116 Beech Street

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report (Rev.1)

Prepared for:

Beech Street LP.
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PN: 2025-188

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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 Zoning By-law Amendment and Official Plan Amendment application.

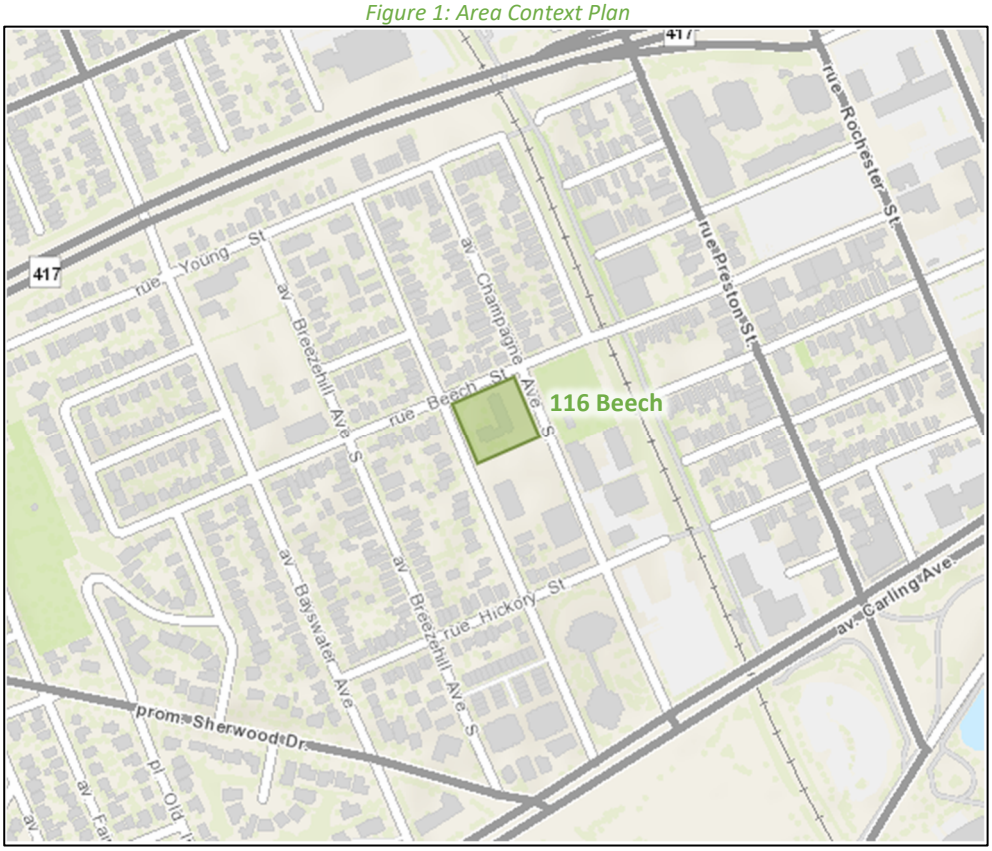
2 Existing and Planned Conditions

2.1 Proposed Development

The development site is located at 116 Beech Street, and it is currently zoned as Residential Fifth Density Zone (R5B H(18)). The proposed development includes a 25-storey residential building with 392 dwelling units, 112 resident vehicle parking spaces, 27 visitor parking spaces and 404 bicycle parking spaces. The proposed access configuration includes an access to interior parking levels on Champagne Avenue and an access to visitor surface parking on Loretta Avenue. The anticipated full build-out is 2030. The site is located within a hub area along the LRT Line 2.

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: December 15, 2025

Figure 2: Concept Plan

GROSS AREA (OBC)		
LEVEL	AREA	AREA (SF)
LEVEL P1	3353.71 m²	36098 SF
LEVEL 00	3465.4 m²	36979 SF
LEVEL 01	2378.76 m²	25403 SF
LEVEL 02	2378.76 m²	25403 SF
LEVEL 03	2952.87 m²	28941 SF
LEVEL 04	2952.87 m²	28941 SF
LEVEL 05	2145.89 m²	23109 SF
LEVEL 06	2145.89 m²	23133 SF
LEVEL 07	774.23 m²	8333 SF
LEVEL 08	834.12 m²	8979 SF
LEVEL 09	834.12 m²	8979 SF
LEVEL 10	834.12 m²	8979 SF
LEVEL 11	834.12 m²	8979 SF
LEVEL 12	834.12 m²	8979 SF

GROSS AREA (OBC)		
LEVEL	AREA	AREA (SF)
LEVEL 13	747.41 m²	8045 SF
LEVEL 14	747.41 m²	8045 SF
LEVEL 15	747.41 m²	8045 SF
LEVEL 16	747.41 m²	8045 SF
LEVEL 17	747.41 m²	8045 SF
LEVEL 18	747.41 m²	8045 SF
LEVEL 19	747.41 m²	8045 SF
LEVEL 20	747.41 m²	8045 SF
LEVEL 21	747.41 m²	8045 SF
LEVEL 22	747.41 m²	8045 SF
LEVEL 23	747.41 m²	8045 SF
LEVEL 24	747.41 m²	8045 SF
LEVEL 25	747.41 m²	8045 SF
TOTAL	35445.21 m²	381528 SF

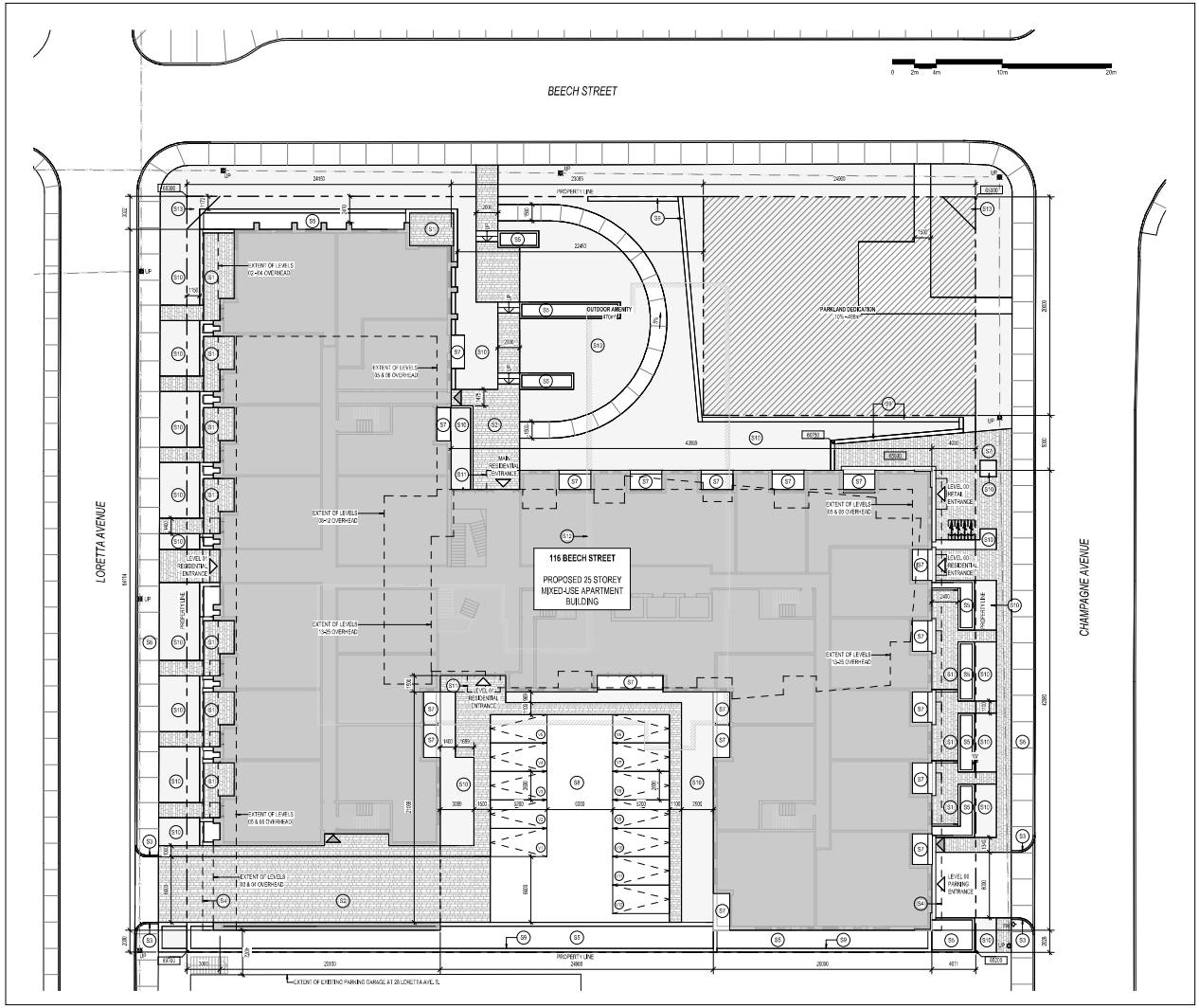
UNIT COUNT																									
NAME	LVL 00	LVL 01	LVL 02	LVL 03	LVL 04	LVL 05	LVL 06	LVL 07	LVL 08	LVL 09	LVL 10	LVL 11	LVL 12	LVL 13	LVL 14	LVL 15	LVL 16	LVL 17	LVL 18	LVL 19	LVL 20	LVL 21	LVL 22	LVL 23	LVL 24	LVL 25	TOTAL COUNT	PERCENTAGE
1-BED	2	14	21	23	23	19	19	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	204	58%
2-BED	1	6	7	9	9	10	10	3	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	134	34%
STUDIO	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1%
TOTAL	3	22	28	33	33	30	30	10	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11	11	11	11	352	100%

PARKING SCH. (BICYCLE)	
LEVEL	COUNT
LEVEL P1	190
LEVEL 00	214
TOTAL	404

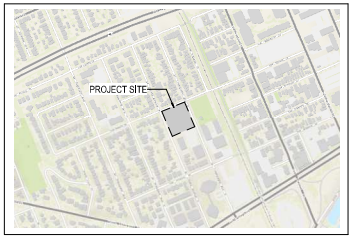
PARKING SCH. (VEHICLE)		
LEVEL	TYPE	COUNT
LEVEL P1	RESIDENTIAL	78
LEVEL 00	VISITOR	15
LEVEL 00	RESIDENTIAL	34
LEVEL 01	VISITOR	12
TOTAL		139

AMENITY SCH. (COMMUNAL)			
LEVEL	NAME	AREA	AREA (SF)
LEVEL 01	AMENITY	86.86 m²	935 SF
LEVEL 01	AMENITY	165.89 m²	1785 SF
LEVEL 01	AMENITY	167.40 m²	1802 SF
LEVEL 01	AMENITY	465.71 m²	5012 SF
LEVEL 02	AMENITY	38.91 m²	419 SF
LEVEL 02	AMENITY	86.86 m²	935 SF
LEVEL 07	AMENITY	158.20 m²	1703 SF
LEVEL 07	AMENITY	811.85 m²	8812 SF
TOTAL		1995.91 m²	21482 SF

AMENITY SCH. (PRIVATE)		
LEVEL	AREA	AREA (SF)
LEVEL 00	54.89 m²	591 SF
LEVEL 01	174.29 m²	1876 SF
LEVEL 02	113.34 m²	1219 SF
LEVEL 03	152.49 m²	1641 SF
LEVEL 04	152.49 m²	1641 SF
LEVEL 05	221.29 m²	2383 SF
LEVEL 06	234.89 m²	2528 SF
LEVEL 07	189.34 m²	2045 SF
LEVEL 08	56.11 m²	604 SF
LEVEL 09	56.37 m²	607 SF
LEVEL 10	56.37 m²	607 SF
LEVEL 11	56.37 m²	607 SF
LEVEL 12	56.37 m²	607 SF
LEVEL 13	133.80 m²	1441 SF
LEVEL 14	56.37 m²	639 SF
LEVEL 15	56.37 m²	639 SF
LEVEL 16	56.37 m²	639 SF
LEVEL 17	56.37 m²	639 SF
LEVEL 18	56.37 m²	639 SF
LEVEL 19	56.37 m²	639 SF
LEVEL 20	56.37 m²	639 SF
LEVEL 21	56.37 m²	639 SF
LEVEL 22	56.37 m²	639 SF
LEVEL 23	56.37 m²	639 SF
LEVEL 24	56.37 m²	639 SF
LEVEL 25	56.37 m²	639 SF
TOTAL	2421.34 m²	26063 SF



1 SP-01 SITE PLAN
SCALE: 1 : 200



2 SP-01 LOCATION PLAN
SCALE: NTS

SITE PLAN SYMBOLS LEGEND

- BUILDING ENTRANCE
- BUILDING EXIT
- BICYCLE PARKING
- INTERLOCKING STONE PAVERS
- UP UTILITY POLE TO BE REMOVED
- FH FIRE HYDRANT
- FH FIRE HYDRANT TO BE REMOVED
- PROPERTY LINE
- SETBACK LINE
- OVERHEAD WIRE

SITE PLAN NOTES

01 PRIVATE RESIDENTIAL TERRACES
02 INTERLOCK PAVER SURFACE
03 DEPRESSED CURB, REFER TO CIVIL
04 LINE DENOTES EXTENT OF PARKING GARAGE BELOW
05 RAISED PLANTING BED, REFER TO LANDSCAPE
06 EXISTING CONCRETE SIDEWALK
07 PRIVATE RESIDENTIAL BALCONY
08 PICK-UP/DROP-OFF & VISITOR PARKING
09 RETAINING WALL, REFER TO CIVIL
010 SOFT LANDSCAPING, REFER TO LANDSCAPE
011 LINE DENOTES CANOPY ABOVE
012 EXISTING 3 STOREY BRICK BUILDING
013 3m X 3m CORNER TRIANGLE

SITE STATISTICS

Current Zoning Designation:	R5B-H(19)
Lot Width:	72.11m
Total Lot Area:	4,904.2m²
Average Existing Grade:	63.27m

Proposed Development - 25 Storey High-Rise Mixed-Use Apartment Building

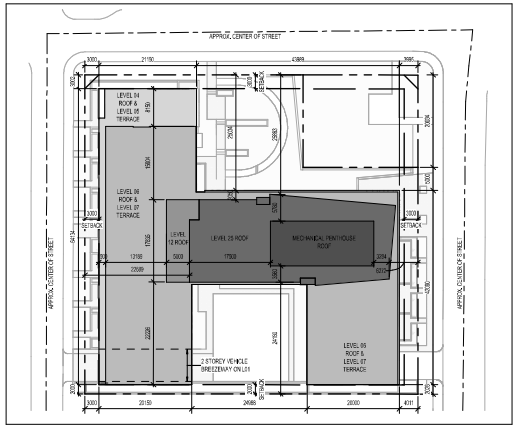
No. of units 392 Units

Zoning Mechanism	Required	Provided
Minimum Lot Width (164(a))	25.2m	72.1m
Minimum Lot Area (164(a))	675.0m²	4,904.5m²
Min. Front Yard Setback (164(e))	3.0m	3.2m
Corner Side Yard Setback (164(e))	3.0m	3.2m
Min. Interior Side Yard Setback (164(b)(ii)(c) & (f))	6.0m if located further than 21.2m from the front lot line	2.2m
Min. Rear Yard Setback (164(b)(i))	7.0m	N/A
Maximum Building Height (164(b)(iii))	19.0m	77.6m
Parking Space Rates (Residents) 101 (Sch. 1A - Area Z)	0 Spaces (Min)	112 Spaces
Minimum Visitor Parking Rates Table 102 (Sch. 1A - Area Z) Section 102(2)	26 Spaces 3 spaces for first 12 units 0.1 spaces / unit for 380 units	27 Spaces
Parking Space Rates (Retail) 101 (Sch. 1A - Area Z) Section 101(2)	0 Spaces No off-street parking required	0 Spaces
Bicycle Parking Rates (Residents) Table 111A(b)(i) (Sch. 1 - Area B)	196 Spaces 0.5 spaces / unit for 392 units	400 Spaces
Bicycle Parking Rates (Retail) Table 111A(e) (Sch. 1 - Area B)	1 Space 1 space / 250m² x 99.4m²	4 Spaces
Total Amenity Area Table 137(4)(i)	2,352.0m² 6m² / unit for 392 units	2,355.0m²
Communal Amenity Area Table 137(4)(ii)	1,176.0m² Min. 50% of Total Amenity Area	1,543.0m²

TOPOGRAPHIC PLAN OF SURVEY OF LOTS 30, 34, 35, 38, 37, 85, 81, 82, 83 AND 84 AND PART OF THE ADJACENT LANE REGISTERED PLAN 4M-537 CITY OF OTTAWA

FARLEY, SMITH, & DENIS SURVEYING LTD. 2022

SURVEY INFO
SCALE: 1 : 100



3 SP-01 SITE SETBACK PLAN
SCALE: 1 : 500

GENERAL ARCHITECTURAL NOTES:

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

7	REISSUED FOR ZBLA/OPA	26-06-10
6	REISSUED FOR ZBLA/OPA	26-07-09
5	ISSUED FOR COORDINATION	26-05-27
4	ISSUED FOR ZBLA/OPA	25-12-19
3	ISSUED FOR COORDINATION	25-11-25
2	ISSUED FOR COORDINATION	24-04-09
1	ISSUED FOR COORDINATION	24-02-09

ISSUE RECORD

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Ryan M. Koolwine
Licence 7370

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116 BEECH

116 Beech Street
Ottawa, ON K1S 3K1

PROJ	SCALE	DRAWN	REVIEWED
2307	NOTED	JDH	RMK

SITE PLAN

SP-01

2.2 Existing Conditions

2.2.1 Area Road Network

Carling Avenue: Carling Avenue is a City of Ottawa arterial road with a six-lane divided urban cross-section including sidewalks on both sides and a 60 km/h posted speed limit. The Ottawa Official Plan reserves a 44.5 metre right of way.

Preston Street: Preston Street is a City of Ottawa arterial road with a two-lane urban cross-section including sidewalks and intermittent on-street parking locations on both sides of the roadway. The speed limit remains 50km/h. The Ottawa Official Plan reserves a 23.0 metre right of way.

Beech Street: Beech Street is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides and on-street parking on the north side of the roadway. The speed limit is an unposted 50km/h and the existing right of way is 20.0 metres.

Champagne Avenue: Champagne Avenue is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides. On-street parking is permitted on the west side of the road between Beech Street and Hickory Street. The speed limit is 30km/h. The existing right of way is 20.0 metres.

Loretta Avenue: Loretta Avenue is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides and on-street parking. Between Beech Street and Hickory Street no parking is permitted. The speed limit is 30km/h and the existing right of way is 20.0 metres.

Pamilla Street: Pamilla Street is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on both sides and on-street parking on the north side of the roadway. The speed limit is an unposted 50km/h and the existing right of way is 15.0 metres.

2.2.2 Existing Intersections

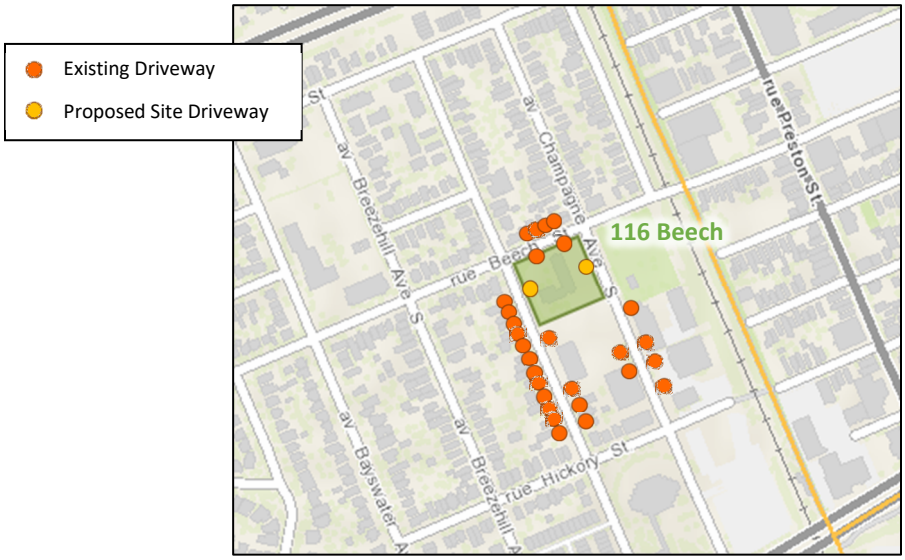
The existing key area intersections within 400 metres of the site have been summarized below:

Carling Avenue at Champagne Avenue	The intersection of Carling Avenue at Champagne Avenue is a signalized t-intersection. The southbound approach consists of an auxiliary left-turn lane and a right-turn lane, the eastbound approach consists of an auxiliary left-turn lane, two through lanes, and a transit lane and the westbound approach consists of three through lanes and an auxiliary right-turn lane. No turn restrictions were noted. Once the construction is complete, the northbound and southbound approaches will consist of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches will each consist of an auxiliary left-turn lane, two through lanes, and an auxiliary right-turn lane that is shared with the transit through lane.
Beech Street at Loretta Avenue	The intersection of Beech Street at Loretta Avenue is an unsignalized with stop control in the north-south direction. All approaches consist of a shared all movement lane. No turn restrictions were noted.
Beech Street at Champagne Avenue	The intersection of Beech Street at Champagne Avenue is an unsignalized all-way stop control intersection with shared all movement lanes on all approaches. No turn restrictions were noted.

Preston Street at Pamilla Street	The intersection of Preston Street at Pamilla Street is a signalized intersection. The northbound, southbound and eastbound approaches all consist of a shared all movement lane. The east leg of the intersection is one-way in the eastbound direction. No other turn restrictions were noted.
Preston Street at Beech Street	The intersection of Preston Street at Beech Street is a signalized intersection. The northbound, southbound and westbound approaches each have an auxiliary left-turn lane and a shared through/right-turn lane, and the westbound approach is a shared all movement lane. No turn restrictions were noted.

2.2.3 Existing Driveways

There are existing private residential driveways along Beech Street, private residential driveways and residential tower accesses along Loretta Avenue, residential tower accesses along Champagne within 200 metres of the proposed site access. None of the driveways are not expected to be significant traffic generators and have no impact on this TIA.

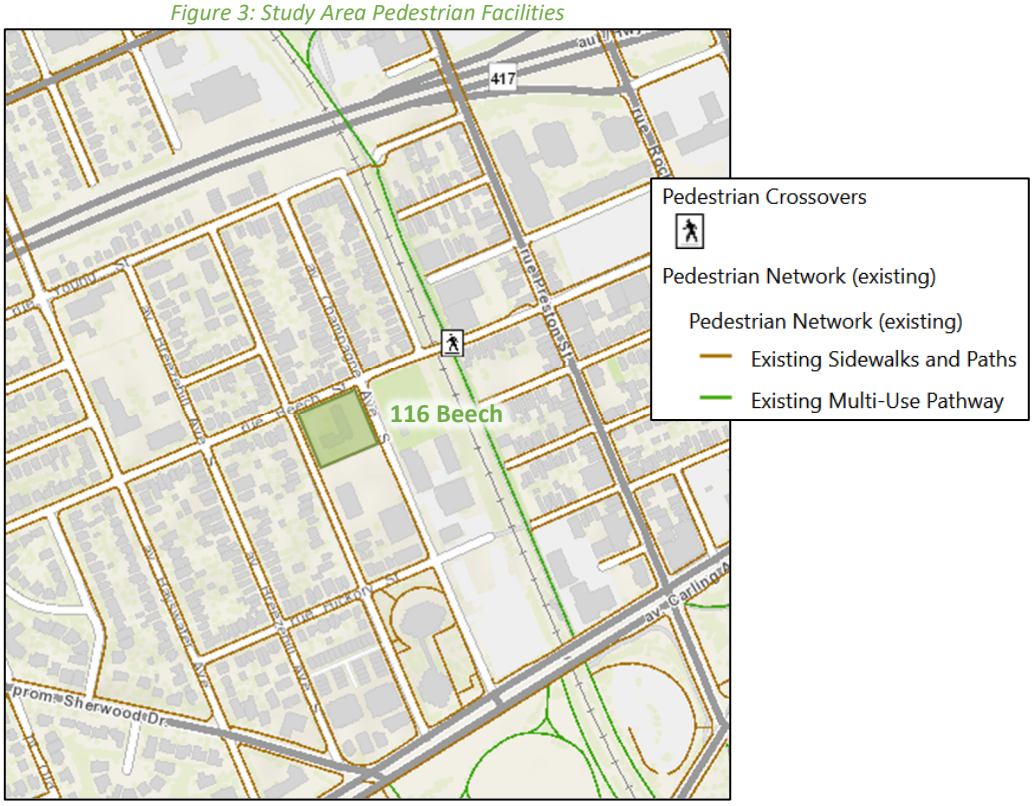


2.2.4 Cycling and Pedestrian Facilities

Figure 3 illustrates the pedestrian facilities in the study area and Figure 4 illustrates the cycling facilities.

