

466 Tremblay Road & 1440 St-Laurent Boulevard

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

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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 an Official Plan and Zoning By-Law Amendment application.

2 Existing and Planned Conditions

2.1 Proposed Development

The existing site located at 466 Tremblay Road is currently zoned as Transit Oriented Development (TD1[1993]) in the legacy Zoning By-Law (2008-250) and as Hub Zone 2 (H2F) in the new Zoning By-Law (2026-50). The site is currently a low-rise office building of approximately 19,000 sq ft with surface parking lots and two accesses. The proposed redevelopment concept consists of the removal of the existing office, parking lots and one of the accesses, and the construction of two 9-storey residential buildings fronting Tremblay Road that comprises 560 dwelling units.

The building is to be accessed by a full-movement access on Tremblay Road. A total of 207 vehicle parking spaces is proposed. The anticipated full build-out and occupancy horizon is 2029 with construction occurring in a single phase.

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

Figure 1: Area Context Plan



Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: June 8, 2026



2.2 Existing Conditions

2.2.1 Area Road Network

St-Laurent Boulevard: St-Laurent Boulevard is a City of Ottawa arterial road with a divided four-lane urban cross-section south of the Tremblay Road and a divided six-lane urban cross-section north of Tremblay Road with widening at the intersections and Highway 417 ramps. Sidewalks are located on both sides of the road, except on the east side of the road between Tremblay Road and the Highway 417 on-ramp, where the facility is provided in the form of an asphalt pathway. The posted speed limit is 60 km/h within the study area, and the right-of-way is highly variable throughout the study area, from a minimum of 28.5 metres near the Highway 417 interchange to 70.0 metres with grading in the vicinity of the rail line overpass. St-Laurent Boulevard is a truck route.

Tremblay Road: Tremblay Road is a City of Ottawa major collector road with a two-lane cross-section that is urban throughout the study area with the exception of the segment between Avenue O and Avenue U where it is semi-urban with a curb on the south side. A sidewalk is located on the south side of the road, and a multi-use pathway is located on the north side of the road westward from a point 185 metres along the road from the intersection with St-Laurent Boulevard. The posted speed limit is 50 km/h within the study area. The Ottawa Official Plan reserves a 26.0-meter right-of-way subject to localized widening. Tremblay Road is a truck route.

Belfast Road: Belfast Road is a City of Ottawa major collector road north of Tremblay Road and a collector road south of Tremblay Road with a two-lane urban cross-section within the study area. North of Tremblay Road, a sidewalk is present, except for 130 metres north of the bridge over Highway 417 where the facility is provided in the form of an asphalt pathway. A MUP is located on the west side of the road throughout the study area, except across the bridge over Highway 417 where this facility is provided in the form of an approximately 3.0-metre-wide sidewalk. The assumed speed limit is 50 km/h and the typical right-of-way is 26.0 metres but is wider and highly variable through the study area. Belfast Road is a truck route.

2.2.2 Existing Intersections

The signalized study area intersections have been summarized below:

Tremblay Road at Belfast Road

The intersection of Tremblay Road at Belfast Road is a signalized intersection. All approaches consist of an auxiliary left-turn lane and a shared through/right-turn lane. No turn restrictions were noted.

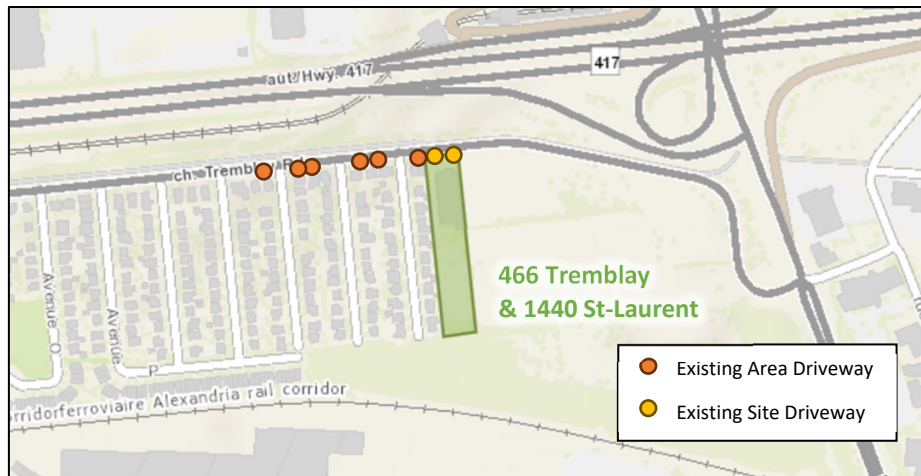
Tremblay Road at St-Laurent Boulevard

The intersection of Tremblay Road at St-Laurent Boulevard is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, two through lanes, and an auxiliary shared through/right-turn lane, and the southbound approach consists of an auxiliary left-turn lane, two through lanes, and a right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn lane and a shared through/right-turn lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Driveways to six single-family residences are located within 200 metres of the site access. None of the driveways would provide access to significant traffic generators and would therefore have no impact on this TIA. The area driveways are illustrated in Figure 3.

Figure 3: Area Driveways



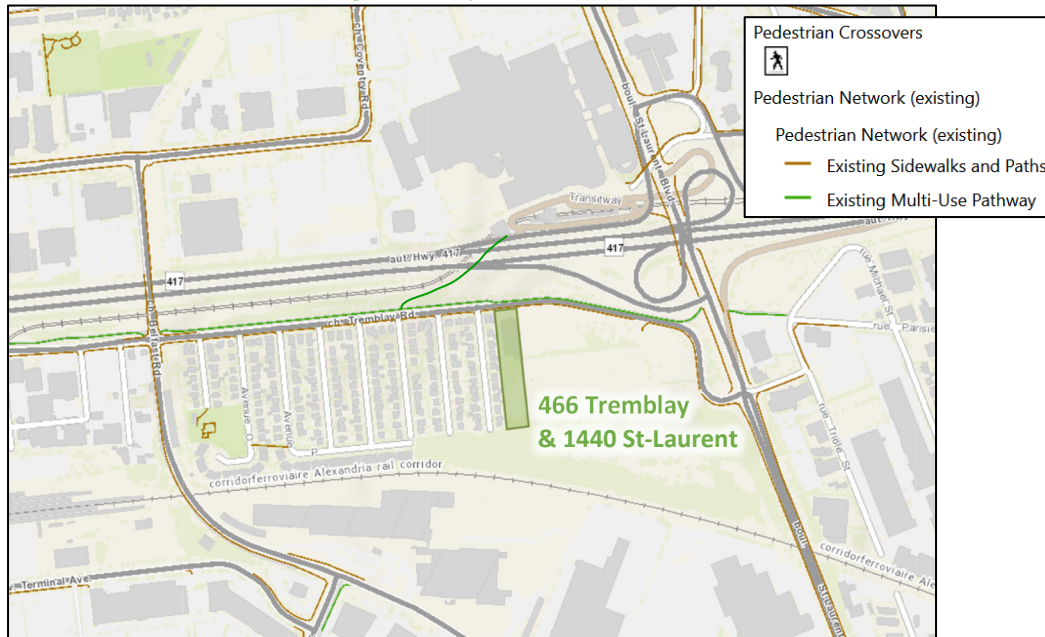
Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: June 8, 2026

2.2.4 Cycling and Pedestrian Facilities

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

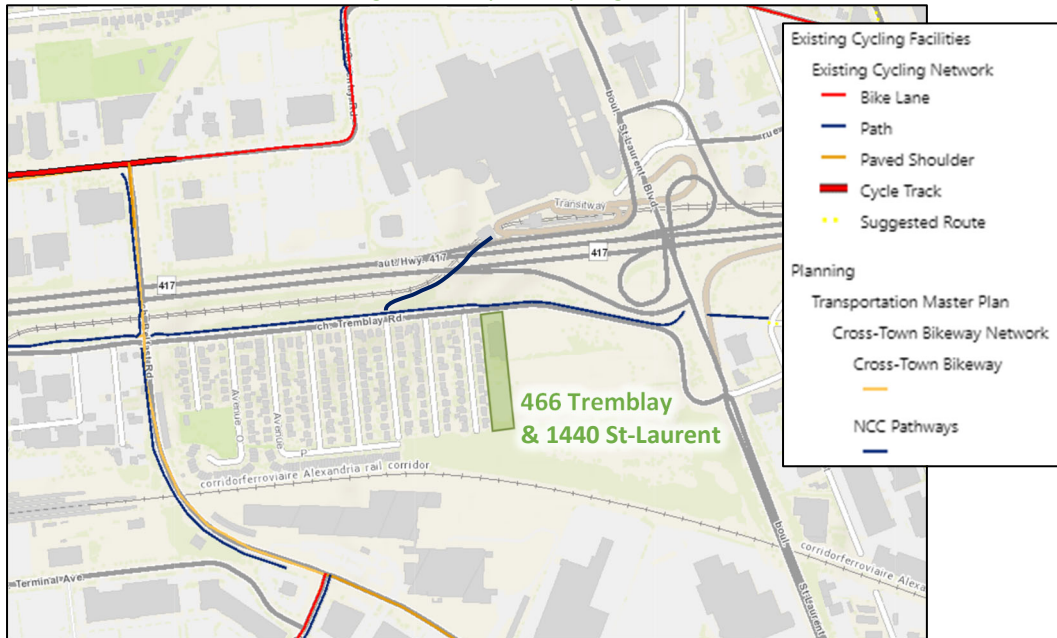
Sidewalks or asphalt pathways are provided along the east side of Belfast Road, south side of Tremblay Road, and both sides of St-Laurent Boulevard. Cycling facilities include MUPs along the west side of Belfast Road and north side of Tremblay Road. The MUPs along Belfast Road and along Tremblay Road west of Belfast Road are also part of Ottawa's cross-town bikeway network. A pathway between the MUP along the north side of Tremblay Road and St-Laurent Station is also present and has been added to Figure 4 and Figure 5.

Figure 4: Study Area Pedestrian Facilities



Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: June 8, 2026

Figure 5: Study Area Cycling Facilities



Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: June 8, 2026

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

Figure 6: Existing Pedestrian Volumes

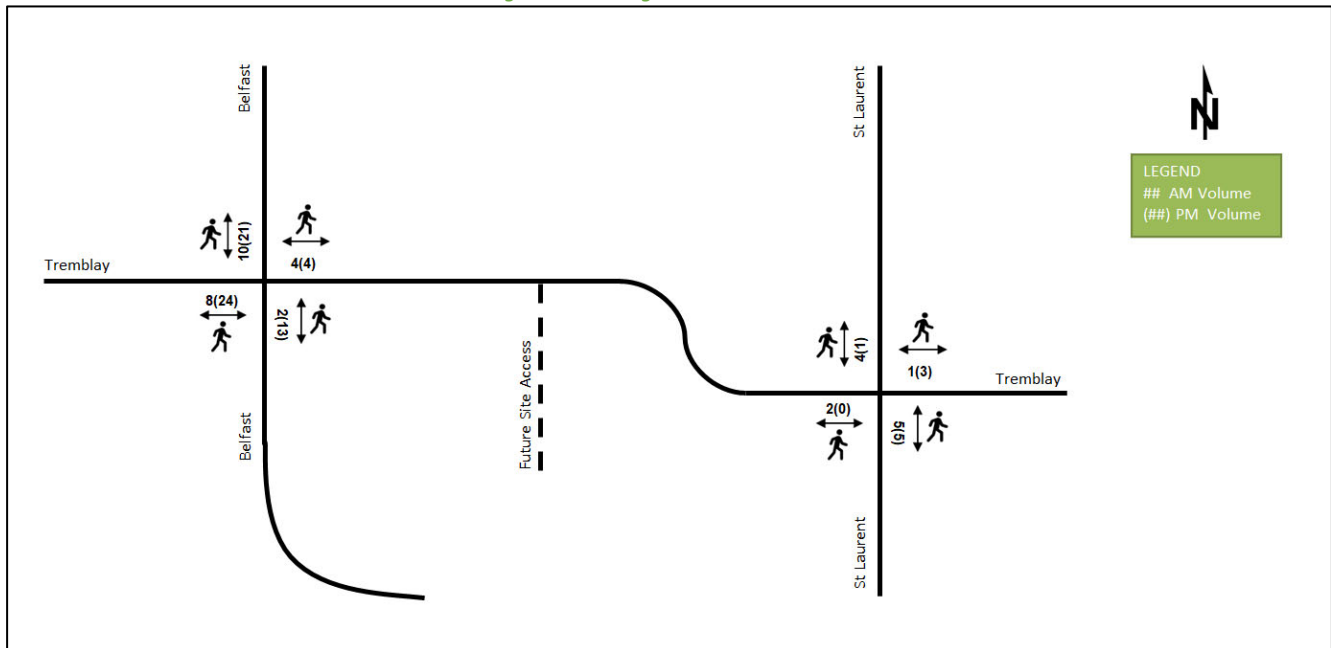
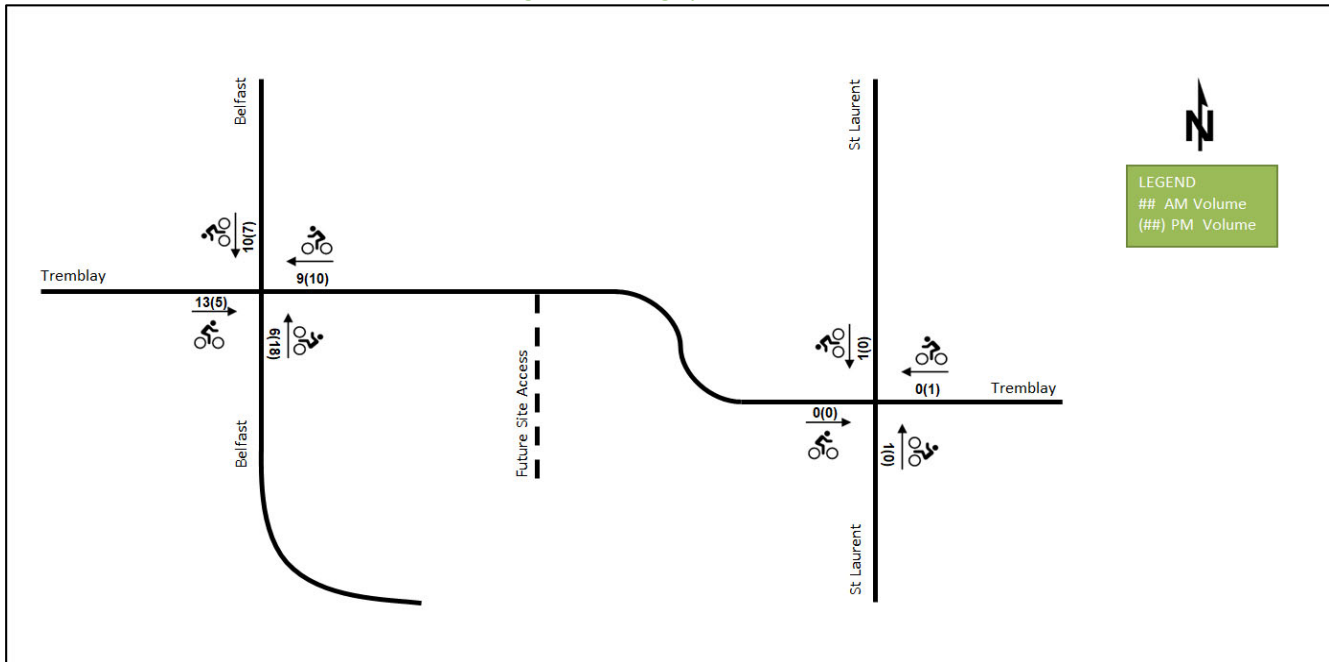


