0934 ext. 116 Cell: (613) 266-5273 E-Mail: joshua.foster@gradientwind.com	**Gino J. Aiello Landscape Architect** 110 Didsbury Road Unit 9, Ottawa, Ontario K2E 0C2 Tel: (613) 852-1343 Cell: (613) Email: gino@giala.com
LEGAL DESCRIPTION	**SURVEYOR**
SURVEYOR'S REAL PROPERTY REPORT WITH TOPOGRAPHIC DETAILS PART 1 - PLAN SHOWING LOT 141 REGISTERED PLAN 652 CITY OF OTTAWA J.D. BARNES LIMITED	**J.D. Barnes Ltd.** 62 STEACIE DRIVE, SUITE 103 KANATA, ON K2K 2A9 Tel.:(613) 731-7244 E-Mail: -----

No.	DESCRIPTION	DATE
1	ISSUED FOR ZBLA APPLICATION	2024 12 13
2	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 12 03
3	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 10 25
4	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 09 03
5	ISSUED FOR OPA / ZBLA PRE-CONSULT APP	2024 08 20

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: CREATIVE VENTURES — Development with Purpose

ARCHITECT: rla/architecture — roderick lahey architect inc. — 56 beech street, ottawa, ontario K1S 3J6 — t.613.724.9932 f.613.724.1209 rlaarchitecture.ca

PROJECT TITLE: 1815 MONTREAL ROAD — OTTAWA ONTARIO

SHEET TITLE: SITE PLAN

DRAWN: R.V. | CHECKED: S.S.

SCALE: 1:200

SHEET No.: SP-1

PROJECT No.: 2405

D07-12-22-0

2.2 Existing Conditions

2.2.1 Area Road Network

Montreal Road: Montreal Road is a City of Ottawa arterial road with a divided four-lane urban cross-section within the study area and sidewalks on both sides of the road. The posted speed limit is 60 km/h, and the Ottawa Official Plan reserves a 37.5-metre right of way within the study area. Montreal Road is a truck route.

Elmsmere Road: Elmsmere Road is a City of Ottawa local road with a two-lane urban cross-section with a sidewalk on the east side of the road. A sidewalk is present on the west side of the road south of Montreal Road for approximately 26 meters. The posted speed limit is 40 km/h, and the existing right-of-way is 18.0 metres.

Elwood Street: Elwood Street is a City of Ottawa local road with a two-lane urban cross-section. The posted speed limit is 40 km/h, and the measured right of way is 20.0 metres.

2.2.2 Existing Intersections

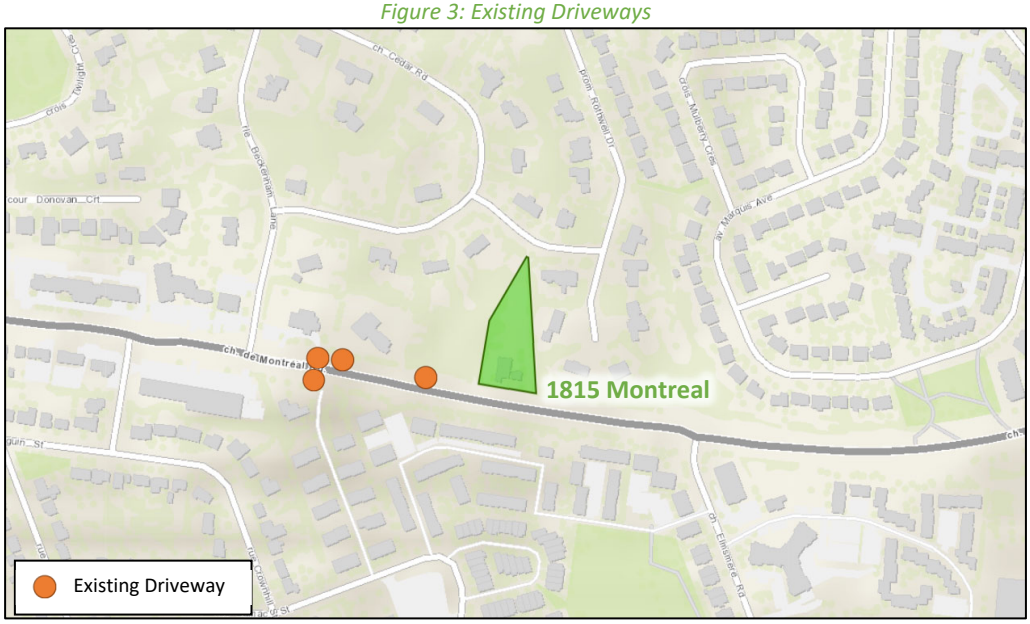
The existing signalized intersections within 400 metres of the site have been summarized below:

Montreal Road at Elwood Street	The intersection of Montreal Road and Elwood Street is a signalized intersection. The northbound approach and the private southbound approach each consist of a shared all-movements lane. The eastbound and westbound approaches each consist of an auxiliary left-turn lane, a through lane, and a shared through/right-turn lane. No turn restrictions were noted.
Montreal Road at Elmsmere Road	The intersection of Montreal Road and Elmsmere Road is a signalized intersection. The northbound approach consists of a shared left-turn/right-turn lane. The eastbound approach consists of two through lanes, and an auxiliary right-turn lane, and the westbound approach consists of an auxiliary left-turn lane, two through lanes, and a bus bay. Space is reserved for a future eastbound left-turn lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Within 200 metres of the proposed site access, driveways to a construction site, an office, and a single dwelling unit are present on the north side of Montreal Road, and a driveway to a single dwelling unit is present on the south side of Montreal Road. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: September 26, 2024

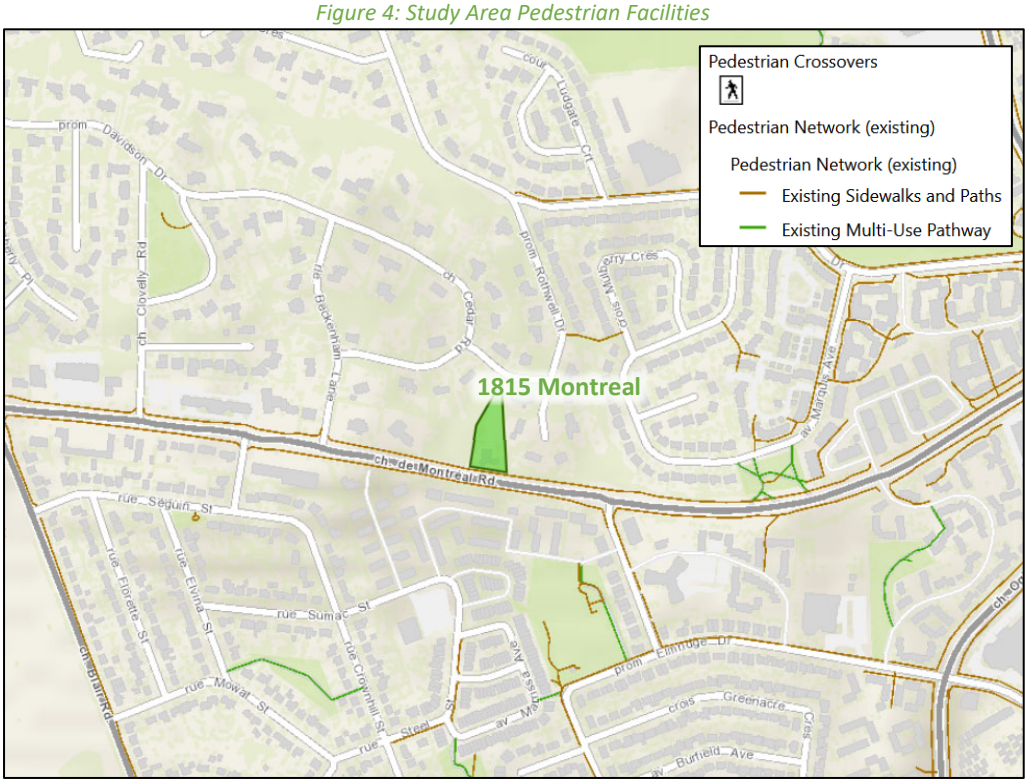
2.2.4 Cycling and Pedestrian Facilities

Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are provided along both sides of Montreal Road, on the east side of Elmsmere Road, and on the west side of Elmsmere Road south of Montreal Road for approximately 26 meters.

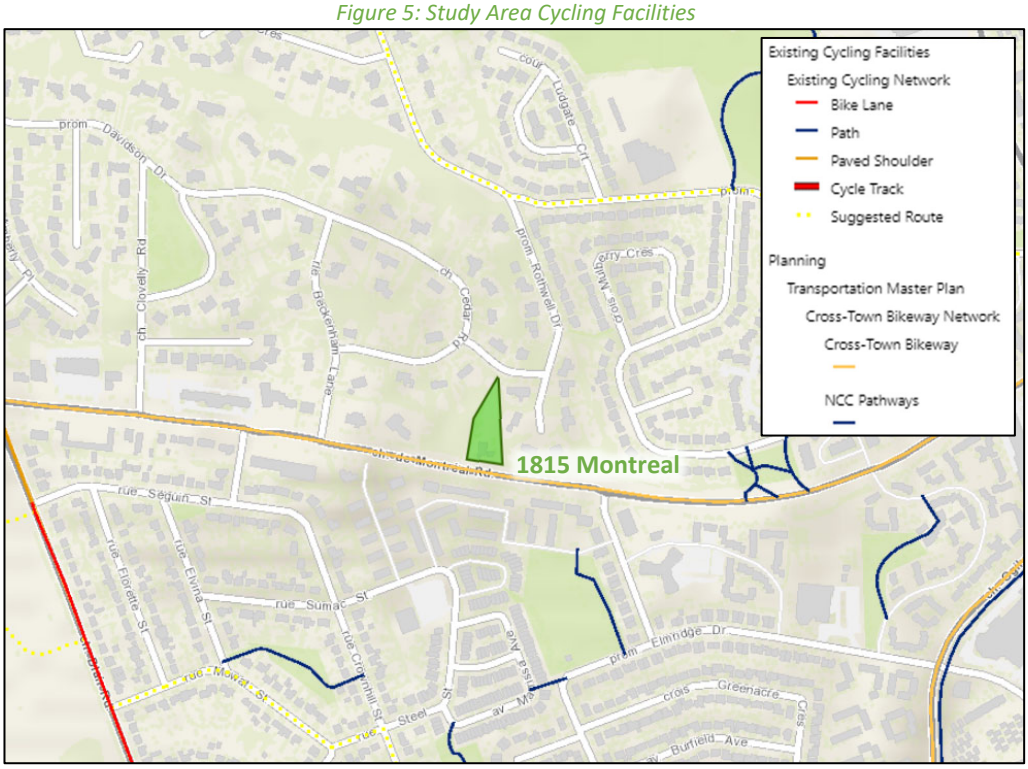
No cycling facilities are present within the study area. In the Transportation Master Plan – Part 1 (2023), Montreal Road is a crosstown bikeway.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: September 26, 2024

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: September 26, 2024

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7, respectively.

Figure 6: Existing Pedestrian Volumes

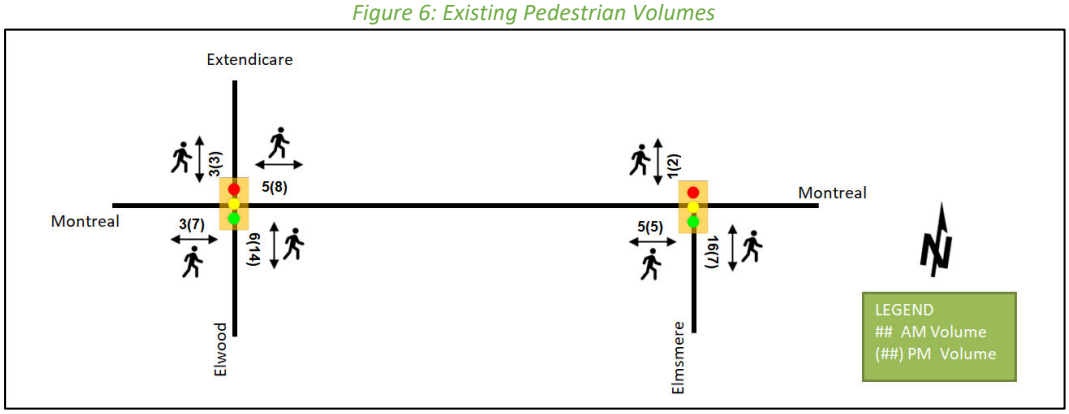
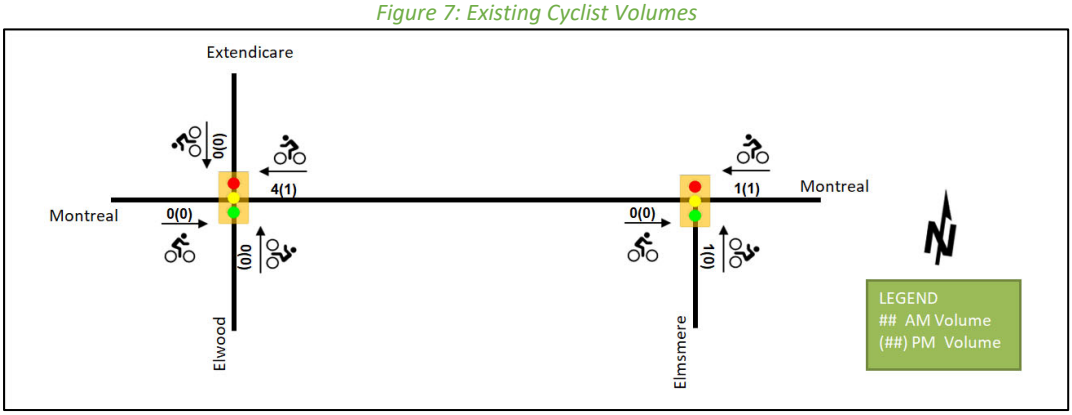


Figure 7: Existing Cyclist Volumes



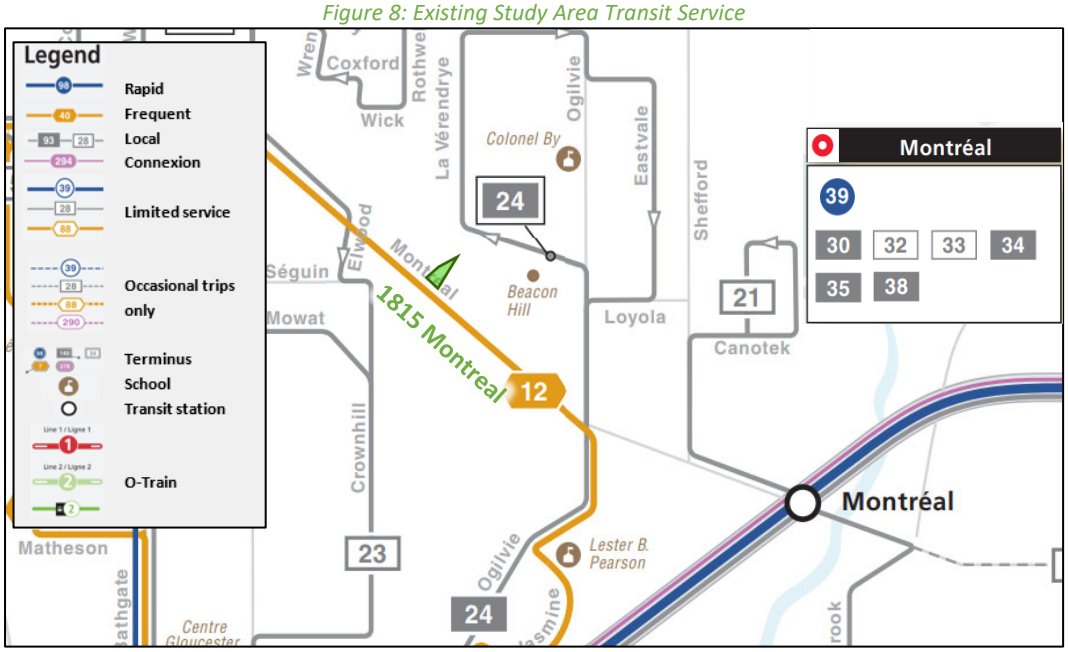
2.2.5 Existing Transit

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from September 26, 2024, and is included for general information purposes and context to the surrounding area.