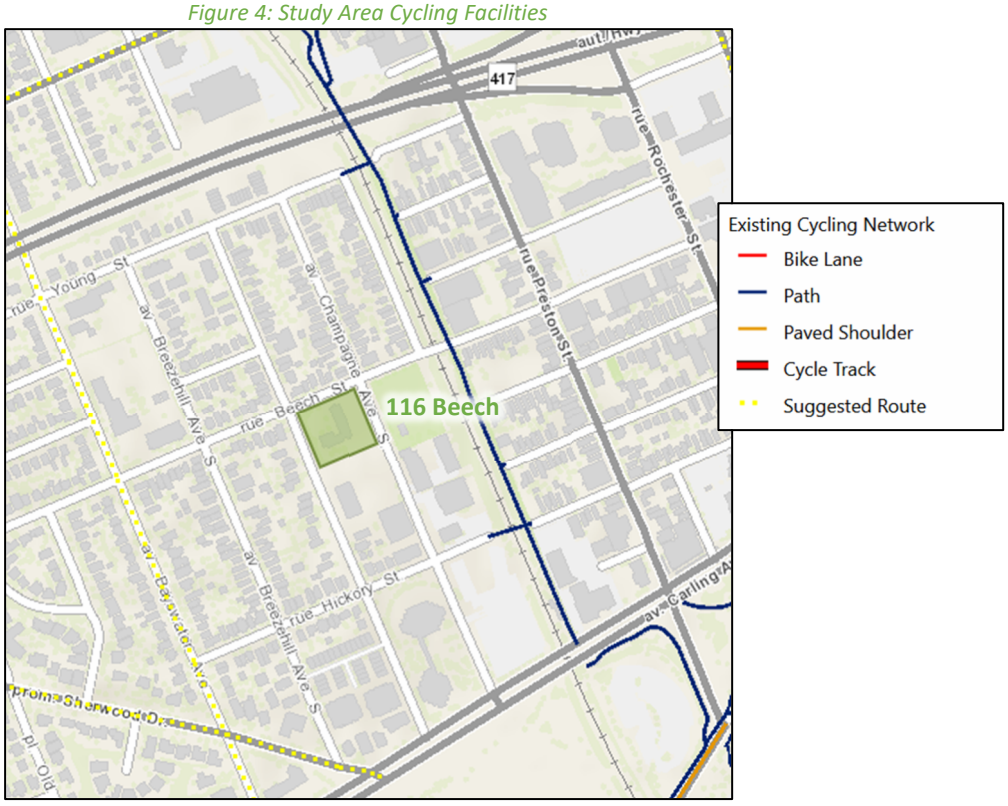
Sidewalks are provided along both sides of the roadways in the area except along Champagne Avenue on the Ev Tremblay Park frontage. Cycling facilities are limited to the path along LRT Line 2 and suggested routes on Bayswater Avenue sand Sherwood Drive. The pathway along the LRT and Carling Avenue east of the LRT pathway are cross-town bikeways.

Figure 3: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: December 15, 2025

Figure 4: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: December 15, 2025

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 5 and Figure 6, respectively.

Figure 5: Existing Pedestrian Volumes

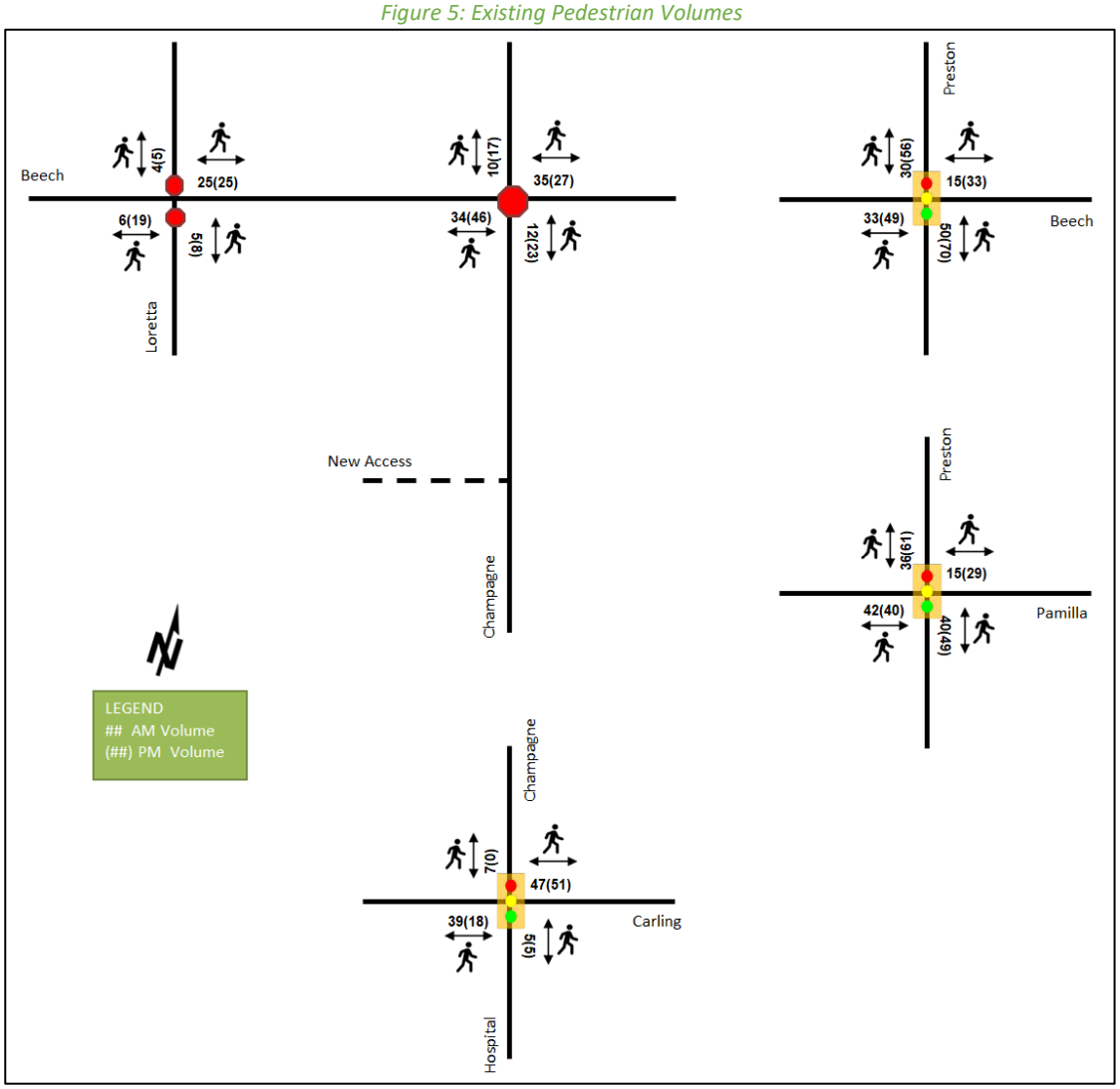
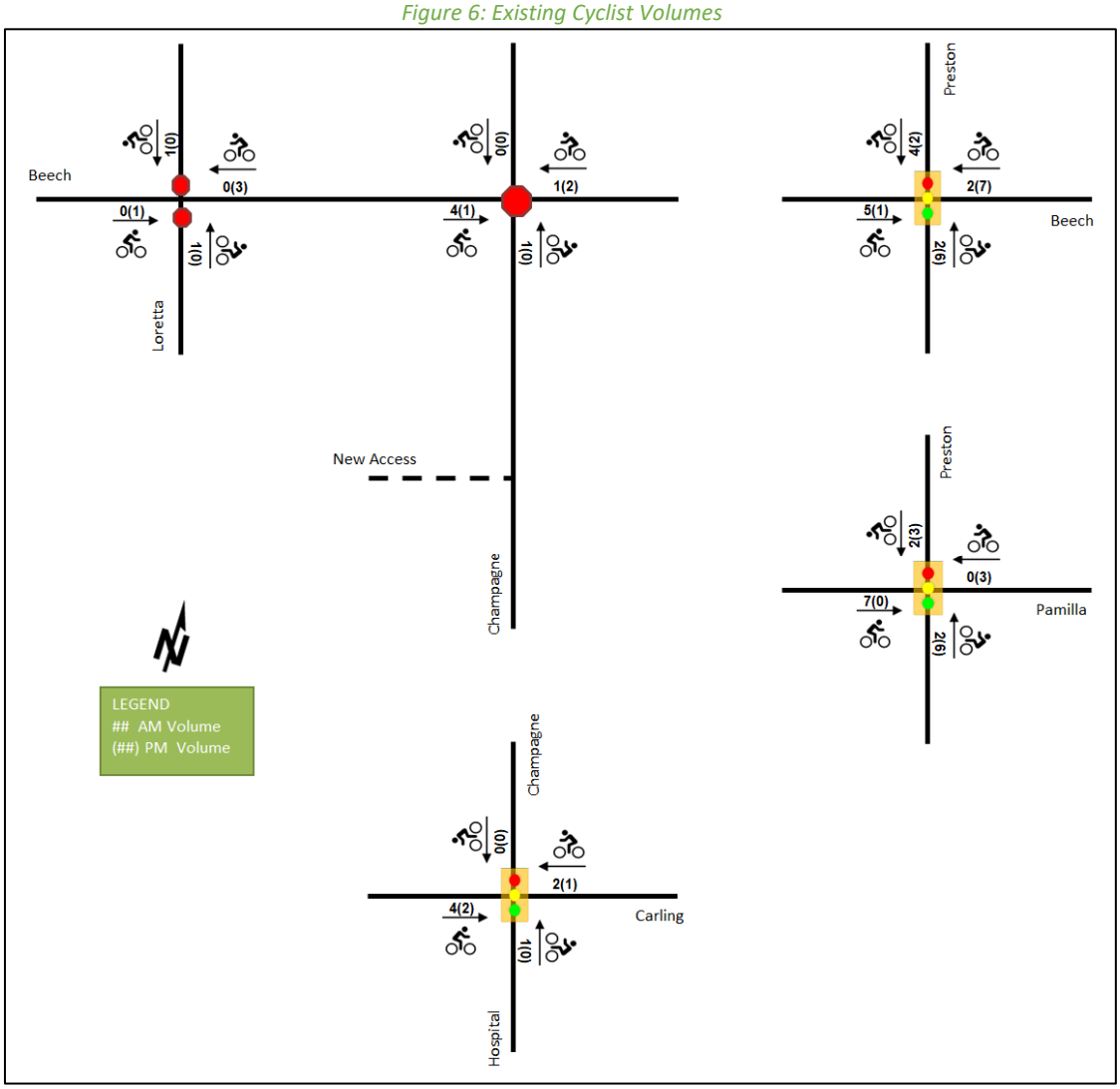


Figure 6: Existing Cyclist Volumes



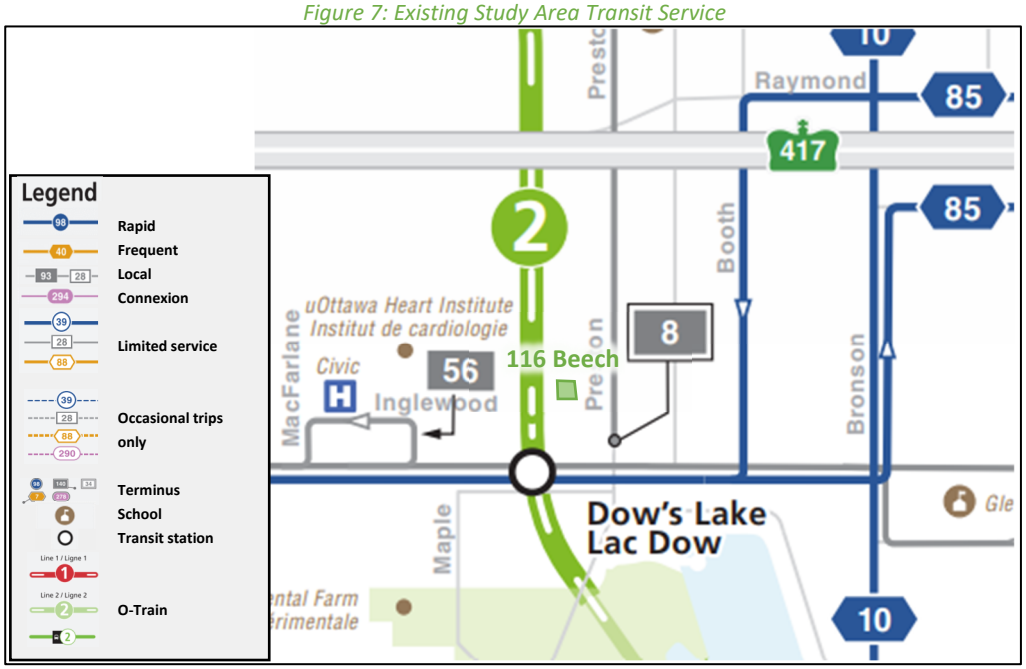
2.2.5 Existing Transit

Figure 7 illustrates the transit system map in the study area and Figure 8 illustrates nearby transit stops. All transit information is from December 15, 2025 and is included for general information purposes and context to the surrounding area.

Within the study area, the routes #8, #56, #85 and LRT Line 2 are located in the vicinity of the site. The frequency of these routes within proximity of the proposed site based on December 15, 2025 service levels are:

- Route #8 – 30-minute service all day
- Route #56 – 15-minute peak period/direction service, 30-minute peak period/off-peak direction service
- Route # 85 – 15-minute daytime service, 30-minute service before 6:00AM and after 7:00PM
- LRT Line 2 – 12-minute service all day

Figure 7: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: December 15, 2025

Figure 8: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: December 15, 2025

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 City of Ottawa and J&S Traffic Services for the existing study area intersections. Table 1 summarizes the intersection locations and count dates.

Table 1: Intersection Count Date

Intersection	Count Date
Carling Avenue at Champagne Avenue	Wednesday, February 14, 2024
Beech Street at Loretta Avenue	Thursday, November 20, 2025
Beech Street at Champagne Avenue	Tuesday, November 25, 2025
Preston Street at Pamilla Street	Tuesday, November 25, 2025
Preston Street at Beech Street	Thursday, November 20, 2025

Figure 9 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, and average delay for unsignalized intersections. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 9: Existing Traffic Counts

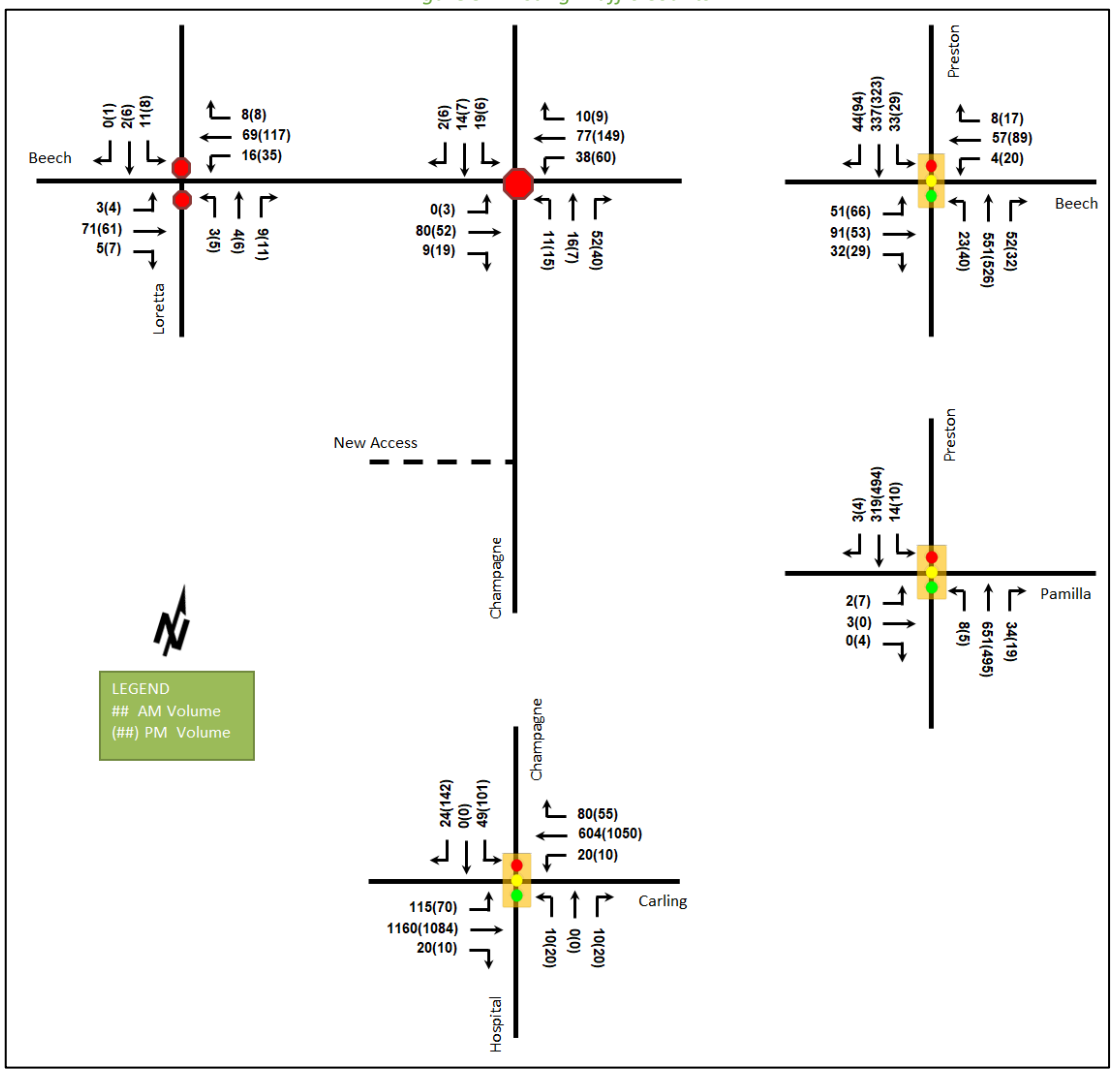


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Carling Avenue at Champagne Avenue *Signalized*	EBL	B	0.68	69.5	49.3	A	0.55	75.5	37.0
	EBT	A	0.53	12.1	155.8	A	0.50	11.2	133.7
	EBR	A	0.02	0.1	0.0	A	0.01	0.0	0.0
	WBL	A	0.22	58.5	13.3	A	0.14	67.4	9.5
	WBT	A	0.32	13.1	72.5	A	0.54	15.8	147.8
	WBR	A	0.11	3.6	9.0	A	0.07	2.3	4.8
	NBL	A	0.06	42.1	6.6	A	0.11	51.3	12.3
	NBR	A	0.04	2.3	1.3	A	0.08	11.8	5.9
	SBL	A	0.27	48.4	20.0	A	0.55	66.1	43.5
	SBR	A	0.08	8.1	5.1	A	0.40	36.0	41.1
	Overall	**B**	-	**16.5**	-	**B**	-	**18.7**	-
Beech Street at Loretta Avenue *Unsignalized*	EB	A	0.00	7.5	0.0	A	0.00	7.6	0.0
	WB	A	0.01	7.4	0.0	A	0.03	7.5	0.8
	NB	A	0.02	9.6	0.8	B	0.04	10.3	0.8
	SB	B	0.02	10.5	0.8	B	0.03	11.5	0.8
	Overall	**A**	-	**2.2**	-	**A**	-	**2.5**	-
Beech Street at Champagne Avenue *Unsignalized*	EB	A	0.12	7.9	3.0	A	0.10	7.7	2.3
	WB	A	0.17	8.2	4.5	A	0.29	8.9	9.0
	NB	A	0.10	7.6	2.3	A	0.08	7.7	2.3
	SB	A	0.05	7.9	1.5	A	0.03	7.7	0.8
	Overall	**A**	-	**7.9**	-	**A**	-	**8.4**	-
Preston Street at Pamilla Street *Signalized*	EB	A	0.02	26.8	3.4	A	0.05	6.6	2.7
	NB	A	0.55	7.5	91.1	A	0.40	5.0	53.8
	SB	A	0.27	1.7	9.2	A	0.40	4.2	37.6
	Overall	**A**	-	**5.7**	-	**A**	-	**4.6**	-
Preston Street at Beech Street *Signalized*	EB	C	0.71	43.1	45.6	C	0.74	52.6	**#48.7**
	WBL	A	0.22	28.5	18.4	A	0.46	39.0	34.4
	WBT/R	A	0.03	0.6	0.5	A	0.08	7.9	4.0
	NBL	A	0.05	5.5	m2.5	A	0.08	1.7	1.0
	NBT/R	A	0.57	7.7	44.8	A	0.51	5.3	39.8
	SBL	A	0.09	5.9	5.3	A	0.07	5.2	4.5
	SBT/R	A	0.36	6.7	40.8	A	0.39	6.3	43.5
	Overall	**B**	-	**13.0**	-	**B**	-	**13.6**	-

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, where all movements operate with LOS C or better.

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 10 illustrates the intersections and segments analyzed, and Table 4 summarizes the total collisions for each of these locations. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		16	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	2	13%
	Property Damage Only	14	88%
Initial Impact Type	**Angle**	4	25%
	Sideswipe	1	6%
	Turning Movement	1	6%
	SMV Unattended	8	50%
	Other	2	13%
Road Surface Condition	**Dry**	11	69%
	Wet	2	13%
	Loose Snow	1	6%
	Slush	1	6%
	Packed Snow	1	6%
Pedestrian Involved		0	0%
Cyclists Involved		1	6%

Figure 10: Study Area Collision Records

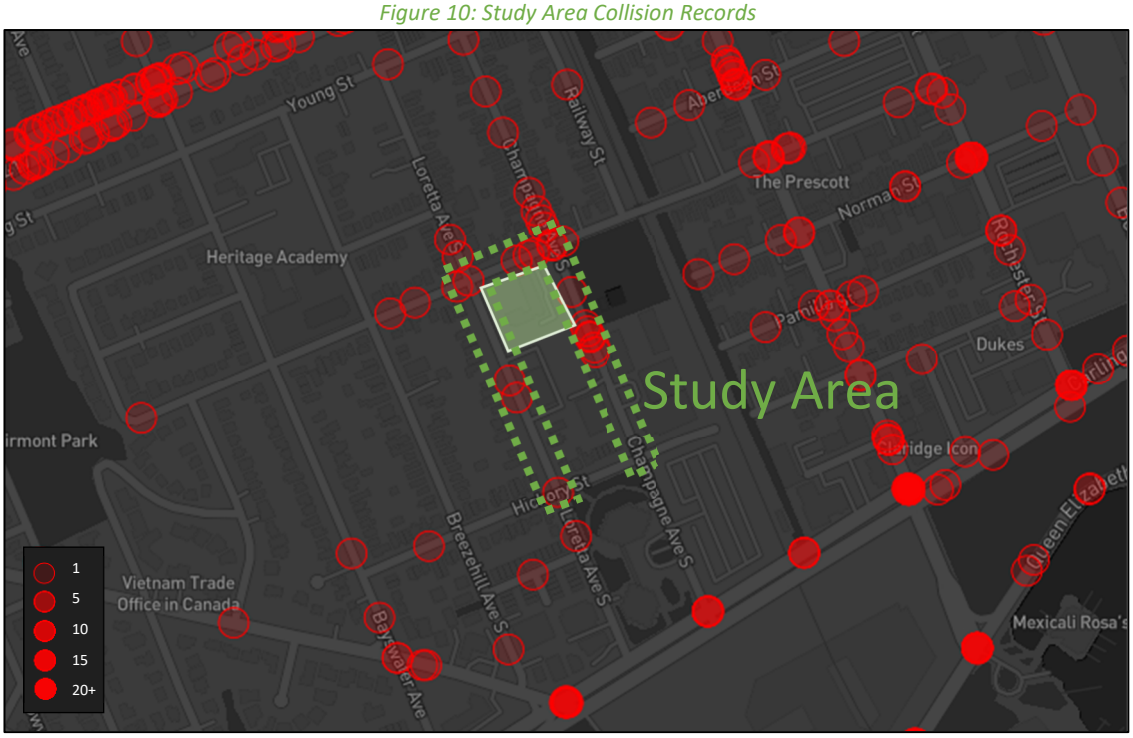


Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	**16**	**100%**
Champagne Ave between Beech St & Hickory St	8	50%
Beech St between Loretta Ave & Champagne Ave	3	19%
Loretta Ave between Beech St & Hickory St	2	13%
Loretta Ave between Beech St & Hickory St	2	13%
Beech St at Champagne Ave	1	6%
Beech St at Loretta Ave	1	6%

	Number	%
Intersections / Segments	**16**	**100%**
Hickory St at Loretta Ave	1	6%

Within the study area, the segment of Champagne Avenue between Beech Street and Hickory Street is noted to have experienced slightly collisions than other locations. Table 5 summarizes the collision types and conditions for this location.

One vulnerable mode collision was noted on Beech Street between Loretta Avenue and Champagne Avenue during this five-year period, involving a westbound left-turning vehicle and a cyclist making the eastbound through movement. The collision happened on a Saturday evening in early September 2020 in clear, dry, daylight conditions, and based on the coordinates recorded for the collision, involved a driver seeking to turn into the access for the existing parking lot on the northeast corner of the subject property. The proposed development would move site access to the lower volume streets, with the primary access being on Champagne Avenue, which is parallel to the Trillium Pathway approximately 90-metres offset, and would be anticipated to have a lower interaction with cyclists. Therefore, the proposed development would mitigate any potential for this specific collision pattern on Beech Street to recur.

Table 5: Champagne Avenue between Beech Street and Hickory Street Collision Summary

		Number	%
Total Collisions		8	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	0	0%
	Property Damage Only	8	100%
Initial Impact Type	**Angle**	2	25%
	Sideswipe	1	13%
	SMV Unattended	5	63%
Road Surface Condition	**Dry**	5	63%
	Wet	2	25%
	Packed Snow	1	13%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The segment of Champagne Avenue between Beech Street and Hickory Street had a total of eight collisions during the 2018-2022 time period, with all eight involving property damage only. The collision types are most represented by single motor vehicle (unattended) with vehicles colliding with parked cars, and two collisions were recorded as being angle collisions and one as a sideswipe. While these collision frequencies are low and not indicative of issues, this segment of Champagne Avenue had significant construction-related disruption for the majority of this period and thus collision patterns are not considered representative, and thus no further review of collisions at this location 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 (2025)

The recently approved Transportation Master Plan includes the Capital Infrastructure Plan identifying transportation investments to support the forecasted growth and strategic connectivity and livability targets for the City. It also identifies committed projects, and a subset of priority projects that are expected to be implemented by 2046 based on current affordability assumptions. Area projects anticipated to impact travel in the study area that are included within the Capital Infrastructure Plan are:

- Active Transportation Network
    - Pedestrian Projects with Prioritization
        - (No projects within the study area)
    - Cycling Projects with Prioritization
        - (No projects within the study area)
- Transit Network
    - Priority Network
        - Carling Avenue (Lincoln Fields Station to Sherwood Drive) – continuous bus lanes
    - Needs-Based Network
        - Carling Transitway (Lincoln Fields Station to Dow's Lake Station) – median bus lanes
    - Ultimate Network
        - (No additional facilities within the study area)
- Road Network
    - Priority Network or Needs-Based Network or Ultimate Network
        - (No projects within the study area)

2.3.2 Other Study Area Developments

829 Carling Avenue

The proposed development application includes a 40-storey mixed-use building with ground-floor commercial. As part of this development, 396 residential units are proposed. The expected buildout year is 2028 and the development is anticipated to generate 17 AM and 16 PM peak hour two-way auto trips. (Parsons, 2023).