Figure 7: Existing Cyclist Volumes



2.2.5 Existing Transit

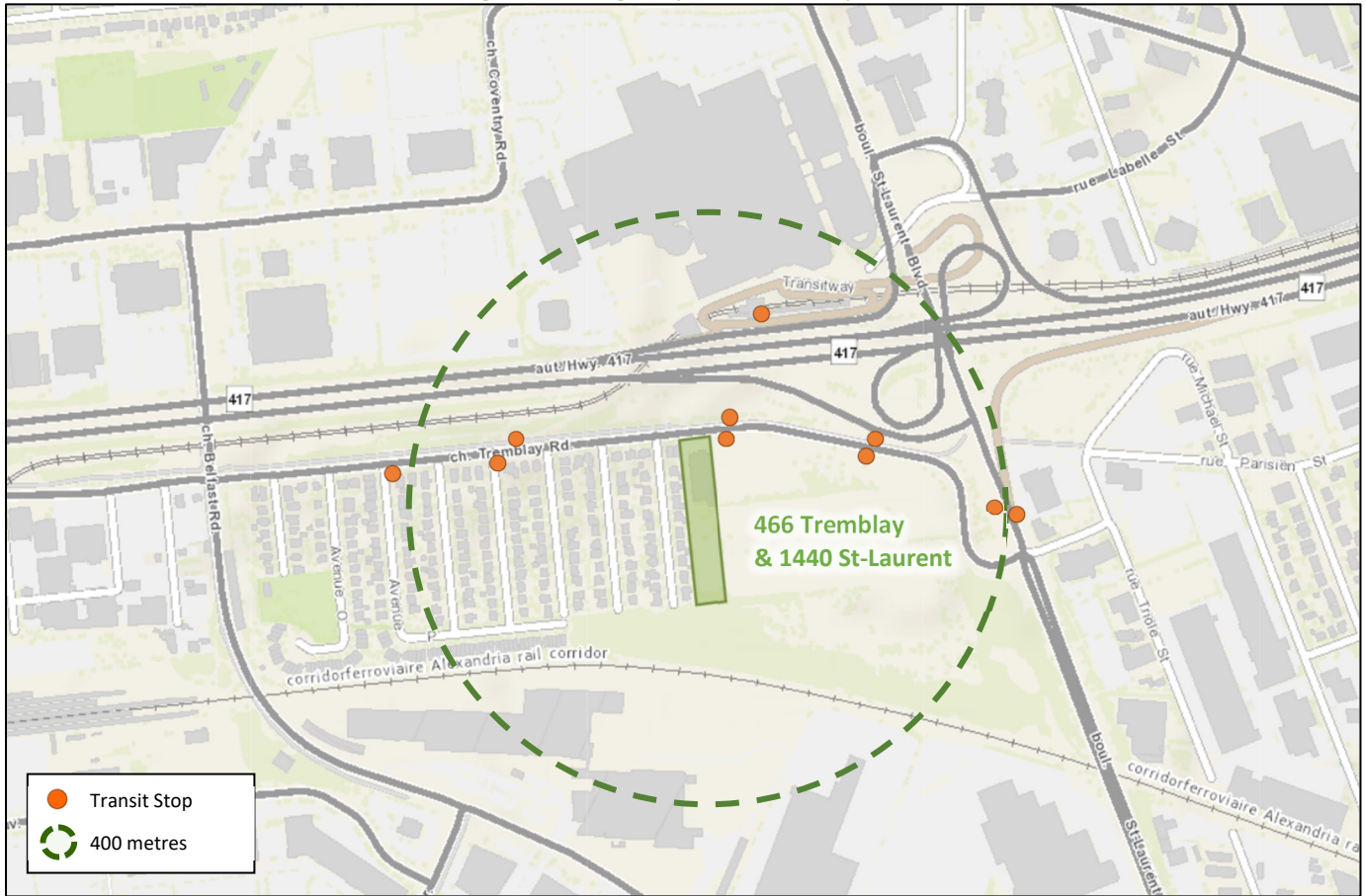
Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from June 8, 2026 and is included for general information purposes and context to the surrounding area.

Within the study area, the routes #105 and #18 operate along Tremblay Road in front of the proposed development, and routes #19, #40, #41 operate along St-Laurent Boulevard and St-Laurent Station. The site is also located within a 600-metre walk of St-Laurent Station via a tunnel from Tremblay Road. The frequency of these routes within proximity of the proposed site based on June 8, 2026 service levels are:

- Route #18 – 30-minute service all day
- Route #19 – 30-minute service all day
- Route #40 – 30-minute service all day, 15-minute service during peak hours on workdays
- Route #41 – 30-minute service all day, 15-minute service during peak hours on workdays
- Route #105 – 30-minute service all day



Figure 9: Existing Study Area Transit Stops



Source: <http://www.octranspo.com/> Accessed: June 8, 2026

2.2.6 Existing Area Traffic Management Measures

On-road messaging provides speed limit information painted on Tremblay Road in proximity to a pedestrian crossover. A modal filter is located at the intersection of Avenue S and Avenue P to restrict auto vehicle access. No additional existing area traffic management measures are noted 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 count dates.

Table 1: Intersection Count Date

Intersection	Count Date	Source
Tremblay Road at Belfast Road	Wednesday, October 18, 2023	City of Ottawa
Tremblay Road at St-Laurent Boulevard	Wednesday, April 1, 2026	J & S Traffic Services

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and MMLOS Guidelines weighted v/c methodology for the overall intersection, per direction from Transportation Engineering Services, 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 10: Existing Traffic Counts

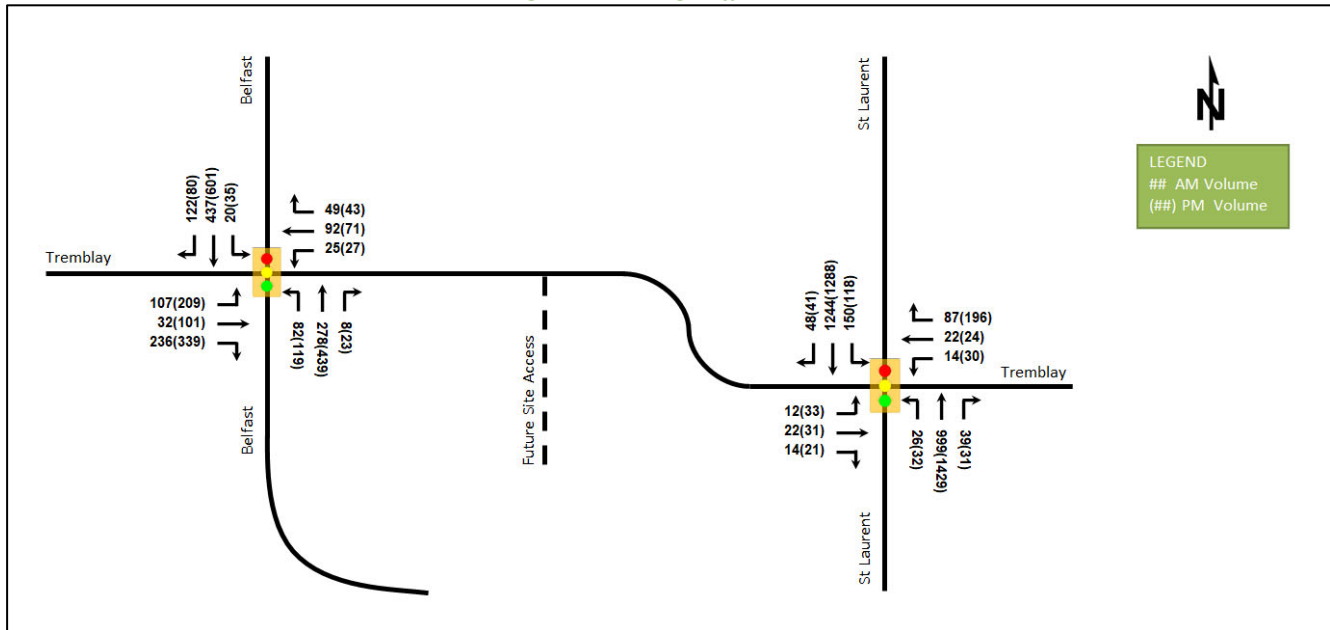


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95 th)	LOS	V/C	Delay (s)	Q (95 th)
Belfast Road & Tremblay Road <i>Signalized</i>	EBL	A	0.49	32.6	27.1	C	0.71	44.9	#64.9
	EBT/R	A	0.58	10.4	21.8	E	0.93	48.1	#117.3
	WBL	A	0.17	25.6	8.8	A	0.38	45.4	13.6
	WBT/R	A	0.42	22.9	27.8	A	0.27	21.9	27.5
	NBL	A	0.23	7.9	11.8	A	0.48	17.5	22.6
	NBT/R	A	0.32	9.4	41.0	A	0.58	23.0	107.9
	SBL	A	0.05	14.8	6.6	A	0.09	9.9	6.8
	SBT/R	C	0.80	28.9	#148.0	E	1.00	63.7	#223.6
	Overall	B	0.69	20.1	-	E	0.93	43.5	-
St-Laurent Boulevard & Tremblay Road <i>Signalized</i>	EBL	A	0.14	51.0	8.2	B	0.65	94.8	16.8
	EBT/R	A	0.21	35.5	13.6	A	0.28	31.9	16.3
	WBL	A	0.11	49.2	8.9	A	0.20	45.9	13.8
	WBT/R	A	0.47	20.5	19.8	B	0.67	22.2	31.4
	NBL	A	0.11	12.1	9.6	A	0.15	14.1	11.8
	NBT/R	A	0.35	10.2	74.7	A	0.50	13.0	113.7
	SBL	A	0.40	7.0	22.1	A	0.49	11.3	18.3
	SBT	A	0.52	6.3	111.6	A	0.55	7.4	120.2
	SBR	A	0.05	1.6	4.2	A	0.04	2.0	4.0
	Overall	A	0.52	9.2	-	A	0.57	12.6	-

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. At the intersection of Belfast Road at Tremblay Road, the southbound through/right movement is at its theoretical capacity during the PM peak hour, but split can be reallocated from other phases in the cycle to reduce the v/c on this movement. Extended queues are noted on this movement during the AM and PM peak hours, and on the eastbound left and eastbound through/right movements during the PM peak hour.

2.2.8 Collision Analysis

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

Table 3: Study Area Collision Summary, 2018-2022

Total Collisions		Number	%
		53	100%
Classification	Fatality	0	0%
	Non-Fatal Injury	16	30%
	Property Damage Only	37	70%
Initial Impact Type	Approaching	2	4%
	Angle	7	13%
	Rear end	19	36%
	Sideswipe	8	15%
	Turning Movement	8	15%
	SMV Unattended	1	2%
	SMV Other	8	15%
Road Surface Condition	Dry	34	64%
	Wet	7	13%
	Loose Snow	4	8%
	Slush	4	8%
	Packed Snow	2	4%
	Ice	2	4%
Pedestrian Involved		2	4%
Cyclists Involved		1	2%

Figure 11: Study Area Collision Records

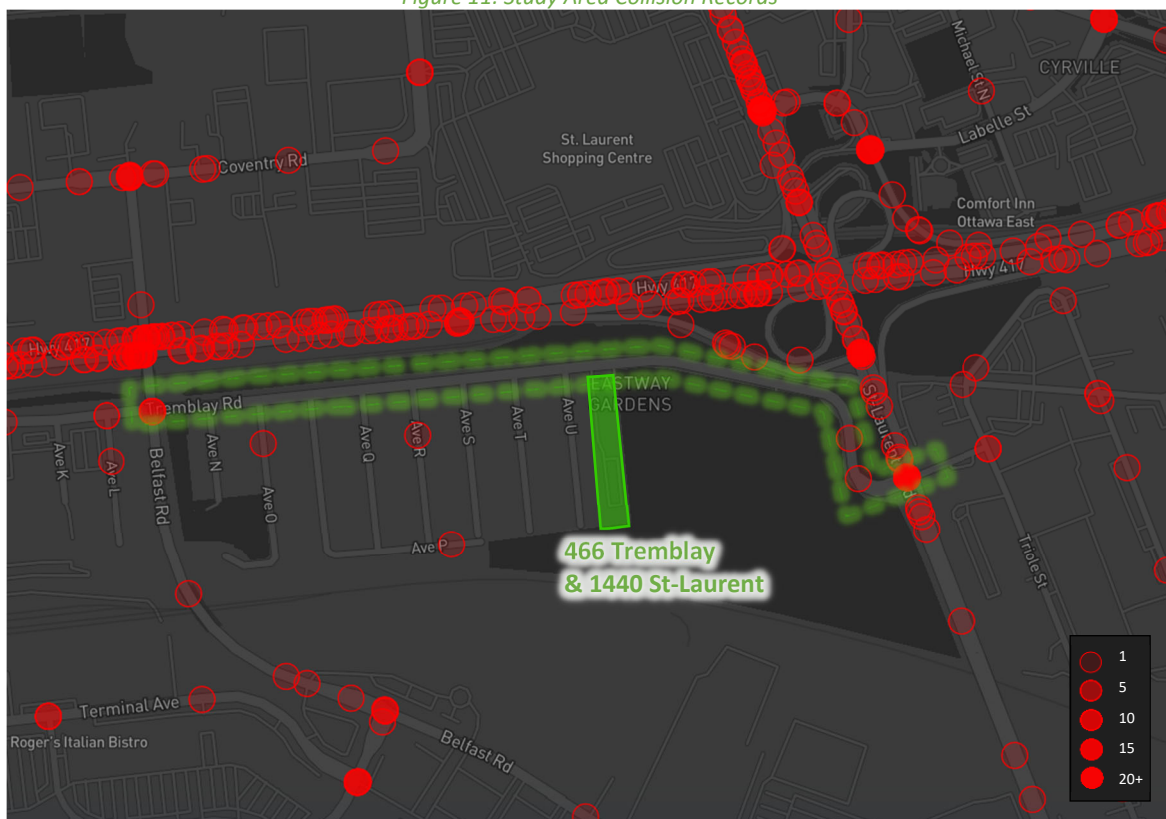


Table 4: Summary of Collision Locations, 2018-2022

Intersections / Segments	Number	%
Intersections / Segments	53	100%
St-Laurent Blvd at Tremblay Rd	43	81%
Belfast Rd at Tremblay Rd	8	15%
Tremblay Rd between Avenue U & St-Laurent Blvd	2	4%

Within the study area, the intersections of St-Laurent Boulevard at Tremblay Road and Belfast Road at Tremblay Road are noted to have experienced higher collisions than other locations. Table 5 and Table 6 summarize the collision types and conditions for each of the intersections.