Within the study area, route #12 travels along Montreal Road and route #23 travels unidirectionally eastward along Montreal and continuing southward along Elwood Street. The frequency of these routes within proximity of the proposed site based on September 26, 2024 service levels are:

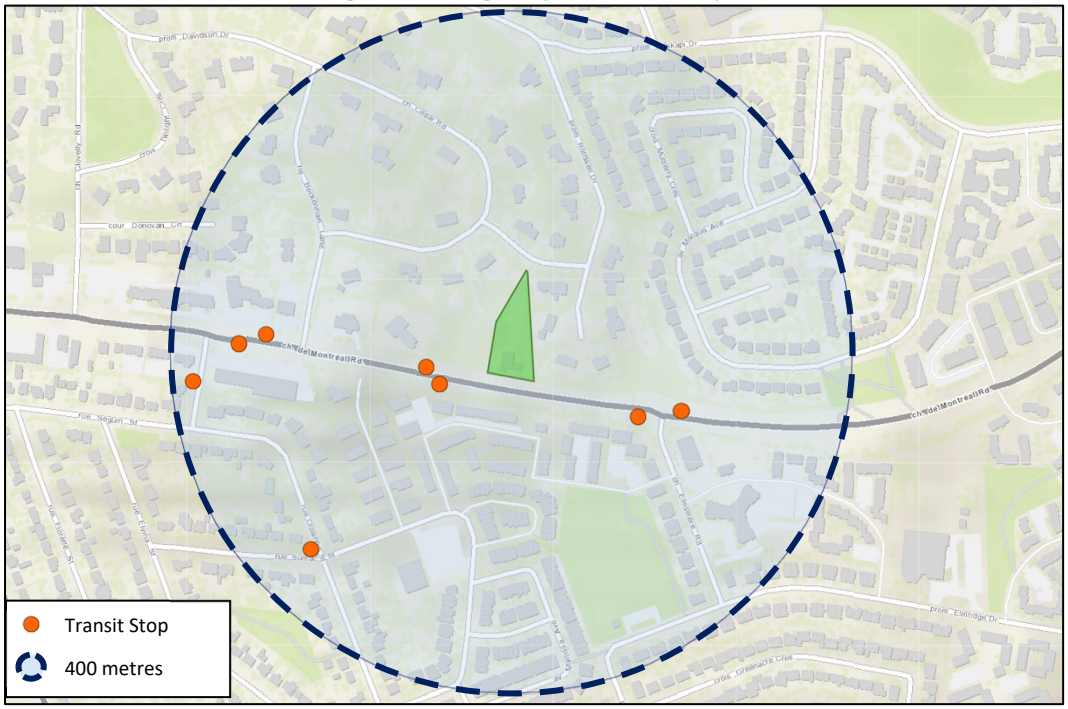
- Route # 12 – 15-minute service all day, 30-minute service early mornings and late nights
- Route #23 – 30-minute service operating during peak periods only

Figure 8: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: September 26, 2024

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: September 26, 2024

2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures within the study area.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the J & S Traffic Services for the existing study area intersections. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

Intersection	Count Date
Montreal Road at Elwood Street	Tuesday, October 15, 2024
Montreal Road at Elmsmere Road	Tuesday, October 15, 2024

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

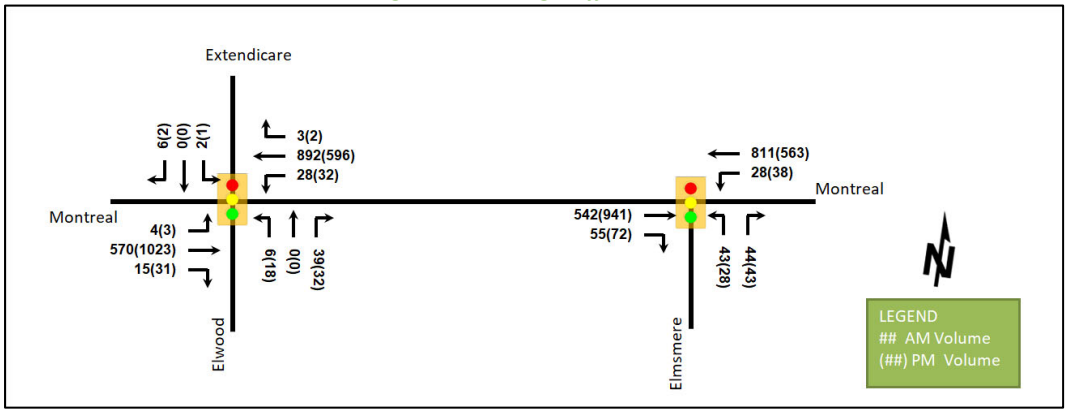


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Montreal Road at Elwood Street *Signalized*	EBL	A	0.02	10.8	1.9	A	0.01	10.3	1.5
	EBT/R	A	0.37	13.2	44.4	B	0.67	18.0	95.4
	WBL	A	0.09	8.3	6.9	A	0.25	17.1	12.1
	WBT/R	A	0.57	15.6	92.7	A	0.38	13.8	55.6
	NB	A	0.11	6.8	7.2	A	0.13	7.9	8.4
	SB	A	0.02	0.1	0.0	A	0.01	0.0	0.0
	Overall	**A**	**0.37**	**14.3**	-	**A**	**0.43**	**16.2**	-
Montreal Road at Elmsmere Road *Signalized*	EBT	A	0.25	3.9	50.9	A	0.41	2.7	104.7
	EBR	A	0.06	2.1	5.9	A	0.07	0.8	m3.2
	WBL	A	0.06	7.4	6.1	A	0.12	6.9	8.5
	WBT	A	0.37	7.5	57.9	A	0.25	5.1	37.3
	NBL/R	A	0.30	17.7	17.5	A	0.29	17.8	14.0
	Overall	**A**	**0.36**	**6.6**	-	**A**	**0.39**	**4.2**	-

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersections operate well. No capacity issues are noted.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 illustrates the area collisions, and Table 4 summarizes the total collisions for each of the locations analyzed. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		5	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	1	20%
	Property Damage Only	4	80%
Initial Impact Type	**Angle**	1	20%
	Rear end	2	40%
	SMV Other	2	40%
Road Surface Condition	**Dry**	3	60%
	Loose Snow	1	20%
	Slush	1	20%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

Figure 11: Study Area Collision Records

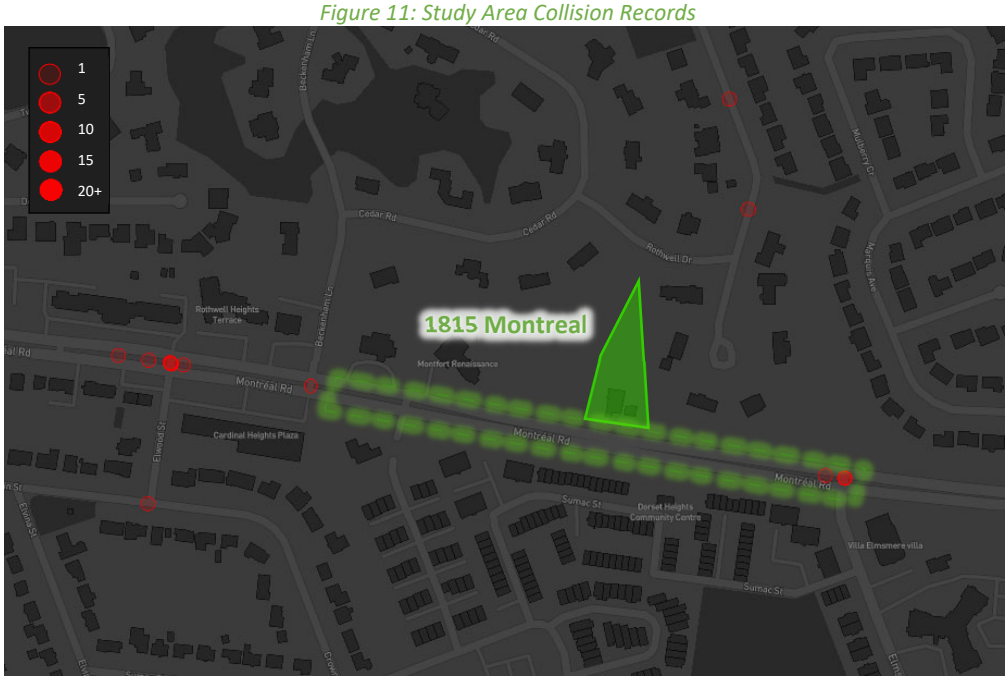


Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	**5**	**100%**
Elmsmere Rd @ Montreal Rd	4	80%
Montreal Rd btwn Chimney Hill Way & Elmsmere Rd	1	20%

Within the study area, there are a total of five collisions during the 2018-2025 time period, with four involving property damage only and the remaining one having non-fatal injuries. No location is noted to have experienced an average of one collision per year and no vulnerable user collisions are documented. The single angle collision occurred at the intersection of Montreal Road at Elmsmere Road in snowing environmental conditions with a slushy road surface in daylight, and likely due to weather conditions. No further collision review is required as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

2.3.1.1 Transportation Master Plan Part 1 (2023)

A sidewalk along Elwood Street is identified within the study area in the Active Transportation Projects.

2.3.1.2 Transportation Master Plan Part 2 (2024)

Part 2 of the Transportation Master Plan will identify the road network concept and transit network concept, including the affordable network and is presently undergoing consultation. This list is expected to be released by the end of 2024.

2.3.1.3 Transportation Master Plan (2013)

The Transportation Master Plan (2013) is instructive as to which transportation facilities are planned and can be referenced during the interim until the Transportation Master Plan Part 2 is released. The Rapid Transit and Transit Priority Network's Network Concept diagram identifies a continuous transit priority measures corridor along Montreal Road.

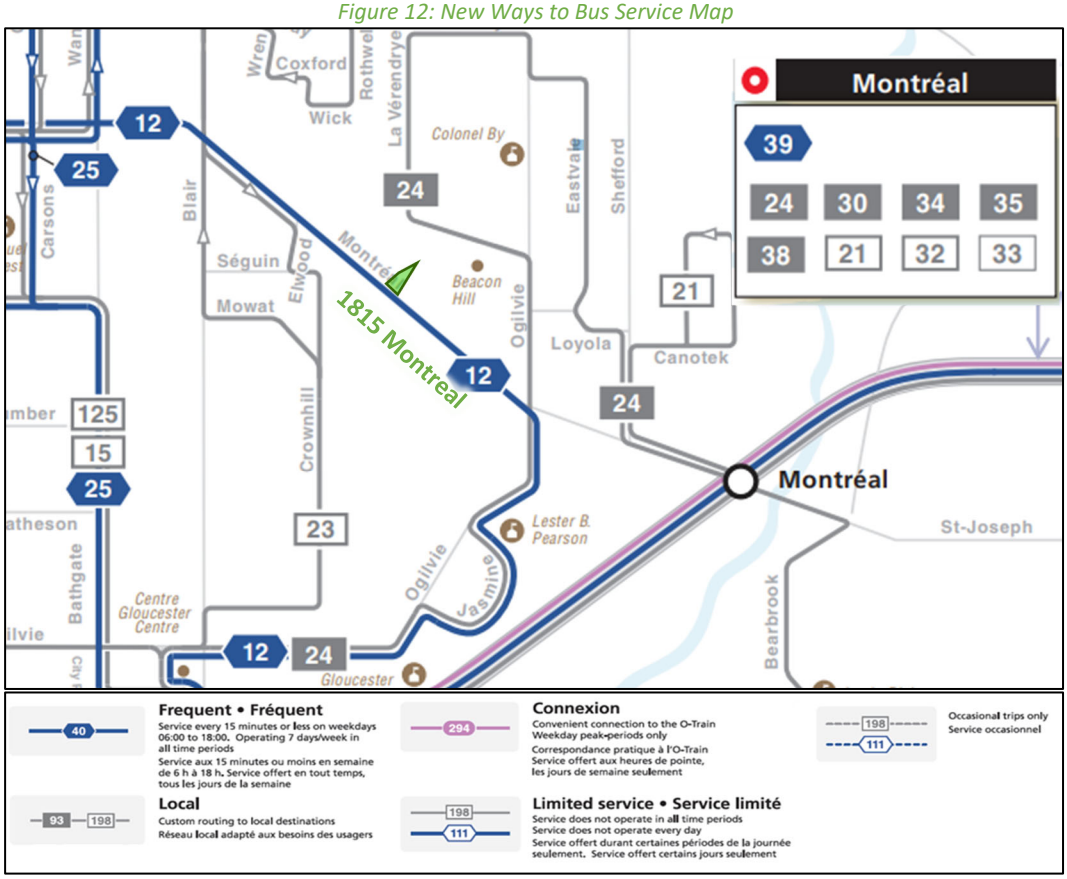
2.3.1.4 Montreal-Blair Transit Priority EA

Montreal-Blair Road Transit Priority Corridor Planning and Environmental Assessment Study proposes transit priority measures from St. Laurent Boulevard to Shefford Road, to be coordinated with the Montreal Road Revitalization Project. The functional design is excerpted in Appendix E, and includes a focus on isolated transit priority measures and the enhancement of the pedestrian and cycling facilities within the corridor. The EA was completed in 2022, and the improvements are assumed as being implemented after 2031.

2.3.1.5 OC Transpo's New Ways to Bus

Responding to recent ridership trends and anticipating the upcoming completion of the Stage 2 expansion of LRT service within the City, the OC Transpo bus service is planned to be recalibrated to focus on frequency, local service in neighbourhoods, and connections to key destinations. These changes are expected in 2025, and the new service map is illustrated in Figure 12.

Figure 12: New Ways to Bus Service Map



Source: www.octranspo.com Accessed: October 28, 2024

2.3.2 Other Study Area Developments

1765 Montreal Road & 9 Beckenham Lane

The proposed development includes a zoning bylaw amendment and site plan control applications to permit the construction of a nine-storey building containing 159 condominium units and 12 townhouse units, for a total of 169 residential units. A total of 35 AM and 36 PM new peak hour two-way vehicle trips are projected as a result of the proposed development, and while yet to be constructed, the development was initially assumed to be built-out by 2023. (Novatech, 2022)

1649 Montreal Road & 741 Blair Road

The proposed development includes a site plan application to construct of a 26-storey mixed-use building on a four-storey podium, massed mostly on the 1649 Montreal Road parcel, comprising 252 residential dwelling units and 7,446 ft2 of ground floor commercial space. A total of 52 AM and 63 PM new peak hour two-way vehicle trips are projected as a result of the proposed development, and while yet to be constructed, the development was initially anticipated to be built-out by 2024. (CGH Transportation, 2024)

971 Montreal Road

The development application includes a site plan for a nine-storey mid-rise building with 78 units. The development is anticipated to be built-out by 2025, and the trip generation trigger for a TIA was not met. (CGH Transportation, 2021)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of Montreal Road at Elwood Street and at Elmsmere Road. The boundary road will be Montreal Road, and no screenlines are present within proximity of the site and none will be evaluated as part of this study.

3.2 Time Periods

As the proposed development is composed entirely of residential units the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2030. As a result, the full build-out plus five years horizon year is 2035.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Beacon Hill have been summarized in Table 5.