845 Carling Avenue

The proposed development application includes a site plan for the first phase of a mixed-use development comprising two residential towers, one of which with commercial and office space in the podium. Phase 1 of the development includes a 36-storey mixed-use building comprising 280 residential dwelling units, 53,000 sq ft of office space, and 13,444 sq ft of ground floor retail space. The expected buildout year is 2028 and the development is anticipated to generate 49 AM and 50 PM peak hour two-way auto trips. (TIA pending)

870-930 Carling Avenue, 520 Preston Street (New Civic Campus for The Ottawa Hospital)

The proposed development application includes new Civic development for The Ottawa Hospital with the gross floor area of 4.94 million square feet including 3.32 million square feet for hospital land uses, 868,000 for U. Ottawa heart institute, and 750,000 square feet for ancillary retail services, ground floor commercial, hospital appointments, and research and development land uses. As part of this development, 3,095 parking spaces are proposed. The parking garage was anticipated to be built out in 2024 as phase 1 and the hospital buildings begin following the completion of the parking garage. The opening day is expected to occur in 2028, and the anticipated full buildout is 2048. The TIA report for parking garage is anticipated to generate 250 peak hour vehicle trips by 2024 and the constriction of hospital building is expected to generate 844 AM and 567 PM peak hour two-way auto trips by 2028 (Parsons, 2021, 2023).

70 Beech Street, 75 Norman Street

The proposed development application includes a minor zoning-by-law amendment and site plan application permitting the construction of a six-storey mixed-use building including 40 one-bedroom units and commercial uses on the ground floor. No TIA or screening form is included as part of the application, however only five parking spaces are proposed for this development, and it is expected to have a negligible impact on the road network.

357-363 Preston Street

The proposed development application includes a site plan for the construction of a six-storey mid-rise building. As part of the development, 45 dwellings, ground-floor commercial space with approximately 3,830 square feet, and 9 vehicle parking spaces and 35 bicycle parking spaces are proposed. The expected buildout year is 2026. The development is expected to generate 4 AM-peak vehicle trips and 5 PM-peak vehicle trips. (Novatech 2024)

17 Aberdeen Street

The proposed application includes development expansion to a 30-storey including 252 units and total 1,015 parking spaces. While no buildout horizon was included within the traffic addendum that is publicly available, the development is not yet constructed and is anticipated to generate 54 AM and 76 PM peak hour two-way auto trips. (IBI Group 2019)

450 Rochester Street

The proposed development application includes an official plan amendment permitting the construction of mixed-use development. As part of this development, in the phase 1 a 9-storey and a 15-storey residential building with approximately 295 units, a grocery store with 21,550 square feet, a liquor store with 12,210 square feet, a retail on ground floor with 4,817 square feet and a retail/commercial with 10,360 square feet on second and third floors for a total of approximately 48,937 square feet of commercial/retail are proposed. Phase 2 consists of a 26-storey residential building with approximately 245 units and a retail store on the ground floor with 10,245 square feet. The buildout years are initially assumed to be 2024 for Phase 1 and 2026 for Phase 2, however construction has not yet commenced. The development is expected to generate 80 AM and 75 PM peak hour two-way auto trips. (Parsons 2019)

552 Booth Street

The proposed development application includes a zoning by-law amendment permitting the construction of five buildings with approximately 1000 residential units. The proposed development also includes five existing heritage buildings which will consist of retail and office uses and add up to approximately 142,000 square feet (Parsons 2018). The forecasting report for this development is not yet available on the City's online development application search tool and thus, the projected trip generation of this development is unknown at this point.

265 Carling Avenue

The proposed application includes a redevelopment of the existing eight-storey building. As part of this redevelopment, 70 residential units, 1,046 square feet commercial space, and 1,745 square feet amenity space are proposed. The expected buildout year is 2026. The development is anticipated to be associated with reduction of 71 two-way person trips during the AM-peak hour and 63 two-way person trips during the PM-peak hour (CGH 2023).

770-774 Bronson Avenue

The proposed development application includes a zoning by-law amendment/site plan application permitting the construction of a 22-storey mixed-use building and a 9-storey residential building, comprising 340 apartment units and 4,742 sq ft of commercial space. Initially anticipated to be built-out by 2025, construction has not yet commenced. The development is anticipated to generate 37 AM and 35 PM peak hour two-way auto trips (CGH 2025).

273-281 Bell Street

The application includes zoning by-law amendment and site plan applications to permit the construction of a six-storey residential building comprising 49 dwelling units. No TIA was required.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of Carling Avenue at Champagne Avenue, Beech Street at Loretta Avenue, at Champagne Avenue, Preston Street at Pamilla Street, and at Beech Street, and the intersection of site accesses.

The boundary road will be Beech Street, Loretta Avenue and Champagne Avenue and no screenlines are considered.

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 Merivale have been summarized in Table 6.

Table 6: TRANS Trip Generation Manual Recommended Mode Shares – Merivale

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	41%	41%
Auto Passenger	6%	11%
Transit	42%	33%
Cycling	2%	2%
Walking	8%	13%
Total	**100%**	**100%**

No adjustments to the existing area mode shares will be considered.

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 7 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 7: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	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 8 summarizes the total person trip generation for the residential land uses.

Table 8: Total Residential 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	392	97	217	314	205	148	353

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 component. Table 9 summarizes the residential trip generation by mode and peak hour.

Table 9: 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	41%	19	43	62	41%	36	28	64
	Auto Passenger	6%	3	6	9	11%	10	7	17
	Transit	42%	22	51	73	33%	31	24	55
	Cycling	2%	1	2	3	2%	2	1	3
	Walking	8%	5	11	15	13%	13	11	24
	Total	**100%**	**50**	**113**	**162**	**100%**	**92**	**71**	**163**

As shown above, a total of 62 AM and 64 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 2030 Table 10 below summarizes the distributions.

Table 10: OD Survey Distribution – Merivale

To/From	Residential % of Trips
North	55%
South	10%
East	20%
West	15%
Total	**100%**

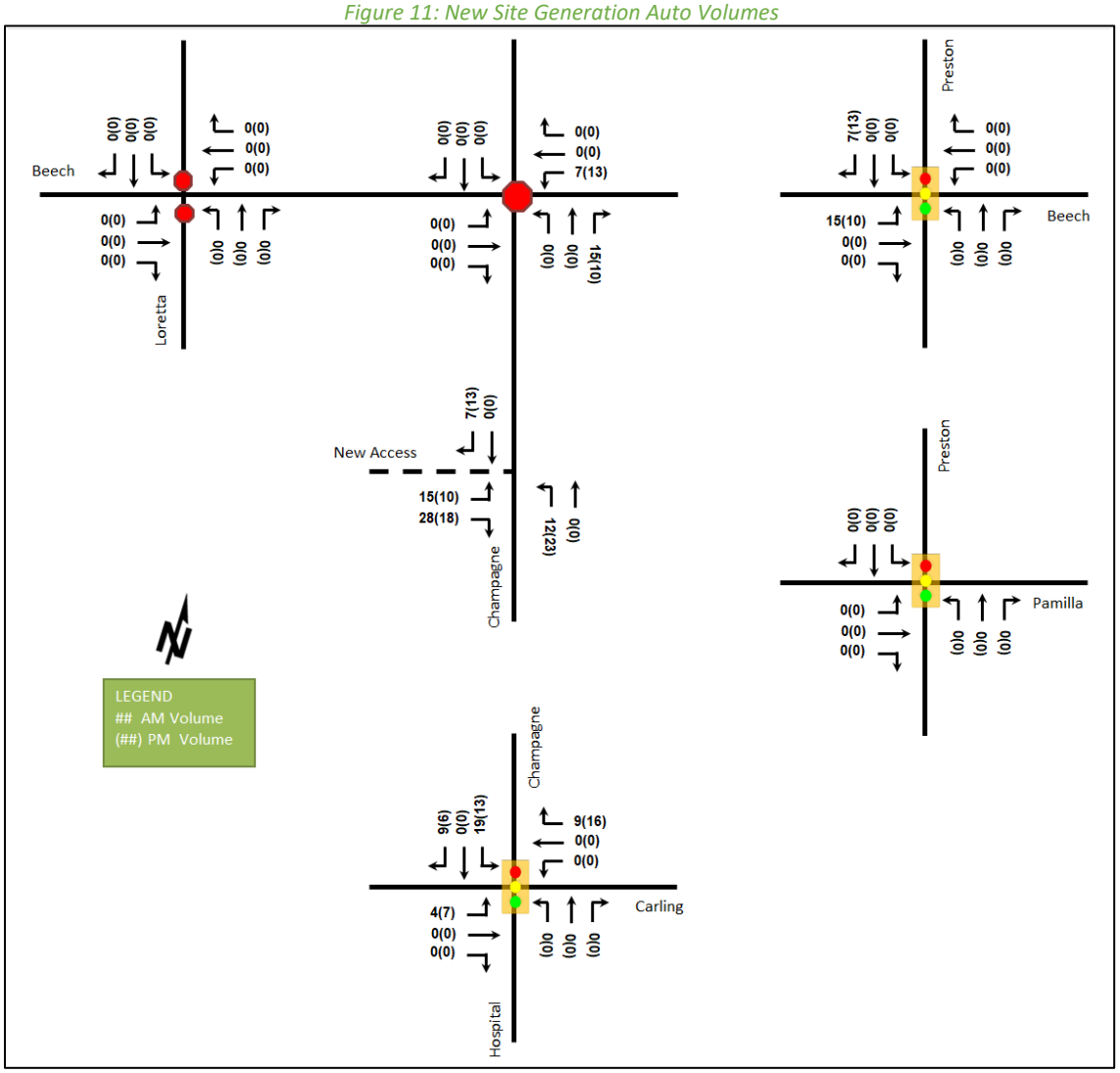
4.4 Trip Assignment

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. Table 11 summarizes the proportional assignment to the study area roadways, and Figure 11 illustrates the new site generated volumes.

Table 11: Trip Assignment

To/From	Inbound/Outbound Via
North	35% Preston St 20% Carling Ave (E)
South	10% Carling Ave (E)
East	20% Carling Ave(E)
West	15% Carling Ave (W)
Total	**100%**

Figure 11: New Site Generation Auto Volumes



5 Exemption Review

Table 12 summarizes the exemptions for this TIA.

Table 12: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
4.1 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
4.2 Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
4.3 Boundary Street Design		All applications	Required
4.5 Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required

Module	Element	Explanation	Exempt/Required
Network Impact			
3.2 Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered	Exempt
3.3 Demand Rationalization		Only required when one or more other Network Impact Modules are triggered	Exempt
4.6 Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site 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.	Exempt
4.7 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
4.8 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 (forecasting less than200 people trips)
4.9 Intersection Design	4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt

Module	Element	Explanation	Exempt/Required
	4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is a 25-storey residential building. Vehicle parking is located in two levels of interior parking and with 12 short-term parking spaces provided in a small surface lot. Bicycle parking is located both externally and in the interior parking levels, one of which is at grade. Elevators are additionally provided from the parking levels for cyclists' ease of use. Building entrances are located on all sides of the building.

An existing 1.8-metre sidewalks are present along boundary of the site on Loretta Avenue, Beech Street and Champagne Avenue and these will be widened to 2.0-metres. Hard surface connections to this facility are proposed from the building entrances.

Within a 400-metre walk from the building entrances, Dow's Lake Station and bus stops are located on both sides of Preston Street provide access to transit. The bus stops on Carling are between a 450 and 560-metre walking distance.

The infrastructure TDM checklist is provided in Appendix E.

6.2 Circulation and Access

Vehicular access is provided via a 6-metre wide at grade access on Champagne Avenue to the interior parking, and a 6-metre at grade access on Loretta Avenue to the visitor parking surface lot. The garbage is expected to be collected curbside along Champagne Avenue and will not travel internal to the site. As requested by the City, the movement of a garbage truck pulling up to the curbside has been provided in Appendix F.

7 Parking

7.1 Parking Supply

The site is proposed to include a total of 139 vehicle parking spaces, including 27 visitor spaces split between the surface and interior spaces, and 404 bicycle parking spaces.

The site is located within Area Z on Schedule 1A of the parking provisions in the Zoning By-Law. No minimum vehicle parking is required for residents, and a total of 38 visitor parking spaces and 196 residential bicycle parking spaces are required.

The Zoning By-Law sets a maximum vehicle parking provision for developments located within 600 metres of a rapid transit station. A maximum parking ratio of 1.75 spaces per dwelling unit for the residential component, including visitor spaces, resulting in a total of 686 parking spaces.

Overall, the proposed parking rates meet the vehicle and bicycle parking requirements for Area Z. Although the proposed visitor parking spaces do not meet the requirements, 207 additional bicycle parking spaces are proposed above the required minimum, given the site's proximity to the O-Train station and Trillium Pathway. Therefore, the proposed parking supply is considered appropriate for the area and is supported for the rezoning application.

8 Boundary Street Design

Table 13 summarizes the MMLOS analysis for the boundary streets of Beech Street, Champagne Avenue and Loretta Avenue. The existing and future conditions for both streets will be the same and are considered in one row. The MMLOS worksheets has been provided in Appendix G.

Table 13: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Public Realm LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	PRLOS	Target
Beech Street	B	A	D	B	-	-	C	C
Champagne Avenue	B	A	A	B	-	-	C	C
Loretta Avenue	B	A	B	B	-	-	C	C

All three roadways will not meet the pedestrian LOS target and Beech street does not meet the bicycle LOS target. Beech Street would need a 2.0-metre sidewalk and an offset of over 1.5m to meet the target, and both Loretta Avenue and Champagne Avenue would need a 2.0-metre sidewalk to meet the target. The site is expected to provide 2.0-metre sidewalks along the perimeter.

Beech Street would need speed reductions and possible volume reduction to meet the bicycle target.

9 Intersection Design

9.1 Intersection Control

No change to the existing control for the network intersections. The site access is proposed as having minor stop control on the access approach.

9.2 Intersection Design

The site is proposed to have two two-way, full-movement accesses, including one 6-metre-wide access on Champagne Avenue and one 6-metre-wide, at-grade access on Loretta Avenue. The proposed number and configuration of accesses comply with the Private Approach By-law, which permits a maximum of two (2) two-way private approaches per frontage. Both proposed accesses meet the minimum and maximum vehicular access widths specified in the Private Approach By-law.

As this application is a Zoning By-law Amendment and Official Plan Amendment application, the detailed design of the accesses, including driveway grades, will be reviewed through the Site Plan Control application. It is recommended that the driveway grade within the right-of-way not exceed the maximum grade of 6% for accesses on local roads, as specified in Chapter 8 of the Geometric Design Guide for Canadian Roads (TAC, 2017).

10 Transportation Demand Management

10.1 Context for TDM

The mode shares used within the TIA represent a split between auto and transit modes. Overall, the modal shares are consistent with the existing area likely to be achieved.

The subject site is within a hub area along the LRT Line 2.

Total bedrooms within the development is subject to the final unit count and layout selections by purchasers. No age restrictions are noted.

10.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto and transit travel, and those assumptions have been carried through the analysis. The study area intersections are anticipated to have residual capacity and the increase in transit ridership is achievable.

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 E.

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 site includes 392 apartment units, 139 parking spaces and 404 bicycle parking spaces
- Accesses will be provided to Loretta Avenue (surface lot) and Champagne Avenue (interior parking levels)
- The development is proposed to be completed as a single phase by 2030

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

- Carling Avenue and Preston Street are arterial roads, and Beech Street, Loretta Avenue, Champagne Avenue and Pamilla Street are local roads
- Sidewalks are provided on both sides of the study area roadways, excluding the EV Trambley park frontage on Champagne Avenue, and cycling facilities are limited to the LRT Line 2 pathway and suggested routes on Bayswater Avenue and Sherwood Drive
- The collisions in the study area are predominantly single motor vehicle collisions with parked cars and may be associated with construction-related disruptions, and one collision involving a bicycle on Beech Street between Loretta Avenue and Champagne Avenue was recorded during the five-year study period associated with the existing site access which will be mitigated through redevelopment
- Study area intersections operate well

Planned Conditions

- Continuous bus lanes are expected along Carling Avenue, west of LRT Line 2, with median bus lanes noted in the needs network within the TMP

Development Generated Travel Demand

- The proposed development is forecasted produce 162 two-way people trips during the AM peak hour and 163 two-way people trips during the PM peak hour
- Of the forecasted people trips, 62 two-way trips will be vehicle trips during the AM peak hour and 64 two-way trips will be vehicle trips during the PM peak hour based on a 41% modal share

- Of the forecasted people trips, 73 two-way trips will be transit trips during the AM peak hour and 55 two-way trips will be transit trips during the PM peak hour based on a 42/33% modal share
- Of the forecasted trips, 55 % are anticipated to travel north, 20 % to the east, and 15 % to both the west and south

Development Design

- The proposed development is a 25-storey residential building
- Vehicle parking is located within interior parking levels and a visitor 12 space surface lot
- A total of 404 bicycle parking spaces are proposed, including four external spaces and 400 internal spaces to the building
- The existing sidewalks on Beech Street, Loretta Avenue and Champagne Avenue will be widened to 2.0-metres and hard surface connections to this facility are proposed from the building entrances
- Bus stops are located at the Dows Lake Station and on Preston Street within a 400-metre walk of the building and additional stops on Carling Avenue are located between a 450 to 560-metre walk of the building
- entrances and OC Transpo bus stop #6695 is proposed to be reconstructed along the site frontage
- Garbage collection will occur curbside on Champagne Avenue

Parking

- The site is proposed to include a total of 139 vehicle parking spaces and 404 bicycle parking spaces
- The proposed parking rates meet the vehicle and bicycle parking requirements for Area Z
- The proposed parking supply is considered appropriate for the area and is supported for the rezoning application

Boundary Street Design

- The boundary streets will not meet pedestrian LOS target due to facility width and/or separation width, and Beech Street will not meet the bicycle LOS target due to travel speeds and volumes
- The site will include widened sidewalks, from 1.8-metres to 2.0-metres to address the pedestrian LOS

Access Intersection Design

- A 6-metre wide access is provided at grade on Champagne Avenue to the interior parking, and a 6-metre at grade access is provided on Loretta Avenue to the visitor parking surface lot
- The site accesses are proposed as having minor stop control
- The proposed accesses meet the minimum and maximum widths of vehicular access according to Private Approach By-law
- The proposed number and configurations of accesses comply with the Private Approach By-law
- It is recommended that the driveway grade within the right-of-way not exceed the maximum grade of 6% for accesses on local roads, as specified in Chapter 8 of the Geometric Design Guide for Canadian Roads (TAC, 2017))

TDM

  - The mode share targets are achievable and TDM summarized in the TDM checklists

12 Conclusion

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

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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: 16-Dec-25
Project Number: 2025-188
Project Reference: 116 Beech

1.1 Description of Proposed Development	
Municipal Address	116 Beech Street
Description of Location	Existing residential building.
Land Use Classification	Residential Fifth Density
Development Size	392 apartment units
Accesses	Loretta Avenue and Champagne Avenue
Phase of Development	Single
Buildout Year	2030
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (High-Rise)	
Development Size	392	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?	No
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	Yes
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
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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

LICENSED PROFESSIONAL ENGINEER
A. J. HARTE
100149314
PROVINCE OF ONTARIO

Revision Date: June 2023

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

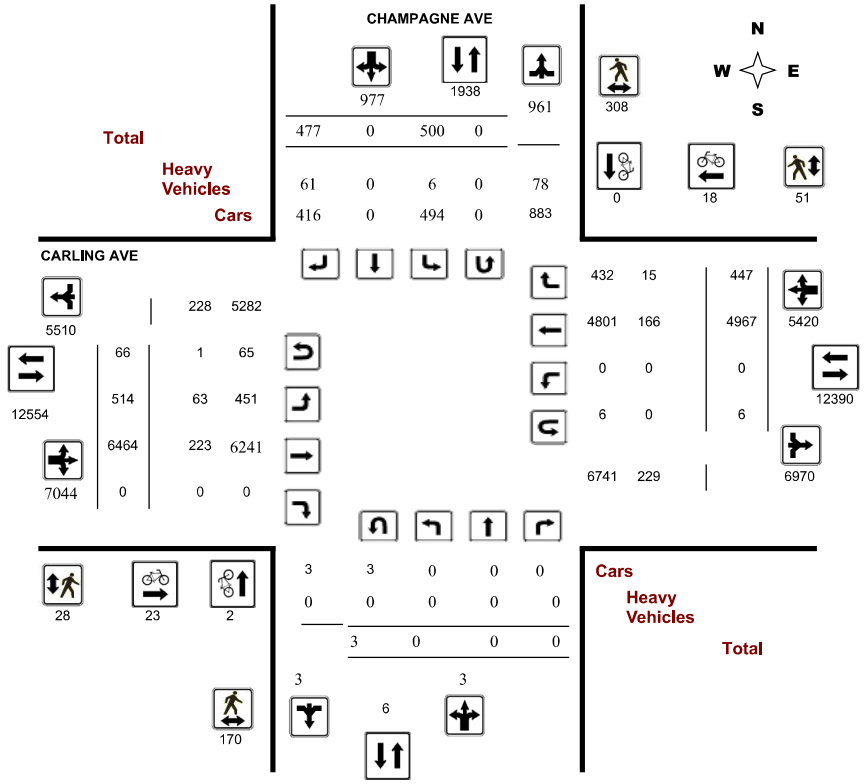
Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Diagram



Transportation Services - Traffic Services

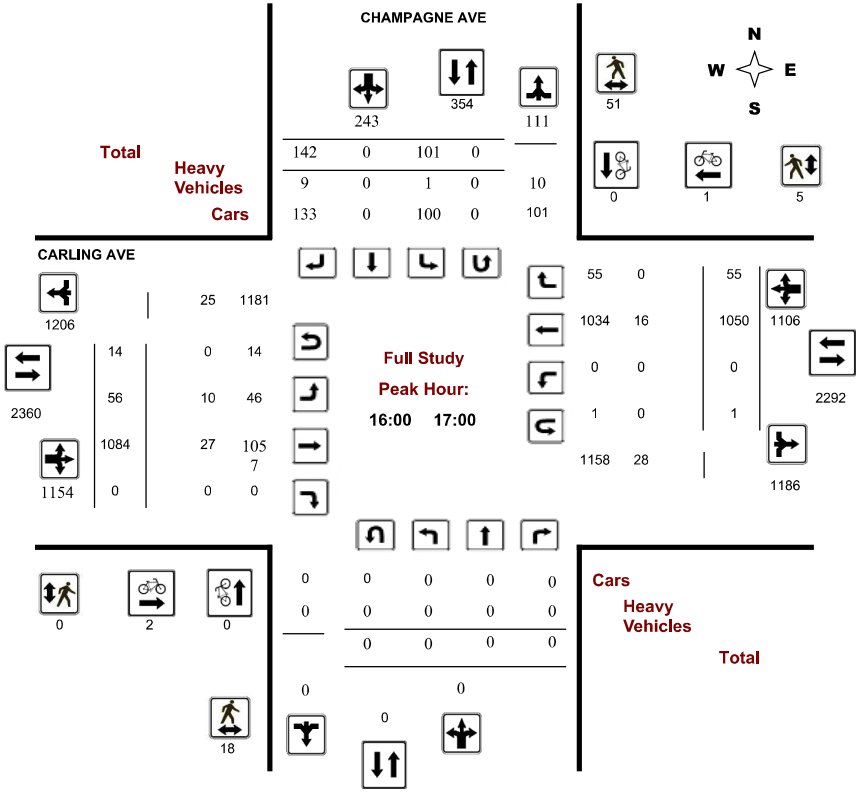
Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

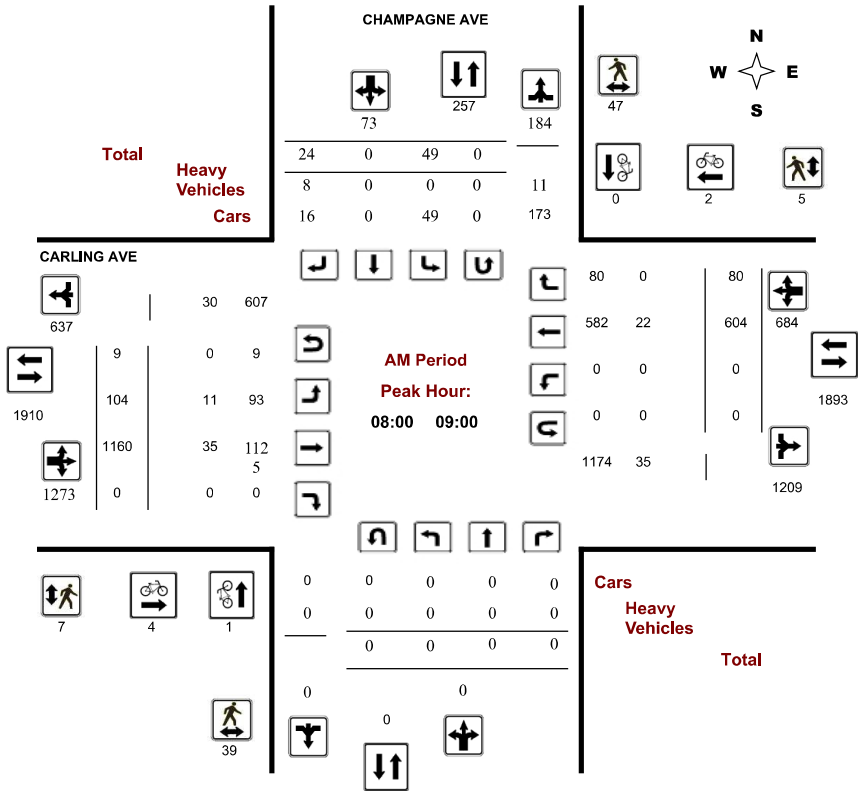
Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