Table 5: St-Laurent Boulevard at Tremblay Road Collision Summary

Total Collisions		Number	%
		43	100%
Classification	Fatality	0	0%
	Non-Fatal Injury	11	26%
	Property Damage Only	32	74%
Initial Impact Type	Angle	4	9%
	Rear end	16	37%
	Sideswipe	8	19%
	Turning Movement	7	16%
	SMV Unattended	1	2%
	SMV Other	7	16%
Road Surface Condition	Dry	30	70%
	Wet	5	12%

		Number	%
Total Collisions		43	100%
	Loose Snow	1	2%
	Slush	4	9%
	Packed Snow	2	5%
	Loose Sand or Gravel	1	2%
Pedestrian Involved		1	2%
Cyclists Involved		0	0%

The St-Laurent Boulevard at Tremblay Road intersection had a total of 43 collisions during the 2018-2022 time period, with 32 involving property damage only and the remaining 11 having non-fatal injuries. The collision types are most represented by rear end collisions with 16 collisions, followed by sideswipe with eight, turning movement and SMV other with seven each, angle with four, and SMV unattended with one. Rear end collisions are typically associated with congestion, as are sideswipe collisions where multiple lanes and/or auxiliary lanes are present on an approach.

Reviewing detailed collision data, turning movement collisions were overwhelmingly associated with southbound left-turning movements in conflict with northbound through or right-turning vehicles. It is noted that site traffic is not forecast to impact any of these movements. Weather conditions are not considered to affect collisions at this location. One collision involved a pedestrian in clear daylight conditions during the PM peak hour involving a vehicle making an eastbound through movement. No patterns are discernable from this single collision. No further review of collisions at this location is required as part of this study.

Table 6: Belfast Road at Tremblay Road Collision Summary

		Number	%
Total Collisions		8	100%
Classification	Fatality	0	0%
	Non-Fatal Injury	5	63%
	Property Damage Only	3	38%
Initial Impact Type	Angle	3	38%
	Rear end	3	38%
	Turning Movement	1	13%
	SMV Other	1	13%
Road Surface Condition	Dry	3	38%
	Wet	2	25%
	Loose Snow	2	25%
	Loose Sand or Gravel	1	13%
Pedestrian Involved		1	13%
Cyclists Involved		1	13%

The Belfast Road at Tremblay Road intersection had a total of 8 collisions during the 2018-2022 time period, with 3 involving property damage only and the remaining 5 having non-fatal injuries. The collision types are most represented by angle and rear end collisions with three collisions each followed by turning movement and SMV other with one collision each. Rear end collisions are typically associated with congestion.

Reviewing the detailed collision data, two angle collisions were associated with slowing or stopping vehicles in conflict with through vehicles on conflicting movements, indicating that failure to obey intersection control was involved. One angle collision involved an eastbound cyclist making a U-turn in conflict with a southbound through vehicle in 2019, where it is noted that an active mode mixing zone has been since constructed on the northwest intersection quadrant for cyclists to dismount at the intersection. One collision involving a pedestrian occurred in

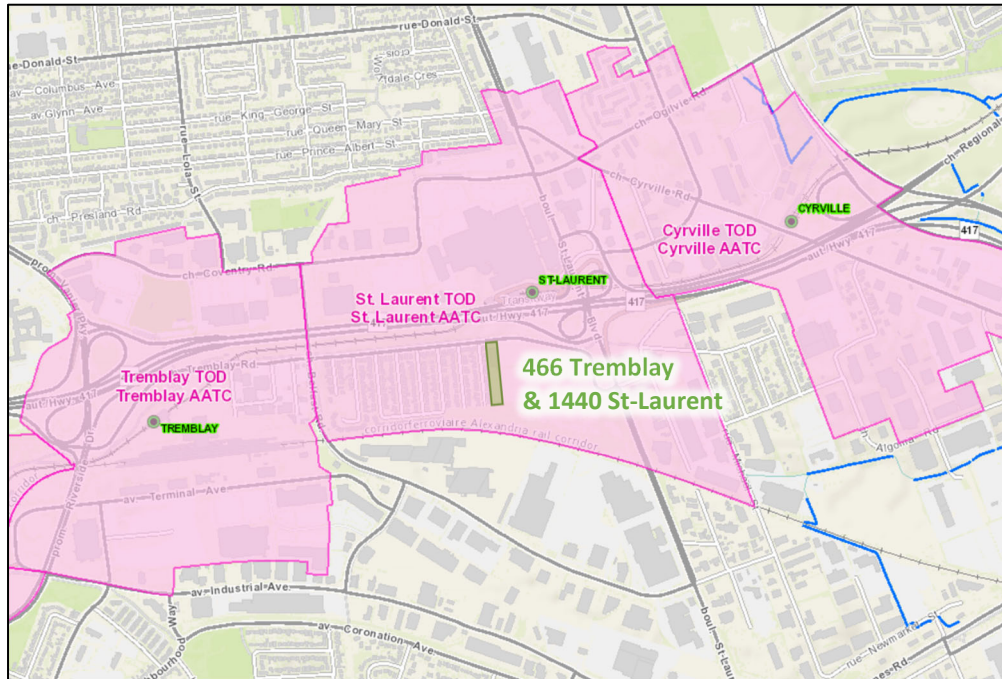
the evening in clear daylight conditions in conflict with a northbound right-turning vehicle. No patterns are discernable from this single collision. Weather conditions may affect collisions at this location, only a low proportion occurring with dry surface conditions, however the overall collision incidence is low. The City may investigate the application of alternative paving treatments as part of future improvements at this intersection. 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

The subject development is within the St-Laurent Transit-Oriented Development (TOD) Plan Area. As such, it is subject to the planning policies outlined in the TOD Plan. Figure 12 shows the boundary of the St-Laurent TOD Plan Area.

Figure 12: St-Laurent TOD Plan Area



Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: June 8, 2026

The St-Laurent TOD plan outlines the realignment of Coventry Road and Tremblay Road through the plan area, new area sidewalks, and dedicated cycling facilities along St-Laurent Boulevard, Coventry Road, Tremblay Road and Belfast Road. Area projects anticipated to impact travel in the study area are summarized below:

- Pedestrian Network
 - Maintain existing pedestrian tunnel connecting St. Laurent O-Train station
 - New pedestrian overpass connecting St. Laurent Shopping Centre
 - Tremblay Road sidewalk realignment
- Cycling Network
 - Dedicated on-street cycling facilities along St-Laurent Boulevard and the south side of Tremblay Road

- Road Network
 - Highway 417 expansion to add new lanes and re-configure St-Laurent ramps
 - Tremblay Road realignment and widening

Figure 13, Figure 14, and Figure 15 illustrate the St-Laurent TOD pedestrian, cycling, and street network plans, respectively.

Figure 13: St-Laurent TOD Pedestrian Network

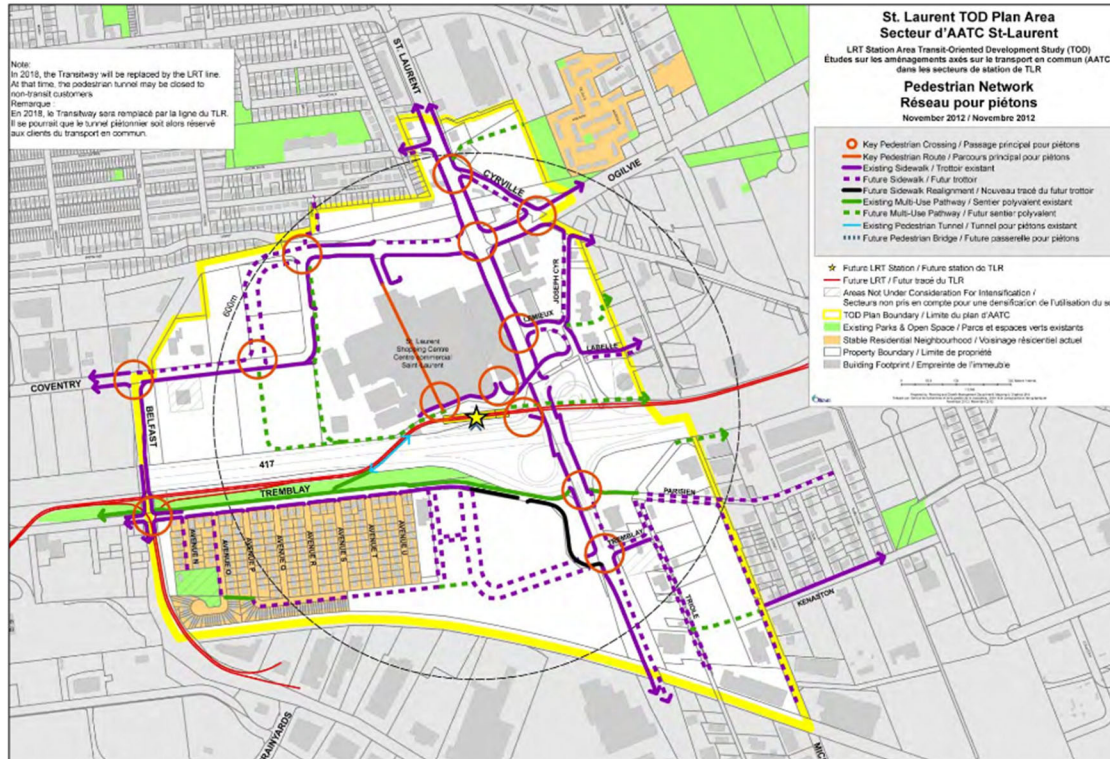


Figure 14: St-Laurent TOD Bicycle Network

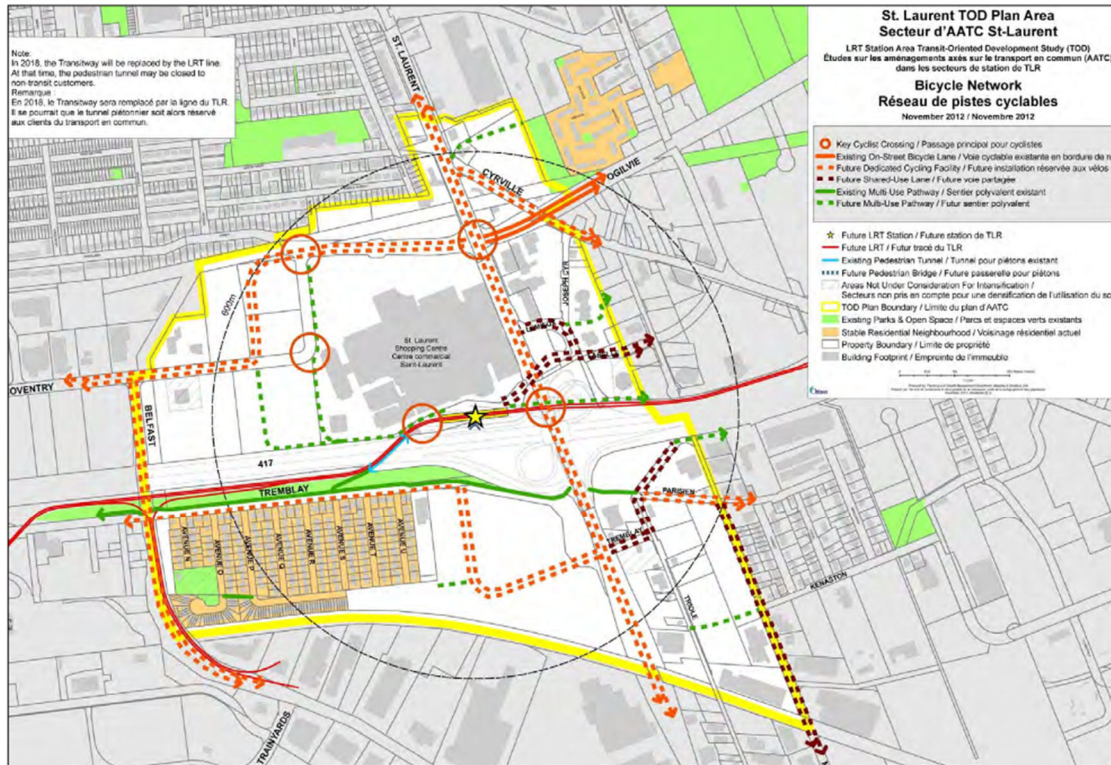
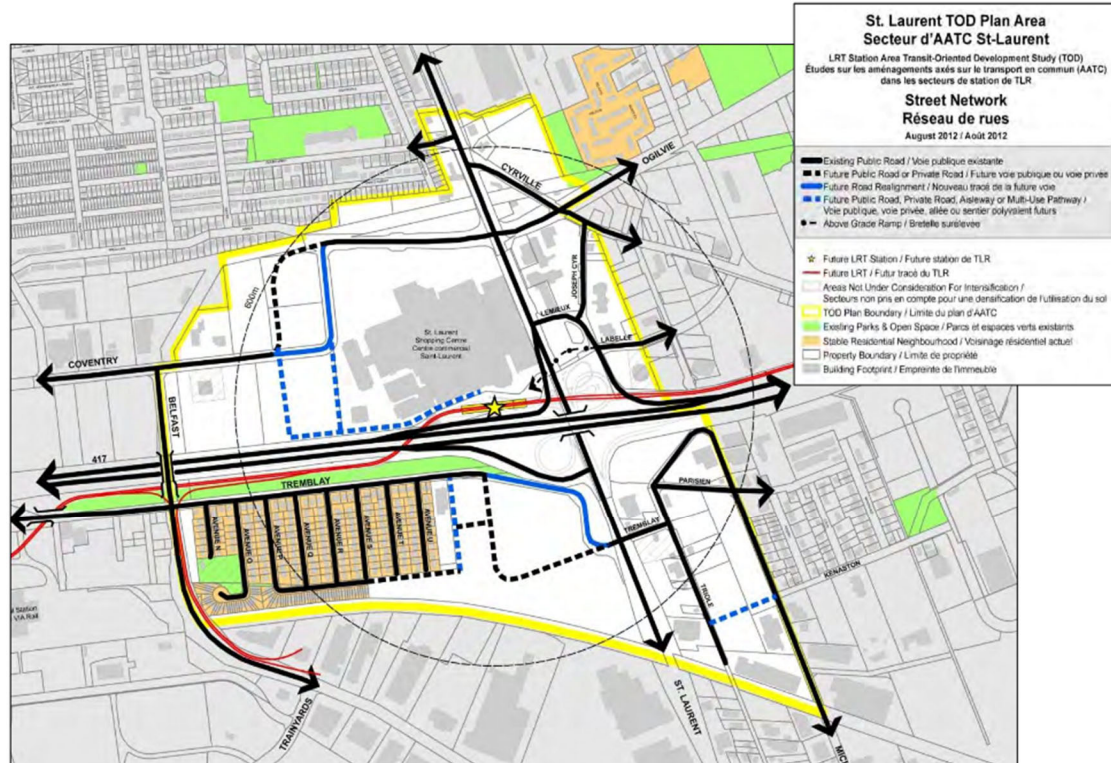