Table 5: TRANS Trip Generation Manual Recommended Mode Shares – Beacon Hill

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	48%	52%
Auto Passenger	9%	16%
Transit	30%	28%
Cycling	3%	0%
Walking	10%	4%
Total	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 6 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 6: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Person Trip Rates
Multi-Unit (High-Rise)	221 & 222 (TRANS)	AM	0.80
		PM	0.90

Using the above person trip rates, the total person trip generation has been estimated. Table 7 summarizes the total person trip generation for the residential land use by peak period.

Table 7: Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	191	47	106	153	100	72	172

Using the above mode share targets and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential development. Table 8 summarizes the residential trip generation by mode and peak hour.

Table 8: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (High-Rise)	Auto Driver	**48%**	11	25	35	**52%**	22	17	39
	Auto Passenger	**9%**	2	5	7	**16%**	7	5	12
	Transit	**30%**	8	18	25	**28%**	13	10	23
	Cycling	**3%**	1	2	3	**0%**	0	0	0
	Walking	**10%**	3	6	9	**4%**	2	2	4
	Total	**100%**	**25**	**56**	**79**	**100%**	**44**	**34**	**78**

As shown above, a total of 35 AM and 39 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Beacon Hill. Table 9 below summarizes the distributions.

Table 9: OD Survey Distribution – Beacon Hill

To/From	Residential % of Trips
North	5%
South	30%
East	20%
West	45%
Total	**100%**

4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. The trip assignment is based on the right-in/right-out nature of the accesses given the median on the roadway.

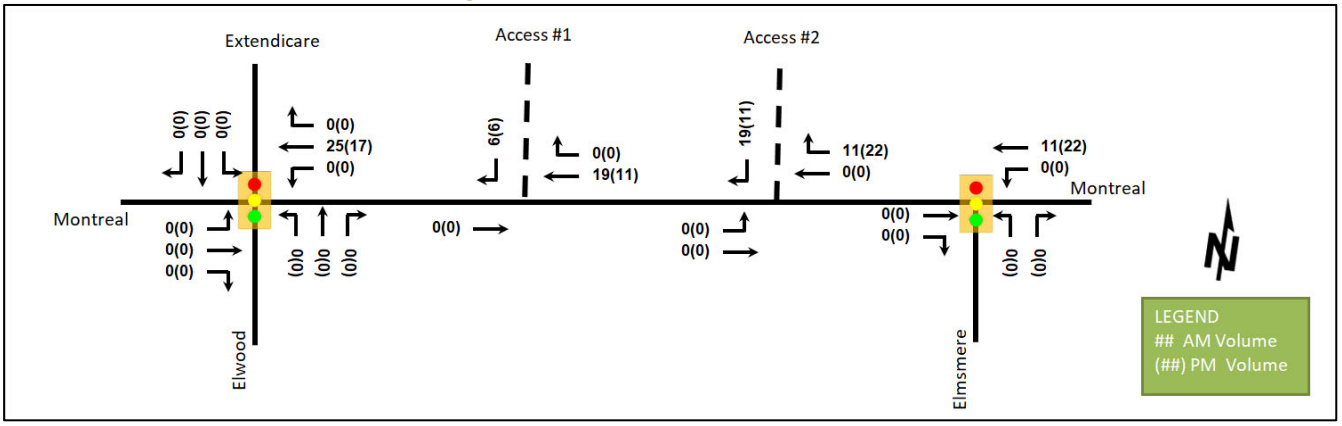
Given the presence of the median along Montreal Road, the possibility of traffic arriving from the west bypassing the site and using the adjacent signalized intersection at Elmsmere Road to perform a U-turn may be a possibility. A review of the counts did not note any U-turns during the peak hours, although some were noted during the off-peak hours and were captured in historic counts during peak hours. Given the reserved space for an auxiliary eastbound left-turn lane at the Montreal Road at Elmsmere Road intersection, any U-turns are not anticipated to disrupt through traffic at this location. Similarly, the collision history did not note a concern regarding potential U-turns. Consistent with the existing conditions, no U-turns were assumed for the trip assignment/distribution.

Table 10 summarizes the proportional assignment to the study area roadways, and Figure 13 illustrates the new site generated volumes.

Table 10: Trip Assignment

To/From	Via
North	5% Montreal Rd (E)
South	30% Montreal Rd (E)
East	20% Montreal Rd (E)
West	35% Montreal Rd (E)
Total	**100%**

Figure 13: New Site Generation Auto Volumes



5 Exemption Review

Table 11 summarizes the exemptions for this TIA.

Table 11: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Exempt
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Exempt
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site	Exempt

Module	Element	Explanation	Exempt/Required
		generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Exempt
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt – All applications require a discussion of site access design

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is a residential building. Parking for vehicles is provided underground and bicycle parking is primarily provided within a secure room on ground floor, within additional spaces provided in the parking levels accessed via an 11% grade and within surface racks.

A one-way (westbound) woonerf-style drive aisle is proposed to connect the accesses, permitting bicycle use, pedestrian crossings, and vehicle pick-ups and drop-offs. Hard surface connections are proposed between the building entrances and the existing sidewalk along Montreal Road frontage. The bicycle parking room entrance is located at the back of the building accessed via the loading aisle and convex mirrors will be installed to ensure sightlines between the ends of the aisle along the building.

The infrastructure TDM checklist is provided in Appendix F.

6.2 Circulation and Access

Underground parking access for vehicles is provided on the east side of the parcel via a right-in/right-out access on Montreal Road. A woonerf-style drive aisle links the eastern to the western access via one-way movements and includes layby parking on the north side that accommodates Para Transpo passenger boarding and alighting operations. The western access permits emergency vehicles, garbage collection and move-in operations.

Bicycles can access the site through either access.

Vehicle swept paths for the various vehicle operations noted above were reviewed to confirm movements will be permitted on site. All turning templates for these uses are provided in Appendix G.

7 Parking

7.1 Parking Supply

The site provides a total of 160 vehicle parking spaces accounting for three pick-up and drop-off spaces at grade and 157 spaces in 2.5 parking levels below grade. Parking is designated as having 19 spaces for visitors and 141 spaces for residents.

According to the Zoning By-Law, given the site is within Area C shown on Schedule 1A, the minimum vehicle parking requirement for residential units is 1.2 spaces per dwelling unit, and the minimum visitor parking requirement is 0.2 spaces per dwelling unit. As such, a total of 229 residential and 38 visitor vehicle parking spaces would be required to meet the Area C vehicle parking rates set out by the Zoning By-Law.

According to the Zoning By-Law, given the site is within Area C shown on Schedule 1, the minimum bicycle parking requirement is 0.5 spaces per dwelling unit, and a total of 96 bicycler parking spaces are required. The site provides a total of 156 bicycle parking spaces, including 130 on the ground floor, 20 within the parking levels, and six exterior spaces within surface racks, which exceed the Zoning By-Law requirements.

The site is pursuing a reduced parking rate through the zoning amendment, given that it is located along an evolving arterial corridor that will include robust active transportation facilities and transit priority in the future. The reduction in parking aligns with the forthcoming update to the Zoning By-Law which is proposed to eliminate minimum parking rates city-wide.

Supporting the proposed auto parking rate, the site is providing 0.82 bicycle parking spaces per dwelling unit, which is greater than the zoning-required bicycle parking for developments in the area and will capitalize on the active transportation investments the City is making through the Montreal-Blair Transit Priority Corridor project.

Based on the City of Ottawa Accessibility Design Standards (2015), the total number of accessible vehicle parking spaces required is six spaces, with three Type A spaces and three Type B spaces. It is recommended that the site meet this accessible parking provision through the site plan application.

8 Boundary Street Design

Table 12 summarizes the MMLOS analysis for the boundary street of Montreal Road. The boundary street analysis is based on the policy area of Arterial Mainstreet. The MMLOS worksheets has been provided in Appendix H.

Table 12: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Montreal Road (Existing)	**E**	C	**F**	B	**D**	C	A	D
Montreal Road (Future)	**D**		A		**D**		A	

Montreal Road does not meet the pedestrian LOS targets due to the operating speeds. Although the pedestrian LOS will be improved from E to D once the Montreal improvements are implemented, to meet the theoretical pedestrian LOS targets, the operating speed would need to be less than 60 km/h or the curb lane vehicle volumes would need to be reduced to below 3000 AADT. Arterial roads typically cannot meet these targets.

Montreal Road does not meet the bicycle LOS targets in the existing conditions, however, will meet targets once the Montreal improvements are implemented. Montreal Road does not meet the transit LOS targets. Given that the Montreal-Blair Transit Priority EA was conducted to study transit priority, it is assumed that the selected treatment meets the City's transit LOS objectives. No mitigations or modifications to address MMLOS are required as part of this application.

9 Access Intersections Design

9.1 Location and Design of Access

The site accesses consist of two right-in/right-out connections onto Montreal Road, where the western access will function primarily as an outbound access with respect to vehicular traffic outside of occasional loading/garbage collection use. The access and drive aisle configuration has been designed to accommodate Para Transpo passenger boarding and alighting, to provide a designated area for carpool drivers, taxis, and ride-hailing services in line with TDM measure 4.1.1 as well as deliveries, and to accommodate loading and garbage collection away from the public right-of-way. The woonerf-style aisle is located within a hydro easement, which requires the building to be located further from the road and provides the opportunity for the proposed programming.

9.1.1 Widths and Number of Accesses

The eastern access is 6.0 metres wide at the future property line, and the western access is 5.5 metres wide at the future property line to the narrowing, but permits firetrucks beyond this width. Both of these widths comply with the Private Approach By-Law minimum and maximum width requirements at the property line. The site frontage is 56.4 metres, and the proposed number and configurations of accesses comply with the Private Approach By-Law which permits two two-way private approaches.

9.1.2 Locations of Accesses

Provision 25(1)(p) of the Private Approach By-Law states that accesses are required to be offset 3.0 metres from the adjacent property line. Although the western access is noted within this distance, the adjacent parcel has an approved site plan for a two-storey office building and one-storey accessory building with a single two-way access approximately 40 metres west of the shared property line. No impacts to the adjacent parcel are therefore noted, and the proposed accesses for each parcel are appropriately separated. As such, the western access is recommended to be approved in line with Private Approach By-Law provision 25(1)(r).

According to provision 25(m)(ii) of the Private Approach Bylaw, a minimum distance of 30 meters is required between any two-way private approach and any other private approach on the site given it fronts an arterial road. The distance between two accesses is 39.8 metres, thus the minimum offset from the Private Approach By-Law is met.

9.1.3 Throat Length

According to Table 8.9.3 of the Geometric Design Guide for Canadian Roads (TAC, 2017), apartment buildings between 100 and 200 units are suggested to correspond to a minimum throat length for their accesses of 25 metres given a connection to an arterial road.

Given the back of sidewalk in the future conditions will be 1.34 metres closer to the site than in the existing conditions, the ensuing discussion on throat length will reference the more conservative future conditions.

At the eastern access, conflicts along the throat of the access from the back of the future sidewalk are:

- The intersection between the north-south drive aisle and the woonerf at 7.5 metres
- The layby along the woonerf at 23 metres
- The garage door at 44 metres

The potential conflict resulting at the intersection of the drive aisle and the woonerf would be due to outbound queued traffic blocking inbound drivers looking to access the woonerf. Given that space for one vehicle is available between the woonerf and the sidewalk for outbound vehicles to queue, this condition would only result in blockage of the sidewalk and cycletrack in the case that two outbound vehicles are queued and two inbound vehicles arrive at the same time, with the first in the succession looking to access the woonerf. Examining the forecasted traffic at the site accesses in Section 4.4, during the peak hours, an averaged two-way traffic at the eastern site access is one vehicle every 1.5 minutes. Therefore, the convergence of four vehicles at the access simultaneously, equating to approximately six minutes' traffic, and in the specific configuration to cause a blockage, is anticipated to be very infrequent.

Moreover, accounting for temporary blockage of the sidewalk and cycletrack in the space between the back of sidewalk and the roadway edge, three vehicles would need to be queued on the outbound movement at the same time as three inbound vehicles arrive with the first in the succession looking to access the woonerf to potentially cause spillback onto Montreal Road. Given the outbound movement is minor stop-controlled onto the median-separated westbound Montreal Road, inbound vehicles turning into the site access are expected to create gaps in the traffic stream for outbound queues to clear. Additionally, outbound queues would only be expected during the most congested periods, where impacts from spillback onto the arterial road are negligible due to low speeds.

The western access throat length is approximately 6.5 metres to the intersection with the woonerf. This length is considered to be sufficient given the low volumes associated with the loading zone and is an outbound only for any pick-up/drop-off vehicles on the one-way woonerf.

Given the foregoing discussion, the proposed access throat configuration is recommended to be approved.

9.1.4 Recommended Access Design Elements

The accesses will comply with the City of Ottawa Standard SC7.1.

10 Transportation Demand Management

10.1 Context for TDM

The mode shares used within the TIA represent the unmodified district mode shares. Overall, the modal shares are likely to be achieved, and supporting TDM measures should be provided to encourage shifts toward sustainable modes.

The subject site is not within a design priority area. Total bedrooms are estimated to be 289, and no age restrictions are noted.

10.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto travel and transit. A limited vehicle parking provision is proposed along with an increase in bicycle parking, which will reduce the risk of failing to meet recommended mode shares. Furthermore, the study area intersections are anticipated to have the residual capacity, therefore, risks to other network users from failing to meet mode share targets are low.

10.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix F. The key TDM measures recommended include:

- Posting of pedestrian, cycling, and transit information and maps at primary entrances/exits
- Inclusion of a 1-year Presto card for first time new residential and retail tenants, along with a set time frame for this offer (e.g., 6-months) from the 'opening' of the buildings/towers
- 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
- 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)
- Unbundle parking from purchase/rental costs

11 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed redevelopment consists of a 21-storey residential building comprising 191 dwelling units
- The site is proposed to be accessed by two right-in/right-out connections onto Montreal Road, where the western access will function primarily as an outbound access with respect to vehicular traffic, outside of occasional loading/garbage collection use
- The development is proposed to be completed as a single phase by 2028

TIA Screening and Exemptions

- The TIA Screening form indicated a full TIA was required due to trip generation and location triggers

- The exemption review for the TIA did not require new street networks, background network travel demand, demand rationalization, neighbourhood traffic calming review, transit review, network concept review, intersection control review or intersection design review

Existing Conditions

- Montreal Road is an arterial road, and Elmsmere Road and Elwood Street are local roads in the study area
- Sidewalks are provided along both sides of Montreal Road, on the east side of Elmsmere Road, and on the west side of the Elmsmere Road south of Montreal Road for approximately 26 meters
- No cycling facilities are present within the study area
- Within the study area, there are a total of five collisions during the 2018-2025 time period, with four involving property damage only and the remaining one having non-fatal injuries, one being an angle collision at the intersection of Montreal Road at Elmsmere Road which may have been associated with winter environmental and road surface conditions

Planned Conditions

- A sidewalk along Elwood Street is identified within the study area in the Active Transportation Projects
- Montreal-Blair Road Transit Priority Corridor Planning and Environmental Assessment Study proposes transit priority measures from St. Laurent Boulevard to Shefford Road, to be coordinated with the Montreal Road Revitalization Project, and the section of Montreal Road along the site frontage will be upgraded to include sidewalks and cycletracks on both sides of the road
- The OC Transpo bus service is planned to be recalibrated to focus on frequency, local service in neighbourhoods, and connections to key destinations through its New Ways to Bus initiative, and these changes are expected in 2025

Development Generated Travel Demand

- The proposed development is forecasted produce 79 two-way people trips during the AM peak hour and 78 two-way people trips during the PM peak hour
- Of the forecasted people trips, 35 two-way trips will be vehicle trips during the AM peak hour and 39 two-way trips will be vehicle trips during the PM peak hour
- Of the forecasted people trips, 25 two-way trips will be transit trips during the AM peak hour and 23 two-way trips will be transit trips during the PM peak hour
- Of the forecasted trips, 5 % are anticipated to travel north, 30% to the south, 20% to the east, and 45% to the west