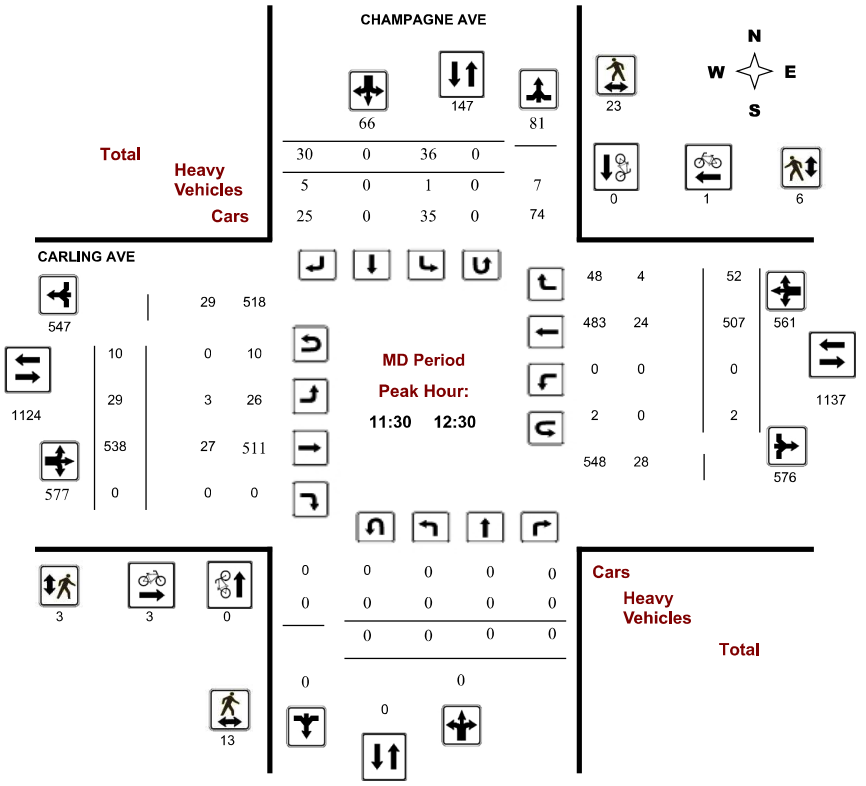
Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

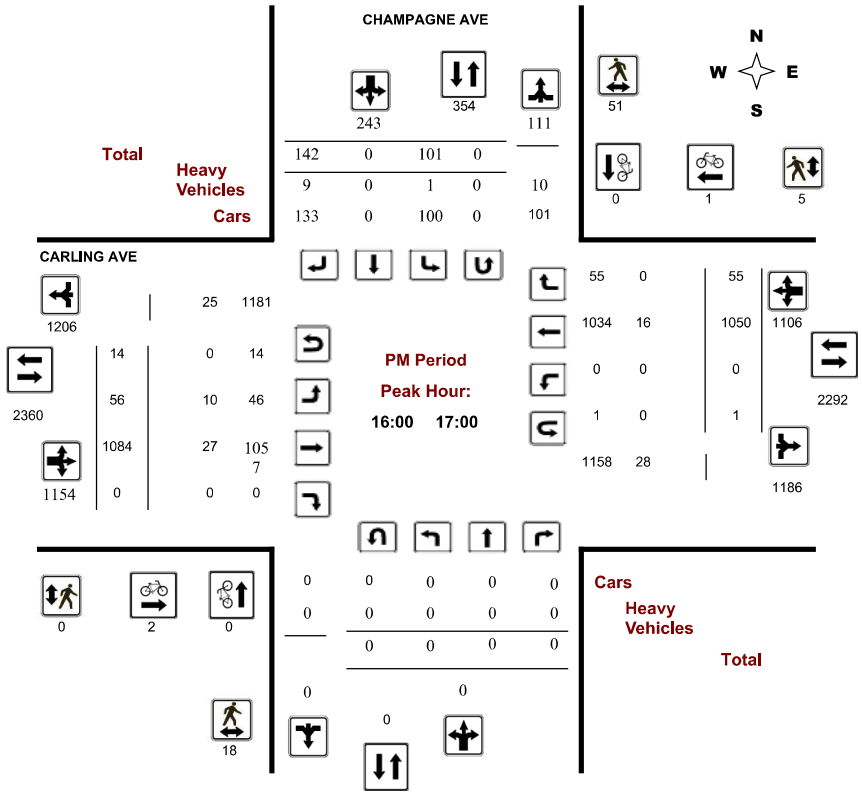
Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, February 14, 2024

Total Observed U-Turns

Northbound: 3 Southbound: 0

Eastbound: 66 Westbound: 6

AADT Factor 1.00

	CHAMPAGNE AVE								CARLING AVE									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	0	0	**0**	54	0	22	**76**	**76**	130	725	0	**855**	0	394	84	**478**	**1333**	**1409**
08:00 09:00	0	0	0	**0**	49	0	24	**73**	**73**	104	1160	0	**1264**	0	604	80	**684**	**1948**	**2021**
09:00 10:00	0	0	0	**0**	45	0	23	**68**	**68**	53	608	0	**661**	0	402	49	**451**	**1112**	**1180**
11:30 12:30	0	0	0	**0**	36	0	30	**66**	**66**	29	538	0	**567**	0	507	52	**559**	**1126**	**1192**
12:30 13:30	0	0	0	**0**	39	0	32	**71**	**71**	37	400	0	**437**	0	514	27	**541**	**978**	**1049**
15:00 16:00	0	0	0	**0**	111	0	133	**244**	**244**	39	962	0	**1001**	0	788	40	**828**	**1829**	**2073**
16:00 17:00	0	0	0	**0**	101	0	142	**243**	**243**	56	1084	0	**1140**	0	1050	55	**1105**	**2245**	**2488**
17:00 18:00	0	0	0	**0**	65	0	71	**136**	**136**	66	987	0	**1053**	0	708	60	**768**	**1821**	**1957**
Sub Total	0	0	0	**0**	500	0	477	**977**	**977**	514	6464	0	**6978**	0	4967	447	**5414**	**12392**	**13369**
U Turns				**3**				**0**	**3**				**66**				**6**	**72**	**75**
Total	0	0	0	**3**	500	0	477	**977**	**980**	514	6464	0	**7044**	0	4967	447	**5420**	**12464**	**13444**
EQ 12Hr	0	0	0	**4**	695	0	663	**1358**	**1362**	714	8985	0	**9791**	0	6904	621	**7534**	**17325**	**18687**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	0	0	0	**4**	695	0	869	**1358**	**1362**	714	8985	0	**9791**	0	6904	621	**7534**	**17325**	**18687**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	0	0	0	**5**	910	0	1138	**1779**	**1784**	935	11770	0	**12826**	0	9044	814	**9870**	**22696**	**24480**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study 15 Minute Increments

		CHAMPAGNE AVE									CARLING AVE									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	0	2	0	7	9	9	21	133	0	155	0	92	24	116	271	280
07:15	07:30	0	0	0	0	10	0	7	17	17	35	163	0	200	0	74	24	98	298	315
07:30	07:45	0	0	0	0	19	0	3	22	22	34	195	0	230	0	108	19	127	357	379
07:45	08:00	0	0	0	0	23	0	5	28	28	40	234	0	274	0	120	17	137	411	439
08:15	08:30	0	0	0	0	14	0	7	21	21	37	317	0	355	0	144	27	171	526	547
17:45	18:00	0	0	0	1	11	0	4	15	16	21	214	0	237	0	115	9	124	361	377
08:00	08:15	0	0	0	0	12	0	6	18	18	24	301	0	330	0	132	23	155	485	503
08:30	08:45	0	0	0	0	15	0	6	21	21	23	306	0	331	0	148	18	166	497	518
08:45	09:00	0	0	0	0	8	0	5	13	13	20	236	0	257	0	180	12	192	449	462
09:00	09:15	0	0	0	0	7	0	5	12	12	17	225	0	247	0	117	16	133	380	392
09:15	09:30	0	0	0	0	16	0	6	22	22	20	165	0	187	0	80	10	90	277	299
09:30	09:45	0	0	0	0	13	0	7	20	20	10	118	0	130	0	90	14	104	234	254
09:45	10:00	0	0	0	0	9	0	5	14	14	6	100	0	107	0	115	9	124	231	245
11:30	11:45	0	0	0	0	7	0	7	14	14	5	116	0	122	0	128	11	139	261	275
11:45	12:00	0	0	0	0	6	0	6	12	12	10	161	0	172	0	120	18	140	312	324
12:00	12:15	0	0	0	0	12	0	10	22	22	8	116	0	130	0	139	10	149	279	301
12:15	12:30	0	0	0	0	11	0	7	18	18	6	145	0	153	0	120	13	133	286	304
12:30	12:45	0	0	0	0	10	0	13	23	23	19	106	0	125	0	112	8	120	245	268
12:45	13:00	0	0	0	0	7	0	7	14	14	7	100	0	107	0	117	8	126	233	247
13:00	13:15	0	0	0	0	9	0	3	12	12	6	105	0	112	0	150	4	154	266	278
13:15	13:30	0	0	0	0	13	0	9	22	22	5	89	0	95	0	135	7	143	238	260
15:00	15:15	0	0	0	0	14	0	30	44	44	11	187	0	202	0	176	13	189	391	435
15:15	15:30	0	0	0	0	39	0	30	69	69	7	228	0	236	0	168	13	182	418	487
15:30	15:45	0	0	0	0	29	0	29	58	58	10	261	0	272	0	200	9	209	481	539
15:45	16:00	0	0	0	0	29	0	44	73	73	11	286	0	298	0	244	5	249	547	620
16:00	16:15	0	0	0	0	29	0	38	67	67	13	310	0	325	0	237	16	253	578	645
16:15	16:30	0	0	0	0	25	0	42	67	67	15	265	0	283	0	247	10	258	541	608
16:30	16:45	0	0	0	0	26	0	38	64	64	11	241	0	256	0	254	14	268	524	588
16:45	17:00	0	0	0	0	21	0	24	45	45	17	268	0	290	0	312	15	327	617	662
17:00	17:15	0	0	0	2	19	0	28	47	49	13	212	0	227	0	234	19	253	480	529
17:15	17:30	0	0	0	0	18	0	20	38	38	20	285	0	308	0	170	20	190	498	536
17:30	17:45	0	0	0	0	17	0	19	36	36	12	276	0	291	0	189	12	201	492	528
Total:		0	0	0	3	500	0	477	977	980	514	6464	0	7044	0	4967	447	5420	12464	13,444

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cycliste volumes reffer to Cyclist Volume report.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Cyclist Volume

		CHAMPAGNE AVE			CARLING AVE			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	1	0	1	1
08:15	08:30	0	0	0	1	0	1	1
17:45	18:00	0	0	0	1	0	1	1
08:00	08:15	1	0	1	1	1	2	3
08:30	08:45	0	0	0	2	1	3	3
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	1	1	1
09:30	09:45	0	0	0	1	0	1	1
09:45	10:00	0	0	0	2	2	4	4
11:30	11:45	0	0	0	2	0	2	2
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	1	1	2	2
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	2	1	3	3
15:00	15:15	0	0	0	0	1	1	1
15:15	15:30	1	0	1	0	3	3	4
15:30	15:45	0	0	0	3	1	4	4
15:45	16:00	0	0	0	1	3	4	4
16:00	16:15	0	0	0	1	1	2	2
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	1	0	1	1
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	1	0	1	1
17:15	17:30	0	0	0	0	1	1	1
17:30	17:45	0	0	0	2	1	3	3
Total		2	0	**2**	23	18	41	43

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Pedestrian Volume

		CHAMPAGNE AVE			CARLING AVE			
Time Period		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	2	3	**5**	0	2	**2**	**7**
07:15	07:30	4	6	**10**	0	1	**1**	**11**
07:30	07:45	8	15	**23**	2	3	**5**	**28**
07:45	08:00	4	4	**8**	2	1	**3**	**11**
08:15	08:30	12	19	**31**	2	0	**2**	**33**
17:45	18:00	4	4	**8**	0	1	**1**	**9**
08:00	08:15	5	14	**19**	2	3	**5**	**24**
08:30	08:45	19	12	**31**	1	0	**1**	**32**
08:45	09:00	3	2	**5**	2	2	**4**	**9**
09:00	09:15	2	9	**11**	0	3	**3**	**14**
09:15	09:30	4	7	**11**	0	0	**0**	**11**
09:30	09:45	6	7	**13**	1	4	**5**	**18**
09:45	10:00	6	5	**11**	1	0	**1**	**12**
11:30	11:45	3	3	**6**	2	1	**3**	**9**
11:45	12:00	1	6	**7**	0	3	**3**	**10**
12:00	12:15	4	7	**11**	0	0	**0**	**11**
12:15	12:30	5	7	**12**	1	2	**3**	**15**
12:30	12:45	8	8	**16**	1	1	**2**	**18**
12:45	13:00	4	7	**11**	0	0	**0**	**11**
13:00	13:15	3	5	**8**	0	1	**1**	**9**
13:15	13:30	2	4	**6**	3	2	**5**	**11**
15:00	15:15	8	8	**16**	2	2	**4**	**20**
15:15	15:30	15	40	**55**	1	5	**6**	**61**
15:30	15:45	4	18	**22**	0	1	**1**	**23**
15:45	16:00	5	8	**13**	2	2	**4**	**17**
16:00	16:15	9	17	**26**	0	0	**0**	**26**
16:15	16:30	2	16	**18**	0	1	**1**	**19**
16:30	16:45	5	14	**19**	0	1	**1**	**20**
16:45	17:00	2	4	**6**	0	3	**3**	**9**
17:00	17:15	5	8	**13**	1	0	**1**	**14**
17:15	17:30	2	11	**13**	0	2	**2**	**15**
17:30	17:45	4	10	**14**	2	4	**6**	**20**
Total		170	308	**478**	28	51	**79**	**557**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study Heavy Vehicles

		CHAMPAGNE AVE									CARLING AVE									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**0**	0	0	2	**2**	**2**	2	5	0	**7**	0	6	2	**8**	**15**	**17**
07:15	07:30	0	0	0	**0**	0	0	3	**3**	**3**	2	7	0	**9**	0	5	1	**6**	**15**	**18**
07:30	07:45	0	0	0	**0**	0	0	2	**2**	**2**	3	9	0	**12**	0	4	1	**5**	**17**	**19**
07:45	08:00	0	0	0	**0**	0	0	4	**4**	**4**	2	11	0	**13**	0	1	0	**1**	**14**	**18**
08:15	08:30	0	0	0	**0**	0	0	2	**2**	**2**	4	11	0	**15**	0	7	0	**7**	**22**	**24**
17:45	18:00	0	0	0	**0**	0	0	1	**1**	**1**	3	7	0	**10**	0	2	0	**2**	**12**	**13**
08:00	08:15	0	0	0	**0**	0	0	2	**2**	**2**	2	10	0	**12**	0	6	0	**6**	**18**	**20**
08:30	08:45	0	0	0	**0**	0	0	2	**2**	**2**	1	9	0	**10**	0	5	0	**5**	**15**	**17**
08:45	09:00	0	0	0	**0**	0	0	2	**2**	**2**	4	5	0	**9**	0	4	0	**4**	**13**	**15**
09:00	09:15	0	0	0	**0**	1	0	3	**4**	**4**	2	13	0	**15**	0	2	1	**3**	**18**	**22**
09:15	09:30	0	0	0	**0**	0	0	2	**2**	**2**	3	8	0	**11**	0	4	0	**4**	**15**	**17**
09:30	09:45	0	0	0	**0**	0	0	2	**2**	**2**	1	6	0	**7**	0	10	1	**11**	**18**	**20**
09:45	10:00	0	0	0	**0**	0	0	1	**1**	**1**	1	7	0	**8**	0	11	1	**12**	**20**	**21**
11:30	11:45	0	0	0	**0**	0	0	1	**1**	**1**	1	4	0	**5**	0	9	1	**10**	**15**	**16**
11:45	12:00	0	0	0	**0**	0	0	1	**1**	**1**	0	6	0	**6**	0	1	0	**1**	**7**	**8**
12:00	12:15	0	0	0	**0**	0	0	2	**2**	**2**	2	7	0	**9**	0	7	1	**8**	**17**	**19**
12:15	12:30	0	0	0	**0**	1	0	1	**2**	**2**	0	10	0	**10**	0	7	2	**9**	**19**	**21**
12:30	12:45	0	0	0	**0**	0	0	1	**1**	**1**	1	6	0	**7**	0	6	0	**6**	**13**	**14**
12:45	13:00	0	0	0	**0**	0	0	1	**1**	**1**	1	3	0	**4**	0	4	1	**5**	**9**	**10**
13:00	13:15	0	0	0	**0**	1	0	0	**1**	**1**	1	9	0	**10**	0	8	0	**8**	**18**	**19**
13:15	13:30	0	0	0	**0**	0	0	1	**1**	**1**	1	4	0	**5**	0	3	2	**5**	**10**	**11**
15:00	15:15	0	0	0	**0**	1	0	2	**3**	**3**	3	7	0	**11**	0	7	1	**8**	**19**	**22**
15:15	15:30	0	0	0	**0**	1	0	1	**2**	**2**	2	6	0	**8**	0	4	0	**4**	**12**	**14**
15:30	15:45	0	0	0	**0**	0	0	4	**4**	**4**	3	6	0	**9**	0	6	0	**6**	**15**	**19**
15:45	16:00	0	0	0	**0**	0	0	3	**3**	**3**	3	6	0	**9**	0	5	0	**5**	**14**	**17**
16:00	16:15	0	0	0	**0**	0	0	3	**3**	**3**	2	5	0	**7**	0	6	0	**6**	**13**	**16**
16:15	16:30	0	0	0	**0**	0	0	2	**2**	**2**	3	5	0	**8**	0	4	0	**4**	**12**	**14**
16:30	16:45	0	0	0	**0**	1	0	2	**3**	**3**	3	8	0	**11**	0	3	0	**3**	**14**	**17**
16:45	17:00	0	0	0	**0**	0	0	2	**2**	**2**	2	9	0	**11**	0	3	0	**3**	**14**	**16**
17:00	17:15	0	0	0	**0**	0	0	3	**3**	**3**	2	7	0	**9**	0	6	0	**6**	**15**	**18**
17:15	17:30	0	0	0	**0**	0	0	2	**2**	**2**	2	2	0	**4**	0	3	0	**3**	**7**	**9**
17:30	17:45	0	0	0	**0**	0	0	1	**1**	**1**	1	5	0	**6**	0	7	0	**7**	**13**	**14**
Total:	None	0	0	0	**0**	6	0	61	**67**	**67**	63	223	0	**287**	0	166	15	**181**	**468**	**535**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CHAMPAGNE AVE

Survey Date: Wednesday, February 14, 2024 **WO No:** 41461

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

Full Study 15 Minute U-Turn Total

Time Period		CHAMPAGNE AVE Northbound U-Turn Total	CHAMPAGNE AVE Southbound U-Turn Total	CARLING AVE Eastbound U-Turn Total	CARLING AVE Westbound U-Turn Total	Total
07:00	07:15	0	0	1	0	1
07:15	07:30	0	0	2	0	2
07:30	07:45	0	0	1	0	1
07:45	08:00	0	0	0	0	0
08:15	08:30	0	0	1	0	1
17:45	18:00	1	0	2	0	3
08:00	08:15	0	0	5	0	5
08:30	08:45	0	0	2	0	2
08:45	09:00	0	0	1	0	1
09:00	09:15	0	0	5	0	5
09:15	09:30	0	0	2	0	2
09:30	09:45	0	0	2	0	2
09:45	10:00	0	0	1	0	1
11:30	11:45	0	0	1	0	1
11:45	12:00	0	0	1	2	3
12:00	12:15	0	0	6	0	6
12:15	12:30	0	0	2	0	2
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	1	1
13:00	13:15	0	0	1	0	1
13:15	13:30	0	0	1	1	2
15:00	15:15	0	0	4	0	4
15:15	15:30	0	0	1	1	2
15:30	15:45	0	0	1	0	1
15:45	16:00	0	0	1	0	1
16:00	16:15	0	0	2	0	2
16:15	16:30	0	0	3	1	4
16:30	16:45	0	0	4	0	4
16:45	17:00	0	0	5	0	5
17:00	17:15	2	0	2	0	4
17:15	17:30	0	0	3	0	3
17:30	17:45	0	0	3	0	3
Total		3	0	66	6	75

Turning Movement Count

Summary Report

Including AM and PM Peak Hours

All Vehicles Except Bicycles and Personal E-Transportation



Beech Street & Loretta Avenue South — Ottawa, ON

Survey Date: Thursday, November 20, 2025 **Start Time:** 0700 **AADT Factor:** 0.9

Weather AM: Overcast -5° C **Survey Duration:** 6 Hrs. **Survey Hours:** 0700-1000 & 1500-1800

Weather PM: Mostly Sunny +1° C **Surveyor(s):** J. Mousseau

	Beech St. Eastbound					Beech St. Westbound						Loretta Ave. South Northbound					Loretta Ave. South 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
0700-0800	0	38	2	0	40	8	34	3	0	45	85	4	3	10	0	17	3	0	5	0	8	25	110
0800-0900	5	58	6	0	69	7	70	4	0	81	150	3	2	9	1	15	12	0	3	0	15	30	180
0900-1000	3	60	2	0	65	17	52	7	0	76	141	3	3	12	1	19	9	2	1	0	12	31	172
1500-1600	3	44	3	0	50	23	70	8	0	101	151	1	3	6	0	10	5	2	7	0	14	24	175
1600-1700	9	60	5	0	74	31	100	11	0	142	216	7	6	10	0	23	11	6	1	0	18	41	257
1700-1800	4	63	9	0	76	32	100	6	1	139	215	3	6	12	0	21	7	5	2	0	14	35	250
Totals	24	323	27	0	374	118	426	39	1	584	958	21	23	59	2	105	47	15	19	0	81	186	1144

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 ➡ 0.84												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
0845-0945	3	71	5	0	79	16	69	8	0	93	172	2	4	9	1	16	11	2	0	0	13	29	201

PM Peak Hour Factor ➡ 0.93												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.
1630-1730	4	61	7	0	72	34	117	8	1	160	232	5	6	11	0	22	8	6	1	0	15	37	269

Comments:

School buses comprise 43.18% of the heavy vehicle traffic.

Notes:

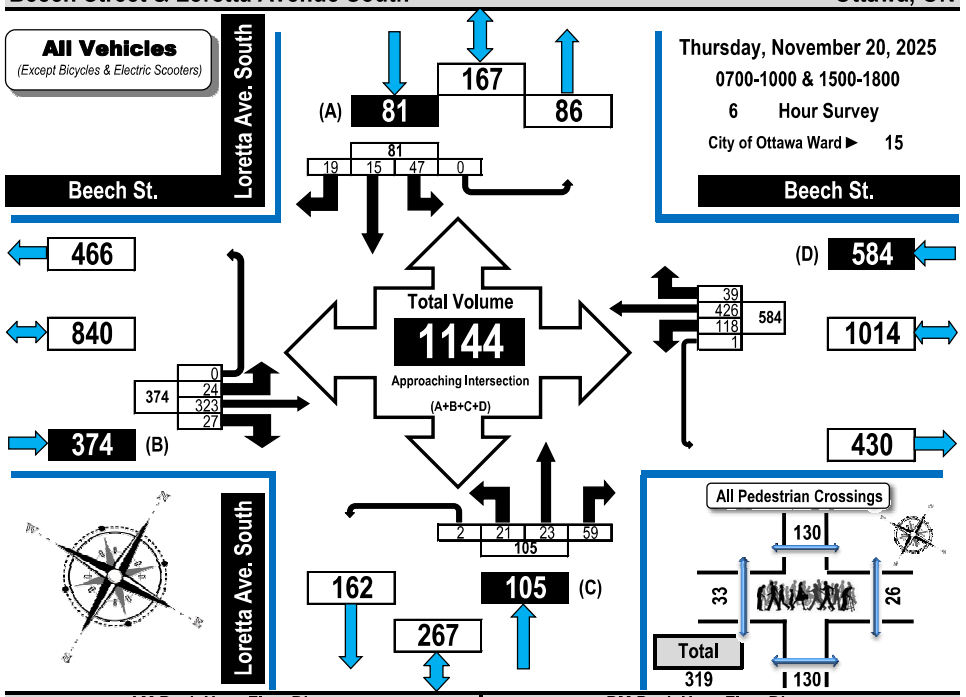
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

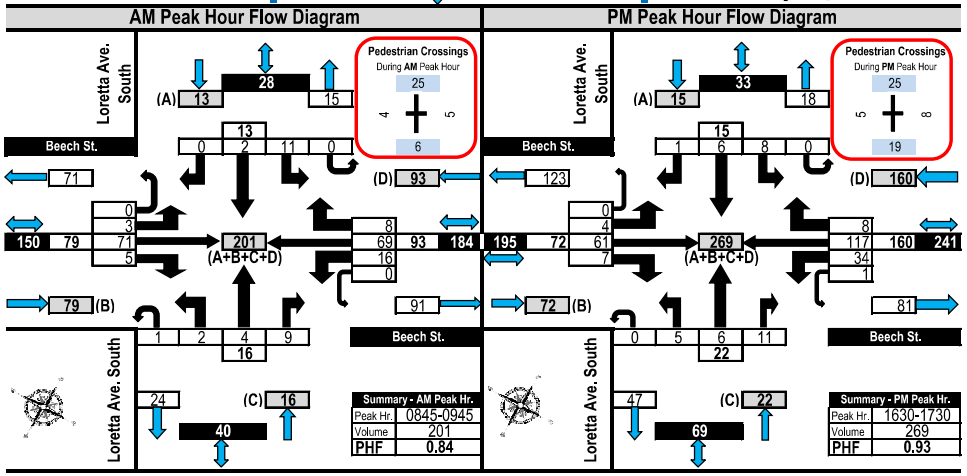
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles and Personal E-Transportation

Beech Street & Loretta Avenue South — **Ottawa, ON**

All Vehicles (Except Bicycles & Electric Scooters)

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 15



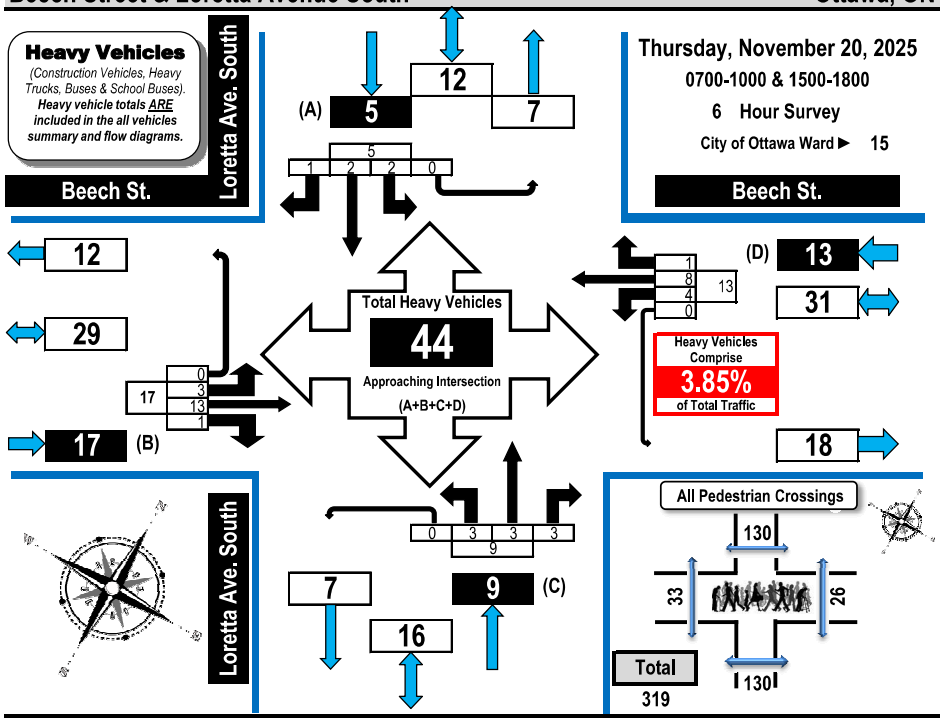


Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Beech Street & Loretta Avenue South — **Ottawa, ON**

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

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 15



	Beech St. Eastbound					Beech St. Westbound					Loretta Ave. South Northbound					Loretta Ave. South 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
0700-0800	0	1	0	0	1	1	2	0	0	3	1	1	1	0	3	0	0	0	0	0	7
0800-0900	1	2	1	0	4	0	3	0	0	3	1	1	0	0	2	1	0	0	0	1	10
0900-1000	1	3	0	0	4	1	3	1	0	5	1	0	1	0	2	1	0	0	0	1	12
1500-1600	1	5	0	0	6	1	0	0	0	1	0	1	1	0	2	0	0	1	0	1	10
1600-1700	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	4
1700-1800	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Totals	3	13	1	0	17	4	8	1	0	13	3	3	3	0	9	2	2	1	0	5	44

Comments:
School buses comprise 43.18% of the heavy vehicle traffic.