Figure 15: St. Laurent TOD Street Network



2.3.1.1 *Transportation Master Plan (2025)*

The recently approved Transportation Master Plan includes a 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
 - Continuous Bus Lane along:
 - St. Laurent Boulevard
 - Needs-Based Network
 - Transitway along:
 - St. Laurent Boulevard
 - Ultimate Network
 - (No additional facilities within the study area)
- Road Network
 - Priority Network
 - (No projects within the study area)
 - Needs-Based Network
 - (No additional projects within the study area)
 - Ultimate Network
 - (No additional facilities within the study area)

2.3.2 *Other Study Area Developments*

700 & 720 Bannermount Avenue (1330 Avenue K)

The site plan application proposes a mixed-use development consisting of approximately 474 residential units and approximately 241 square metres of ground floor commercial space. The proposed development will provide 250 vehicle parking spaces and 474 bicycle parking spaces. Access to the proposed development will be provided via Bannermount Avenue, with additional service accesses from Pickering Place and Bannermount Avenue. The development is expected to be completed by 2027. (Novatech, 2025)

294 & 300 Tremblay Road

The proposed site plan application proposes a 6-storey mixed-use building consists of 100 units and ground floor commercial space. No TIA is available or is understood to be required for this development.

530 Tremblay Road

The draft plan of subdivision application proposes a mixed-use redevelopment that includes approximately 500 apartment units to be developed in three phases. Phase 1 will comprise 200 residential units, initially anticipated by 2025 however construction has not yet commenced, Phase 2 will comprise an additional 200 residential units

by 2029, and Phase 3 will comprise the remaining 100 residential units by 2033. The development also proposes the realignment of Tremblay Road. (WSP, 2020)

1300 Michael Street

The site plan control application proposes a development consisting of approximately 15,000 square feet of commercial-industrial space. The development will retain the existing site access. The development was completed in 2023. No TIA was required for this development. (Parsons, 2021)

400 Coventry Road

The site plan control application proposes a redevelopment that includes seven residential towers ranging from 18 to 30 storeys, including a total of 1,768 residential units and approximately 1,518 square metres of commercial space. The proposed development will provide 1,204 vehicle parking spaces and 900 bicycle parking spaces in a combination of underground and surface parking facilities. Access to the proposed development will be provided via a new public local road connecting Belfast Road and via an existing access on Coventry Road. The development is expected to be completed in multiple phases with full build-out anticipated by 2032. (CGH Transportation, 2023)

500 Coventry Road

The site plan control application proposes Phase 1 of a multi-phase redevelopment consisting of a high-rise residential tower with 309 residential units. The proposed development will provide 207 underground vehicle parking spaces and 309 bicycle parking spaces. Access to the proposed development will be provided via the existing private driveway on Coventry Road. The development is expected to be completed by 2028. (CGH Transportation, 2024)

453 & 455 Coventry Road

The proposed development application includes a zoning amendment to allow the construction of one mixed-use mid-rise building and three high-rise buildings. A total of 574 parking spaces will be provided on site. No TIA is available for this development.

1209 St-Laurent Boulevard & 1200 Lemieux Street

The site plan control application proposes a development that includes two 30-storey residential buildings with a combined total of 640 residential units. The proposed development will provide 392 vehicle parking spaces for residents and visitors, and 640 bicycle parking spaces. Access to the proposed development will be provided via an existing full-movement access on Lemieux Street. The development is expected to be completed by 2026. (CGH Transportation, 2022)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of Tremblay Road at Belfast Road and Tremblay Road at St. Laurent Boulevard. The boundary street is Tremblay Road. No screenlines are present near the site and none will be reviewed as part of this study.

3.2 Time Periods

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

3.3 Horizon Years

The anticipated build-out year is 2029. As a result, the full build-out plus five years horizon year is 2034.

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 multi-unit (high-rise) have been summarized in Table 7.

Table 7: TRANS Trip Generation Manual Recommended Mode Shares – Alta Vista

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	38%	45%
Auto Passenger	12%	16%
Transit	42%	28%
Cycling	2%	2%
Walking	7%	9%
Total	100%	100%

Based upon the site's context of being within 600 metres-walk of the to the St-Laurent O-Train Station and St. Laurent Shopping Centre via the tunnel underneath Trans-Canada Highway, modified mode share targets are proposed for the development and are summarized in Table 8.

Table 8: Proposed Development Mode Shares – Within 600 m of Rapid Transit

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	26%	33%
Auto Passenger	9%	13%
Transit	51%	38%
Cycling	2%	2%
Walking	12%	14%
Total	100%	100%

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 9 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 9: 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 10 summarizes the total person trip generation for the residential land use.

Table 10: Person Trip Generation by Peak Period/Hour

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit High-Rise	560	139	309	448	292	212	504

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 11 summarizes the residential trip generation by mode and peak hour.

Table 11: 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	26%	17	39	56	33%	41	32	73
	Auto Passenger	9%	6	13	19	13%	16	13	29
	Transit	51%	38	88	125	38%	50	40	90
	Cycling	2%	2	4	5	2%	3	2	5
	Walking	12%	9	22	31	14%	21	16	37
	Total	100%	72	166	236	100%	131	103	234

As shown above, a total of 56 AM and 73 PM new peak hour two-way vehicle trips and 125 AM and 90 PM new peak hour transit 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 development, and these patterns were applied based on the build-out of Alta Vista. Table 12 below summarizes the distributions.

Table 12: OD Survey Distribution – Alta Vista

To/From	Residential % of Trips
North	15%
South	40%
East	10%
West	35%
Total	100%

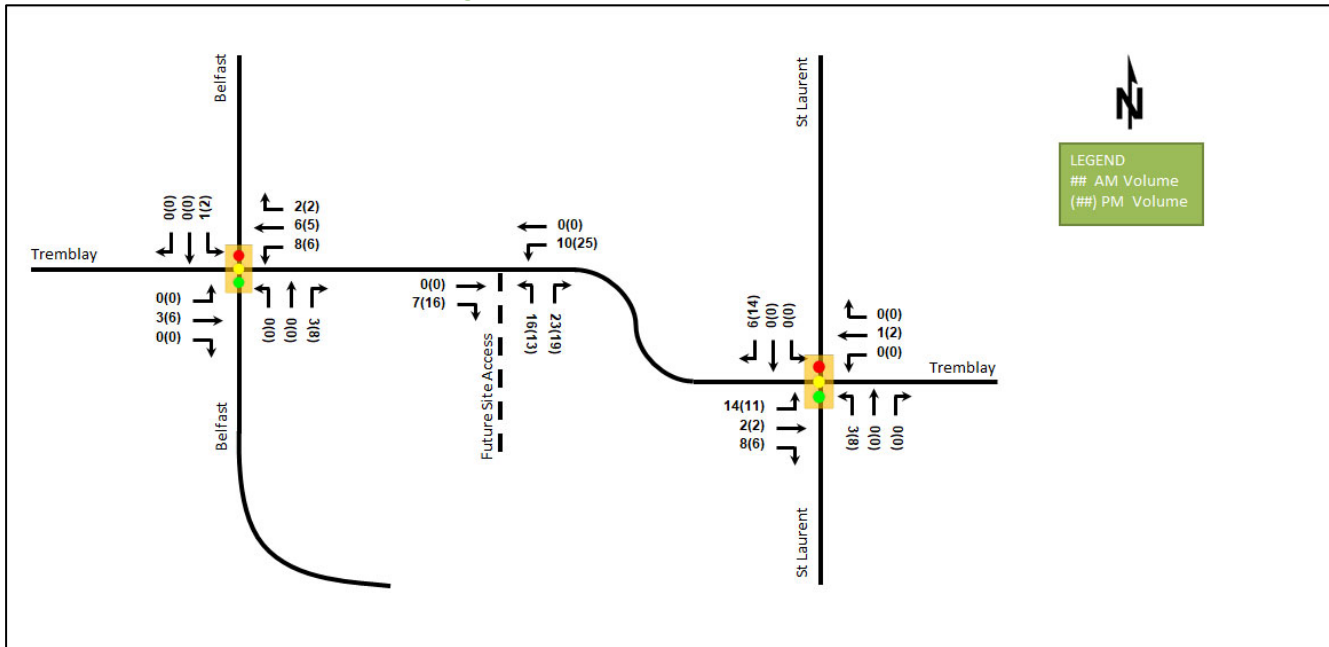
4.4 Trip Assignment

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 13 summarizes the proportional assignment to the study area roadways, and Figure 16 illustrates the new site generated volumes.

Table 13: Trip Assignment

To/From	Via
North	10% St-Laurent Blvd (N) 5% Belfast Rd (N)
South	5% Tremblay Rd (W) 15% Belfast Rd (S) 20% St-Laurent Blvd (S)
East	5% St-Laurent Blvd (N) 5% Tremblay Rd (E)
West	10% Tremblay Rd (W) 20% St-Laurent Blvd (N) 5% Belfast Rd (S)
Total	100%

Figure 16: New Site Generation Auto Volumes



4.5 Trip Reductions

The existing development is a general office building that is approximately 19,000 square feet. The ITE Trip Generation Manual land use category of General Office Building (ITE 710) has been applied to estimate the current vehicle trip generation, multiplied by the person trip conversion factor of 1.28. The employment generator mode shares for Alta Vista were applied to the existing land use's person trip generation, using the same relative mode share adjustments applied to the high-rise apartment land use in Section 4.1, to determine trip generation by mode. Table 14 below compares the forecasted vehicle trip generation against the estimated existing trip generation potential of the existing site land use.

Table 14: Estimated Existing Primary Auto Trips vs Forecasted Primary Auto Trips

Scenario	AM Peak Hour				PM Peak Hour			
	Mode Share	In	Out	Total	Mode Share	In	Out	Total
Existing	57%	152	21	173	57%	26	137	163
Proposed	26%	17	39	56	33%	41	32	73
Difference	-	-135	18	-117	-	15	-105	-90

As shown above, the proposed development is anticipated to generate 117 fewer two-way AM peak hour vehicle trips, and 90 fewer two-way PM peak hour vehicles on the adjacent road network than the existing land use. It is noted that the polarity of the tidal effects between the office and residential land uses is inverted, and thus the residential land use is forecast to generate 18 additional outbound AM peak hour trips and 15 additional outbound PM peak hour trips, which is a negligible increase in traffic.

5 Exemption Review

Table 15 summarizes the exemptions for this TIA.

Table 15: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Exempt
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Exempt
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site 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
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Exempt for all applications per City direction

Module	Element	Explanation	Exempt/Required
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Exempt
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt except for Access Design

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is a high-rise residential development consisting of 560 dwelling units. The building will be accessed by vehicles and bicycles via a driveway connecting to Tremblay Road. Vehicle parking is located in parallel spaces along the aisle and in one parking level below grade. Bicycle parking is located in secure rooms on the main floor of each building, below grade in the underground parking level accessed via a ramp with a maximum grade of 14%, and in racks on the surface opposite each main building main along the drive aisle.

Pedestrian access to the existing sidewalk on Tremblay Road is proposed via a main walkway on the west side of the drive aisle that terminates at a stairway exit of the southern building. Four crossings of the drive aisle from this on-site walkway to the main building entrances and bike rooms are proposed by continuing the walkway materiality across the drive aisle in these locations. A walkway is also present on the east side of the drive aisle between the existing sidewalk on Tremblay Road and a stairway exit of the northern building. Bus stops are located on both sides of Tremblay Road within a 160-metre walking distance of the main entrances, however no crossing is present to reach the stop on the north side of the road. The nearest crossing to a stop on the north side of Tremblay Road is a pedestrian crossover 180 metres west of the site and the associated north side bus stop is within a 400-metre walk of the building entrances. St-Laurent LRT Station can be accessed via a pedestrian tunnel on the north side of Tremblay Road via this pedestrian crossover, and the station is within an approximately 700-metre walk of all building entrances.

The infrastructure TDM checklist is provided in Appendix E.

6.2 Circulation and Access

Vehicular and bicycle access is provided via a 6.4-metre-wide two-way full-movement access on Tremblay Road. Garbage collection is proposed in a 16.5-metre-long turnaround perpendicular to the main aisle. A 2.6-metre-wide parallel parking lane is present on the west side of the drive aisle.

7 Parking

7.1 Parking Supply

A total of 207 vehicle parking spaces are proposed on site, with 193 spaces for residents in a single parking level below grade and 14 spaces for visitors located on the surface parallel to the drive aisle. A total of 298 bicycle parking spaces are proposed, with 180 provided within the below grade parking level, 100 total spaces provided in the secure rooms in both buildings, and 18 spaces provided in surface racks near the main building entrances.