Development Design

- Parking for vehicles is provided underground, and bicycle parking is primarily provided within a secure room on ground floor, with additional spaces provided in surface racks
- A one-way (westbound) woonerf-style drive aisle is proposed to connect the accesses, permitting bicycle use, pedestrian crossings, and vehicle pick-ups and drop-offs
- The bicycle parking room entrance is located at the back of the building accessed via the loading aisle, convex mirrors will be installed to ensure sightlines between the ends of the aisle along the building
- The woonerf-style aisle permits Para Transpo passenger boarding and alighting
- Emergency vehicles can access the western site access which has designed to permit fire access to the building

- Swept paths for the garbage collection design vehicle, and move-in trucks were reviewed to confirm movements will be permitted on site

Parking

- The site provides a total of 160 vehicle parking spaces, including 19 visitor spaces, and 141 residential spaces
- Parking totals include three pick-up and drop-off spaces at grade and 157 spaces in 2.5 below grade parking levels
- The site provides a total of 156 bicycle parking spaces, including 130 on the ground floor, 20 within the parking levels, and six exterior spaces within surface racks, which exceed the Zoning By-Law requirements
- The site is pursuing a reduced parking rate through the zoning amendment, given that it is located along an evolving arterial corridor that will include robust active transportation facilities and transit priority in the future
- The reduction in parking aligns with the forthcoming update to the Zoning By-Law which is proposed to eliminate minimum parking rates city-wide
- Supporting the proposed auto parking rate, the site is providing 0.82 bicycle parking spaces per dwelling unit, which is greater than the zoning-required bicycle parking for developments in the area and will capitalize on the active transportation investments the City is making through the Montreal-Blair Transit Priority Corridor project
- It is recommended that the site meet this accessible parking provision through the site plan application

Boundary Street Design

- The Montreal Road pedestrian LOS will be improved from E to D once the Montreal improvements are implemented
- To meet the theoretical pedestrian LOS targets, the operating speed would need to be less than 60 km/h, or the curb lane vehicle volumes would need to be reduced to below 3000 AADT, which arterial roads typically cannot meet
- Montreal Road does not meet the bicycle LOS targets in the existing conditions, and it will be met once the Montreal improvements are implemented
- No mitigations or modifications to address MMLOS are required as part of this application

Access Intersections Design

- The site accesses consist of two right-in/right-out connections onto Montreal Road, where the western access will function primarily as an outbound access with respect to vehicular traffic outside of occasional loading/garbage collection use
- The access and drive aisle configuration has been designed to accommodate Para Transpo passenger boarding and alighting, to provide a designated area for carpool drivers, taxis, and ride-hailing services in line with TDM measure 4.1.1 as well as deliveries, and to accommodate loading and garbage collection away from the public right-of-way
- The eastern access is 6.0 metres wide at the future property line, and the western access is 5.5 metres wide at the future property line to the narrowing, but permits firetrucks beyond this width and both widths comply with the Private Approach By-Law minimum and maximum width requirements
- The site frontage is 56.4 metres, and the proposed number and configurations of accesses comply with the Private Approach By-Law which permits two two-way private approaches

- Although the western access is noted within 3 metres from the adjacent property line, the western access is recommended to be approved in line with Private Approach By-Law provision 25(1)(r)
- Although the throat lengths of the eastern and western accesses to the lay-by area do not meet TAC suggested minimums, they are considered to be sufficient based on the ability to accommodate the expected site operation without impacts to Montreal Road or its active transportation facilities
- Accesses will comply with the City of Ottawa standard drawing SC7.1

TDM

- Supportive TDM measures to be included within the proposed development should include:
  - Posting of pedestrian, cycling, and transit information and maps at primary entrances/exits
  - Inclusion of a 1-year Presto card for first time new residential and retail tenants, along with a set time frame for this offer (e.g., 6-months) from the 'opening' of the buildings/towers
  - 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
  - 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)
  - Unbundle parking from purchase/rental costs

12 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

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Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2023 Revisions to 2017 TIA Guidelines
Step 1 - Screening Form

Date: 29-Oct-24
Project Number: 2024-117
Project Reference: 1815 Montreal

1.1 Description of Proposed Development	
Municipal Address	1815 Montreal Road
Description of Location	On the north side of Montreal Road between Ewood Street and Elmsmere Road
Land Use Classification	Residential First Density Zone (R1AA)
Development Size	A 19-storey residential building comprising 191 dwelling units
Accesses	A two-way right-in/right-out access on Montreal Road on the east side of the parcel, and a two-way occasional use loading access on the west side of the parcel
Phase of Development	Single
Buildout Year	2028
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (High-Rise)	
Development Size	191	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers		
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?	Yes	Montreal Road is a Cross-Town Bikeway and Transit Priority Corridor
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No	
Location Trigger	Yes	

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

Certification Form for TIA Study PM

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
- ☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

[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.

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

Revision Date: June 2023

Dated at Ottawa (City) this 17 day of August , 20 23 .

Name : Andrew Harte

Professional title: Senior Transportation Engineer / Vice-President Ottawa

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)
Address: 6 Plaza Court
City / Postal Code: Ottawa, K2H 7W1
Telephone / Extension: 613-697-3797
Email Address: andrew.harte@cghtransportation.com

Stamp

Revision Date: June 2023

Appendix B

Turning Movement Counts

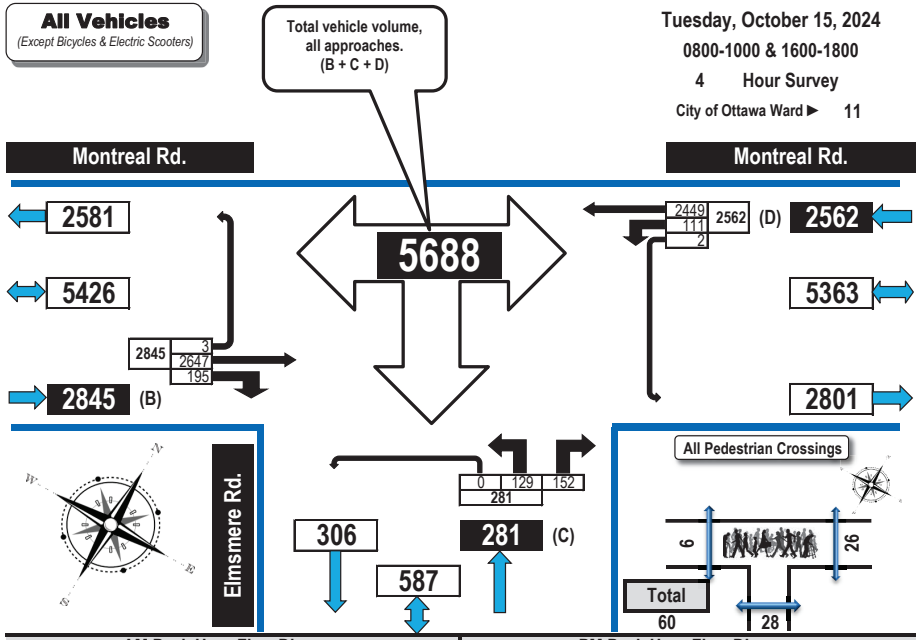
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Elmsmere Road & Montreal Road — Gloucester, ON

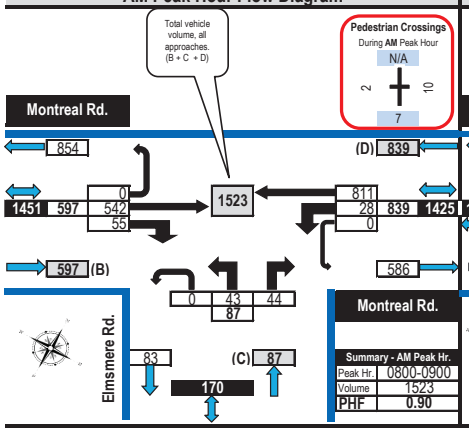
All Vehicles
(Except Bicycles & Electric Scooters)

Total vehicle volume, all approaches. (B + C + D)

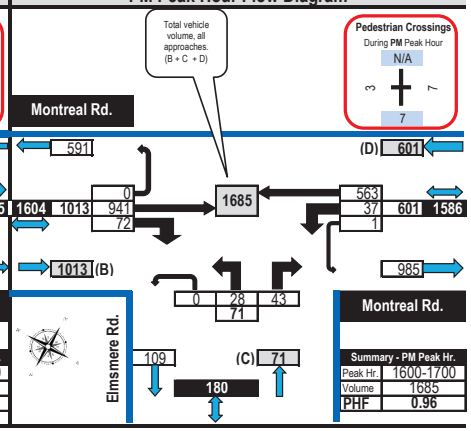
Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



AM Peak Hour Flow Diagram



PM Peak Hour Flow Diagram



Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4 to 13)
Flow Diagram

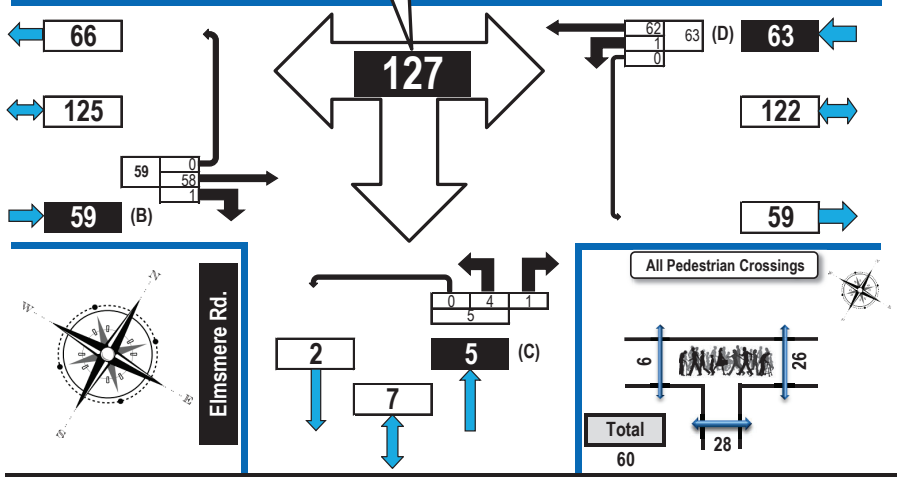
Elmsmere Road & Montreal Road — Gloucester, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses). Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Total heavy vehicle volume, all approaches. (B + C + D)

Heavy Vehicles Comprise **2.23%** of Total Traffic

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Elmsmere Rd. Northbound					N/A Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900		19	1	0	20	0	22		0	22	2		1	0	3						45
0900-1000		15	0	0	15	1	22		0	23	1		0	0	1						39
1600-1700		10	0	0	10	0	11		0	11	0		0	0	0						21
1700-1800		14	0	0	14	0	7		0	7	1		0	0	1						22
Totals		58	1	0	59	1	62		0	63	4		1	0	5					0	127

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

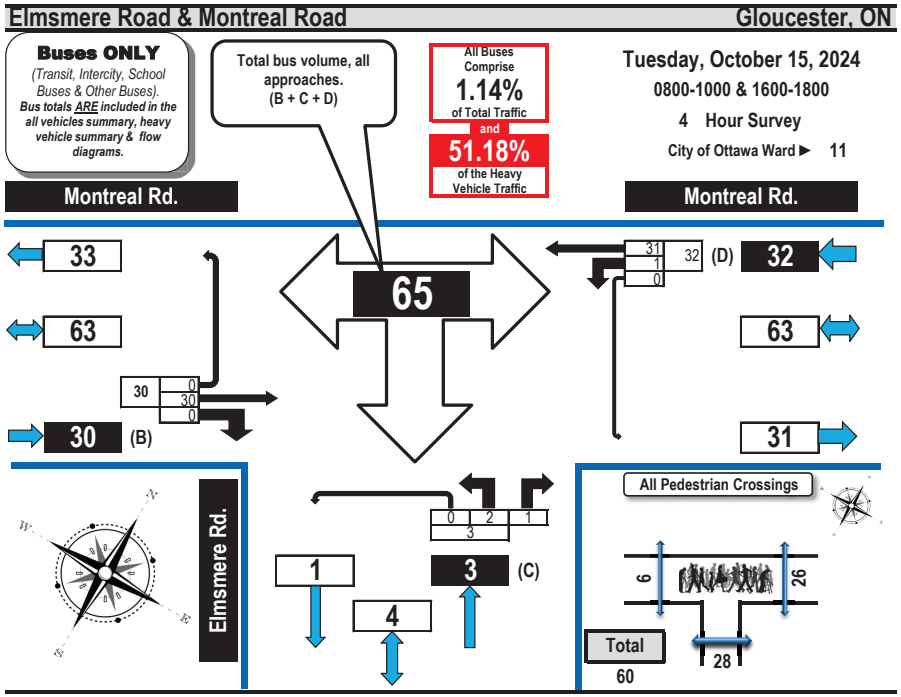
Elmsmere Road & Montreal Road — Gloucester, ON

Buses ONLY
(Transit, Intercity, School Buses & Other Buses).
Bus totals ARE included in the all vehicles summary, heavy vehicle summary & flow diagrams.

Total bus volume, all approaches. (B + C + D)

All Buses Comprise **1.14%** of Total Traffic and **51.18%** of the Heavy Vehicle Traffic

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



	Montreal Rd.					Montreal Rd.					Elmsmere Rd.					N/A					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900		10	0	0	10	0	12		0	12	1		1	0	2						24
0900-1000		7	0	0	7	1	9		0	10	1		0	0	1						18
1600-1700		5	0	0	5	0	6		0	6	0		0	0	0						11
1700-1800		8	0	0	8	0	4		0	4	0		0	0	0						12
Totals		30	0	0	30	1	31		0	32	2		1	0	3						65

Turning Movement Count
Bicycle Summary
Flow Diagram

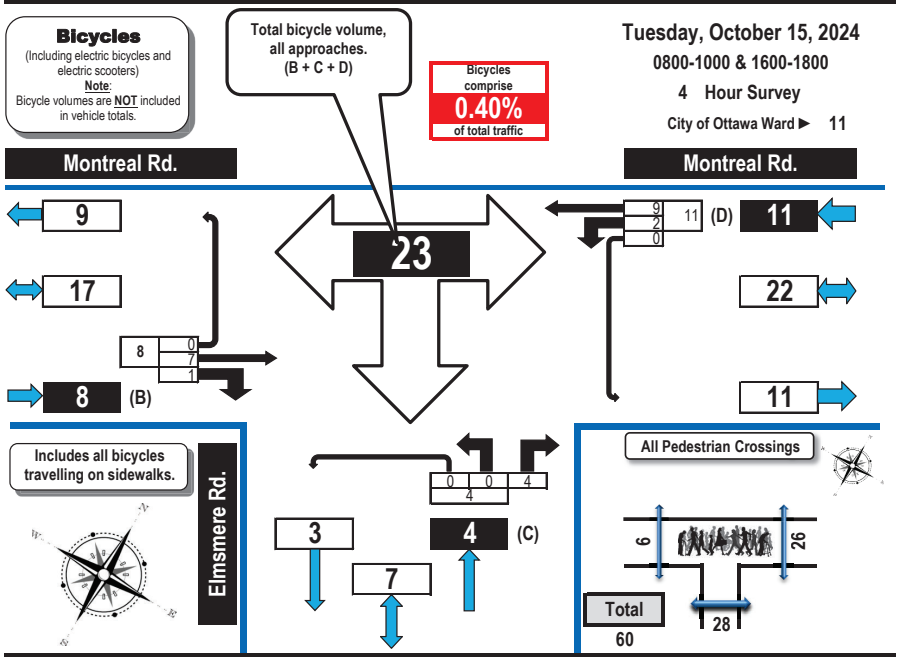
Elmsmere Road & Montreal Road — Gloucester, ON

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are NOT included in vehicle totals.