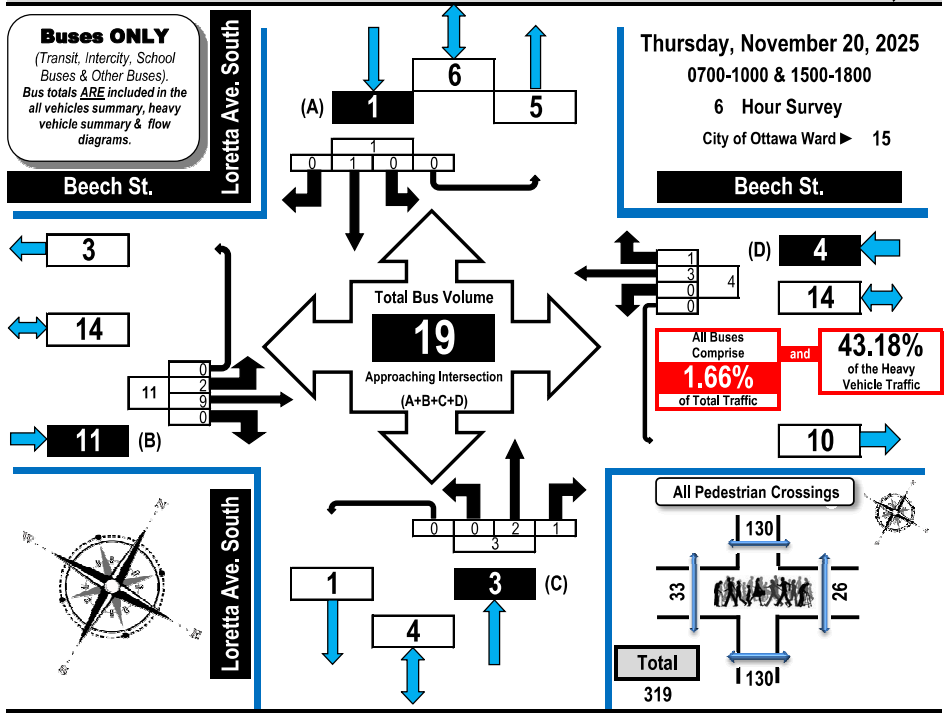
Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram



Beech Street & Loretta Avenue South — **Ottawa, ON**

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

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ► 15



	Beech St. Eastbound					Beech St. Westbound					Loretta Ave. South Northbound					Loretta Ave. South 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
0700-0800	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	3
0800-0900	1	1	0	0	2	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	5
0900-1000	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
1500-1600	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
1600-1700	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	9	0	0	11	0	3	1	0	4	0	2	1	0	3	0	1	0	0	1	19

Comments:
School buses comprise 43.18% of the heavy vehicle traffic.

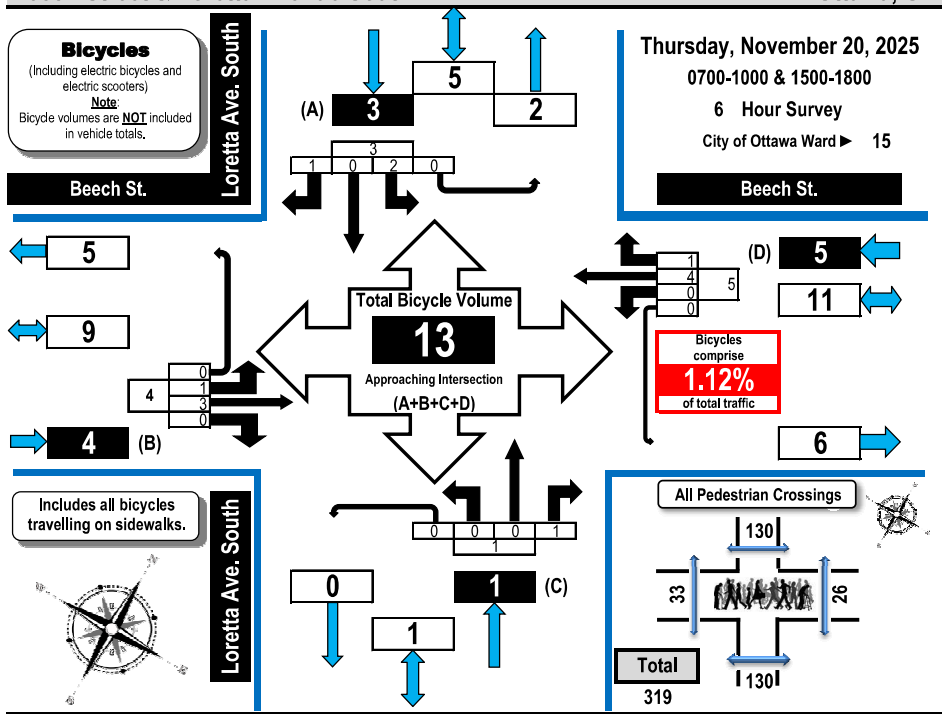
Turning Movement Count
Bicycles and Personal E-Transportation Summary
Flow Diagram



Beech Street & Loretta Avenue South — **Ottawa, ON**

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

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ► 15



	Beech St. Eastbound					Beech St. Westbound					Loretta Ave. South Northbound					Loretta Ave. South 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
0700-0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
0800-0900	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
0900-1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500-1600	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
1600-1700	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
1700-1800	0	2	0	0	2	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4
Totals	1	3	0	0	4	0	4	1	0	5	0	0	1	0	1	2	0	1	0	3	13

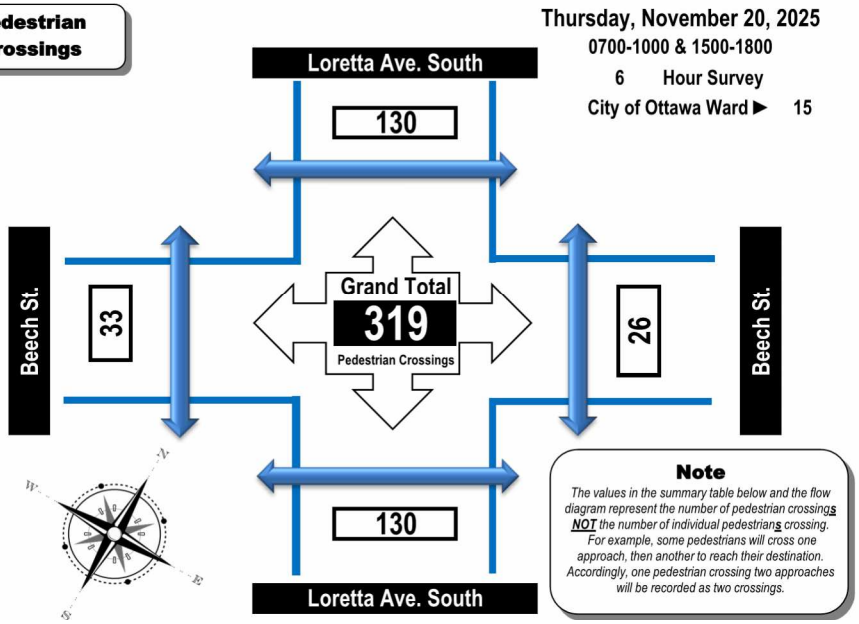
Comments:
School buses comprise 43.18% of the heavy vehicle traffic.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Beech Street & Loretta Avenue South — Ottawa, ON

Pedestrian Crossings

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 15



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 Beech St.	East Side Crossing Beech St.	Street Total	South Side Crossing Loretta Ave. South	North Side Crossing Loretta Ave. South	Street Total	Grand Total
0700-0800	6	2	8	8	11	19	27
0800-0900	3	4	7	41	19	60	67
0900-1000	3	6	9	6	22	28	37
1500-1600	13	2	15	43	31	74	89
1600-1700	3	8	11	20	26	46	57
1700-1800	5	4	9	12	21	33	42
Totals	33	26	59	130	130	260	319

Comments:
School buses comprise 43.18% of the heavy vehicle traffic.

Turning Movement Count
Summary Report Including Peak Hours, AADT and Expansion Factors
All Vehicles Except Bicycles and Personal E-Transportation

Beech Street & Champagne Avenue South — Ottawa, ON

Survey Date: Tuesday, November 25, 2025
Weather AM: Cloudy +1° C
Weather PM: Cloudy +7° C
Survey Duration: 8 Hrs.
Start Time: 0700
Survey Hours: 0700-1000, 1130-1330 & 1500-1800
Surveyor(s): J. Mousseau
AADT Factor: 1.0

	Beech St. Eastbound					Beech St. Westbound						Champagne Ave. South Northbound					Champagne Ave. South 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
0700-0800	1	44	2	0	47	32	37	3	0	72	119	5	5	43	0	53	13	8	1	0	22	75	194
0800-0900	1	80	8	0	89	42	63	10	0	115	204	9	13	61	0	83	18	11	1	0	30	113	317
0900-1000	1	61	5	0	67	21	50	7	0	78	145	9	11	44	1	65	13	6	2	0	21	86	231
1130-1230	4	49	4	0	57	40	63	19	2	124	181	7	8	37	1	53	18	7	9	0	34	87	268
1230-1330	4	38	11	0	53	42	45	14	5	106	159	14	6	33	0	53	11	7	5	0	23	76	235
1500-1600	5	48	6	0	59	44	98	14	0	156	215	17	13	49	1	80	11	8	3	0	22	102	317
1600-1700	1	54	13	0	68	50	140	10	0	200	268	14	14	41	1	70	4	11	7	0	22	92	360
1700-1800	4	49	16	0	69	48	101	15	2	166	235	13	4	48	0	65	5	7	5	0	17	82	317
Totals	21	423	65	0	509	319	597	92	9	1017	1526	88	74	356	4	522	93	65	33	0	191	713	2239

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	29	588	90	0	708	443	830	128	13	1414	2121	122	103	495	6	726	129	90	46	0	265	991	3112
Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 1.0																							
AADT 12-hr	29	588	90	0	708	443	830	128	13	1414	2121	122	103	495	6	726	129	90	46	0	265	991	3112
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	38	770	118	0	927	581	1087	168	16	1852	2779	160	135	648	7	951	169	118	60	0	348	1298	4077

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.73												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. Tot.
0815-0915	0	80	9	0	89	38	77	10	0	125	214	11	16	52	0	79	19	14	2	0	35	114	328
OFF Peak Hour Factor ➡ 0.91												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF 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.
1200-1300	3	48	12	0	63	51	50	23	3	127	190	12	9	35	0	56	16	7	9	0	32	88	278
PM Peak Hour Factor ➡ 0.85												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.
1630-1730	3	52	19	0	74	60	149	9	0	218	292	14	7	40	1	62	6	7	6	0	19	81	373

Comments:
School buses comprise 29.41% of the heavy vehicle traffic.

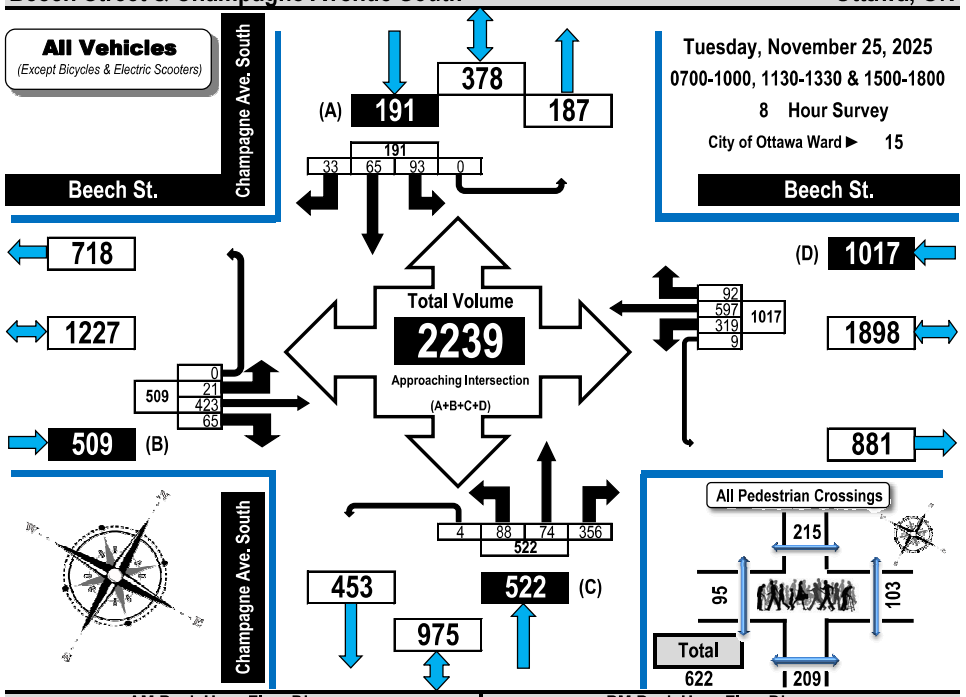
Notes:
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

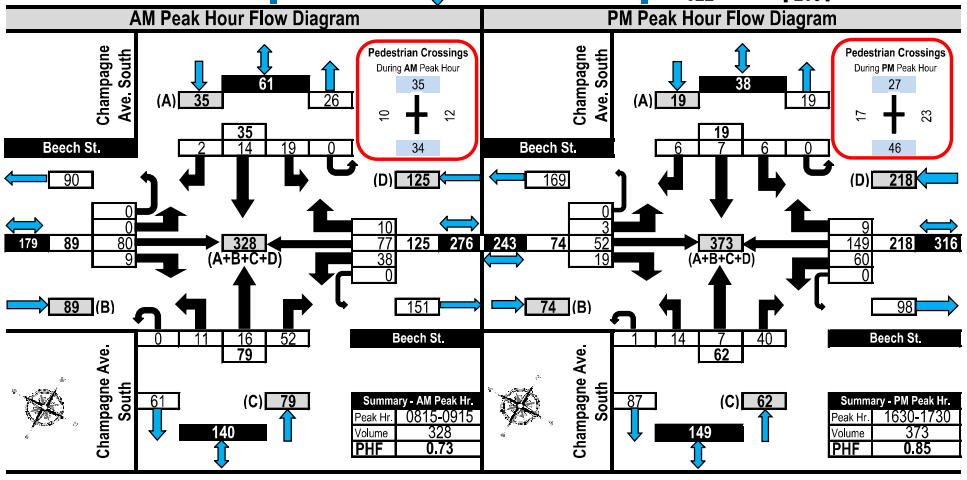
Turning Movement Count
Summary, AM and PM Peak Hour
Flow Diagrams
All Vehicles Except Bicycles and Personal E-Transportation

Beech Street & Champagne Avenue South — **Ottawa, ON**

All Vehicles (Except Bicycles & Electric Scooters)

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15



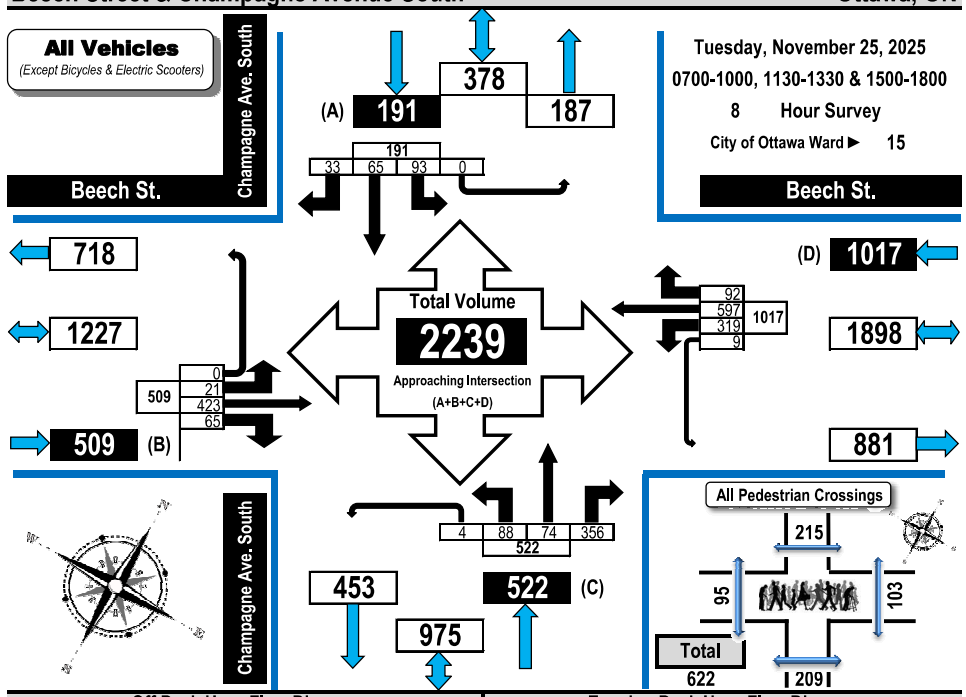


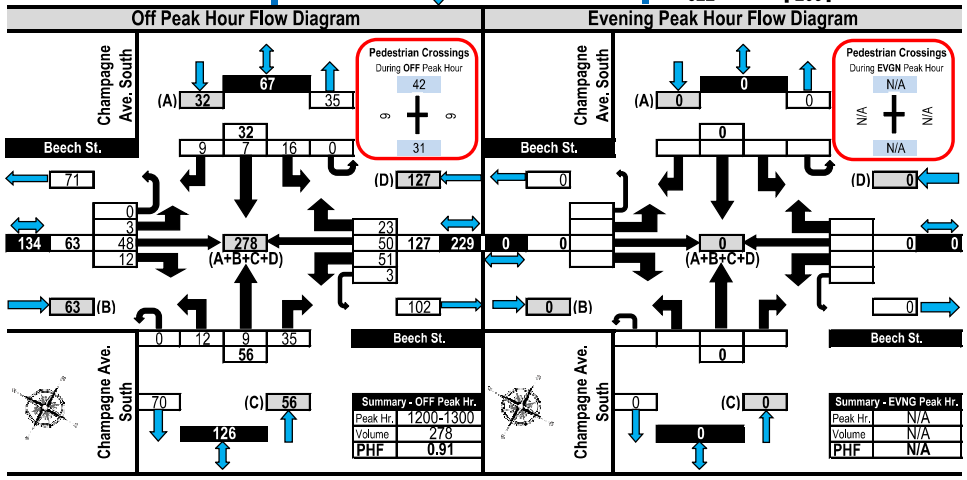
Turning Movement Count
Summary, OFF and EVENING Peak Hour
Flow Diagrams
All Vehicles Except Bicycles and Personal E-Transportation

Beech Street & Champagne Avenue South — **Ottawa, ON**

All Vehicles (Except Bicycles & Electric Scooters)

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15





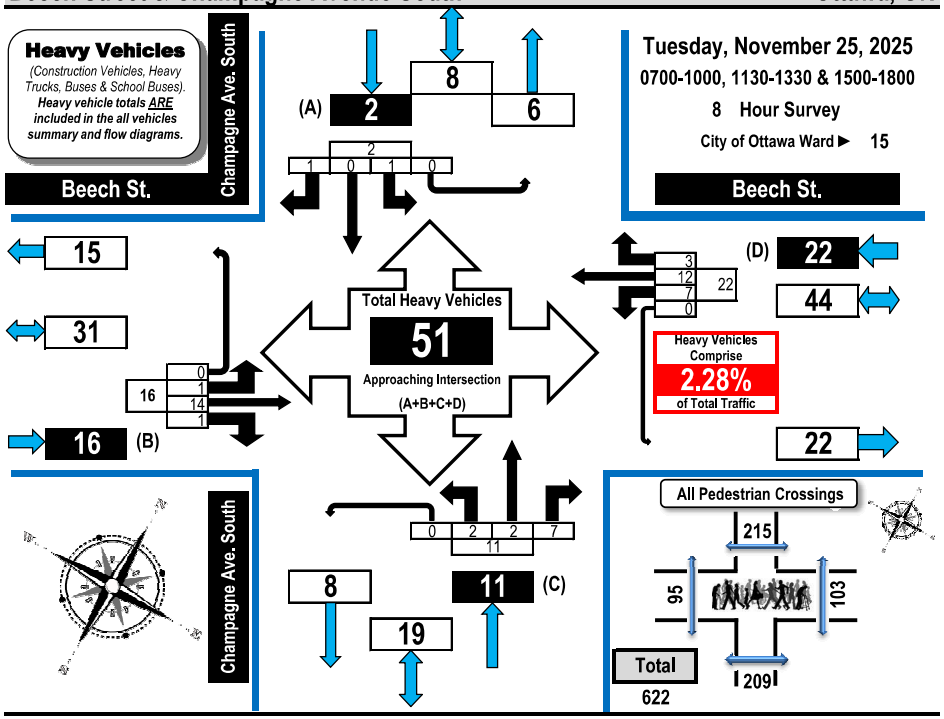
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Beech Street & Champagne Avenue South — **Ottawa, ON**

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

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15



	Beech St. Eastbound					Beech St. Westbound					Champagne Ave. South Northbound					Champagne Ave. South 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
0700-0800	0	1	0	0	1	1	2	0	0	3	0	0	1	0	1	0	0	0	0	0	5
0800-0900	0	1	0	0	1	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	5
0900-1000	0	2	0	0	2	0	3	1	0	4	1	0	1	0	2	0	0	0	0	0	8
1130-1230	0	2	0	0	2	4	2	0	0	6	0	2	0	0	2	0	0	1	0	1	11
1230-1330	0	1	1	0	2	0	2	0	0	2	1	0	1	0	2	1	0	0	0	1	7
1500-1600	1	5	0	0	6	1	0	2	0	3	0	0	1	0	1	0	0	0	0	0	10
1600-1700	0	2	0	0	2	1	0	0	0	1	0	0	2	0	2	0	0	0	0	0	5
1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1	14	1	0	16	7	12	3	0	22	2	2	7	0	11	1	0	1	0	2	51

Comments:
School buses comprise 29.41% of the heavy vehicle traffic.

Printed on: 11/30/2025 Prepared by: J and S Traffic Services Summary: Heavy Vehicles

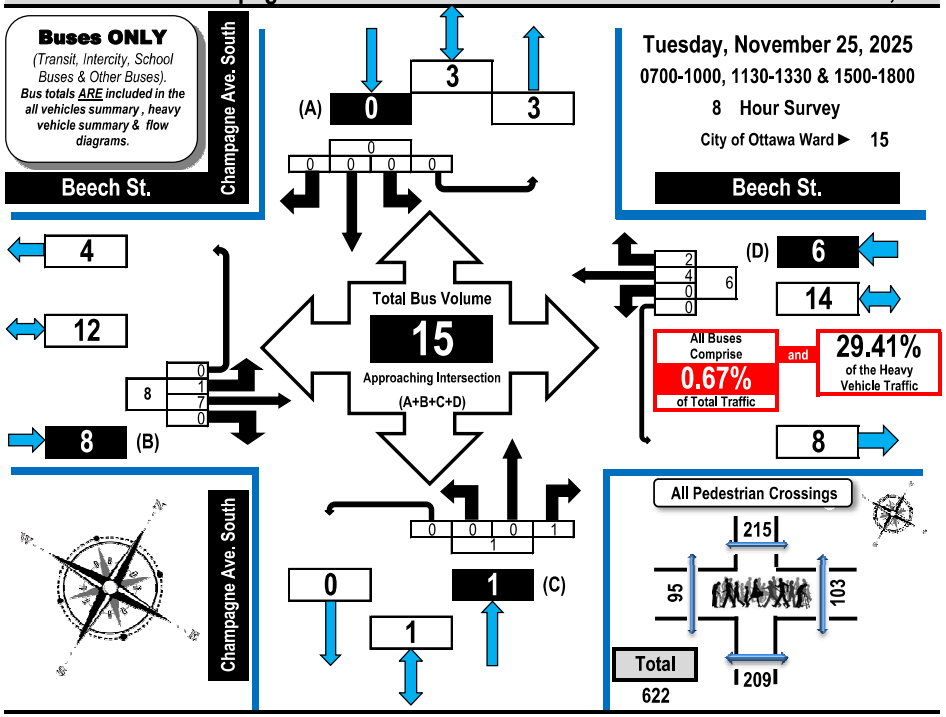
Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram



Beech Street & Champagne Avenue South — **Ottawa, ON**

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

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15



	Beech St. Eastbound					Beech St. Westbound					Champagne Ave. South Northbound					Champagne Ave. South 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
0700-0800	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
0800-0900	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
0900-1000	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	3
1130-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500-1600	1	4	0	0	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	6
1600-1700	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
1700-1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1	7	0	0	8	0	4	2	0	6	0	0	1	0	1	0	0	0	0	0	15

Comments:
School buses comprise 29.41% of the heavy vehicle traffic.