The legacy Zoning By-law (2008-250) requires no minimum vehicular parking provision for residents given it is located in Area Z on Schedule A1 to the Zoning By-Law, and a minimum visitor vehicle parking provision of 55 spaces would be required. With respect to maximum vehicular parking, 980 total spaces between residents and visitors would be permitted. The minimum bicycle parking provision for the site per the legacy Zoning By-Law (2008-250) is 280 total spaces.

The new Zoning By-Law (2026-50) does not require a minimum vehicular parking provision for residents, and as the site lies within Area A of Schedule A3 to the Zoning By-Law, no minimum visitor vehicular parking rate is applicable to the site. With respect to maximum vehicular parking, as the site falls within Area B of Schedule A1 to the Zoning By-Law, the maximum parking spaces required for the development is 700 parking spaces. The minimum bicycle parking provision for the site per the new Zoning By-Law (2026-50) is 30 short-term parking spaces and 560 long-term parking spaces.

The site is providing vehicular parking that meets the minimum and maximum provisions from the new Zoning By-Law (2026-50) and bicycle parking that meets the minimum provision from the legacy Zoning By-Law (2008-250).

8 Boundary Street Design

Table 16 summarizes the MMLOS analysis for the boundary street of Tremblay Road. The existing and future conditions for the street will be the same and are considered in one row. The boundary street analysis is based on the policy area of being within 600 metres of rapid transit. The MMLOS worksheets have been provided in Appendix F.

Table 16: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Public Realm LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	PRLOS	Target
Tremblay Road	B	A	D	B	B	E	B	-

Tremblay Road will not meet the pedestrian or cycling LOS targets. To meet pedestrian LOS targets, the MUP and sidewalk would each require a 1.5-metre separation from the roadway. To meet cycling LOS targets, the MUP would require a 1.5-metre separation from the roadway.

Given no right-of-way widening is reserved on the south side of the road, no changes to the sidewalk on the site frontage are recommended. The MUP location is constrained by the grading, existing trees, property and services on the north side of the road, and no local changes are recommended to its design until such time as the City widens Tremblay Road to the north and realigns it within its future right-of-way. No further MMLOS review is required as part of this study.

9 Transportation Demand Management

9.1 Context for TDM

The mode shares used within the TIA represent a shift from auto modes to transit modes given the proximity to St-Laurent Station. The subject site is located within the St-Laurent Transit-Oriented Development (TOD) Area. Overall, the modal shares are likely to be achieved. A TDM program is recommended to be provided to encourage use of the nearby transit facilities.

9.2 Need and Opportunity

The subject site has been assumed to have a high transit ridership due to its proximity to the St-Laurent LRT station and within the St-Laurent TOD Area and the 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. Negligible risks to other road users are associated with failing to meet modal share targets.

9.3 TDM Program

The “suite of post occupancy TDM measures” has been summarized in the TDM checklists for the proposed development. The checklists are provided in Appendix E. The key TDM measures recommended for consideration include:

- Display local area maps with walking/cycling access routes and key destinations at the entrance
- Display relevant transit schedules and route maps at the entrance
- Inclusion of a 1-month Presto card for first time home purchase and rentals, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from purchase or rental costs

10 Intersection Design

10.1 Intersection Control

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

10.2 Intersection Design

The site is proposed as having a single two-way full-movement access on Tremblay Road. Relevant design criteria for the proposed accesses are detailed below and discussed in relation to relevant by-laws and design guidance.

10.2.1 Access By-Law Provisions

10.2.1.1 Location of Access

The access on Tremblay Road is proposed as being offset 4.7 metres from the western property line, thereby exceeding the minimum 3.0-metre spacing from the adjacent property line of the Access By-Law.

The existing access which is in the approximate location of the western of two existing accesses, will be located approximately 28.1 metres from the Avenue U right-of-way, and approximately 26.8 metres from the future local road right-of-way on the eastern property line. While this spacing from each road does not achieve the Access By-Law target of 60 metres from any adjacent roadways, this approximate equal spacing is considered the most appropriate location for the access and is recommended to be approved.

10.2.1.2 Width of Access

The site access is 6.4-metres-wide with 6.0-metre curb radii. The resulting width of the access at the property line is 7.3 metres and the width at the curb line is 18.2 metres. The Access By-Law states that two-way accesses are not to exceed nine metres in width at the property line or 19 metres at the curb line. Therefore, the site access is compliant with the maximum widths from the Access By-Law criteria.

10.2.2 TAC Suggested Design Criteria

10.2.2.1 Access Throat Length

The clear throat length of the site access is 32.0 metres. The TAC Geometric Design Guide provides a suggested minimum clear throat length for apartment land uses of over 200 units on a collector road of 25 metres. Therefore, the site access exceeds the suggested minimum throat length from TAC.

10.2.3 Intersection Design Elements

No specific access intersection design elements are recommended outside of the typical application of City Standard SC7.1 for a continuous depressed sidewalk across the site access.

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 redevelopment includes the removal of an office and surface parking lots and the construction of two mid-rise towers constituting 560 residential dwelling units
- Accesses will be provided as a full-movement connection to Tremblay Road
- The development is proposed to be completed as a single phase by 2029

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

- St-Laurent Boulevard is an arterial road, and Tremblay Road and Belfast Road are collector roads in the study area
- Sidewalks or asphalt pathways are provided along the east side of Belfast Road, south side of Tremblay Road, and both sides of St-Laurent Boulevard
- Cycling facilities include MUPs along the west side of Belfast Road and north side of Tremblay Road, and the MUPs along Belfast Road and along Tremblay Road west of Belfast Road are part of Ottawa's cross-town bikeway network
- A pathway connection is provided between the MUP on the north side of Tremblay Road and St-Laurent Station
- The site is within a 600-metre walk of St-Laurent Station on the LRT line
- Multiple movements at the intersection of Belfast Road at Tremblay Road are approaching theoretical capacity during the PM peak hour, and queueing is noted on specific movements at this intersection during the AM and PM peak hours, but study area intersections generally operate well
- The high volumes arterial roadway has produced a high number of collisions at the intersection of St-Laurent Boulevard at Tremblay Road, primarily as rear end and sideswipe collisions indicating that they are lower speed and a result of congestion

Planned Conditions

- Tremblay Road right-of-way protection is asymmetrical from the existing right-of-way, widening to the north along the site frontage
- Tremblay Road east of the site is planned to be realigned through an adjacent development
- Dedicated cycling facilities on the south side of Tremblay Road are planned in the St-Laurent TOD plan

Development Generated Travel Demand

- The proposed development is forecasted produce 236 two-way people trips during the AM peak hour and 234 two-way people trips during the PM peak hour
- Of the forecasted people trips, 56 two-way trips will be vehicle trips during the AM peak hour and 73 two-way trips will be vehicle trips during the PM peak hour based on a 26%-33% auto modal share target
- Of the forecasted people trips, 125 two-way trips will be vehicle trips during the AM peak hour and 90 two-way trips will be transit trips during the PM peak hour based on a 38%-51% auto modal share target
- The historical land use of the site is estimated to have a higher total trip generation than the proposed, however with a reverse tidal effect
- Of the forecasted trips, 15% are anticipated to travel north, 40% to travel south, 10% to travel east, and 35% to travel west

Development Design

- Auto parking is via parallel spaces along the main drive aisle and in one parking level below grade
- Bike parking is located in surface racks near building entrances, in secure rooms on the main floor or each building, and in the parking level below grade accessed via a ramp with a 14% grade
- Pedestrian connections will be made along the west side of the site connecting to the sidewalk on Tremblay Road, where crossings of the drive aisle are present between this walkway and the main building entrances and bike rooms
- St-Laurent Station is within a 700-metre walk of building entrances and bus stops on Tremblay Road are located within a 400-metre walk
- Garbage collection is proposed within an on-site turnaround

Parking

- The site is proposed to provide 207 vehicle parking spaces, including 193 spaces for residents and 14 spaces for visitors, and 298 bicycle parking spaces, including 18 spaces in surface racks
- The legacy Zoning By-Law requires no minimum resident vehicle parking, 55 visitor vehicle parking spaces, and up to a maximum of 980 total vehicle parking spaces on site, and requires a minimum of 280 bicycle parking spaces
- The new Zoning By-Law requires no minimum resident or visitor vehicle parking and up to a maximum of 700 total vehicle parking spaces on site, and requires a minimum of 30 short-term bicycle parking spaces and 560 long-term bicycle parking spaces
- The site is providing vehicular parking that meets the minimum and maximum provisions from the new Zoning By-Law and bicycle parking that meets the minimum provision from the legacy Zoning By-Law

Boundary Street Design

- Tremblay Road will not meet pedestrian or cycling MMLOS targets
- While additional separation of the active transportation facilities from the roadway would improve MMLOS, the MUP and sidewalk locations are constrained in the existing right-of-way and no local changes are recommended to its design until such time as the City widens Tremblay Road to the north and realigns it within its future right-of-way

TDM

- Supportive TDM measures to be included within the proposed development should include:

- Display local area maps with walking/cycling access routes and key destinations at the entrance
- Display relevant transit schedules and route maps at the entrance
- Inclusion of a 1-month Presto card for first time home purchase and rentals, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from purchase or rental costs

Intersection Design

- A single 6.4-metre-wide two-way full-movement access with 6.0-metre curb radii and a 32.0-metre throat length is proposed located 3.0 metres from the adjacent western property line
- The access meets the suggested minimum throat length values from TAC and most requirements from the Access By-Law however cannot meet the minimum spacing from adjacent roadways, however is approximate equidistant from the existing Avenue U to the west and adjacent future roadway to the east
- No specific access intersection design elements are recommended outside of the typical application of City Standard SC7.1 for a continuous depressed sidewalk across the site access

12 Conclusion

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

Prepared By:



John Kingsley, BEng
Transportation Engineering-Intern

Reviewed By:



Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

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

Date: 08-Jun-26
Project Number: 2026-015
Project Reference: 466 Tremblay Road

1.1 Description of Proposed Development	
Municipal Address	466 Tremblay Road
Description of Location	Rectangular-shaped 0.75-ha parcel fronting Tremblay Road
Land Use Classification	Transit Oriented Development (TD1[1993])/Hub Zone 2 (H2F)
Development Size	560 dwelling units in two 9-storey buildings
Accesses	One full-movement access on Tremblay Road
Phase of Development	Single
Buildout Year	2029
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger	
Land Use Type	Multi-Family (High-Rise)
Development Size	560 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 registered¹ 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.

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

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)
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City / Postal Code: <u>Ottawa, K2H 7W1</u>
Telephone / Extension: <u>613-697-3797</u>
Email Address: <u>andrew.harte@cghtransportation.com</u>

Stamp



Revision Date: June 2023

Appendix B

Turning Movement Counts



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

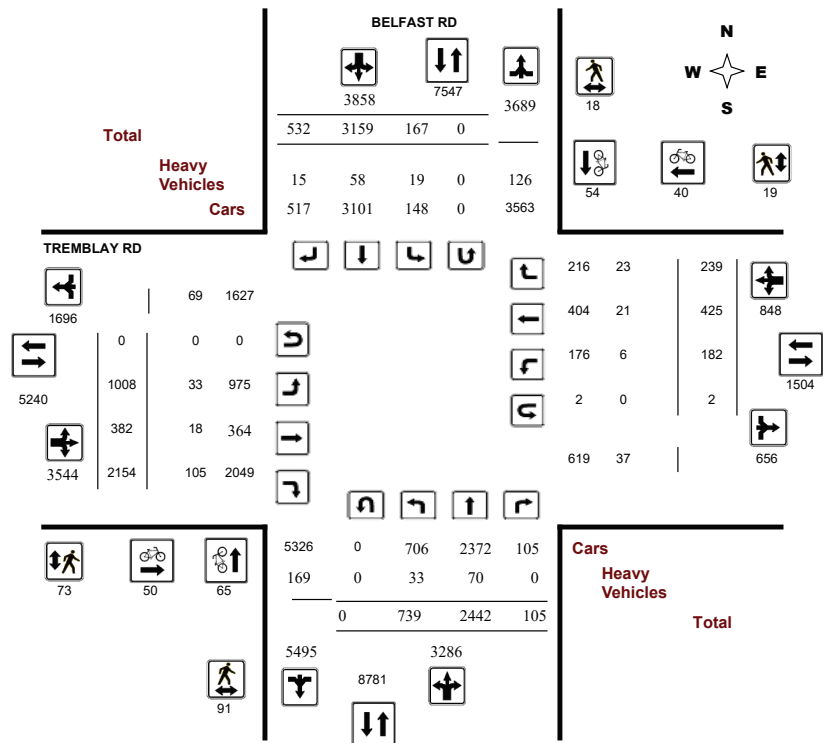
Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

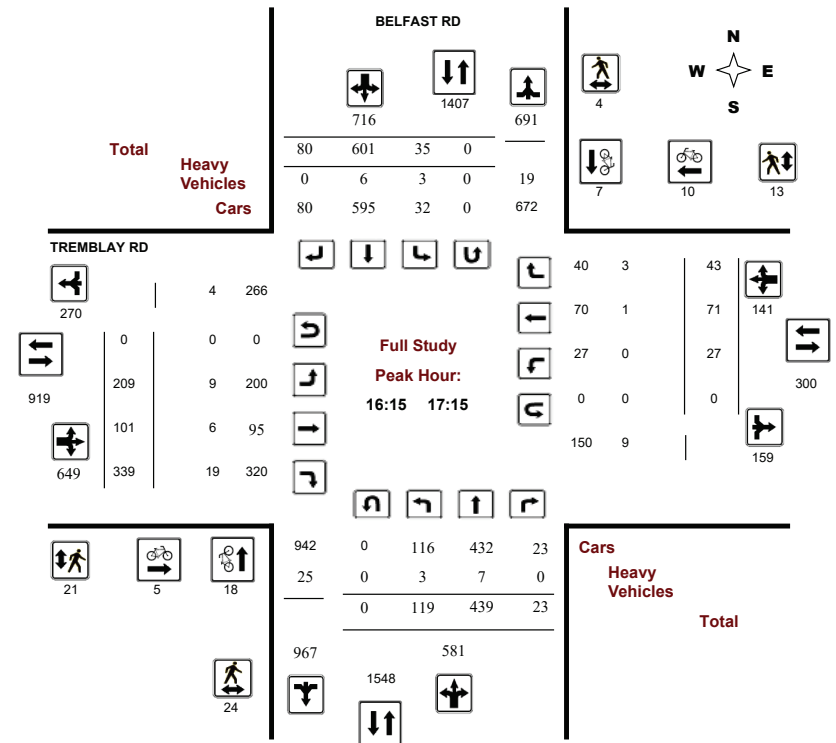
Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