Total bicycle volume, all approaches. (B + C + D)

Bicycles comprise **0.40%** of total traffic

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



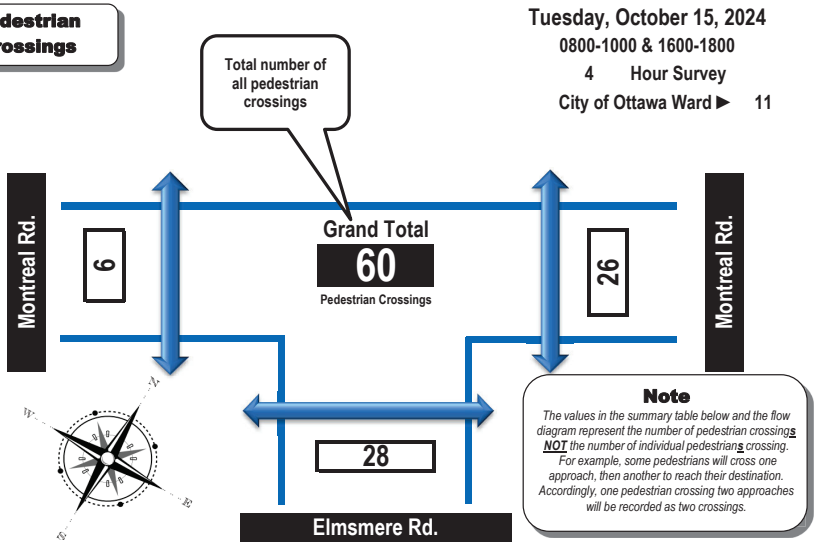
	Montreal Rd.					Montreal Rd.					Elmsmere Rd.					N/A					
	Eastbound					Westbound					Northbound					Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900		2	0	0	2	1	1		0	2	0		3	0	3						7
0900-1000		1	0	0	1	0	2		0	2	0		0	0	0						3
1600-1700		1	0	0	1	0	3		0	3	0		0	0	0						4
1700-1800		3	1	0	4	1	3		0	4	0		1	0	1						9
Totals		7	1	0	8	2	9		0	11	0		4	0	4						23

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Elmsmere Road & Montreal Road — Gloucester, ON

Pedestrian Crossings

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 11



Time Period	West Side Crossing Montreal Rd.	East Side Crossing Montreal Rd.	Street Total	South Side Crossing Elmsmere Rd.	North Side Crossing N/A	Street Total	Grand Total
0800-0900	2	10	12	7		7	19
0900-1000	0	3	3	5		5	8
1600-1700	3	7	10	7		7	17
1700-1800	1	6	7	9		9	16
Totals	6	26	32	28		28	60

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.18% of the heavy vehicle traffic.

Turning Movement Count
Summary Report
Including AM and PM Peak Hours
All Vehicles Except Bicycles

Elmsmere Road & Montreal Road — Gloucester, ON

Survey Date: Tuesday, October 15, 2024 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Cloudy 5° C **Survey Duration:** 6 Hrs. **Survey Hours:** 0700-1000 & 1500-1800
Weather PM: Cloudy 7° C **Surveyor(s):** J. Mousseau

	Montreal Rd. Eastbound					Montreal Rd. Westbound						Elmsmere Rd. Northbound					N/A Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0800-0900		542	55	0	597	28	811		0	839	1436	43		44	0	87					0	87	1523
0900-1000		414	25	2	441	23	558		1	582	1023	28		35	0	63					0	63	1086
1600-1700		941	72	0	1013	37	563		1	601	1614	28		43	0	71					0	71	1685
1700-1800		750	43	1	794	23	517		0	540	1334	30		30	0	60					0	60	1394
Totals		2647	195	3	2845	111	2449		2	2562	5407	129		152	0	281					0	281	5688

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.90												Highest Hourly Vehicle Volume Between 0700h & 1000h										
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Total
0800-0900	0	542	55	0	597	28	811	0	0	839	1436	43	0	44	0	87	0	0	0	0	0	87	1523

PM Peak Hour Factor ➡ 0.96												Highest Hourly Vehicle Volume Between 1500h & 1800h										
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1600-1700	0	941	72	0	1013	37	563	0	1	601	1614	28	0	43	0	71	0	0	0	0	0	71	1685

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.18% of the heavy vehicle traffic.

Notes:
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count
Summary Report
Including AM and PM Peak Hours
All Vehicles Except Bicycles

Elwood Street & Montreal Road — Gloucester, ON

Survey Date: Tuesday, October 15, 2024 | **Start Time:** 0700 | **AADT Factor:** 0.9
Weather AM: Cloudy 5° C | **Survey Duration:** 4 Hrs. | **Survey Hours:** 0800-1000 & 1600-1800
Weather PM: Cloudy 7° C | **Surveyor(s):** J. Mousseau

	Montreal Rd.					Montreal Rd.					Elwood St.					Laurier Manor						
	Eastbound					Westbound					Northbound					Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0800-0900	4	570	15	0	589	28	892	3	0	923	1512	6	0	39	0	45	2	0	6	0	8	53	1565
0900-1000	3	457	18	0	478	14	622	3	0	639	1117	13	0	18	0	31	0	0	5	0	5	36	1153
1600-1700	2	1023	31	1	1057	32	596	2	0	630	1687	18	0	32	0	50	1	0	2	0	3	53	1740
1700-1800	4	828	30	1	863	28	553	1	0	582	1445	22	0	24	0	46	1	0	1	0	2	48	1493
Totals	13	2878	94	2	2987	102	2663	9	0	2774	5761	59	0	113	0	172	4	0	14	0	18	190	5951

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡					0.91							Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot	Gr. Total
0800-0900	4	570	15	0	589	28	892	3	0	923	1512	6	0	39	0	45	2	0	6	0	8	53	1565

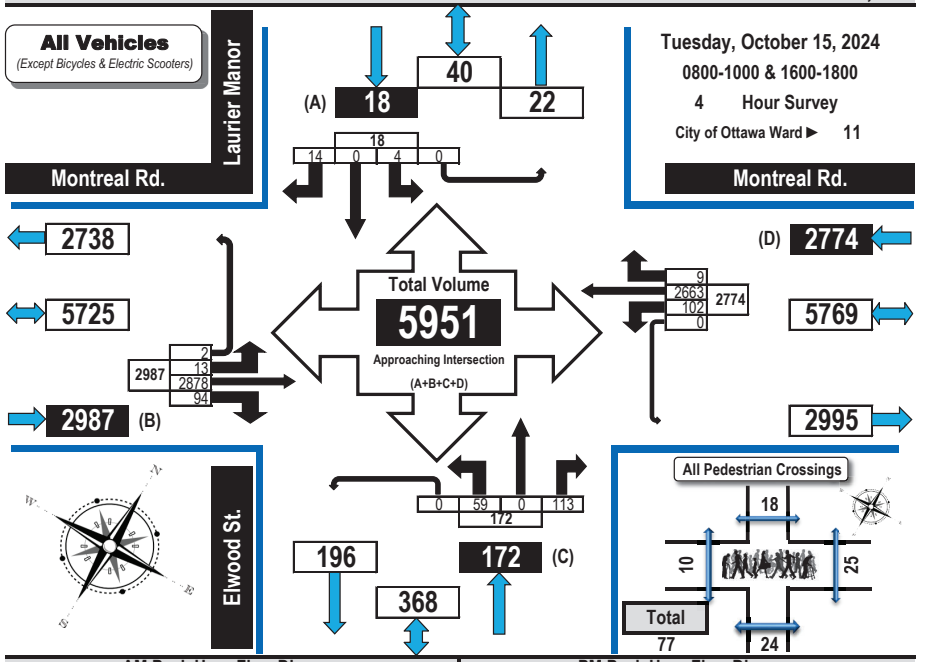
PM Peak Hour Factor ➡					0.98							Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot	Gr. Tot.
1600-1700	2	1023	31	1	1057	32	596	2	0	630	1687	18	0	32	0	50	1	0	2	0	3	53	1740

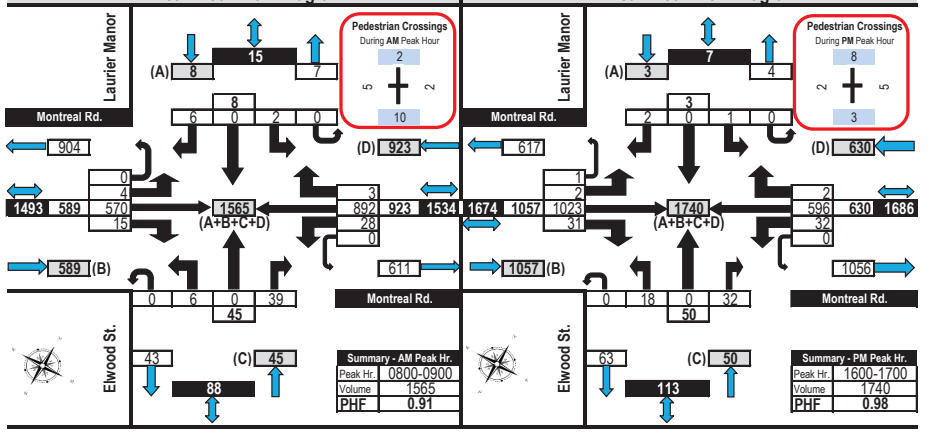
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.68% of the heavy vehicle traffic.

Notes:
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Turning Movement Count
Summary, AM and PM Peak Hour
Flow Diagrams
All Vehicles Except Bicycles

Elwood Street & Montreal Road — Gloucester, ON





Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Elwood Street & Montreal Road — **Gloucester, ON**

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11

Laurier Manor | Montreal Rd. | Elwood St.

(A) 3 | 5 | 2
(B) 72 | 148 | 76
(C) 8 | 9 | 1
(D) 69 | 136 | 67

Total Heavy Vehicles **149** Approaching Intersection (A+B+C+D)

Heavy Vehicles Comprise **2.50%** of Total Traffic

All Pedestrian Crossings: 18 / 10 / 25 / 24 — Total 77

	Montreal Rd. Eastbound					Montreal Rd. Westbound					Elwood St. Northbound					Laurier Manor Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900	1	25	1	0	27	0	27	0	0	27	0	0	1	0	1	0	0	2	0	2	57
0900-1000	0	16	2	0	18	0	22	0	0	22	0	0	0	0	0	0	0	1	0	1	41
1600-1700	0	11	2	0	13	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	24
1700-1800	1	14	3	0	18	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	27
Totals	2	66	8	0	76	0	69	0	0	69	0	0	1	0	1	0	0	3	0	3	149

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.68% of the heavy vehicle traffic.

Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram

Elwood Street & Montreal Road — **Gloucester, ON**

Buses ONLY
(Transit, Intercity, School Buses & Other Buses).
Bus totals ARE included in the all vehicles summary, heavy vehicle summary & flow diagrams.

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11

Laurier Manor | Montreal Rd. | Elwood St.

(A) 0 | 0 | 0
(B) 35 | 76 | 41
(C) 8 | 9 | 1
(D) 35 | 69 | 34

Total Bus Volume **77** Approaching Intersection (A+B+C+D)

All Buses Comprise **1.29%** of Total Traffic and **51.68%** of the Heavy Vehicle Traffic

All Pedestrian Crossings: 18 / 10 / 25 / 24 — Total 77

	Montreal Rd. Eastbound					Montreal Rd. Westbound					Elwood St. Northbound					Laurier Manor Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900	0	13	1	0	14	0	15	0	0	15	0	0	1	0	1	0	0	0	0	0	30
0900-1000	0	7	2	0	9	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	18
1600-1700	0	5	2	0	7	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	14
1700-1800	0	8	3	0	11	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	15
Totals	0	33	8	0	41	0	35	0	0	35	0	0	1	0	1	0	0	0	0	0	77

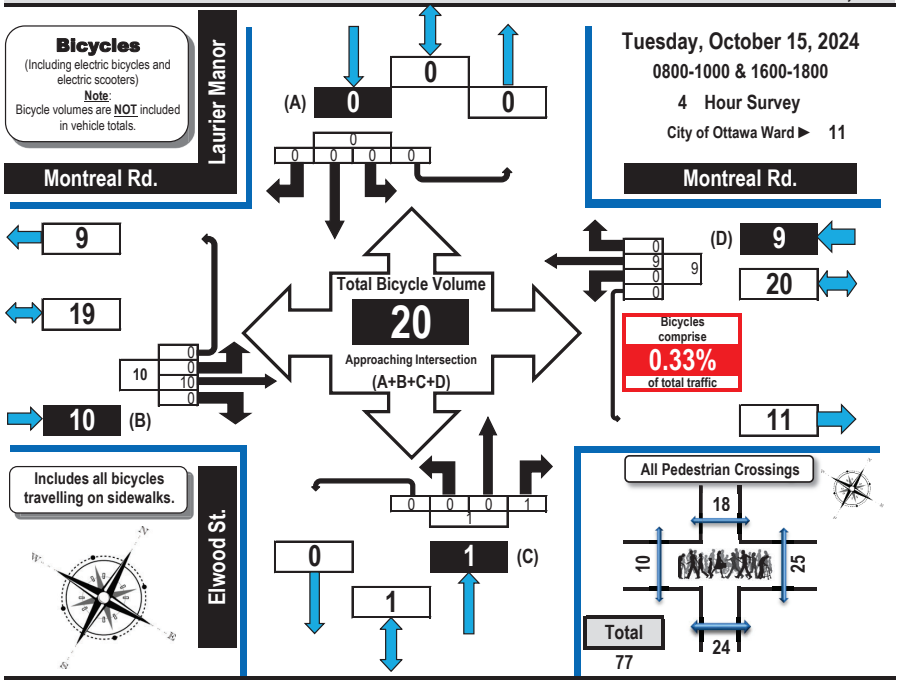
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.68% of the heavy vehicle traffic.

Turning Movement Count
Bicycle Summary
Flow Diagram

Elwood Street & Montreal Road — **Gloucester, ON**

Bicycles
(Including electric bicycles and electric scooters)
Note:
Bicycle volumes are NOT included in vehicle totals.

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



	Montreal Rd. Eastbound					Montreal Rd. Westbound					Elwood St. Northbound					Laurier Manor Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0800-0900	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5
0900-1000	0	1	0	0	1	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	4
1600-1700	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
1700-1800	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
Totals	0	10	0	0	10	0	9	0	0	9	0	0	1	0	1	0	0	0	0	0	20

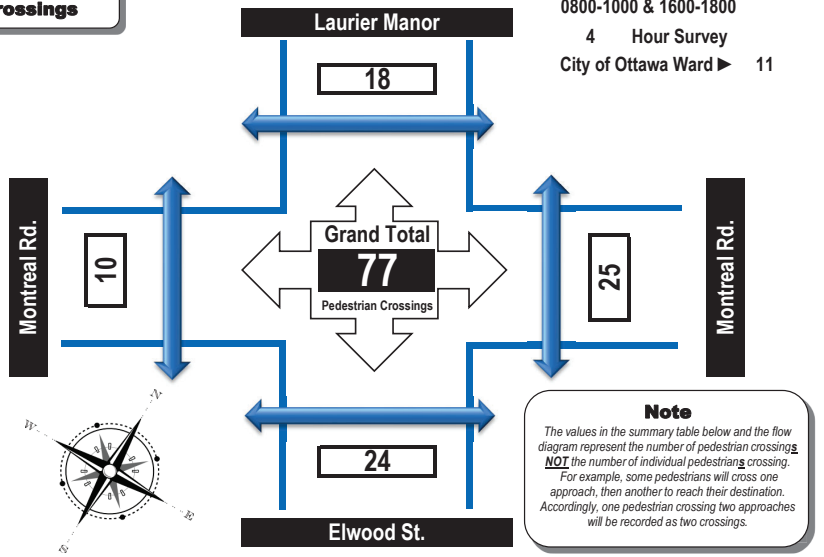
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.68% of the heavy vehicle traffic.