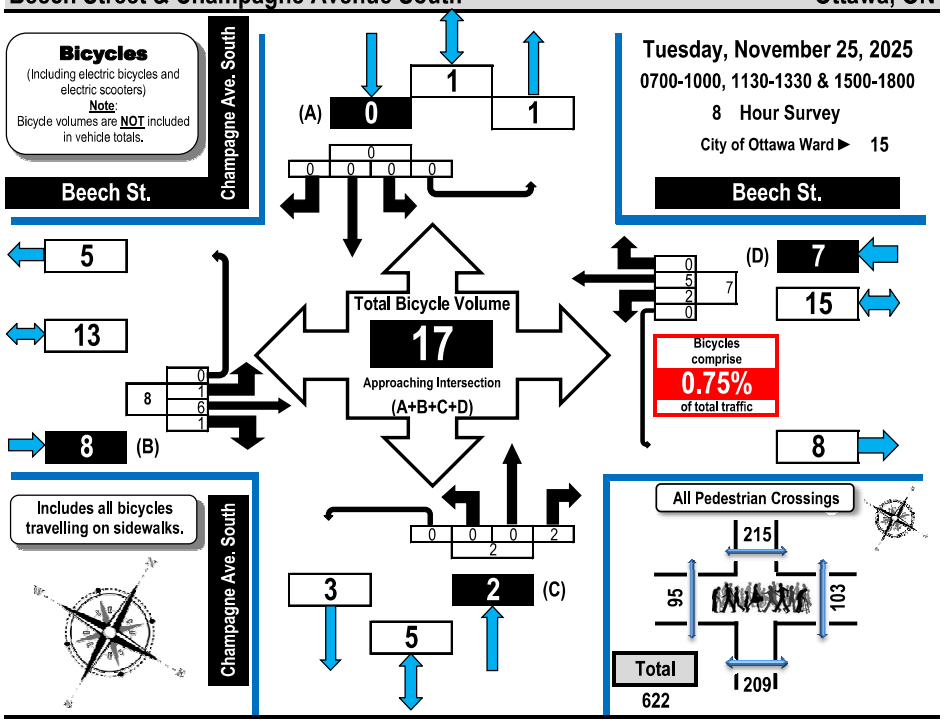
Printed on: 11/30/2025 Prepared by: J and S Traffic Services Summary: Buses Only

Turning Movement Count
Bicycles and Personal E-Transportation Summary
Flow Diagram

Beech Street & Champagne Avenue South — **Ottawa, ON**

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

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15



	Beech St. Eastbound					Beech St. Westbound					Champagne Ave. South Northbound					Champagne Ave. South 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
0700-0800	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
0800-0900	1	3	0	0	4	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	6
0900-1000	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1130-1230	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1230-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500-1600	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1600-1700	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4
1700-1800	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Totals	1	6	1	0	8	2	5	0	0	7	0	0	2	0	2	0	0	0	0	0	17

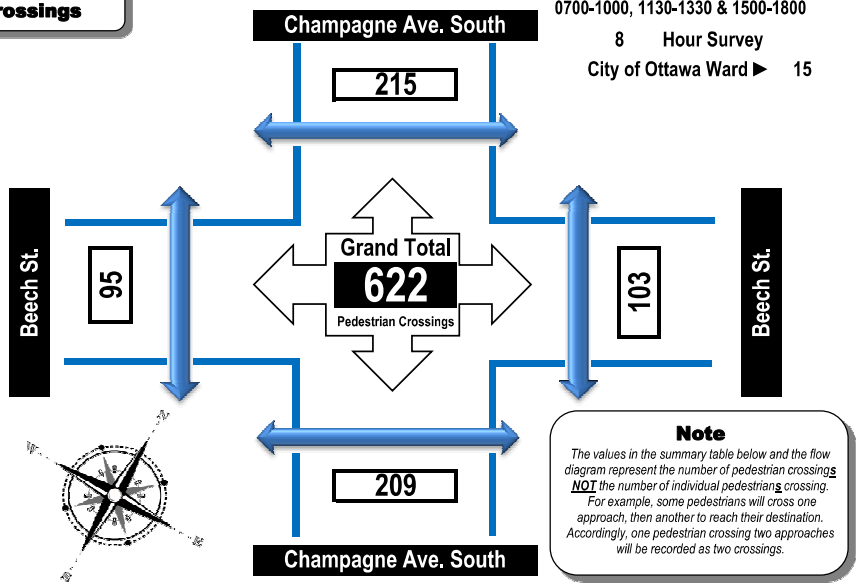
Comments:
School buses comprise 29.41% of the heavy vehicle traffic.

Turning Movement Count
Pedestrian Crossings Summary
and Flow Diagram

Beech Street & Champagne Avenue South — **Ottawa, ON**

Pedestrian Crossings

Tuesday, November 25, 2025
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 15



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 Beech St.	East Side Crossing Beech St.	Street Total	South Side Crossing Champagne Ave. South	North Side Crossing Champagne Ave. South	Street Total	Grand Total
0700-0800	3	8	11	10	11	21	32
0800-0900	7	10	17	33	31	64	81
0900-1000	17	13	30	14	21	35	65
1130-1230	10	16	26	28	40	68	94
1230-1330	12	6	18	26	27	53	71
1500-1600	21	14	35	32	32	64	99
1600-1700	9	21	30	30	36	66	96
1700-1800	16	15	31	36	17	53	84
Totals	95	103	198	209	215	424	622

Comments:
School buses comprise 29.41% of the heavy vehicle traffic.

Turning Movement Count
Summary Report
Including AM and PM Peak Hours
All Vehicles Except Bicycles and Personal E-Transportation

Pamilla Street & Preston Street — Ottawa, ON

Survey Date: Tuesday, November 25, 2025 **Start Time:** 0700 **AADT Factor:** 1.0
Weather AM: Overcast +1° C **Survey Duration:** 6 Hrs. **Survey Hours:** 0700-1000 & 1500-1800
Weather PM: Overcast +7° C **Surveyor(s):** J. Mousseau

	Pamilla St. Eastbound					Pamilla St. Westbound						Preston St. Northbound					Preston St. 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
0700-0800	2	0	1	0	3	0	0	0	0	0	3	2	425	9	0	436	15	339	2	0	356	792	795
0800-0900	2	5	1	0	8	0	0	0	0	0	8	6	644	29	0	679	13	327	3	0	343	1022	1030
0900-1000	4	0	3	0	7	0	0	0	0	0	7	10	483	25	0	518	10	305	4	0	319	837	844
1500-1600	7	0	4	0	11	0	0	0	0	0	11	5	495	19	0	519	10	494	4	0	508	1027	1038
1600-1700	3	3	6	0	12	1	0	0	0	1	13	3	515	21	0	539	6	415	8	0	429	968	981
1700-1800	9	5	9	0	23	0	0	0	0	0	23	8	492	27	0	527	11	424	18	0	453	980	1003
Totals	27	13	24	0	64	1	0	0	0	1	65	34	3054	130	0	3218	65	2304	39	0	2408	5626	5691

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: 1.0

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 ➡ 0.99												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
0815-0915	2	3	0	0	5	0	0	0	0	0	5	8	651	34	0	693	14	319	3	0	336	1029	1034

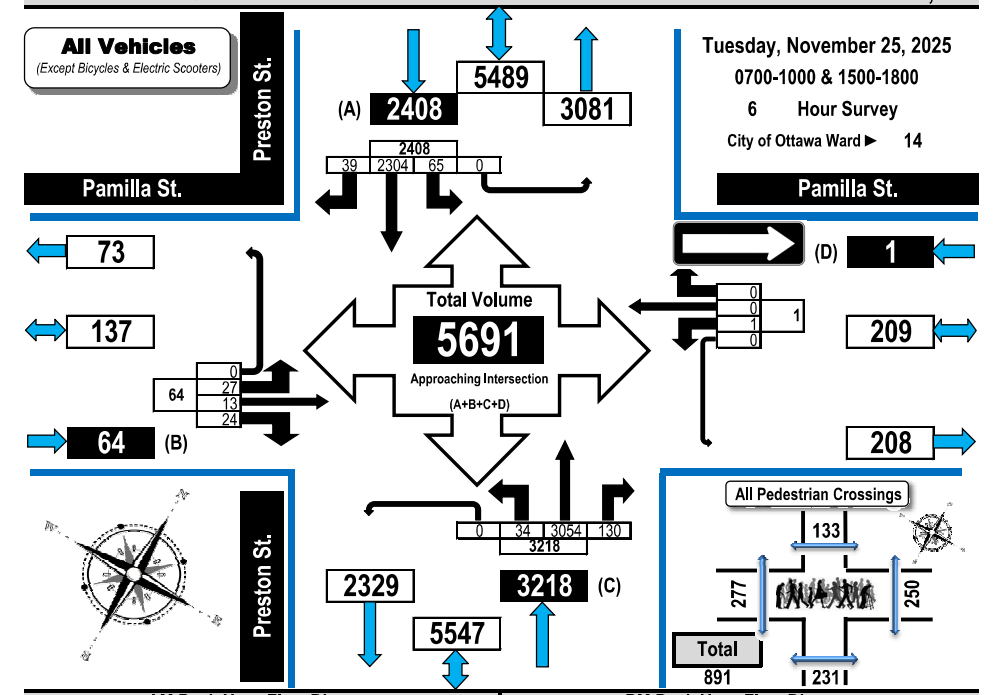
PM Peak Hour Factor ➡ 0.93												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot	Gr. Tot.
1500-1600	7	0	4	0	11	0	0	0	0	0	11	5	495	19	0	519	10	494	4	0	508	1027	1038

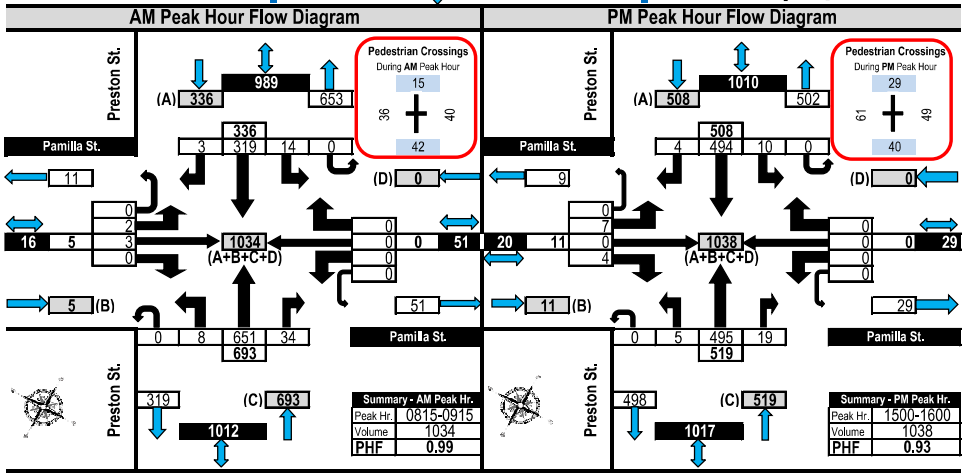
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 21.67% of the heavy vehicle traffic. Pamilla Street, east of Preston Street, is one-way eastbound. During the PM time period, traffic would back up from Carling Avenue to beyond Pamilla Street.

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 and Personal E-Transportation

Pamilla Street & Preston Street — Ottawa, ON





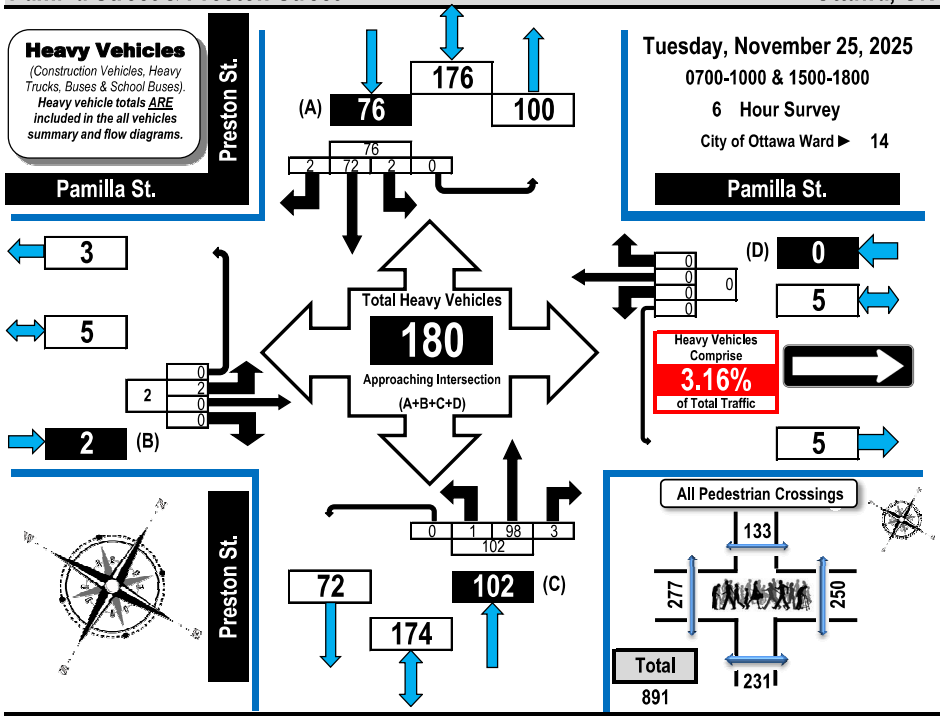
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Pamilla Street & Preston Street — **Ottawa, ON**

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

Tuesday, November 25, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 14



	Pamilla St. Eastbound					Pamilla St. Westbound					Preston St. Northbound					Preston St. 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
0700-0800	1	0	0	0	1	0	0	0	0	0	0	19	0	0	19	1	12	0	0	13	33
0800-0900	0	0	0	0	0	0	0	0	0	0	0	20	0	0	20	0	14	2	0	16	36
0900-1000	1	0	0	0	1	0	0	0	0	0	1	27	1	0	29	1	21	0	0	22	52
1500-1600	0	0	0	0	0	0	0	0	0	0	0	11	2	0	13	0	10	0	0	10	23
1600-1700	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14	0	8	0	0	8	22
1700-1800	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	0	7	0	0	7	14
Totals	2	0	0	0	2	0	0	0	0	0	1	98	3	0	102	2	72	2	0	76	180

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 21.67% of the heavy vehicle traffic. Pamilla Street, east of Preston Street, is one-way eastbound. During the PM time period, traffic would back up from Carling Avenue to beyond Pamilla Street.

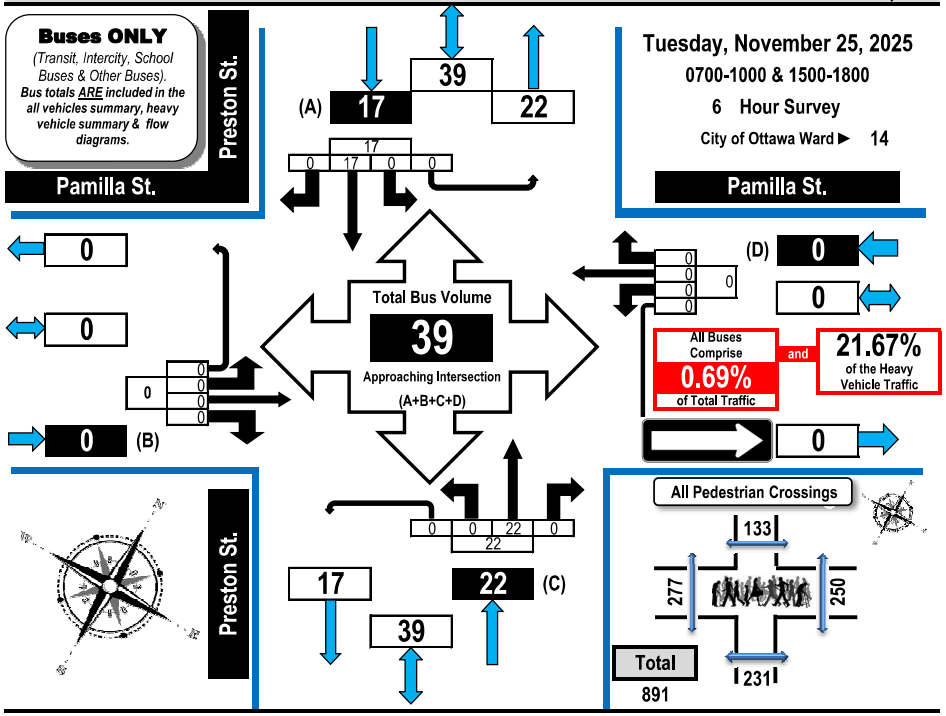
Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram



Pamilla Street & Preston Street — **Ottawa, ON**

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

Tuesday, November 25, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 14

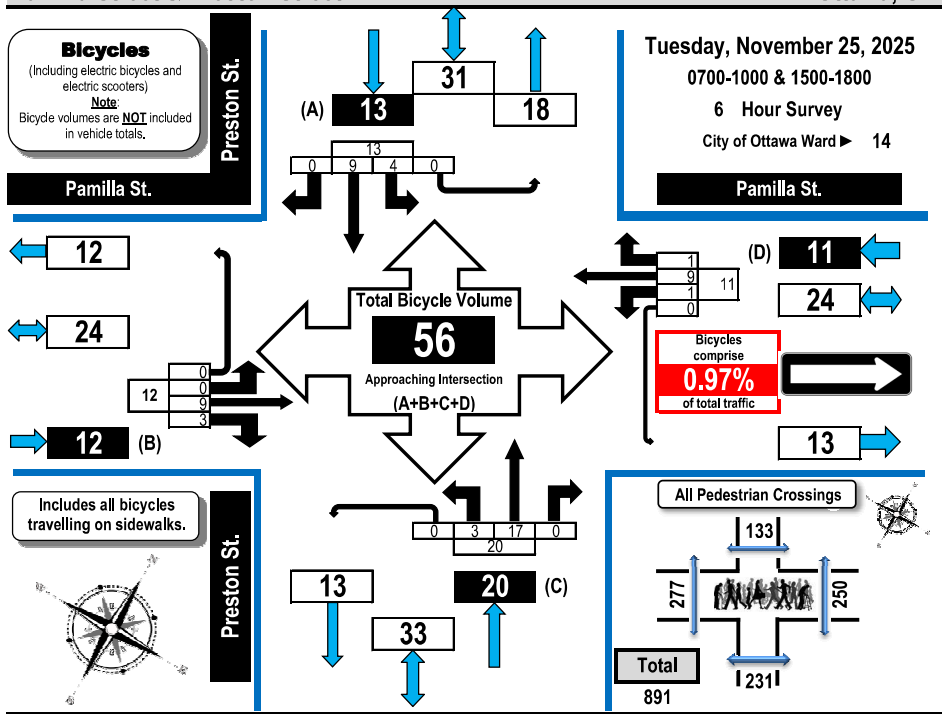


	Pamilla St. Eastbound					Pamilla St. Westbound					Preston St. Northbound					Preston St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	0	0	3	6
0800-0900	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	2	0	0	2	8
0900-1000	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	5	0	0	5	9
1500-1600	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4
1600-1700	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	4	0	0	4	7
1700-1800	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	3	0	0	3	5
Totals	0	0	0	0	0	0	0	0	0	0	0	22	0	0	22	0	17	0	0	17	39

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 21.67% of the heavy vehicle traffic. Pamilla Street, east of Preston Street, is one-way eastbound. During the PM time period, traffic would back up from Carling Avenue to beyond Pamilla Street.

Turning Movement Count
Bicycles and Personal E-Transportation Summary
Flow Diagram

Pamilla Street & Preston Street — **Ottawa, ON**

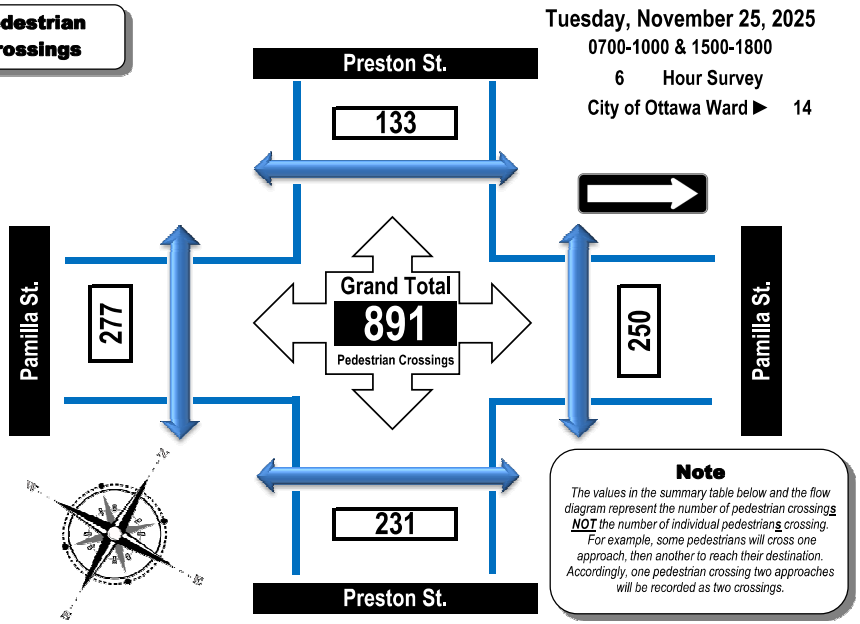


	Pamilla St. Eastbound					Pamilla St. Westbound					Preston St. Northbound					Preston St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	5
0800-0900	0	4	3	0	7	0	0	0	0	0	0	2	0	0	2	1	1	0	0	2	11
0900-1000	0	5	0	0	5	0	0	0	0	0	1	3	0	0	4	1	0	0	0	1	10
1500-1600	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
1600-1700	0	0	0	0	0	1	4	0	0	5	2	4	0	0	6	1	2	0	0	3	14
1700-1800	0	0	0	0	0	0	2	1	0	3	0	4	0	0	4	0	3	0	0	3	10
Totals	0	9	3	0	12	1	9	1	0	11	3	17	0	0	20	4	9	0	0	13	56

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 21.67% of the heavy vehicle traffic.
Pamilla Street, east of Preston Street, is one-way eastbound. During the PM time period, traffic would back up from Carling Avenue to beyond Pamilla Street.

Turning Movement Count
Pedestrian Crossings Summary
and Flow Diagram

Pamilla Street & Preston Street — **Ottawa, ON**



Time Period	West Side Crossing Pamilla St.	East Side Crossing Pamilla St.	Street Total	South Side Crossing Preston St.	North Side Crossing Preston St.	Street Total	Grand Total
0700-0800	25	22	47	14	6	20	67
0800-0900	37	41	78	44	13	57	135
0900-1000	24	30	54	20	11	31	85
1500-1600	61	49	110	40	29	69	179
1600-1700	82	49	131	54	31	85	216
1700-1800	48	59	107	59	43	102	209
Totals	277	250	527	231	133	364	891

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 21.67% of the heavy vehicle traffic.
Pamilla Street, east of Preston Street, is one-way eastbound. During the PM time period, traffic would back up from Carling Avenue to beyond Pamilla Street.

Turning Movement Count
Summary Report
Including AM and PM Peak Hours
All Vehicles Except Bicycles and Personal E-Transportation

Beech Street & Preston Street — Ottawa, ON

Survey Date: Thursday, November 20, 2025 | **Start Time:** 0700 | **AADT Factor:** 0.9
Weather AM: Overcast -5° C | **Survey Duration:** 6 Hrs. | **Survey Hours:** 0700-1000 & 1500-1800
Weather PM: Mostly Sunny +1° C | **Surveyor(s):** J. Mousseau

	Beech St. Eastbound					Beech St. Westbound						Preston St. Northbound						Preston St. 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
0700-0800	47	45	27	0	119	5	28	5	0	38	157	19	363	32	0	414	13	265	45	0	323	737	894
0800-0900	51	91	32	0	174	4	57	8	0	69	243	23	551	52	0	626	33	337	44	0	414	1040	1283
0900-1000	69	62	33	0	164	6	42	10	0	58	222	33	404	47	0	484	26	318	42	0	386	870	1092
1500-1600	44	42	25	0	111	16	41	9	0	66	177	44	462	33	0	539	27	407	57	0	491	1030	1207
1600-1700	60	63	30	0	153	29	82	23	0	134	287	43	449	30	0	522	29	370	80	0	479	1001	1288
1700-1800	70	51	29	0	150	14	74	14	0	102	252	37	555	37	0	629	35	296	84	0	415	1044	1296
Totals	341	354	176	0	871	74	324	69	0	467	1338	199	2784	231	0	3214	163	1993	352	0	2508	5722	7060

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	51	91	32	0	174	4	57	8	0	69	243	23	551	52	0	626	33	337	44	0	414	1040	1283

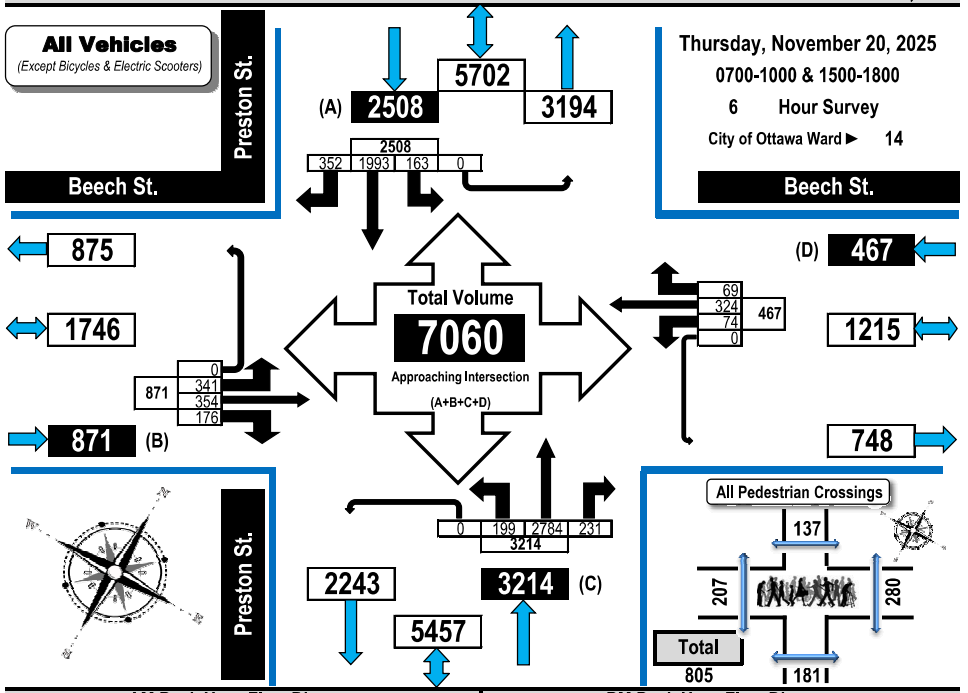
PM Peak Hour Factor ➡ 0.95												Highest Hourly Vehicle Volume Between 1500h & 1800h											
PM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot	Gr. Tot.
1645-1745	66	53	29	0	148	20	89	17	0	126	274	40	526	32	0	598	29	323	94	0	446	1044	1318

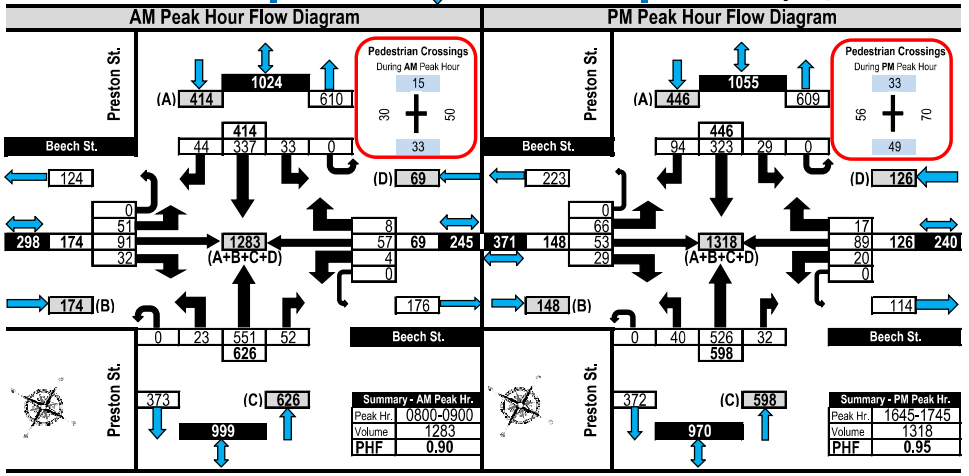
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 24.23% of the heavy vehicle traffic. During portions of the PM time period, southbound traffic backed up from Carling Avenue to beyond Beech Street.