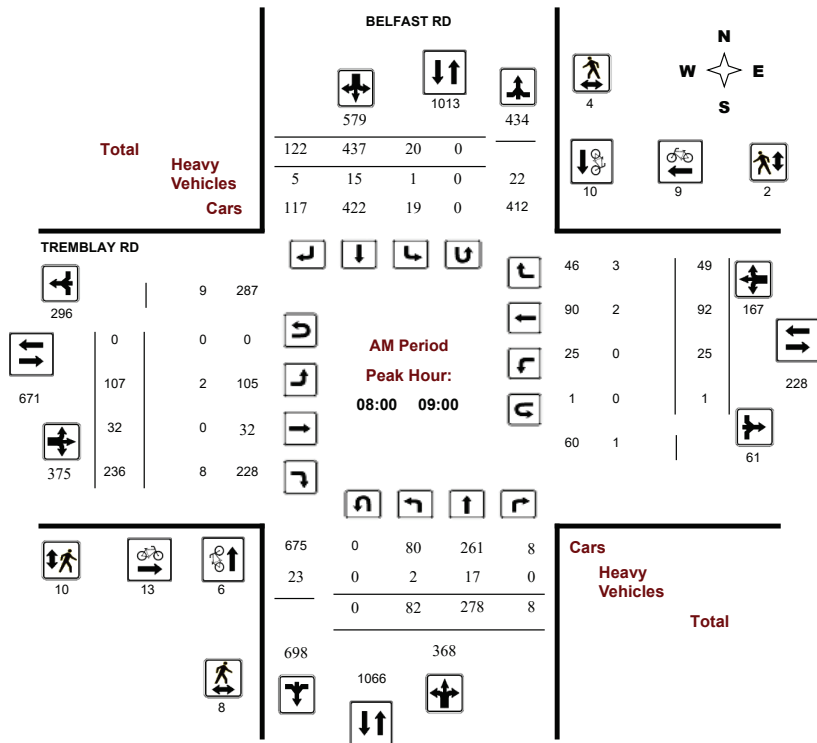
Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

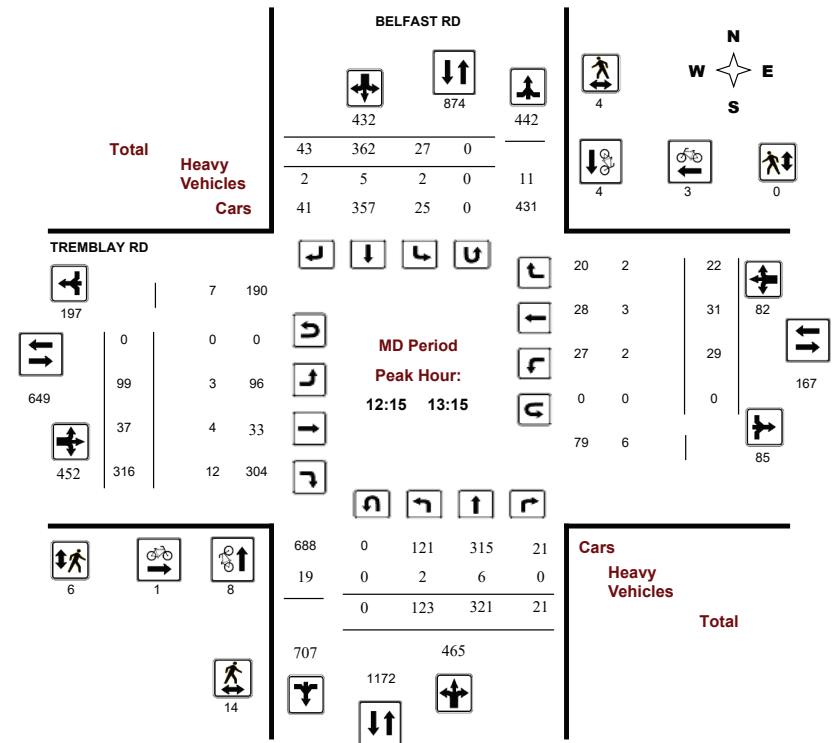
Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

MD Period Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

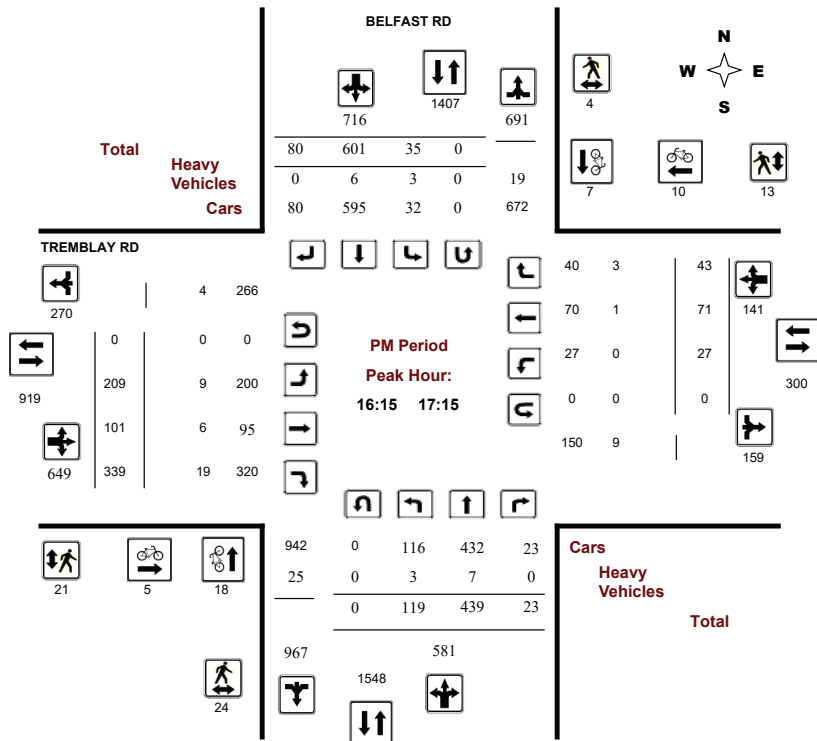
Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, October 18, 2023

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0
Eastbound: 0 Westbound: 2

.90

BELFAST RD										TREMBLAY RD											
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	64	134	8	206	11	180	28	219	425	102	24	221	347	22	65	19	106	453	878		
08:00 09:00	82	278	8	368	20	437	122	579	947	107	32	236	375	25	92	49	166	541	1488		
09:00 10:00	76	232	6	314	11	283	52	346	660	104	30	160	294	17	48	23	88	382	1042		
11:30 12:30	73	274	13	360	18	388	42	448	808	97	33	292	422	20	30	26	76	498	1306		
12:30 13:30	123	305	21	449	29	337	48	414	863	95	40	314	449	29	37	20	86	535	1398		
15:00 16:00	108	417	10	535	19	507	85	611	1146	119	71	344	534	18	42	30	90	624	1770		
16:00 17:00	107	428	19	554	37	628	66	731	1285	211	97	329	637	25	60	47	132	769	2054		
17:00 18:00	106	374	20	500	22	399	89	510	1010	173	55	258	486	26	51	25	102	588	1598		
Sub Total	739	2442	105	3286	167	3159	532	3858	7144	1008	382	2154	3544	182	425	239	846	4390	11534		
U Turns				0				0	0				0				2	2	2		
Total	739	2442	105	3286	167	3159	532	3858	7144	1008	382	2154	3544	182	425	239	848	4392	11536		
EQ 12Hr	1027	3394	146	4568	232	4391	739	5363	9930	1401	531	2994	4926	253	591	332	1179	6105	16035		
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39							
AVG 12Hr	924	3055	131	4111	209	5177	872	4827	8937	1261	478	2695	4433	228	532	299	1061	5494	14432		
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														.90							
AVG 24Hr	1210	4002	172	5385	274	6782	1142	6323	11707	1652	626	3530	5807	299	697	392	1390	7197	18906		
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

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

BELFAST RD												TREMBLAY RD											
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	14	26	1	41	0	42	7	49	90	14	5	39	58	4	10	3	17	75	165			
07:15	07:30	14	30	3	47	3	39	4	46	93	21	3	49	73	3	19	5	27	100	193			
07:30	07:45	13	36	1	50	5	49	5	59	109	29	5	69	103	8	9	5	22	125	234			
07:45	08:00	23	42	3	68	3	50	12	65	133	38	11	64	113	7	27	6	40	153	286			
08:15	08:30	22	67	2	91	6	110	29	145	236	30	9	63	102	9	23	10	42	144	380			
08:30	08:45	19	86	0	105	5	114	39	158	263	26	5	50	81	2	22	20	45	126	389			
08:45	09:00	22	68	4	94	5	135	41	181	275	29	11	48	88	7	28	8	43	131	406			
09:00	09:15	28	62	1	91	3	82	22	107	198	26	11	26	63	10	18	11	39	102	300			
09:15	09:30	19	49	1	69	4	71	11	86	155	27	7	36	70	2	8	3	13	83	238			
09:45	10:00	12	65	2	79	4	73	4	81	160	30	7	50	87	3	13	4	20	107	267			
11:30	11:45	15	71	4	90	2	88	10	100	190	22	10	78	110	2	9	6	18	128	318			
11:45	12:00	14	64	4	82	4	92	11	107	189	25	7	90	122	7	8	5	20	142	331			
12:00	12:15	20	58	3	81	8	101	11	120	201	22	8	48	78	8	8	8	24	102	303			
12:15	12:30	24	81	2	107	4	107	10	121	228	28	8	76	112	3	5	7	15	127	355			
12:30	12:45	30	80	4	114	8	85	6	99	213	22	9	72	103	12	11	4	27	130	343			
13:00	13:15	31	75	5	111	8	86	14	108	219	30	12	103	145	6	9	5	20	165	384			
13:15	13:30	24	65	2	91	6	82	15	103	194	24	11	74	109	3	11	5	19	128	322			
15:00	15:15	32	96	1	129	3	107	17	127	256	22	10	80	112	6	8	6	20	132	388			
15:15	15:30	27	104	1	132	5	131	25	161	293	30	11	92	133	4	15	5	24	157	450			
15:30	15:45	24	110	5	139	7	126	27	160	299	32	28	86	146	5	13	15	33	179	478			
15:45	16:00	25	107	3	135	4	143	16	163	298	35	22	86	143	3	6	4	13	156	454			
16:00	16:15	28	103	1	132	13	156	17	186	318	43	18	86	147	5	10	11	26	173	491			
17:00	17:15	40	114	5	159	11	129	31	171	330	41	22	96	159	7	21	7	35	194	524			
17:15	17:30	35	108	3	146	4	120	29	153	299	63	14	61	138	11	15	5	31	169	468			
17:30	17:45	16	80	8	104	1	93	20	114	218	44	8	49	101	4	11	6	21	122	340			
16:30	16:45	23	107	8	138	12	159	18	189	327	60	21	66	147	8	20	9	37	184	511			
17:45	18:00	15	72	4	91	6	57	9	72	163	25	11	52	88	4	4	7	15	103	266			
08:00	08:15	19	57	2	78	4	78	13	95	173	22	7	75	104	7	19	11	37	141	314			
09:30	09:45	17	56	2	75	0	57	15	72	147	21	5	48	74	2	9	5	16	90	237			
12:45	13:00	38	85	10	133	7	84	13	104	237	19	8	65	92	8	6	6	20	112	349			
16:15	16:30	32	110	6	148	9	154	16	179	327	50	21	88	159	8	15	11	34	193	520			
16:45	17:00	24	108	4	136	3	159	15	177	313	58	37	89	184	4	15	16	35	219	532			
Total:		739	2442	105	3286	167	3159	532	3858	7144	1008	382	2154	3544	182	425	239	848	4392	11,536			

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



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

BELFAST RD				TREMBLAY RD			
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	1	0	1	1
07:15 07:30	0	4	4	7	0	7	11
07:30 07:45	1	4	5	2	1	3	8
07:45 08:00	3	2	5	1	1	2	7
08:15 08:30	3	2	5	2	1	3	8
08:30 08:45	0	3	3	6	4	10	13
08:45 09:00	1	1	2	3	2	5	7
09:00 09:15	0	1	1	2	1	3	4
09:15 09:30	0	1	1	1	2	3	4
09:45 10:00	1	2	3	1	0	1	4
11:30 11:45	2	2	4	1	0	1	5
11:45 12:00	2	0	2	0	0	0	2
12:00 12:15	1	0	1	2	0	2	3
12:15 12:30	2	0	2	0	1	1	3
12:30 12:45	2	0	2	0	0	0	2
13:00 13:15	2	4	6	0	0	0	6
13:15 13:30	2	1	3	0	1	1	4
15:00 15:15	1	1	2	1	0	1	3
15:15 15:30	0	1	1	1	0	1	2
15:30 15:45	1	1	2	2	1	3	5
15:45 16:00	5	3	8	2	3	5	13
16:00 16:15	4	2	6	3	4	7	13
17:00 17:15	2	1	3	1	3	4	7
17:15 17:30	3	2	5	1	1	2	7
17:30 17:45	4	1	5	1	2	3	8
16:30 16:45	4	4	8	3	4	7	15
17:45 18:00	1	4	5	1	1	2	7
08:00 08:15	2	4	6	2	2	4	10
09:30 09:45	2	1	3	1	0	1	4
12:45 13:00	2	0	2	1	2	3	5
16:15 16:30	6	0	6	1	1	2	8
16:45 17:00	6	2	8	0	2	2	10
Total	65	54	119	50	40	90	209



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

Time Period	BELFAST RD			TREMBLAY RD			Grand Total
	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	
07:00 07:15	1	1	2	1	0	1	3
07:15 07:30	4	0	4	1	1	2	6
07:30 07:45	3	1	4	1	2	3	7
07:45 08:00	4	1	5	2	0	2	7
08:15 08:30	2	2	4	3	0	3	7
08:30 08:45	0	1	1	0	0	0	1
08:45 09:00	4	1	5	4	0	4	9
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	2	0	2	1	0	1	3
09:45 10:00	3	1	4	1	0	1	5
11:30 11:45	4	0	4	1	1	2	6
11:45 12:00	1	0	1	0	0	0	1
12:00 12:15	3	0	3	2	0	2	5
12:15 12:30	4	0	4	1	0	1	5
12:30 12:45	6	1	7	1	0	1	8
13:00 13:15	3	3	6	2	0	2	8
13:15 13:30	0	0	0	2	0	2	2
15:00 15:15	0	0	0	3	0	3	3
15:15 15:30	1	1	2	1	0	1	3
15:30 15:45	3	0	3	3	0	3	6
15:45 16:00	4	0	4	3	0	3	7
16:00 16:15	6	0	6	2	0	2	8
17:00 17:15	5	1	6	1	1	2	8
17:15 17:30	1	0	1	2	0	2	3
17:30 17:45	3	0	3	1	0	1	4
16:30 16:45	6	2	8	9	8	17	25
17:45 18:00	2	0	2	4	0	4	6
08:00 08:15	2	0	2	3	2	5	7
09:30 09:45	0	1	1	5	0	5	6
12:45 13:00	1	0	1	2	0	2	3
16:15 16:30	9	1	10	7	3	10	20
16:45 17:00	4	0	4	4	1	5	9
Total	91	18	109	73	19	92	201