Turning Movement Count
Pedestrian Crossings Summary
and Flow Diagram

Elwood Street & Montreal Road — **Gloucester, ON**

Pedestrian Crossings

Tuesday, October 15, 2024
0800-1000 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 11



Note
*The values in the summary table below and the flow diagram represent the number of pedestrian crossings **NOT** the number of individual pedestrians crossing. For example, some pedestrians will cross one approach, then another to reach their destination. Accordingly, one pedestrian crossing two approaches will be recorded as two crossings.*

Time Period	West Side Crossing Montreal Rd.	East Side Crossing Montreal Rd.	Street Total	South Side Crossing Elwood St.	North Side Crossing Laurier Manor	Street Total	Grand Total
0800-0900	5	2	7	10	2	12	19
0900-1000	1	7	8	4	5	9	17
1600-1700	2	5	7	3	8	11	18
1700-1800	2	11	13	7	3	10	23
Totals	10	25	35	24	18	42	77

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 51.68% of the heavy vehicle traffic.

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	570	15	28	892	3	6	0	39	2	0	6
Future Volume (vph)	4	570	15	28	892	3	6	0	39	2	0	6
Satd. Flow (prot)	1658	3300	0	1658	3315	0	0	1508	0	0	1527	0
Flt Permitted	0.216			0.367				0.973			0.965	
Satd. Flow (perm)	376	3300	0	639	3315	0	0	1477	0	0	1488	0
Satd. Flow (RTOR)		4						56			56	
Lane Group Flow (vph)	4	650	0	31	994	0	0	50	0	0	9	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6		32.7	32.7		32.7	32.7	
Total Split (s)	53.0	53.0		53.0	53.0		32.0	32.0		32.0	32.0	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		35.6%	35.6%		35.6%	35.6%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			6.7			6.7	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effct Green (s)	47.4	47.4		47.4	47.4			25.3			25.3	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.28			0.28	
v/c Ratio	0.02	0.37		0.09	0.57			0.11			0.02	
Control Delay	10.8	13.2		8.3	15.6			6.8			0.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.8	13.2		8.3	15.6			6.8			0.1	
LOS	B	B		A	B			A			A	
Approach Delay		13.2			15.4			6.8			0.1	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	0.3	32.7		3.1	70.2			0.0			0.0	
Queue Length 95th (m)	1.9	44.4		6.9	92.7			7.2			0.0	
Internal Link Dist (m)		303.4			511.1			83.3			31.6	
Turn Bay Length (m)	37.5			15.5								
Base Capacity (vph)	198	1739		336	1745			455			458	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.37		0.09	0.57			0.11			0.02	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 7 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 58.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Elwood/Extendicare & Montreal

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	542	55	28	811	43	44
Future Volume (vph)	542	55	28	811	43	44
Satd. Flow (prot)	3316	1483	1658	3316	1564	0
Flt Permitted			0.424		0.976	
Satd. Flow (perm)	3316	1438	737	3316	1563	0
Satd. Flow (RTOR)		61			49	
Lane Group Flow (vph)	602	61	31	901	97	0
Turn Type	NA	Perm	Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases		2	6		8	
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	27.0	27.0	24.0	24.0	32.2	
Total Split (s)	58.0	58.0	58.0	58.0	32.0	
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	65.9	65.9	65.9	65.9	16.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.18	
v/c Ratio	0.25	0.06	0.06	0.37	0.30	
Control Delay	3.9	2.1	7.4	7.5	17.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.9	2.1	7.4	7.5	17.7	
LOS	A	A	A	A	B	
Approach Delay	3.7			7.5	17.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	0.7	0.0	1.1	22.2	7.8	
Queue Length 95th (m)	50.9	5.9	6.1	57.9	17.5	
Internal Link Dist (m)	511.1			384.1	209.9	
Turn Bay Length (m)		20.0	50.0			
Base Capacity (vph)	2428	1069	539	2428	483	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.06	0.06	0.37	0.20	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 50 (56%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 6.6	Intersection LOS: A
Intersection Capacity Utilization 48.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Elmsmere & Montreal

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1023	31	32	596	2	18	0	32	1	0	2
Future Volume (vph)	3	1023	31	32	596	2	18	0	32	1	0	2
Satd. Flow (prot)	1658	3299	0	1658	3315	0	0	1538	0	0	1547	0
Flt Permitted	0.360			0.157				0.917			0.954	
Satd. Flow (perm)	624	3299	0	273	3315	0	0	1435	0	0	1493	0
Satd. Flow (RTOR)		5						56			56	
Lane Group Flow (vph)	3	1171	0	36	664	0	0	56	0	0	3	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.6	22.6		22.6	22.6		32.7	32.7		32.7	32.7	
Total Split (s)	53.0	53.0		53.0	53.0		32.0	32.0		32.0	32.0	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		35.6%	35.6%		35.6%	35.6%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.9	1.9		1.9	1.9		3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6			6.7			6.7	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Act Effct Green (s)	47.4	47.4		47.4	47.4			25.3			25.3	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.28			0.28	
v/c Ratio	0.01	0.67		0.25	0.38			0.13			0.01	
Control Delay	10.3	18.0		17.1	13.8			7.9			0.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.3	18.0		17.1	13.8			7.9			0.0	
LOS	B	B		B	B			A			A	
Approach Delay		18.0			14.0			7.9				
Approach LOS		B			B			A				
Queue Length 50th (m)	0.2	73.4		3.9	40.7			0.0			0.0	
Queue Length 95th (m)	1.5	95.4		12.1	55.6			8.4			0.0	
Internal Link Dist (m)		303.4			511.1			83.3			31.6	
Turn Bay Length (m)	37.5			15.5								
Base Capacity (vph)	328	1739		143	1745			443			459	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.67		0.25	0.38			0.13			0.01	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	4.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	Max	Max
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Elwood/Extendicare & Montreal

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	941	72	38	563	28	43
Future Volume (vph)	941	72	38	563	28	43
Satd. Flow (prot)	3316	1483	1658	3316	1553	0
Flt Permitted			0.256		0.981	
Satd. Flow (perm)	3316	1438	446	3316	1552	0
Satd. Flow (RTOR)		50			48	
Lane Group Flow (vph)	1046	80	42	626	79	0
Turn Type	NA	Perm	Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases		2	6		8	
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	27.0	27.0	24.0	24.0	32.2	
Total Split (s)	58.0	58.0	58.0	58.0	32.0	
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	69.1	69.1	69.1	69.1	13.2	
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.15	
v/c Ratio	0.41	0.07	0.12	0.25	0.29	
Control Delay	2.7	0.8	6.9	5.1	17.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.7	0.8	6.9	5.1	17.8	
LOS	A	A	A	A	B	
Approach Delay	2.6			5.2	17.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	0.6	0.0	1.6	13.8	5.0	
Queue Length 95th (m)	104.7	m3.2	8.5	37.3	14.0	
Internal Link Dist (m)	511.1			384.1	209.9	
Turn Bay Length (m)		20.0	50.0			
Base Capacity (vph)	2545	1115	342	2545	479	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.07	0.12	0.25	0.16	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 4.2	Intersection LOS: A
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Elmsmere & Montreal

Appendix D

Collision Data

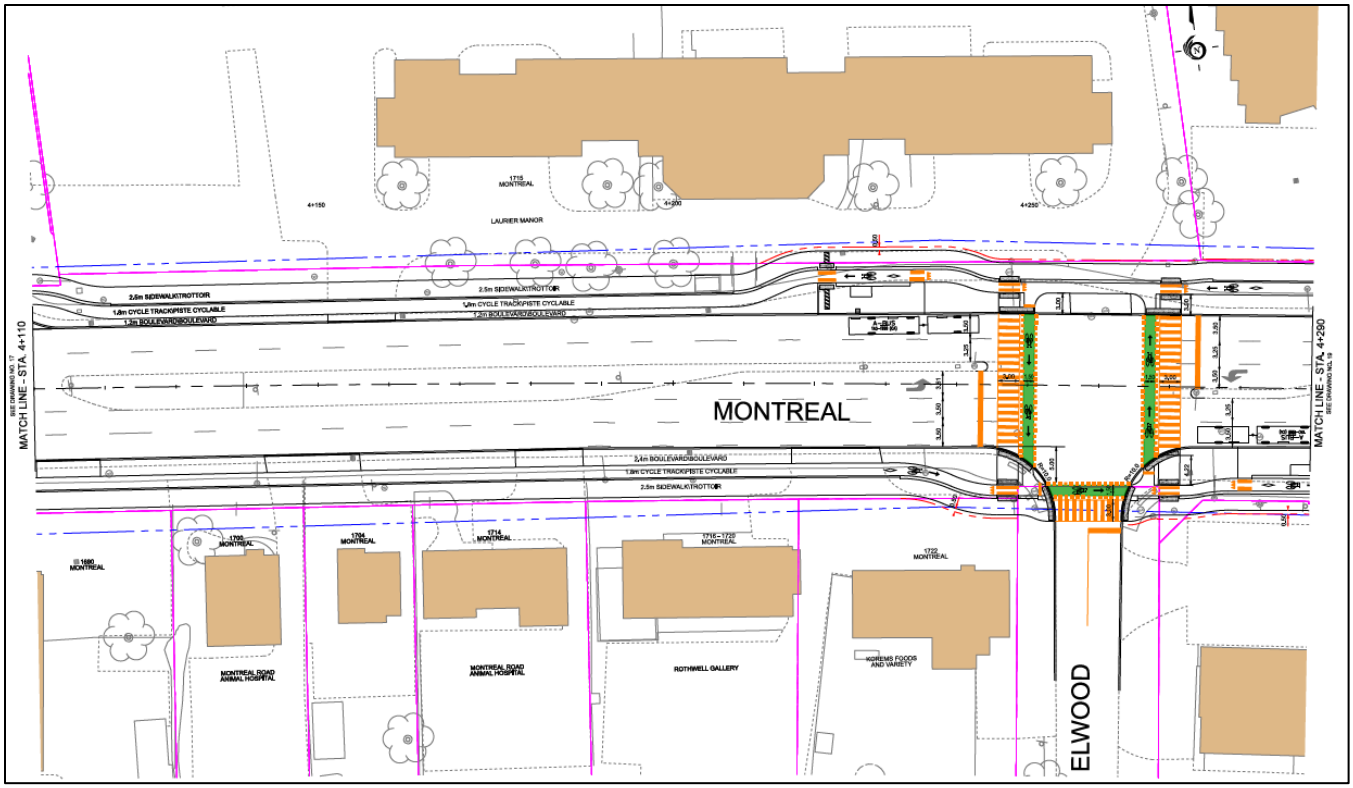
CGH TRANSPORTATION

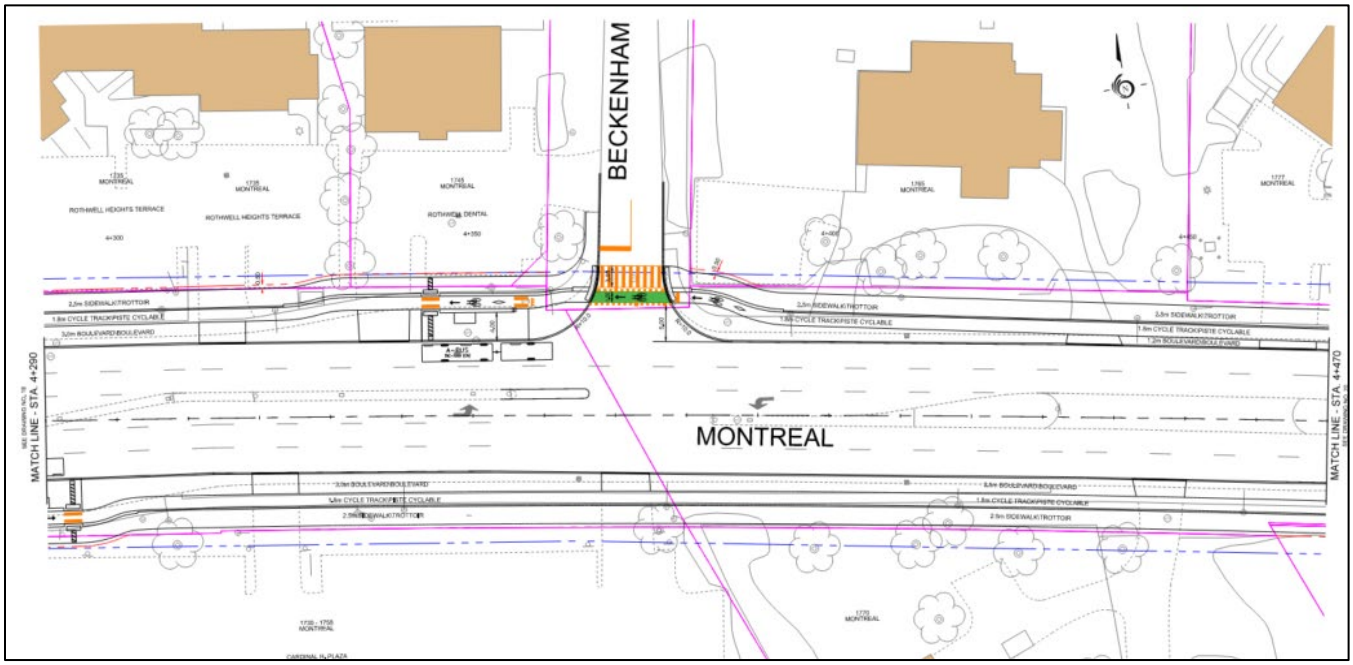
Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
2019-03-08	2019	0:04	MONTREAL RD btwn CHIMNEY HILL WAY & ELMSMERE RD (__3ZA121)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	0	0	0	0
2018-11-16	2018	14:30	ELMSMERE RD @ MONTREAL RD (0012320)	03 - Snow	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	02 - Angle	04 - Slush	0	0	0	0
2019-04-25	2019	18:30	ELMSMERE RD @ MONTREAL RD (0012320)	01 - Clear	01 - Daylight	01 - Traffic signal	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
2020-01-06	2020	17:54	ELMSMERE RD @ MONTREAL RD (0012320)	03 - Snow	07 - Dark	01 - Traffic signal	0	03 - P.D. only	07 - SMV other	03 - Loose snow	0	0	0	0
2020-05-01	2020	17:34	ELMSMERE RD @ MONTREAL RD (0012320)	01 - Clear	01 - Daylight	01 - Traffic signal	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	0	0	0	0