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 and Personal E-Transportation

Beech Street & Preston Street — Ottawa, ON





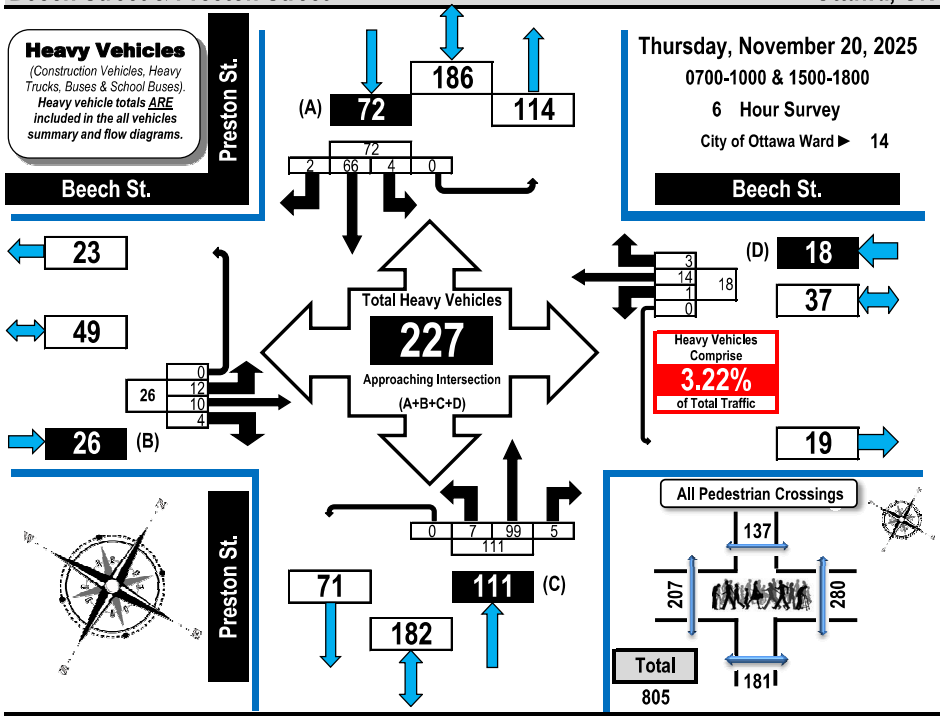
Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram



Beech Street & Preston Street — **Ottawa, ON**

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

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 14



	Beech St. Eastbound					Beech St. Westbound					Preston St. Northbound					Preston St. 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
0700-0800	2	1	0	0	3	0	3	0	0	3	2	18	1	0	21	0	8	0	0	8	35
0800-0900	1	1	0	0	2	0	3	2	0	5	1	17	2	0	20	1	15	0	0	16	43
0900-1000	3	1	1	0	5	1	2	1	0	4	3	24	1	0	28	2	18	2	0	22	59
1500-1600	2	3	3	0	8	0	5	0	0	5	1	21	0	0	22	1	11	0	0	12	47
1600-1700	3	4	0	0	7	0	0	0	0	0	0	12	0	0	12	0	10	0	0	10	29
1700-1800	1	0	0	0	1	0	1	0	0	1	0	7	1	0	8	0	4	0	0	4	14
Totals	12	10	4	0	26	1	14	3	0	18	7	99	5	0	111	4	66	2	0	72	227

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 24.23% of the heavy vehicle traffic. During portions of the PM time period, southbound traffic backed up from Carling Avenue to beyond Beech Street.

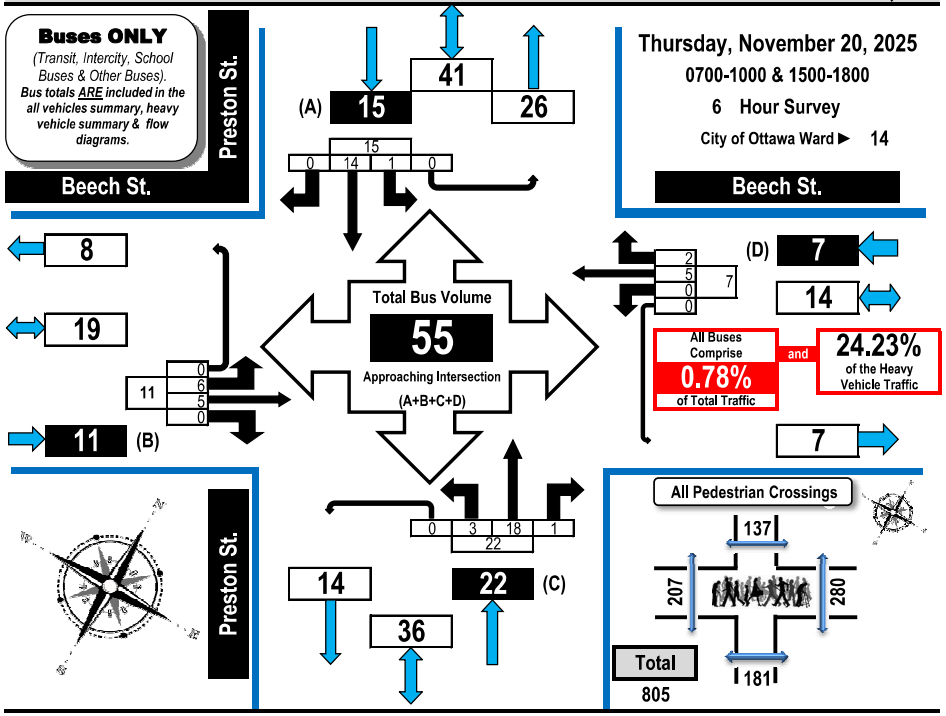
Turning Movement Count
All Buses Summary (FHWA Class 4 ONLY)
Flow Diagram



Beech Street & Preston Street — **Ottawa, ON**

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

Thursday, November 20, 2025
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ▶ 14

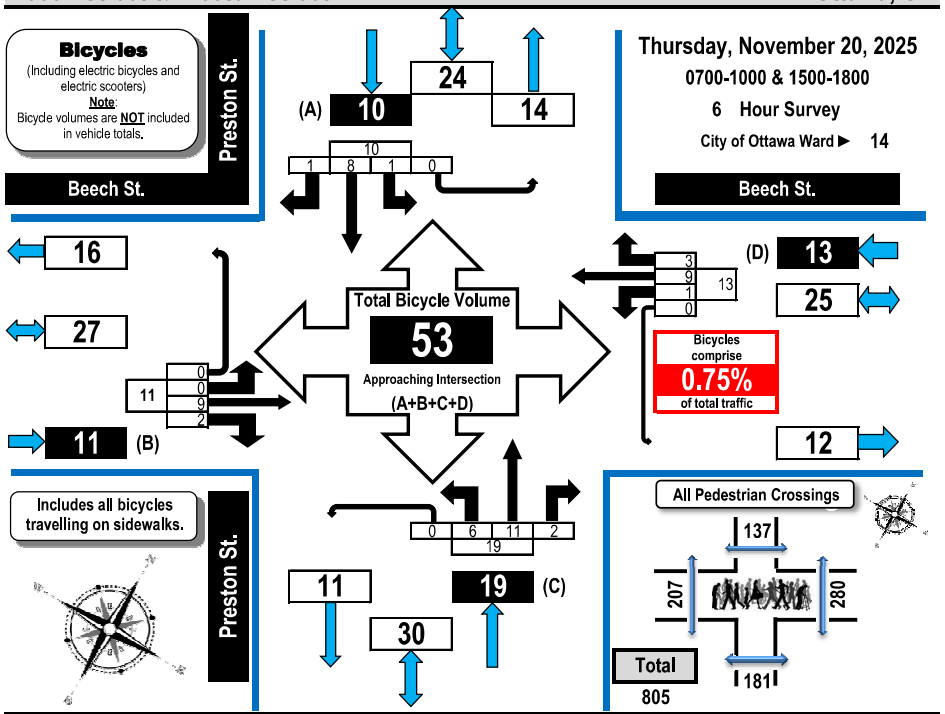


	Beech St. Eastbound					Beech St. Westbound					Preston St. Northbound					Preston St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	1	0	0	0	1	0	1	0	0	1	0	3	0	0	3	0	2	0	0	2	7
0800-0900	0	1	0	0	1	0	1	2	0	3	1	1	1	0	3	0	4	0	0	4	11
0900-1000	2	1	0	0	3	0	1	0	0	1	1	4	0	0	5	0	2	0	0	2	11
1500-1600	1	1	0	0	2	0	2	0	0	2	1	6	0	0	7	1	2	0	0	3	14
1600-1700	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	8
1700-1800	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	4
Totals	6	5	0	0	11	0	5	2	0	7	3	18	1	0	22	1	14	0	0	15	55

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 24.23% of the heavy vehicle traffic. During portions of the PM time period, southbound traffic backed up from Carling Avenue to beyond Beech Street.

Turning Movement Count
Bicycles and Personal E-Transportation Summary
Flow Diagram

Beech Street & Preston Street — **Ottawa, ON**

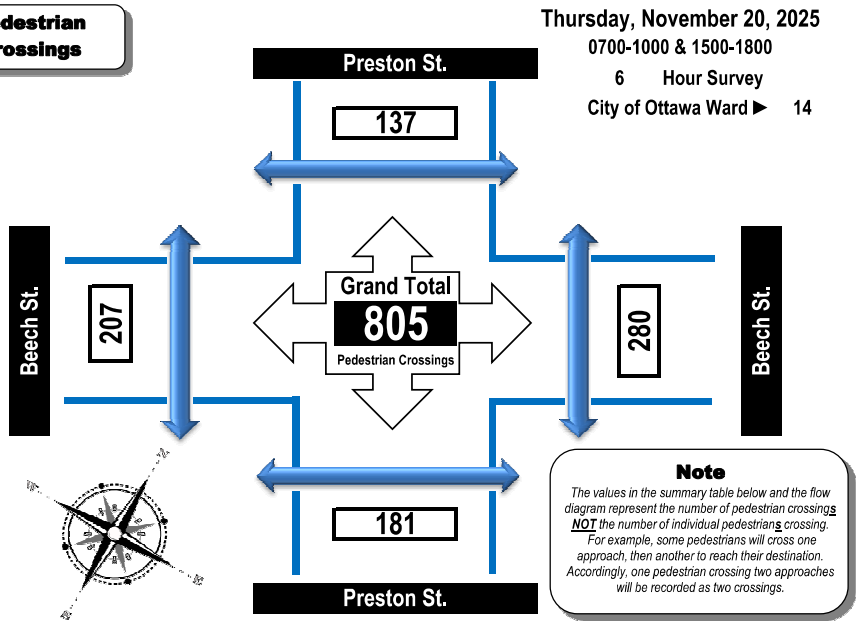


	Beech St. Eastbound					Beech St. Westbound					Preston St. Northbound					Preston St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	5
0800-0900	0	4	1	0	5	0	1	1	0	2	1	1	0	0	2	1	3	0	0	4	13
0900-1000	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	4
1500-1600	0	1	0	0	1	0	4	0	0	4	0	2	1	0	3	0	1	0	0	1	9
1600-1700	0	1	0	0	1	1	4	2	0	7	2	4	0	0	6	0	1	1	0	2	16
1700-1800	0	2	0	0	2	0	0	0	0	0	2	0	1	0	3	0	1	0	0	1	6
Totals	0	9	2	0	11	1	9	3	0	13	6	11	2	0	19	1	8	1	0	10	53

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 24.23% of the heavy vehicle traffic. During portions of the PM time period, southbound traffic backed up from Carling Avenue to beyond Beech Street.

Turning Movement Count
Pedestrian Crossings Summary
and Flow Diagram

Beech Street & Preston Street — **Ottawa, ON**



Time Period	West Side Crossing Beech St.	East Side Crossing Beech St.	Street Total	South Side Crossing Preston St.	North Side Crossing Preston St.	Street Total	Grand Total
0700-0800	9	24	33	8	14	22	55
0800-0900	30	50	80	33	15	48	128
0900-1000	13	31	44	22	11	33	77
1500-1600	30	51	81	24	34	58	139
1600-1700	61	56	117	49	33	82	199
1700-1800	64	68	132	45	30	75	207
Totals	207	280	487	181	137	318	805

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 24.23% of the heavy vehicle traffic. During portions of the PM time period, southbound traffic backed up from Carling Avenue to beyond Beech Street.

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)	115	1160	20	20	604	80	10	0	10	49	0	24
Future Volume (vph)	115	1160	20	20	604	80	10	0	10	49	0	24
Satd. Flow (prot)	1658	3316	1483	1658	3316	1483	1658	0	1483	1658	0	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1574	3316	1295	1628	3316	1265	1645	0	1457	1649	0	1454
Satd. Flow (RTOR)			90			90			28			28
Lane Group Flow (vph)	128	1289	22	22	671	89	11	0	11	54	0	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6				1			5
Permitted Phases			2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8		1	4		5
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.6	28.1	28.1	11.6	28.1	28.1	38.3		11.6	38.3		11.6
Total Split (s)	22.0	59.7	59.7	22.0	59.7	59.7	38.3		22.0	38.3		22.0
Total Split (%)	18.3%	49.8%	49.8%	18.3%	49.8%	49.8%	31.9%		18.3%	31.9%		18.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3		3.7	3.3		3.7
All-Red Time (s)	2.9	2.4	2.4	2.9	2.4	2.4	3.0		2.9	3.0		2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.6	6.1	6.1	6.6	6.1	6.1	6.3		6.6	6.3		6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None		None	None		None
Act Effct Green (s)	13.6	88.7	88.7	7.2	76.1	76.1	14.6		19.5	14.6		25.9
Actuated g/C Ratio	0.11	0.74	0.74	0.06	0.63	0.63	0.12		0.16	0.12		0.22
v/c Ratio	0.68	0.53	0.02	0.22	0.32	0.11	0.06		0.04	0.27		0.08
Control Delay	69.5	12.1	0.1	58.5	13.1	3.6	42.1		2.3	48.4		8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	69.5	12.1	0.1	58.5	13.1	3.6	42.1		2.3	48.4		8.1
LOS	E	B	A	E	B	A	D		A	D		A
Approach Delay		17.1			13.3			22.2			35.0	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	29.2	70.4	0.0	5.0	35.1	0.0	2.4		0.0	12.3		0.0
Queue Length 95th (m)	49.3	155.8	0.0	13.3	72.5	9.0	6.6		1.3	20.0		5.1
Internal Link Dist (m)		215.9			182.8			77.0			128.6	
Turn Bay Length (m)	45.0		30.0	30.0		30.0	15.0			15.0		
Base Capacity (vph)	216	2451	981	212	2104	835	438		361	439		364
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.59	0.53	0.02	0.10	0.32	0.11	0.03		0.03	0.12		0.07

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Hospital/Champagne & Carling



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	71	5	16	69	8	3	4	9	11	2	0
Future Vol, veh/h	3	71	5	16	69	8	3	4	9	11	2	0
Conflicting Peds, #/hr	25	0	6	6	0	25	4	0	5	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	79	6	18	77	9	3	4	10	12	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	111	0	0	91	0	0	217	241	93	243	240	111
Stage 1	-	-	-	-	-	-	94	94	-	143	143	-
Stage 2	-	-	-	-	-	-	123	147	-	100	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1479	-	-	1504	-	-	739	660	964	711	661	942
Stage 1	-	-	-	-	-	-	913	817	-	860	779	-
Stage 2	-	-	-	-	-	-	881	775	-	906	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1450	-	-	1497	-	-	723	634	956	675	635	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	723	634	-	675	635	-
Stage 1	-	-	-	-	-	-	907	811	-	842	754	-
Stage 2	-	-	-	-	-	-	864	750	-	886	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	9.6	10.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	805	1450	-	-	1497	-	-	669
HCM Lane V/C Ratio	0.022	0.002	-	-	0.012	-	-	0.022
HCM Control Delay (s)	9.6	7.5	0	-	7.4	0	-	10.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	80	9	38	77	10	11	16	52	19	14	2
Future Vol, veh/h	0	80	9	38	77	10	11	16	52	19	14	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	10	42	86	11	12	18	58	21	16	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.2	7.6	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	0%	30%	54%
Vol Thru, %	20%	90%	62%	40%
Vol Right, %	66%	10%	8%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	89	125	35
LT Vol	11	0	38	19
Through Vol	16	80	77	14
RT Vol	52	9	10	2
Lane Flow Rate	88	99	139	39
Geometry Grp	1	1	1	1
Degree of Util (X)	0.101	0.118	0.168	0.05
Departure Headway (Hd)	4.146	4.304	4.346	4.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	866	836	831	774
Service Time	2.161	2.317	2.346	2.654
HCM Lane V/C Ratio	0.102	0.118	0.167	0.05
HCM Control Delay	7.6	7.9	8.2	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.4	0.6	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣						✣			✣	
Traffic Volume (vph)	2	3	0	0	0	0	8	651	34	14	319	3
Future Volume (vph)	2	3	0	0	0	0	8	651	34	14	319	3
Satd. Flow (prot)	0	1710	0	0	0	0	0	1724	0	0	1739	0
Flt Permitted		0.980						0.996			0.965	
Satd. Flow (perm)	0	1683	0	0	0	0	0	1718	0	0	1680	0
Satd. Flow (RTOR)								7			1	
Lane Group Flow (vph)	0	5	0	0	0	0	0	770	0	0	373	0
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	
Total Split (s)	21.0	21.0					59.0	59.0		59.0	59.0	
Total Split (%)	26.3%	26.3%					73.8%	73.8%		73.8%	73.8%	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		13.0						64.6			64.6	
Actuated g/C Ratio		0.16						0.81			0.81	
v/c Ratio		0.02						0.55			0.27	
Control Delay		26.8						7.5			1.7	
Queue Delay		0.0						0.0			0.0	
Total Delay		26.8						7.5			1.7	
LOS		C						A			A	
Approach Delay		26.8						7.5			1.7	
Approach LOS		C						A			A	
Queue Length 50th (m)		0.6						57.3			6.9	
Queue Length 95th (m)		3.4						91.1			9.2	
Internal Link Dist (m)		99.0			95.3			144.2			139.8	
Turn Bay Length (m)												
Base Capacity (vph)		326						1389			1357	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.02						0.55			0.27	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 48 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Preston & Pamilla



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	91	32	4	57	8	23	551	52	33	337	44
Future Volume (vph)	51	91	32	4	57	8	23	551	52	33	337	44
Satd. Flow (prot)	0	1645	0	0	1740	1483	1658	1709	0	1658	1703	0
Flt Permitted		0.877			0.979		0.493			0.337		
Satd. Flow (perm)	0	1450	0	0	1703	1397	841	1709	0	575	1703	0
Satd. Flow (RTOR)		13				34		12			17	
Lane Group Flow (vph)	0	194	0	0	67	9	26	670	0	37	423	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	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	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	57.0	57.0		57.0	57.0	
Total Split (%)	28.8%	28.8%		28.8%	28.8%	28.8%	71.3%	71.3%		71.3%	71.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		14.5			14.5	14.5	54.4	54.4		54.4	54.4	
Actuated g/C Ratio		0.18			0.18	0.18	0.68	0.68		0.68	0.68	
v/c Ratio		0.71			0.22	0.03	0.05	0.57		0.09	0.36	
Control Delay		43.1			28.5	0.6	5.5	7.6		5.9	6.7	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		43.1			28.5	0.6	5.5	7.7		5.9	6.7	
LOS		D			C	A	A	A		A	A	
Approach Delay		43.1			25.2			7.6			6.7	
Approach LOS		D			C			A			A	
Queue Length 50th (m)		25.8			8.7	0.0	1.2	30.9		1.7	22.8	
Queue Length 95th (m)		45.6			18.4	0.5	m2.5	44.8		5.3	40.8	
Internal Link Dist (m)		213.5			113.1			139.8			111.9	
Turn Bay Length (m)						15.0	20.0			25.0		
Base Capacity (vph)		325			370	330	572	1166		391	1163	
Starvation Cap Reductn		0			0	0	0	39		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.60			0.18	0.03	0.05	0.59		0.09	0.36	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 40 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 5: Preston & Beech



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1084	10	10	1050	55	20	0	20	101	0	142
Future Volume (vph)	70	1084	10	10	1050	55	20	0	20	101	0	142
Satd. Flow (prot)	1658	3316	1483	1658	3316	1483	1658	0	1483	1658	0	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1605	3316	1368	1640	3316	1217	1658	0	1456	1647	0	1483
Satd. Flow (RTOR)			77			77			24			28
Lane Group Flow (vph)	78	1204	11	11	1167	61	22	0	22	112	0	158
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6				1			5
Permitted Phases			2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8		1	4		5
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0		5.0	10.0		5.0
Minimum Split (s)	11.6	28.1	28.1	11.6	28.1	28.1	38.3		11.6	38.3		11.6
Total Split (s)	30.0	71.7	71.7	30.0	71.7	71.7	38.3		30.0	38.3		30.0
Total Split (%)	21.4%	51.2%	51.2%	21.4%	51.2%	51.2%	27.4%		21.4%	27.4%		21.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3		3.7	3.3		3.7
All-Red Time (s)	2.9	2.4	2.4	2.9	2.4	2.4	3.0		2.9	3.0		2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.6	6.1	6.1	6.6	6.1	6.1	6.3		6.6	6.3		6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None		None	None		None
Act Effct Green (s)	11.9	102.0	102.0	6.6	91.8	91.8	17.3		23.6	17.3		35.5
Actuated g/C Ratio	0.08	0.73	0.73	0.05	0.66	0.66	0.12		0.17	0.12		0.25
v/c Ratio	0.55	0.50	0.01	0.14	0.54	0.07	0.11		0.08	0.55		0.40
Control Delay	75.5	11.2	0.0	67.4	15.8	2.3	51.3		11.8	66.1		36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	75.5	11.2	0.0	67.4	15.8	2.3	51.3		11.8	66.1		36.0
LOS	E	B	A	E	B	A	D		B	E		D
Approach Delay		15.0			15.6			31.6			48.5	
Approach LOS		B			B			C			D	
Queue Length 50th (m)	21.1	72.0	0.0	3.0	79.6	0.0	5.6		0.0	30.2		30.6
Queue Length 95th (m)	37.0	133.7	0.0	9.5	147.8	4.8	12.3		5.9	43.5		41.1
Internal Link Dist (m)		215.9			182.8			77.0			128.6	
Turn Bay Length (m)	45.0		30.0	30.0		30.0	15.0			15.0		
Base Capacity (vph)	277	2415	1017	277	2173	824	378		442	376		516
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.28	0.50	0.01	0.04	0.54	0.07	0.06		0.05	0.30		0.31

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 60.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Hospital/Champagne & Carling



Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	61	7	35	117	8	5	6	11	8	6	1
Future Vol, veh/h	4	61	7	35	117	8	5	6	11	8	6	1
Conflicting Peds, #/hr	25	0	19	19	0	25	5	0	8	8	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	68	8	39	130	9	6	7	12	9	7	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	95	0	0	321	341	99	336	341	165
Stage 1	-	-	-	-	-	-	99	99	-	238	238	-
Stage 2	-	-	-	-	-	-	222	242	-	98	103	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1499	-	-	632	581	957	618	581	879
Stage 1	-	-	-	-	-	-	907	813	-	765	708	-
Stage 2	-	-	-	-	-	-	780	705	-	908	810	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1387	-	-	1477	-	-	599	543	937	575	543	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	543	-	575	543	-
Stage 1	-	-	-	-	-	-	891	798	-	748	675	-
Stage 2	-	-	-	-	-	-	746	672	-	881	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.6	10.3	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	707	1387	-	-	1477	-	-	574
HCM Lane V/C Ratio	0.035	0.003	-	-	0.026	-	-	0.029
HCM Control Delay (s)	10.3	7.6	0	-	7.5	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	52	19	60	149	9	15	7	40	6	7	6
Future Vol, veh/h	3	52	19	60	149	9	15	7	40	6	7	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	58	21	67	166	10	17	8	44	7	8	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	8.9	7.7	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	4%	28%	32%
Vol Thru, %	11%	70%	68%	37%
Vol Right, %	65%	26%	4%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	74	218	19
LT Vol	15	3	60	6
Through Vol	7	52	149	7
RT Vol	40	19	9	6
Lane Flow Rate	69	82	242	21
Geometry Grp	1	1	1	1
Degree of Util (X)	0.083	0.097	0.282	0.027
Departure Headway (Hd)	4.338	4.242	4.184	4.607
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	829	849	848	780
Service Time	2.345	2.25	2.264	2.616
HCM Lane V/C Ratio	0.083	0.097	0.285	0.027
HCM Control Delay	7.7	7.7	8.9	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.3	1.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣						✣			✣	
Traffic Volume (vph)	7	0	4	0	0	0	5	495	19	10	494	4
Future Volume (vph)	7	0	4	0	0	0	5	495	19	10	494	4
Satd. Flow (prot)	0	1539	0	0	0	0	0	1727	0	0	1740	0
Flt Permitted		0.968						0.996			0.989	
Satd. Flow (perm)	0	1450	0	0	0	0	0	1721	0	0	1721	0
Satd. Flow (RTOR)		25						5			1	
Lane Group Flow (vph)	0	12	0	0	0	0	0	577	0	0	564	0
Turn Type	Perm	NA					Perm	NA		Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4						2			6		
Detector Phase	4	4					2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0					10.0	10.0		10.0	10.0	
Minimum Split (s)	20.5	20.5					28.1	28.1		28.1	28.1	
Total Split (s)	21.0	21.0					69.0	69.0		69.0	69.0	
Total Split (%)	23.3%	23.3%					76.7%	76.7%		76.7%	76.7%	
Yellow Time (s)	3.3	3.3					3.3	3.3		3.3	3.3	
All-Red Time (s)	2.2	2.2					1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.5						5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		13.0						74.6			74.6	
Actuated g/C Ratio		0.14						0.83			0.83	
v/c Ratio		0.05						0.40			0.40	
Control Delay		6.6						5.0			4.1	
Queue Delay		0.0						0.0			0.1	
Total Delay		6.6						5.0			4.2	
LOS		A						A			A	
Approach Delay		6.6						5.0			4.2	
Approach LOS		A						A			A	
Queue Length 50th (m)		0.0						35.5			28.2	
Queue Length 95th (m)		2.7						53.8			37.6	
Internal Link Dist (m)		99.0			95.3			144.2			139.8	
Turn Bay Length (m)												
Base Capacity (vph)		270						1428			1427	
Starvation Cap Reductn		0						0			155	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.04						0.40			0.44	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 27 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Preston & Pamilla



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	53	29	20	89	17	40	526	32	29	323	94
Future Volume (vph)	66	53	29	20	89	17	40	526	32	29	323	94
Satd. Flow (prot)	0	1614	0	0	1729	1483	1658	1716	0	1658	1644	0
Flt Permitted		0.799			0.921		0.469			0.374		
Satd. Flow (perm)	0	1275	0	0	1582	1309	783	1716	0	627	1644	0
Satd. Flow (RTOR)		12				30		8			37	
Lane Group Flow (vph)	0	164	0	0	121	19	44	620	0	32	463	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	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	22.6	33.5	33.5		33.5	33.5	
Total Split (s)	23.0	23.0		23.0	23.0	23.0	67.0	67.0		67.0	67.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%	25.6%	74.4%	74.4%		74.4%	74.4%	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.6			5.6	5.6	5.5	5.5		5.5	5.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		15.0			15.0	15.0	63.9	63.9		63.9	63.9	
Actuated g/C Ratio		0.17			0.17	0.17	0.71	0.71		0.71	0.71	
v/c Ratio		0.74			0.46	0.08	0.08	0.51		0.07	0.39	
Control Delay		52.6			39.0	7.9	1.7	5.2		5.2	6.3	
Queue Delay		0.0			0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay		52.6			39.0	7.9	1.7	5.3		5.2	6.3	
LOS		D			D	A	A	A		A	A	
Approach Delay		52.6			34.8			5.1			6.2	
Approach LOS		D			C			A			A	
Queue Length 50th (m)		24.5			18.5	0.0	0.4	5.1		1.6	27.1	
Queue Length 95th (m)		#48.7			34.4	4.0	1.0	39.8		4.5	43.5	
Internal Link Dist (m)		213.5			113.1			139.8			111.9	
Turn Bay Length (m)						15.0	20.0			25.0		
Base Capacity (vph)		256			305	277	556	1220		445	1178	
Starvation Cap Reductn		0			0	0	0	75		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.64			0.40	0.07	0.08	0.54		0.07	0.39	

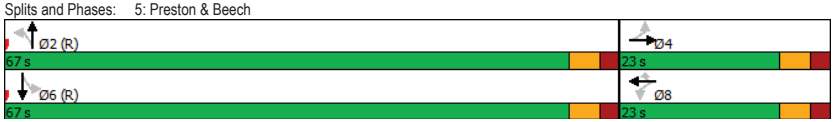
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 43 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Preston & Beech



Appendix D

Collision Data

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
2019-11-26	2019	7:50	BEECH ST @ CHAMPAGNE AVE (0005614)	01 - Clear	01 - Daylight	02 - Stop sign	0	03 - P.D. only	99 - Other	01 - Dry	2	0	0	0
2018-11-04	2018	13:39	BEECH ST @ LORETTA AVE (0005637)	01 - Clear	01 - Daylight	02 - Stop sign	0	02 - Non-fatal injury	02 - Angle	01 - Dry	2	0	0	0
2019-12-30	2019	14:15	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__3Z0GKV)	03 - Snow	01 - Daylight	10 - No control	0	03 - P.D. only	99 - Other	03 - Loose snow	2	0	0	0
2020-03-03	2020	13:00	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__3Z0GKV)	03 - Snow	01 - Daylight	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	04 - Slush	1	0	0	0
2020-09-05	2020	18:13	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__3Z0GKV)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	05 - Turning movement	01 - Dry	2	0	1	0
2018-04-27	2018	12:50	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	1	0	0	0
2019-02-15	2019	17:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	02 - Angle	02 - Wet	2	0	0	0
2019-03-12	2019	Unknown	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	05 - Packed snow	1	0	0	0
2019-04-15	2019	Unknown	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	02 - Wet	1	0	0	0
2019-05-12	2019	15:32	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
2020-09-04	2020	Unknown	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	1	0	0	0
2020-10-08	2020	Unknown	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	1	0	0	0
2022-04-15	2022	14:05	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__3Z0GI2)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
2019-09-03	2019	22:18	HICKORY ST @ LORETTA AVE (0005612)	01 - Clear	07 - Dark	02 - Stop sign	0	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
2019-06-18	2019	Unknown	LORETTA AVE btwn BEECH ST & HICKORY ST (__3Z0GIW)	01 - Clear	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	1	0	0	0
2020-01-29	2020	Unknown	LORETTA AVE btwn BEECH ST & HICKORY ST (__3Z0GIW)	00 - Unknown	00 - Unknown	10 - No control	0	03 - P.D. only	06 - SMV unattended vehicle	01 - Dry	1	0	0	0

Accident Year	Accident Date	Accident Time	Location	Accident Location	Initial Impact Type	Traffic Control	Vehicle 1 Type	Vehicle 2 Type	Environment Condition 1	Light	Classification Of Accident	X-Coordinate	Y-Coordinate	Vehicle 1 Initial Direction	Vehicle 1 Manoeuver	Vehicle 1 First Event	Vehicle 2 Initial Direction	Vehicle 2 Manoeuver	Vehicle 2 First Event	No Of Pedestrians
2019	2019-04-15	00:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	00 - Unknown		01 - Clear	00 - Unknown	03 - P.D. only	366505.42724	5029086.07101	00 - Unknown	00 - Unknown	02 - Unattended vehicle				0
2020	2020-03-03	13:00	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__320GKV)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	00 - Unknown		03 - Snow	01 - Daylight	03 - P.D. only	366430.50974	5029162.04623	00 - Unknown	00 - Unknown	02 - Unattended vehicle				0
2019	2019-03-12	00:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	05 - Pick-up truck		01 - Clear	00 - Unknown	03 - P.D. only	366509.90193	5029075.49943	01 - North	01 - Going ahead	02 - Unattended vehicle				0
2020	2020-09-04	00:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	05 - Pick-up truck		01 - Clear	00 - Unknown	03 - P.D. only	366511.65353	5029071.36135	01 - North	01 - Going ahead	02 - Unattended vehicle				0
2020	2020-10-08	00:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	00 - Unknown		01 - Clear	00 - Unknown	03 - P.D. only	366500.30581	5029098.17054	01 - North	00 - Unknown	02 - Unattended vehicle				0
2024	2024-03-22	20:10	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	04 - At/near private drive	04 - Sideswipe	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	366512.58194	5029069.16787	01 - North	01 - Going ahead	01 - Other motor vehicle	01 - North	13 - Pulling away from shoulder or curb	01 - Other motor vehicle	0
2024	2024-11-06	04:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	06 - SMV unattended vehicle	10 - No control	09 - Truck - closed	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366511.13757	5029072.57768	01 - North	05 - Turning right	02 - Unattended vehicle	01 - North	11 - Parked	02 - Unattended vehicle	0
2024	2024-05-07	15:30	BEECH ST @ LORETTA AVE (0005637)	03 - At intersection	02 - Angle	02 - Stop sign	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366382.70271	5029141.55702	01 - North	01 - Going ahead	01 - Other motor vehicle	03 - East	01 - Going ahead	01 - Other motor vehicle	0
2024	2024-09-15	05:40	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__320GKV)	04 - At/near private drive	06 - SMV unattended vehicle	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366442.24408	5029167.06653	01 - North	09 - Reversing	02 - Unattended vehicle	03 - East	11 - Parked	01 - Other motor vehicle	0
2022	2022-04-15	14:05	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	04 - Sideswipe	10 - No control	00 - Unknown	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366519.98744	5029051.67198	02 - South	13 - Pulling away from shoulder or curb	01 - Other motor vehicle	02 - South	01 - Going ahead	01 - Other motor vehicle	0
2024	2024-03-08	23:30	BEECH ST @ CHAMPAGNE AVE (0005614)	01 - Non intersection	99 - Other	02 - Stop sign	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	366466.70312	5029177.55819	02 - South	10 - Stopped	01 - Other motor vehicle	03 - East	09 - Reversing	01 - Other motor vehicle	0
2024	2024-02-14	11:10	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	04 - Sideswipe	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366506.38304	5029083.81232	02 - South	01 - Going ahead	01 - Other motor vehicle	02 - South	13 - Pulling away from shoulder or curb	01 - Other motor vehicle	0
2019	2019-11-26	07:50	BEECH ST @ CHAMPAGNE AVE (0005614)	02 - Intersection related	99 - Other	02 - Stop sign	06 - Delivery van	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366466.70300	5029177.55810	03 - East	09 - Reversing	01 - Other motor vehicle	04 - West	10 - Stopped	01 - Other motor vehicle	0
2024	2024-06-16	14:58	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	04 - At/near private drive	05 - Turning movement	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366535.20080	5029015.41736	03 - East	05 - Turning right	01 - Other motor vehicle	02 - South	01 - Going ahead	01 - Other motor vehicle	0
2019	2019-02-15	17:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	04 - At/near private drive	02 - Angle	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	366486.33279	5029131.18218	04 - West	09 - Reversing	01 - Other motor vehicle	02 - South	01 - Going ahead	01 - Other motor vehicle	0
2019	2019-05-12	15:32	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	04 - At/near private drive	02 - Angle	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366503.00433	5029091.79520	04 - West	09 - Reversing	01 - Other motor vehicle	02 - South	10 - Stopped	01 - Other motor vehicle	0
2019	2019-12-30	14:15	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__320GKV)	01 - Non intersection	99 - Other	10 - No control	05 - Pick-up truck	01 - Automobile, station wagon	03 - Snow	01 - Daylight	03 - P.D. only	366448.11289	5029169.59067	04 - West	09 - Reversing	01 - Other motor vehicle	03 - East	10 - Stopped	01 - Other motor vehicle	0
2020	2020-09-05	18:13	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__320GKV)	04 - At/near private drive	05 - Turning movement	10 - No control	01 - Automobile, station wagon	36 - Bicycle	01 - Clear	01 - Daylight	02 - Non-fatal injury	366442.09114	5029167.00984	04 - West	04 - Turning left	04 - Cyclist	03 - East	01 - Going ahead	01 - Other motor vehicle	0
2022	2022-09-09	23:39	BEECH ST btwn LORETTA AVE & CHAMPAGNE AVE (__320GKV)	02 - Intersection related	06 - SMV unattended vehicle	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	366385.15885	5029142.55742	04 - West	01 - Going ahead	02 - Unattended vehicle	04 - West	11 - Parked	01 - Other motor vehicle	0
2024	2024-11-08	10:00	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	04 - At/near private drive	06 - SMV unattended vehicle	10 - No control	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366514.08090	5029065.62531	04 - West	09 - Reversing	02 - Unattended vehicle	00 - Unknown	11 - Parked	01 - Other motor vehicle	0
2024	2024-09-13	14:30	CHAMPAGNE AVE btwn BEECH ST & HICKORY ST (__320GI2)	01 - Non intersection	99 - Other	10 - No control	05 - Pick-up truck	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366510.76063	5029073.46985	04 - West	09 - Reversing	01 - Other motor vehicle	02 - South	10 - Stopped	01 - Other motor vehicle	0
2024	2024-11-03	08:24	CHAMPAGNE AVE @ HICKORY ST (0005577)	02 - Intersection related	06 - SMV unattended vehicle	02 - Stop sign	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	366557.70148	5028965.55635	04 - West	05 - Turning right	02 - Unattended vehicle	00 - Unknown	11 - Parked	01 - Other motor vehicle	0

Appendix E

TDM Checklist

CGH TRANSPORTATION

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	☐

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

Legend

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

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

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

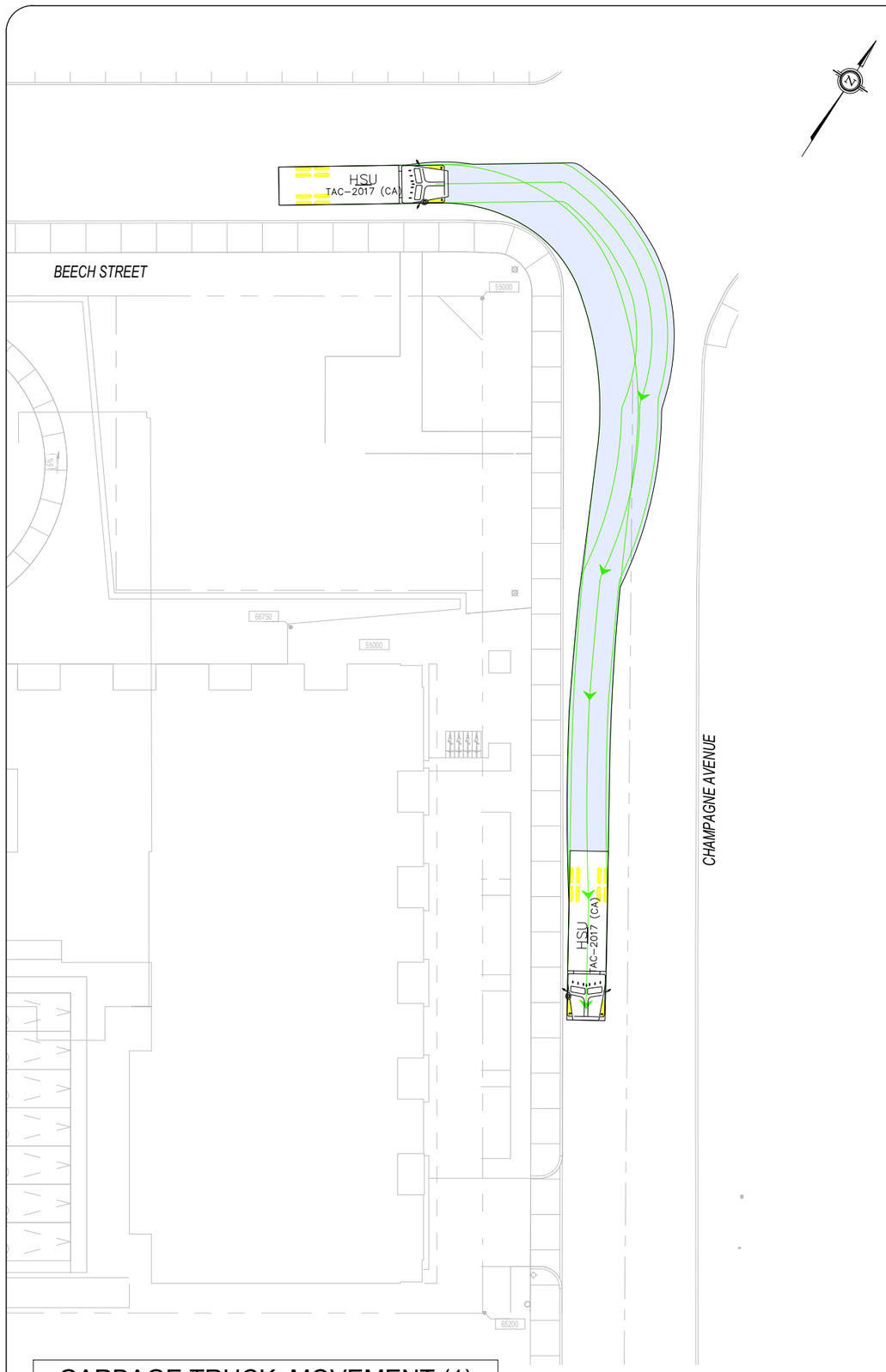
		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted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

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

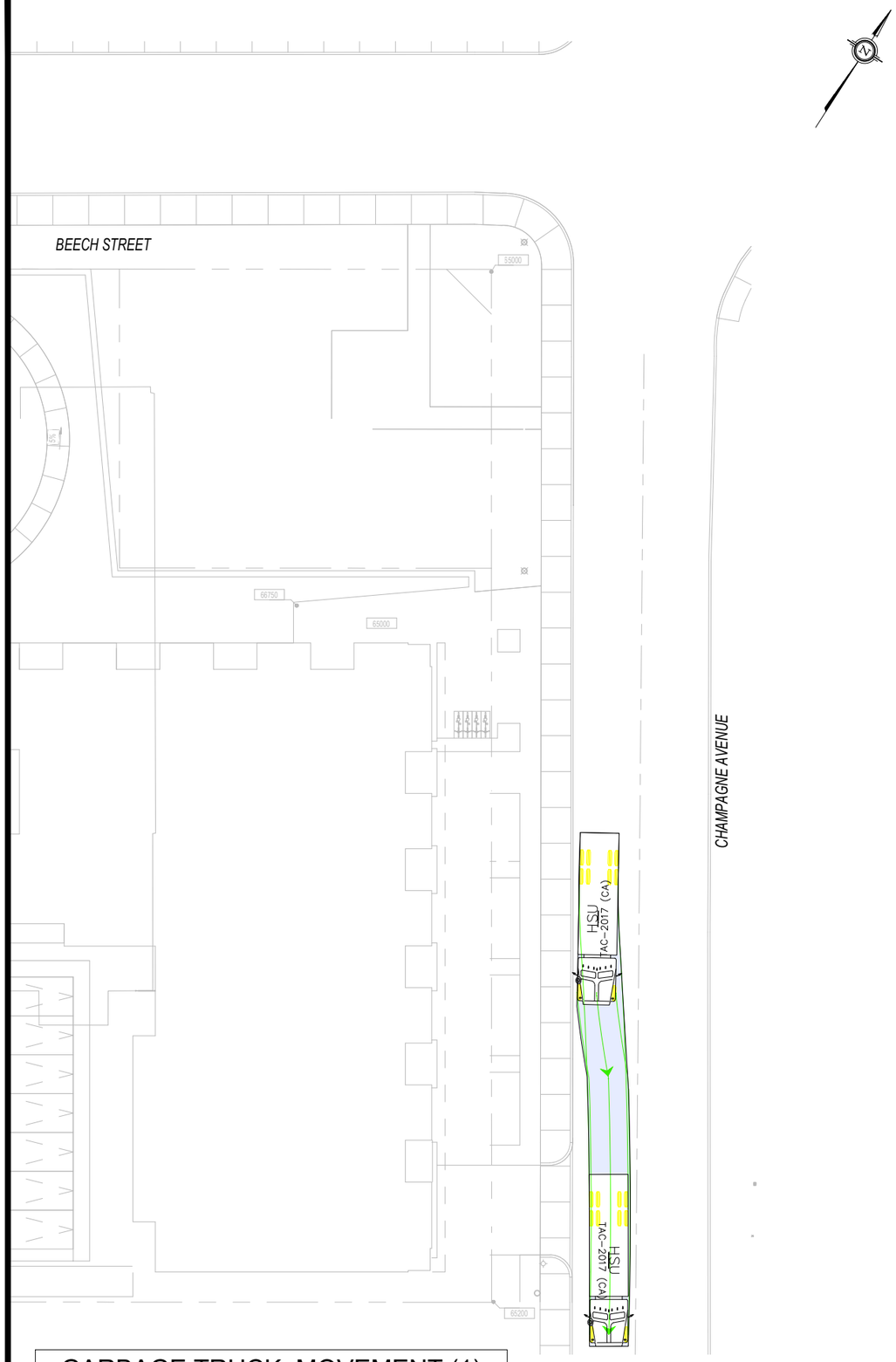
Appendix F

Garbage Truck Movement

CGH TRANSPORTATION



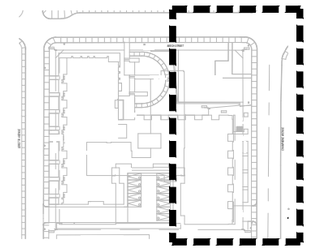
GARBAGE TRUCK MOVEMENT (1)
PULLING TOWARD CURBSIDE

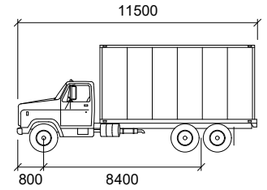


GARBAGE TRUCK MOVEMENT (1)
PULLING AWAY FROM CURBSIDE

Notes:

Key Plan:





HSU

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

REV:	DESCRIPTION:	BY:	DATE:
01	description	EA	2026-09-21

STATUS:

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

CLIENT: KTS Properties

ARCHITECT:

SITE: 116 Beech Street

TITLE: Garbage Movement Analysis

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-09-21	EA	MC

PROJECT NO:	DRAWING NO:	REVISION:
2025-188	001	01

Appendix G

MMLOS Analysis

CGH TRANSPORTATION

Multi-Modal Level of Service - Segments Form

Project: 116 Beech
Consultant: CGH
Date: Dec 16, 2025
Scenario: Existing

	Segment Name	Beech		Loretta		Champagne	
	OP Transect / Policy Area	Within 600m of a rapid transit station		Within 600m of a rapid transit station		Within 600m of a rapid transit station	
	Segment Component	Majority (>50%)		Majority (>50%)		Majority (>50%)	
	Side of Street	S		E		W	
Pedestrian	**PLOS Inputs**						
	Posted Speed (km/h)	50 km/h		30 km/h		30 km/h	
	Two-Way ADT	2,400		700		1,500	
	Pedestrian Facility	Sidewalk		Sidewalk		Sidewalk	
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	Yes		Yes		Yes	
	Facility Width (m)	1.80m		1.80m		1.80m	
	Offset from Motor Vehicle Travel Lanes (m)	< 0.5m		0.5-1.49m		< 0.5m	
	Presence of Adjacent Parking?	-		-		-	
	General Purpose Curb Lane ADT	≤ 3000		≤ 3000		≤ 3000	
	Max. Distance between Controlled Crossings (m)	≤ 200m		201-230m	-	201-230m	-
	Score	-	**3.50**	-	**4.25**	**3.50**	-
	PLOS	-	**B**	-	**B**	**B**	-
	Target PLOS	**A**		**A**		**A**	
Bicycle	**BLOS Inputs**						
	Cycling Route Classification	**Elsewhere**		**Elsewhere**		**Elsewhere**	
	Cycling Facility	Input PLOS First	Shared Operating Space	Input PLOS First	Shared Operating Space	Shared Operating Space	Input PLOS First
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)		-		-	-	
	Facility Operation		-		-	-	
	Pedestrian/Cyclist Volume		-		-	-	
	Facility Width		-		-	-	
	Boulevard/Buffer Width (excluding curb)		-		-	-	
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)		None		Cross-Street	Cross-Street	
	Number of Travel Lanes at Crossing		-		≤ 2	≤ 2	
	Crossing includes Median Refuge (≥ 2.7m)		-		No	No	
	Cross-street Posted Speed (km/h)		-		≤ 30 km/h	≤ 30 km/h	
	Cycling Path Blockages (e.g. bus stops and/or loading zones)		Rare		Rare	Rare	
	Score	-	**1.60**	-	**5.00**	**4.30**	-
	BLOS	-	**D**	-	**A**	**B**	-
	Target BLOS	**B**		**B**		**B**	
Transit	**TLOS Inputs**						
	Transit Facility	**Select Transit Designation**		**Select Transit Designation**		**Select Transit Designation**	
	Facility Type						
	Expected Transit Running Time						
	Transit Travel Speed (if available)						
	TLOS	-	-	-	-	-	-
	Target TLOS	-		-		-	
Public Realm	**PRLOS Inputs**						
	Context	Input PLOS and BLOS First	Mainstreet or active frontage street within a Hub, Special District, or Village	Input PLOS and BLOS First	Mainstreet or active frontage street within a Hub, Special District, or Village	Mainstreet or active frontage street within a Hub, Special District, or Village	Input PLOS and BLOS First
	Inner Boulevard Width		≤ 0.6m		0.6-1.19m	≤ 0.6m	
	Middle Boulevard Width		≤ 0.5m		≤ 0.5m	≤ 0.5m	
	Outer Boulevard (Frontage) Width		-		-	-	
	Transit Route on Segment?		No		No	No	
	Bus Stop Elements		-		-	-	
	Number of Midblock Traffic Lanes (both travel directions)		≤ 2		≤ 2		≤ 2
	Score	-	**18.60**	-	**20.40**	**19.50**	-
	PRLOS	-	**C**	-	**C**	**C**	-
		C		**C**		**C**	