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

BELFAST RD										TREMBLAY RD										Grand Total
Northbound					Southbound					Eastbound					Westbound					
Time Period	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT			
	LT																			
07:00 07:15	2	1	0	3	0	1	0	1	4	0	0	0	0	1	1	2	2	6		
07:15 07:30	1	2	0	3	1	1	1	3	6	2	0	1	3	0	3	1	4	13		
07:30 07:45	2	2	0	4	0	0	0	4	0	0	6	6	1	0	1	2	8	12		
07:45 08:00	4	1	0	5	1	0	0	1	6	1	0	3	4	0	3	1	4	14		
08:15 08:30	1	5	0	6	0	3	0	3	9	0	0	2	2	0	0	1	3	12		
08:30 08:45	0	7	0	7	1	2	2	5	12	0	0	3	3	0	0	1	4	16		
08:45 09:00	0	3	0	3	0	6	0	6	9	2	0	1	3	0	0	0	3	12		
09:00 09:15	2	5	0	7	1	0	0	1	8	2	0	0	2	1	1	1	3	13		
09:15 09:30	3	6	0	9	1	4	0	5	14	3	0	0	3	0	1	0	4	18		
09:45 10:00	2	4	0	6	0	1	0	1	7	4	0	2	6	0	2	1	3	16		
11:30 11:45	0	2	0	2	1	0	0	1	3	0	0	4	4	0	0	0	4	7		
11:45 12:00	0	1	0	1	0	2	0	2	3	0	0	4	4	0	0	1	5	8		
12:00 12:15	3	1	0	4	2	2	0	4	8	1	0	5	6	0	0	0	6	14		
12:15 12:30	0	0	0	0	0	2	0	2	2	1	1	3	5	1	3	1	5	10	12	
12:30 12:45	2	2	0	4	1	2	0	3	7	2	2	3	7	0	0	0	7	14		
13:00 13:15	0	2	0	2	1	0	1	2	4	0	0	5	5	1	0	0	1	6	10	
13:15 13:30	0	1	0	1	0	1	1	2	3	0	2	5	7	0	1	2	3	10	13	
15:00 15:15	3	4	0	7	2	4	0	6	13	0	1	9	10	1	2	1	4	14	27	
15:15 15:30	2	3	0	5	0	4	0	4	9	0	0	7	7	1	0	0	1	8	17	
15:30 15:45	0	0	0	0	1	4	1	6	6	1	1	6	8	0	1	2	3	11	17	
15:45 16:00	1	0	0	1	1	2	1	4	5	0	1	2	3	0	0	1	1	4	9	
16:00 16:15	0	2	0	2	1	3	0	4	6	2	1	5	8	0	0	0	8	14	14	
17:00 17:15	2	2	0	4	1	2	0	3	7	1	0	4	5	0	0	0	5	12	12	
17:15 17:30	0	3	0	3	0	0	1	1	4	0	1	3	4	0	0	0	4	8	8	
17:30 17:45	0	1	0	1	0	1	2	3	4	1	1	1	3	0	0	0	3	7	7	
16:30 16:45	0	2	0	2	1	0	0	1	3	5	3	6	14	0	0	0	14	17	17	
17:45 18:00	0	0	0	0	1	0	0	1	1	1	0	1	2	0	0	1	1	3	4	
08:00 08:15	1	2	0	3	0	4	3	7	10	0	0	2	2	0	2	1	3	5	15	
09:30 09:45	1	1	0	2	0	2	1	3	5	1	0	2	3	0	0	1	1	4	9	
12:45 13:00	0	2	0	2	0	1	1	2	4	0	1	1	2	0	0	1	1	3	7	
16:15 16:30	0	0	0	0	1	2	0	3	3	1	1	6	8	0	1	1	2	10	13	
16:45 17:00	1	3	0	4	0	2	0	2	6	2	2	3	7	0	0	2	2	9	15	
Total: None	33	70	0	103	19	58	15	92	195	33	18	105	156	6	21	23	50	206	401	



Transportation Services - Traffic Services

Turning Movement Count - Study Results

BELFAST RD @ TREMBLAY RD

Survey Date: Wednesday, October 18, 2023

WO No: 41242

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

BELFAST RD TREMBLAY RD

Time Period	Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00 07:15	0	0	0	0	0
07:15 07:30	0	0	0	0	0
07:30 07:45	0	0	0	0	0
07:45 08:00	0	0	0	0	0
08:15 08:30	0	0	0	0	0
08:30 08:45	0	0	0	1	1
08:45 09:00	0	0	0	0	0
09:00 09:15	0	0	0	0	0
09:15 09:30	0	0	0	0	0
09:45 10:00	0	0	0	0	0
11:30 11:45	0	0	0	1	1
11:45 12:00	0	0	0	0	0
12:00 12:15	0	0	0	0	0
12:15 12:30	0	0	0	0	0
12:30 12:45	0	0	0	0	0
13:00 13:15	0	0	0	0	0
13:15 13:30	0	0	0	0	0
15:00 15:15	0	0	0	0	0
15:15 15:30	0	0	0	0	0
15:30 15:45	0	0	0	0	0
15:45 16:00	0	0	0	0	0
16:00 16:15	0	0	0	0	0
17:00 17:15	0	0	0	0	0
17:15 17:30	0	0	0	0	0
17:30 17:45	0	0	0	0	0
16:30 16:45	0	0	0	0	0
17:45 18:00	0	0	0	0	0
08:00 08:15	0	0	0	0	0
09:30 09:45	0	0	0	0	0
12:45 13:00	0	0	0	0	0
16:15 16:30	0	0	0	0	0
16:45 17:00	0	0	0	0	0
Total	0	0	0	2	2



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



St. Laurent Boulevard & Tremblay Road

Ottawa, ON

Survey Date: Wednesday, 1 April 2026

Start Time: 0700 AADT Factor: 0.9

Weather AM: Cloudy/Overcast +1° C Survey Duration: 6 Hrs.

Survey Hours: 0700-1000 & 1500-1800

Weather PM: Mostly Cloudy +5° C

Surveyor(s): J. Mousseau

Time Period	Tremblay Rd. Eastbound					Tremblay Rd. Westbound					St. Laurent Blvd. Northbound					St. Laurent Blvd. Southbound					Street Total	Grand Total	
	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot			
	Street Total																						
0700-0800	15	19	19	0	53	10	11	79	0	100	153	23	762	37	0	822	208	1043	38	3	1292	2114	2267
0800-0900	14	26	18	0	58	15	16	92	0	123	181	42	985	40	1	1068	178	1186	54	6	1424	2492	2673
0900-1000	18	17	17	0	52	12	19	97	0	128	180	18	935	36	0	989	125	1158	36	4	1323	2312	2492
1500-1600	27	31	27	0	85	22	30	176	0	228	313	22	1362	12	1	1397	88	1236	45	7	1376	2773	3086
1600-1700	30	38	30	0	98	30	20	207	0	257	355	35	1410	36	2	1483	121	1234	37	9	1401	2884	3239
1700-1800	24	21	34	0	79	26	21	164	0	211	290	22	1228	9	2	1261	76	1127	47	9	1259	2520	2810
Totals	128	152	145	0	425	115	117	815	0	1047	1472	162	6682	170	6	7020	796	6984	257	38	8075	15095	16567

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 → 0.96												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.
0830-0930	12	22	14	0	48	14	22	87	0	123	171	26	999	39	0	1064	150	1244	48	6	1448	2512	2683

PM Peak Hour Factor → 0.92												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.
1545-1645	33	31	21	0	85	30	24	196	0	250	335	32	1429	31	2	1494	118	1288	41	10	1457	2951	3286

Comments:

OC Transpo and Para Transpo buses, private buses and school buses comprise 35.28% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 11 & 18.

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.

Printed on: 06-04-2026

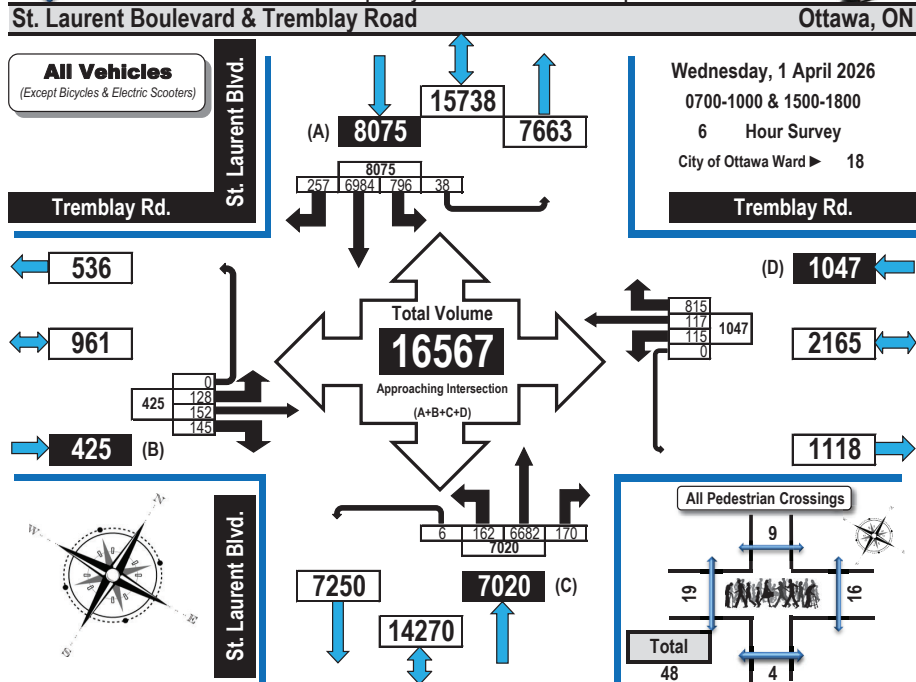
Prepared by: J and S Traffic Services

Summary: All Vehicles



Turning Movement Count Summary, AM and PM Peak Hour Flow Diagrams

All Vehicles Except Bicycles and Personal E-Transportation



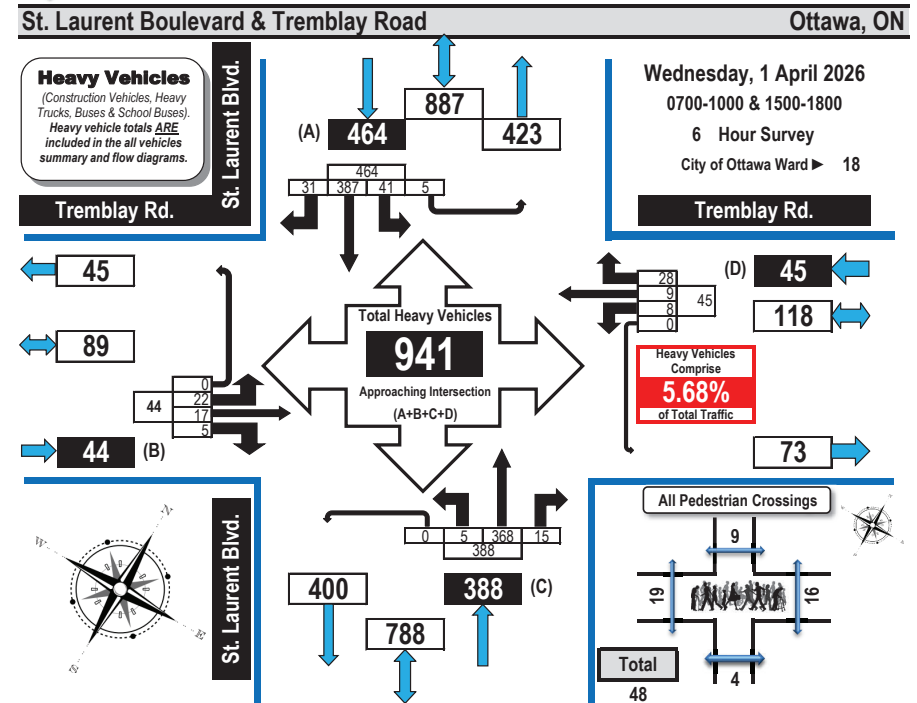
Printed on: 06-04-2026

Prepared by: J and S Traffic Services

Flow Diagrams: AM PM Peak



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



Time Period	Tremblay Rd.					EB Tot	Tremblay Rd.					WB Tot	St. Laurent Blvd.					NB Tot	St. Laurent Blvd.					SB Tot	GR Tot
	LT	ST	RT	UT	LT		ST	RT	UT	LT	ST		RT	UT	LT	ST	RT		UT						
																				Eastbound					
0700-0800	3	2	0	0	5	3	3	12	0	18	1	105	4	0	110	5	46	4	0	55	188				
0800-0900	4	1	0	0	5	2	0	5	0	7	1	82	1	0	84	4	53	5	2	64	160				
0900-1000	4	2	1	0	7	1	2	4	0	7	2	74	3	0	79	4	93	5	0	102	195				
1500-1600	5	1	3	0	9	2	3	1	0	6	0	51	4	0	55	5	76	8	0	89	159				
1600-1700	3	9	0	0	12	0	0	4	0	4	1	35	2	0	38	12	84	4	1	101	155				
1700-1800	3	2	1	0	6	0	1	2	0	3	0	21	1	0	22	11	35	5	2	53	84				
Totals	22	17	5	0	44	8	9	28	0	45	5	368	15	0	388	41	387	31	5	464	941				

Comments:

OC Transpo and Para Transpo buses, private buses and school buses comprise 35.28% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 11 & 18.