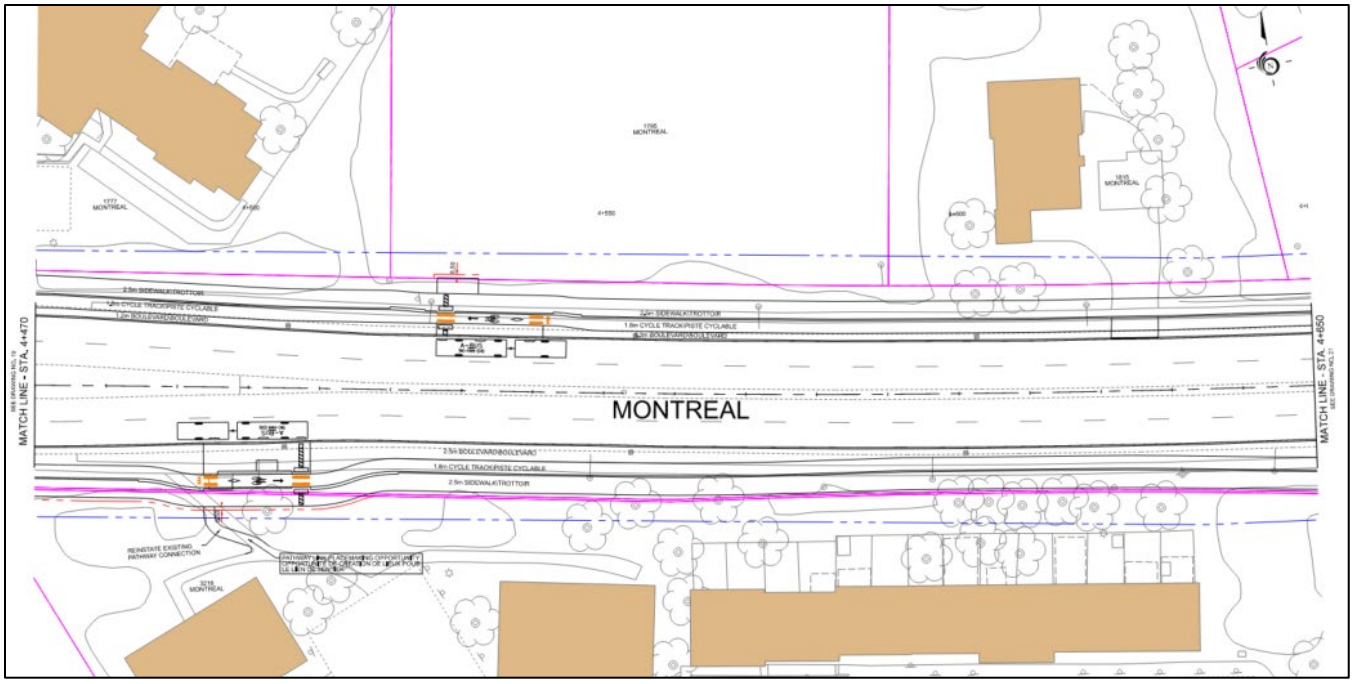
Appendix E

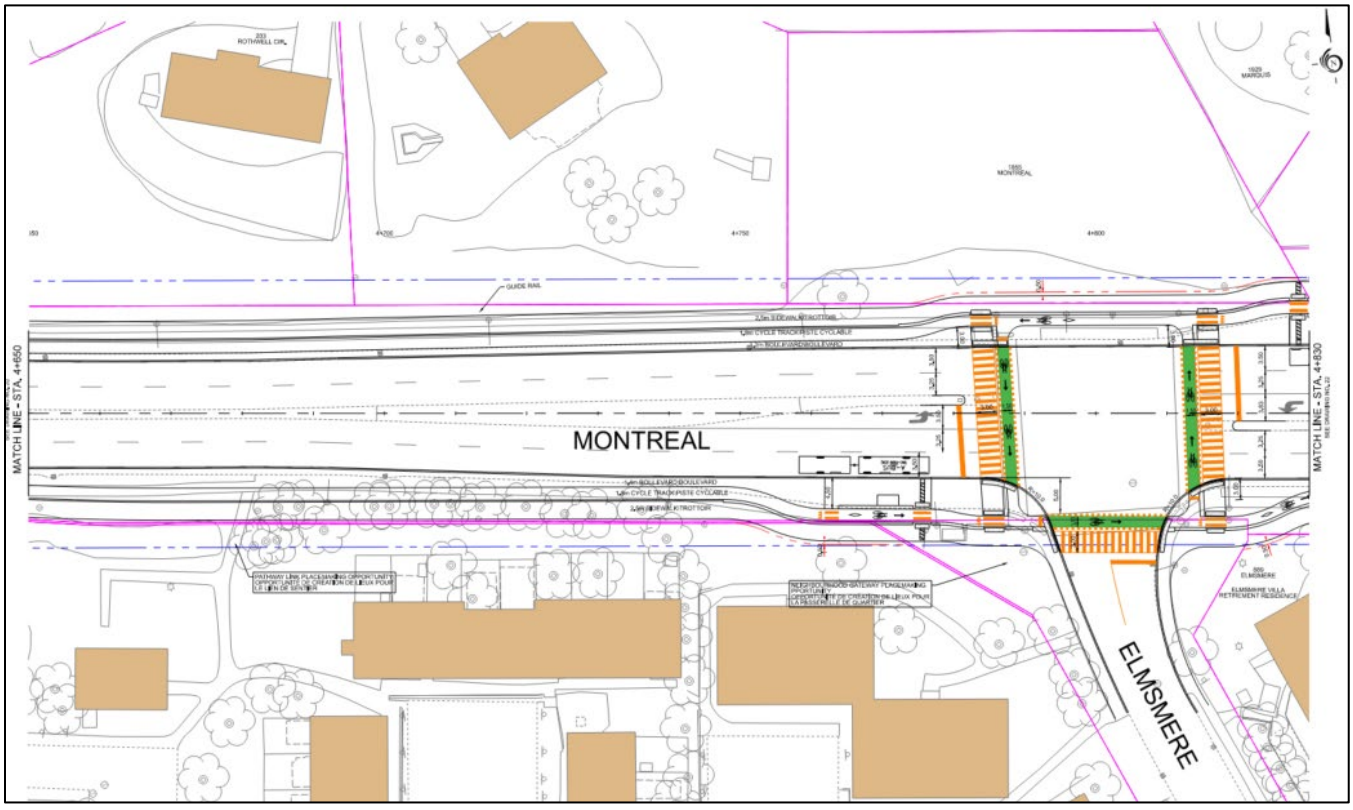
Montreal-Blair Road Transit Priority Corridor EA Excerpts

CGH TRANSPORTATION


MONTREAL
ELWOOD
MATCH LINE - STA. 4+110
MATCH LINE - STA. 4+290
LAURIER MANOR
ROTHWELL GALLERY
MONTREAL ROAD ANIMAL HOSPITAL
KOREMS FOODS AND VARIETY


BECKENHAM
MONTREAL
MATCH LINE - STA. 4+290
MATCH LINE - STA. 4+470
ROTHWELL HEIGHTS TERRACE
ROTHWELL DENTAL


MONTREAL
MATCH LINE - STA. 4+470
MATCH LINE - STA. 4+650
2.5m SIDEWALK/TROTTOIR
1.8m CYCLE TRACK/PISTE CYCLABLE
2.5m BOULEVARD/BOULEVARD
REINSTATE EXISTING PATHWAY CONNECTION
PATHWAY LINK PLACEMAKING OPPORTUNITY / OPPORTUNITÉ DE CRÉATION DE LIEUX POUR LE LIEN DE SENTIER


MONTREAL
ELMSMERE
MATCH LINE - STA. 4+650
MATCH LINE - STA. 4+830
GUIDE RAIL
2.5m SIDEWALK/TROTTOIR
1.8m CYCLE TRACK/PISTE CYCLABLE
2.5m BOULEVARD/BOULEVARD
PATHWAY LINK PLACEMAKING OPPORTUNITY / OPPORTUNITÉ DE CRÉATION DE LIEUX POUR LE LIEN DE SENTIER
NEIGHBOURHOOD GATEWAY PLACEMAKING OPPORTUNITY / OPPORTUNITÉ DE CRÉATION DE LIEUX POUR LA PASSERELLE DE QUARTIER
ELMSMERE VILLA RETIREMENT RESIDENCE

Appendix F

TDM Checklist

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

Legend

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

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

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

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

TDM-Supportive Development Design and Infrastructure Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

		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)*	☑

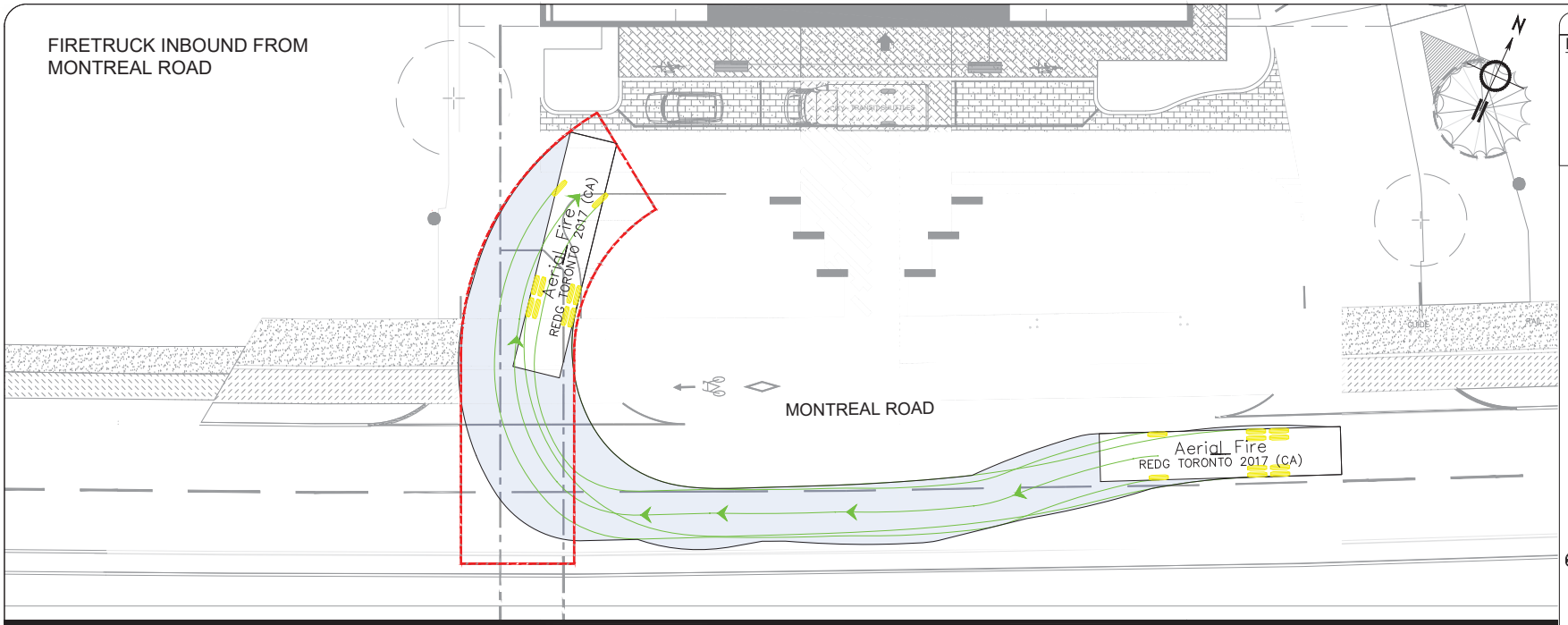
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☐
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1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

Appendix G

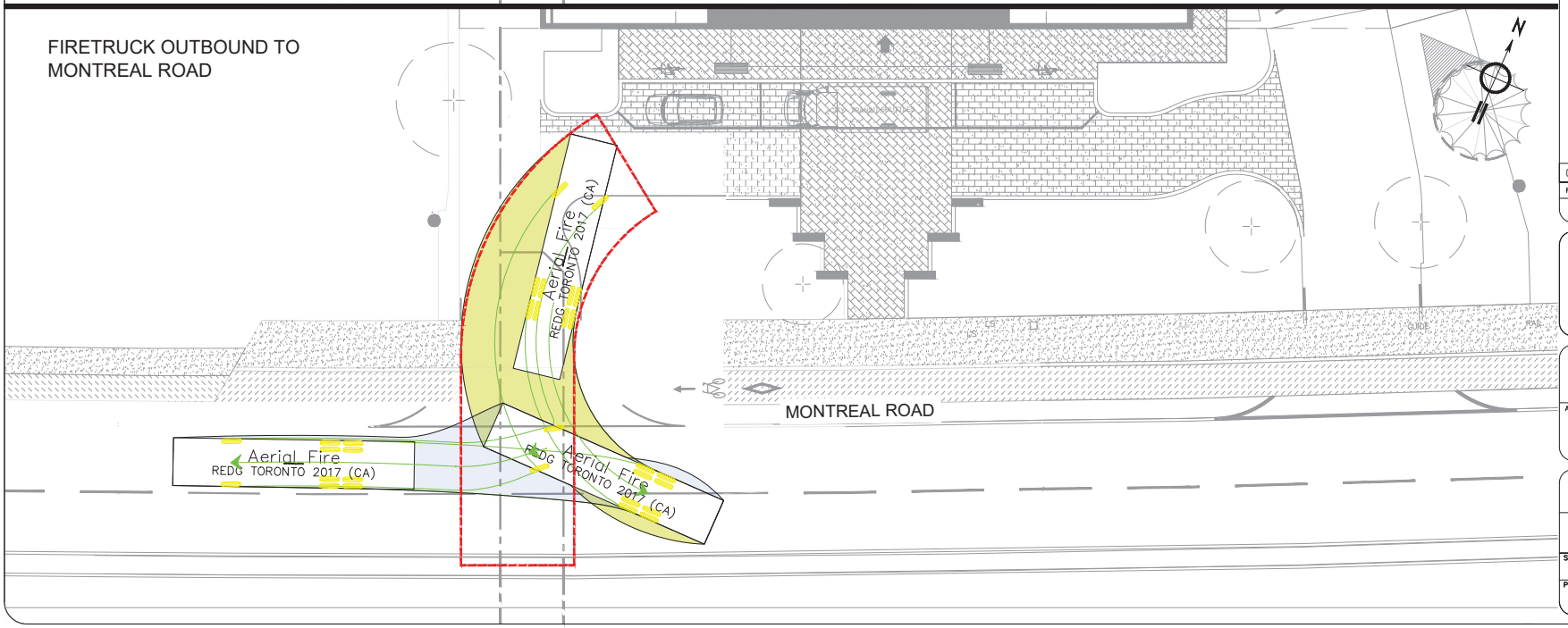
Turning Templates

CGH TRANSPORTATION

FIRETRUCK INBOUND FROM MONTREAL ROAD



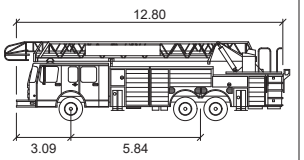
FIRETRUCK OUTBOUND TO MONTREAL ROAD



Notes:

Legend:

- Forward Movement
- Reverse Movement
- Fire Lane



Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

REV:	DESCRIPTION:	BY:	DATE:
01	ISSUED FOR REVIEW	EW	2024-12-18

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: 14193679 CANADA INC.

ARCHITECT: RLA Architecture

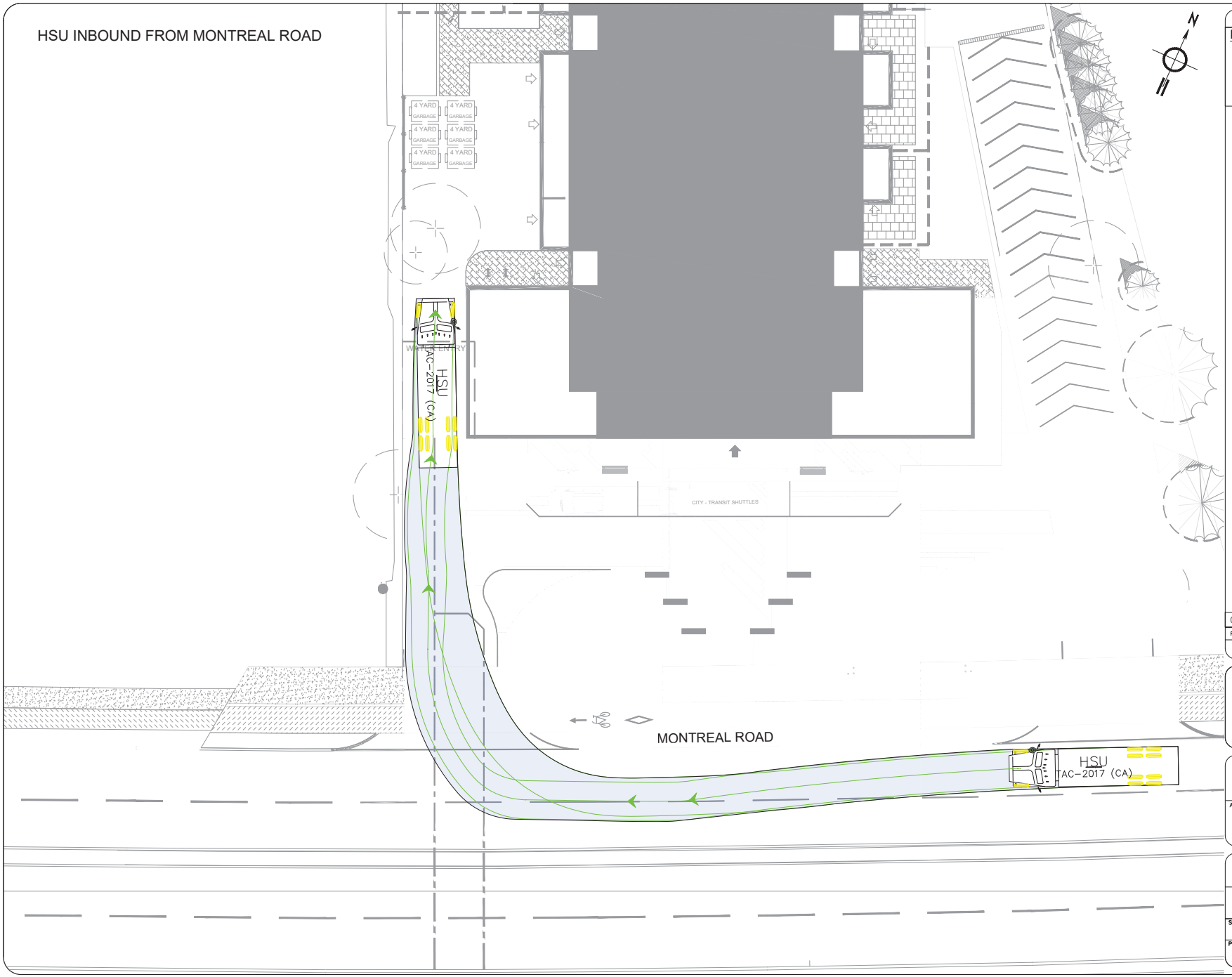
SITE: 1815 Montreal Road, Ottawa, ON

TITLE: Fire Lane Turning Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-12-18	EW	JK

PROJECT NO:	DRAWING NO:	REVISION:
2024-117	001	01

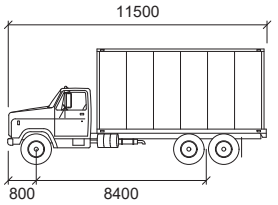
HSU INBOUND FROM MONTREAL ROAD



Notes:

Legend:

- Forward Movement
- Reverse Movement



HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
01	ISSUED FOR REVIEW	EW	2024-12-18

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: 14193679 CANADA INC.

ARCHITECT: RLA Architecture

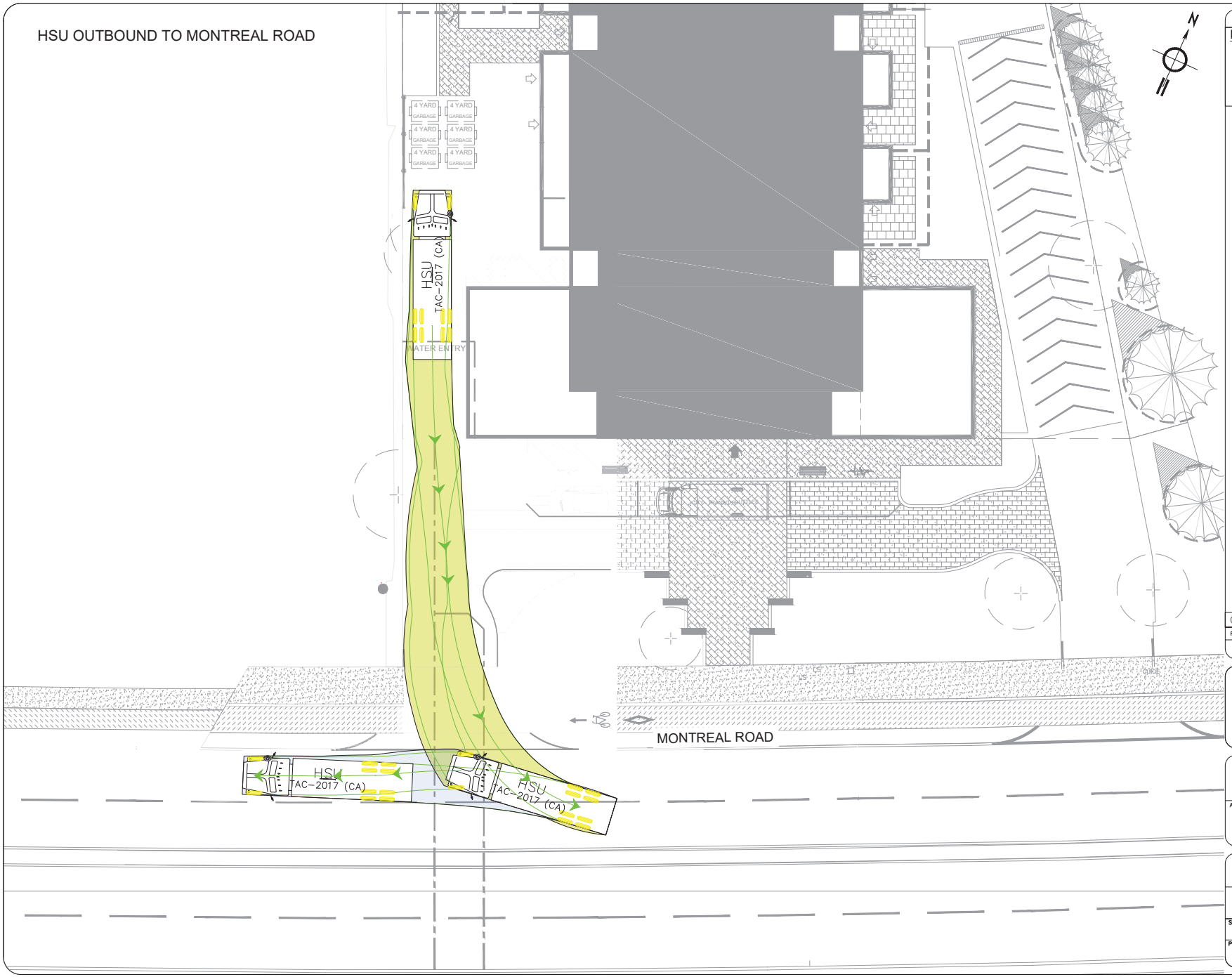
SITE: 1815 Montreal Road, Ottawa, ON

TITLE: HSU Inbound Turning Movement

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-12-18	EW	JK

PROJECT NO:	DRAWING NO:	REVISION:
2024-117	002	01

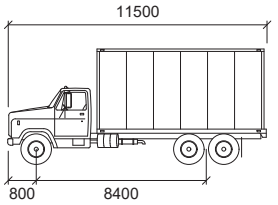
HSU OUTBOUND TO MONTREAL ROAD



Notes:

Legend:

- Forward Movement
- Reverse Movement



HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
01	ISSUED FOR REVIEW	EW	2024-12-18

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: 14193679 CANADA INC.

ARCHITECT: RLA Architecture

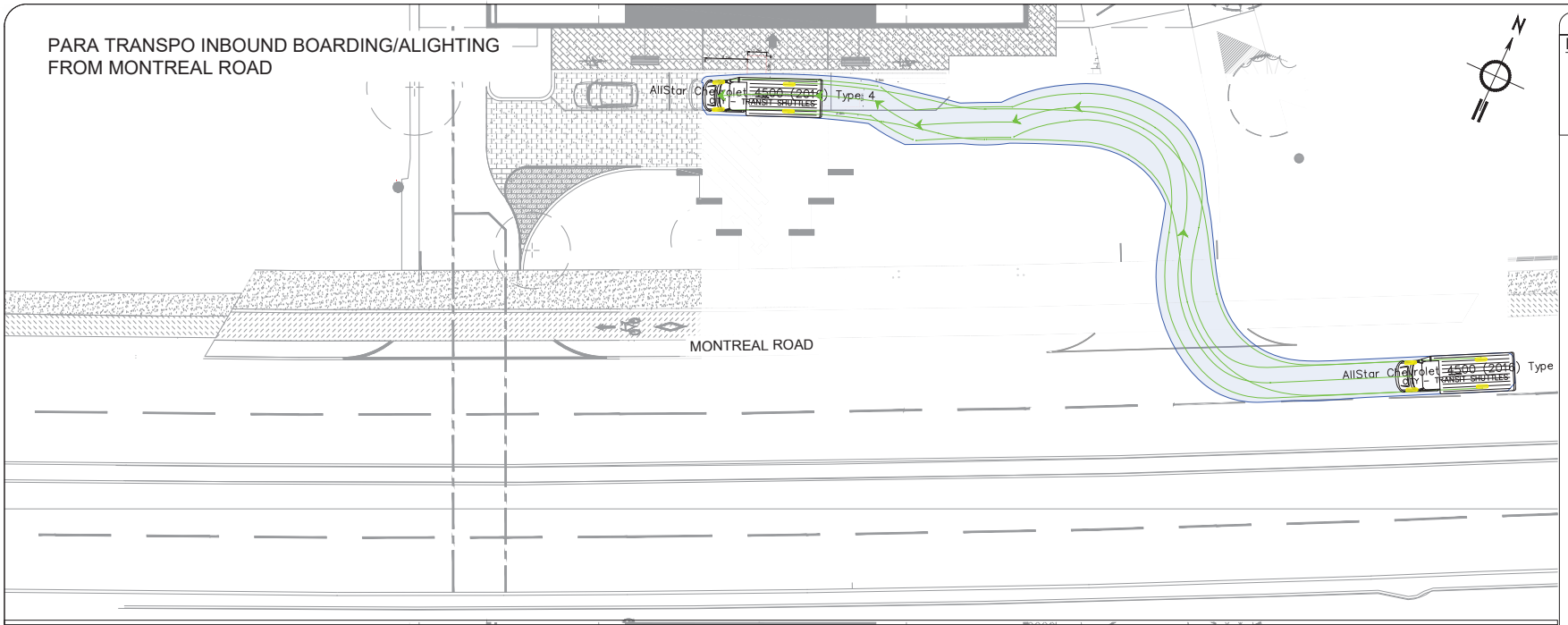
SITE: 1815 Montreal Road, Ottawa, ON

TITLE: HSU Outbound Turning Movement

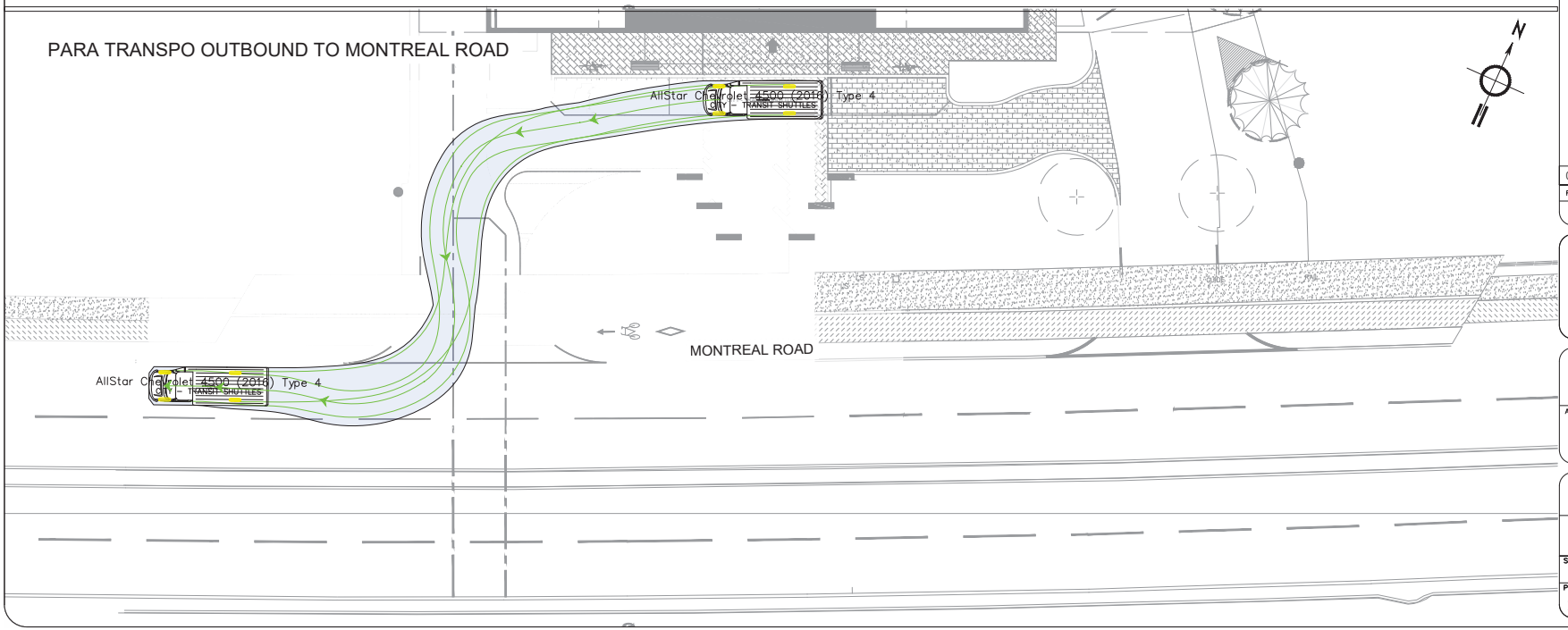
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-12-18	EW	JK

PROJECT NO:	DRAWING NO:	REVISION:
2024-117	003	01

PARA TRANSPO INBOUND BOARDING/ALIGHTING
FROM MONTREAL ROAD



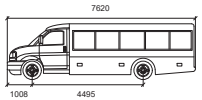
PARA TRANSPO OUTBOUND TO MONTREAL ROAD



Notes:

Legend:

- Forward Movement
- Reverse Movement



AllStar Chevrolet 4500 (2016) Type 4

	mm
Width	: 2438
Track	: 1957
Lock to Lock Time	: 6.0
Steering Angle	: 34.2

REV:	DESCRIPTION:	BY:	DATE:
01	ISSUED FOR REVIEW	EW	2024-12-18

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: 14193679 CANADA INC.

ARCHITECT: RLA Architecture

SITE: 1815 Montreal Road, Ottawa, ON

TITLE: Para Transpo Boarding/ Alighting Turning Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-12-18	EW	JK

PROJECT NO:	DRAWING NO:	REVISION:
2024-117	004	01

Appendix H

MMLOS Analysis

CGH TRANSPORTATION

Multi-Modal Level of Service - Segments Form

Consultant	**CGH Transportation**	**Project**	**1815 Montreal**
Scenario	**Existing/Future**	**Date**	**2024-12-18**
Comments			

SEGMENTS			Montreal Rd Existing	Montreal Rd Future
Pedestrian	Sidewalk Width Boulevard Width	-	1.5 m 0.5 - 2 m	≥ 2 m > 2 m
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000
	Operating Speed On-Street Parking		> 60 km/h no	> 60 km/h no
	Exposure to Traffic PLoS		**E**	**D**
	Effective Sidewalk Width			
	Pedestrian Volume			
	Crowding PLoS		-	-
	Level of Service		**-**	**-**
Bicycle	Type of Cycling Facility	A	Mixed Traffic	Physically Separated
	Number of Travel Lanes		2-3 lanes total	
	Operating Speed		≥ 60 km/h	
	# of Lanes & Operating Speed LoS		**F**	**-**
	Bike Lane (+ Parking Lane) Width			
	Bike Lane Width LoS		-	-
	Bike Lane Blockages			
	Blockage LoS		-	-
	Median Refuge Width (no median = < 1.8 m)			
	No. of Lanes at Unsignalized Crossing			
	Sidestreet Operating Speed			
	Unsignalized Crossing - Lowest LoS		-	~~A~~
	Level of Service		**-**	**A**
Transit	Facility Type	D	Mixed Traffic	Mixed Traffic
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8
	Level of Service		**D**	**D**
Truck	Truck Lane Width	A	> 3.7 m	> 3.7 m
	Travel Lanes per Direction		> 1	> 1
	Level of Service		**A**	**A**
Auto	**Level of Service**	**Not Applicable**		