Printed on: 06-04-2026

Prepared by: J and S Traffic Services

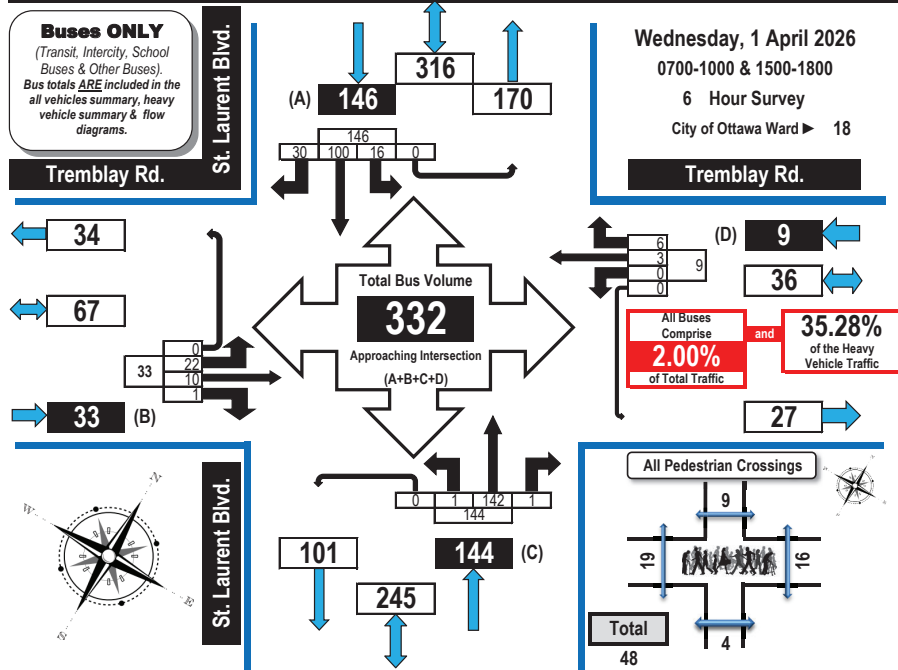
Summary: Heavy Vehicles



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



St. Laurent Boulevard & Tremblay Road Ottawa, ON



Time Period	Tremblay Rd. Eastbound				Tremblay Rd. Westbound				St. Laurent Blvd. Northbound				St. Laurent Blvd. Southbound				GR Tot
	LT	ST	RT	UT	LT	ST	RT	UT	LT	ST	RT	UT	LT	ST	RT	UT	
0700-0800	3	0	0	0	3	0	1	1	0	2	0	46	0	0	46	3	74
0800-0900	4	0	0	0	4	0	0	0	0	0	17	0	17	3	15	5	44
0900-1000	4	1	0	0	5	0	1	0	0	1	0	17	1	20	4	0	49
1500-1600	5	0	1	0	6	0	0	1	0	1	0	29	0	14	8	0	58
1600-1700	3	8	0	0	11	0	0	2	0	2	1	21	0	6	13	4	58
1700-1800	3	1	0	0	4	0	1	2	0	3	0	12	0	3	22	5	49
Totals	22	10	1	0	33	0	3	6	0	9	1	142	1	16	100	30	332

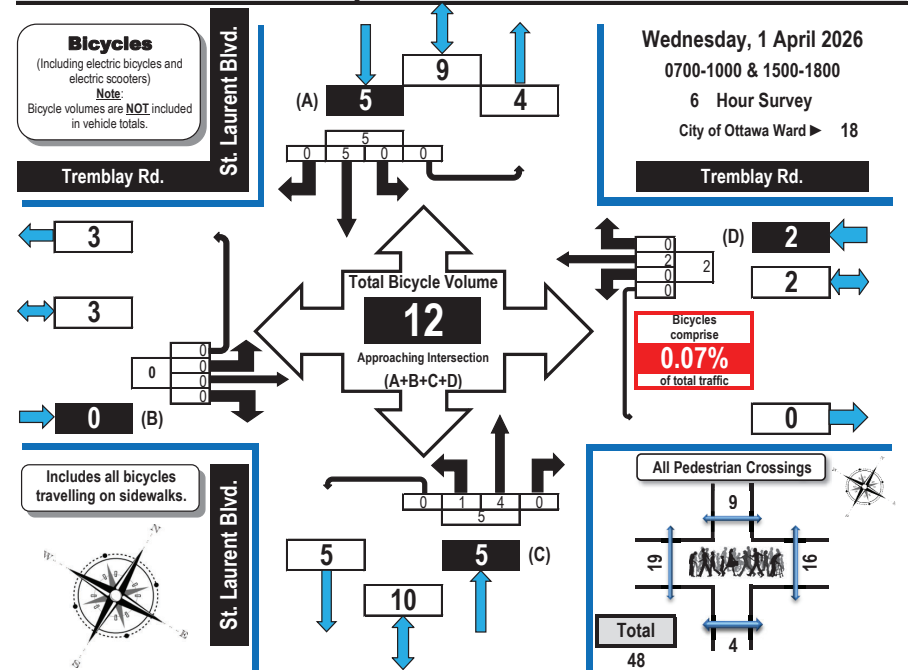
Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 35.28% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 11 & 18.



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



St. Laurent Boulevard & Tremblay Road Ottawa, ON



Time Period	Tremblay Rd. Eastbound				Tremblay Rd. Westbound				St. Laurent Blvd. Northbound				St. Laurent Blvd. Southbound				SB Tot	GR Tot
	LT	ST	RT	UT	LT	ST	RT	UT	LT	ST	RT	UT	LT	ST	RT	UT		
0700-0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
0800-0900	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
0900-1000	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
1500-1600	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
1600-1700	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
1700-1800	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
Totals	0	0	0	0	0	2	0	0	2	1	4	0	5	0	5	0	5	12

Comments:
OC Transpo and Para Transpo buses, private buses and school buses comprise 35.28% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 11 & 18.



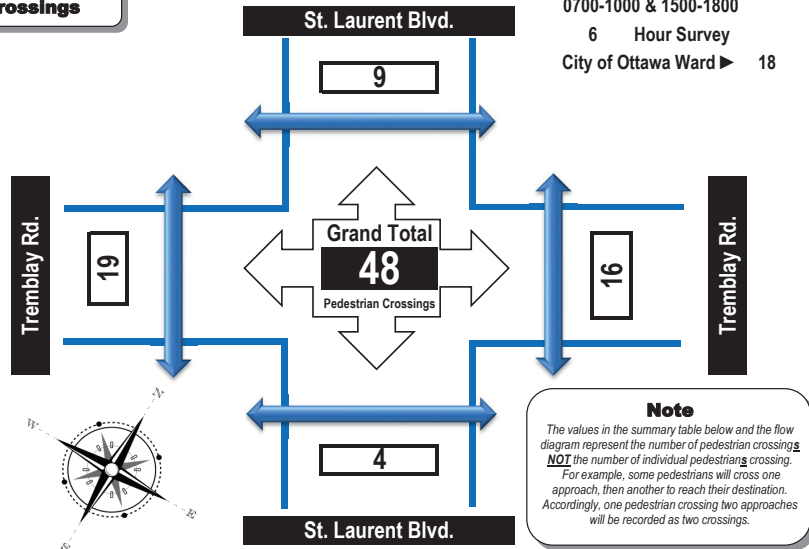
Turning Movement Count Pedestrian Crossings Summary and Flow Diagram



St. Laurent Boulevard & Tremblay Road Ottawa, ON

Pedestrian Crossings

Wednesday, 1 April 2026
0700-1000 & 1500-1800
6 Hour Survey
City of Ottawa Ward ► 18



Time Period	West Side Crossing Tremblay Rd.	East Side Crossing Tremblay Rd.	Street Total	South Side Crossing St. Laurent Blvd.	North Side Crossing St. Laurent Blvd.	Street Total	Grand Total
0700-0800	2	2	4	0	1	1	5
0800-0900	4	6	10	1	1	2	12
0900-1000	4	1	5	1	2	3	8
1500-1600	4	4	8	1	2	3	11
1600-1700	5	2	7	0	2	2	9
1700-1800	0	1	1	1	1	2	3
Totals	19	16	35	4	9	13	48

Comments:

OC Transpo and Para Transpo buses, private buses and school buses comprise 35.28% of the heavy vehicle traffic. This intersection is on the boundaries of Wards 11 & 18.

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Lanes, Volumes, Timings
1: Belfast & Tremblay

Existing
466 Tremblay Road

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖		↖	↖		↖	↖	
Traffic Volume (vph)	107	32	236	25	92	49	82	278	8	20	437	122
Future Volume (vph)	107	32	236	25	92	49	82	278	8	20	437	122
Satd. Flow (prot)	1658	1437	0	1658	1611	0	1658	1673	0	1610	1646	0
Flt Permitted	0.662			0.441			0.210			0.577		
Satd. Flow (perm)	1148	1437	0	763	1611	0	366	1673	0	974	1646	0
Satd. Flow (RTOR)		248			34			2			18	
Lane Group Flow (vph)	113	282	0	26	149	0	86	301	0	21	588	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		7	4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	29.8	29.8		29.8	29.8		10.9	19.9		19.9	19.9	
Total Split (s)	35.0	35.0		35.0	35.0		15.0	35.0		35.0	35.0	
Total Split (%)	41.2%	41.2%		41.2%	41.2%		17.6%	41.2%		41.2%	41.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.5	3.5		3.5	3.5		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	2.6		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		5.9	8.5		5.9	5.9	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	13.5	13.5		13.5	13.5		40.6	38.0		29.7	29.7	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.61	0.57		0.44	0.44	
v/c Ratio	0.49	0.58		0.17	0.42		0.23	0.32		0.05	0.80	
Control Delay	32.6	10.4		25.6	22.9		7.9	9.4		14.8	28.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	32.6	10.4		25.6	22.9		7.9	9.4		14.8	28.9	
LOS	C	B		C	C		A	A		B	C	
Approach Delay		16.8			23.3			9.1			28.4	
Approach LOS		B			C			A			C	
Queue Length 50th (m)	13.3	3.7		2.9	13.1		3.5	16.1		1.5	61.2	
Queue Length 95th (m)	27.1	21.8		8.8	27.8		11.8	41.0		6.6	#148.0	
Internal Link Dist (m)		147.5			683.6			123.2			269.8	
Turn Bay Length (m)	100.0			55.0			55.0			25.0		
Base Capacity (vph)	492	757		327	710		400	1056		431	738	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.37		0.08	0.21		0.21	0.29		0.05	0.80	

Intersection Summary

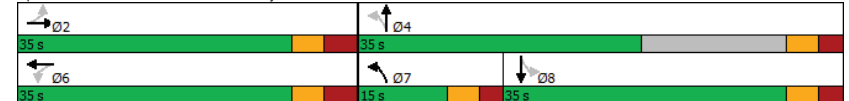
Cycle Length: 85
Actuated Cycle Length: 67.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80

Lanes, Volumes, Timings
1: Belfast & Tremblay

Existing
466 Tremblay Road

Intersection Signal Delay: 20.1
Intersection Capacity Utilization 84.8%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Belfast & Tremblay



Lanes, Volumes, Timings
2: St. Laurent & Tremblay

Existing
466 Tremblay Road

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			 	
Traffic Volume (vph)	12	22	14	14	22	87	26	999	39	150	1244	48
Future Volume (vph)	12	22	14	14	22	87	26	999	39	150	1244	48
Satd. Flow (prot)	1271	1539	0	1580	1465	0	1566	4508	0	1642	3161	1375
Fit Permitted	0.618			0.732			0.210			0.224		
Satd. Flow (perm)	826	1539	0	1215	1465	0	346	4508	0	386	3161	1337
Satd. Flow (RTOR)		15			92			6				51
Lane Group Flow (vph)	13	38	0	15	115	0	27	1093	0	158	1309	51
Turn Type	Perm	NA		Perm	NA		Perm	NA	pm+pt	NA	Perm	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	38.5	38.5		38.5	38.5		39.6	39.6		9.7	37.5	37.5
Total Split (s)	40.0	40.0		40.0	40.0		72.0	72.0		18.0	90.0	90.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		55.4%	55.4%		13.8%	69.2%	69.2%
Yellow Time (s)	3.3	3.3		3.3	3.3		4.1	4.1		3.7	3.5	3.5
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.6	6.6		4.7	4.5	4.5
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	14.5	14.5		14.5	14.5		89.2	89.2		104.3	104.5	104.5
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.69	0.69		0.80	0.80	0.80
v/c Ratio	0.14	0.21		0.11	0.47		0.11	0.35		0.40	0.52	0.05
Control Delay	51.0	35.5		49.2	20.5		12.1	10.2		7.0	6.3	1.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	51.0	35.5		49.2	20.5		12.1	10.2		7.0	6.3	1.6
LOS	D	D		D	C		B	B		A	A	A
Approach Delay		39.4			23.8			10.2			6.2	
Approach LOS		D			C			B			A	
Queue Length 50th (m)	3.2	5.6		3.7	5.6		1.8	32.6		5.6	37.3	0.0
Queue Length 95th (m)	8.2	13.6		8.9	19.8		9.6	74.7		22.1	111.6	4.2
Internal Link Dist (m)		399.8			90.6			42.3			137.7	
Turn Bay Length (m)	38.0			30.0			40.0			75.0		
Base Capacity (vph)	212	407		313	445		237	3094		438	2541	1085
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.06	0.09		0.05	0.26		0.11	0.35		0.36	0.52	0.05

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 53 (41%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

07-15-2026
CJ

CGH Transportation
Page 3

Lanes, Volumes, Timings
2: St. Laurent & Tremblay

Existing
466 Tremblay Road

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 9.2

Intersection LOS: A

Intersection Capacity Utilization 68.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: St. Laurent & Tremblay



07-15-2026
CJ

CGH Transportation
Page 4

Lanes, Volumes, Timings
1: Belfast & Tremblay

Existing
466 Tremblay Road

	↖	→	↗	↖	←	↖	↖	↖	↖	↖	↖	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	209	101	339	27	71	43	119	439	23	35	601	80
Future Volume (vph)	209	101	339	27	71	43	119	439	23	35	601	80
Satd. Flow (prot)	1626	1396	0	1658	1592	0	1642	1726	0	1551	1694	0
Flt Permitted	0.680			0.159			0.098			0.441		
Satd. Flow (perm)	1155	1396	0	273	1592	0	169	1726	0	709	1694	0
Satd. Flow (RTOR)		169			30			3			8	
Lane Group Flow (vph)	220	463	0	28	120	0	125	486	0	37	717	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	29.8	29.8		29.8	29.8		10.9	19.9		10.9	19.9	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	45.0		15.9	45.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		20.0%	45.0%		15.9%	45.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.5	3.5		3.5	3.5		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	2.6		0.0	0.0	
Total Lost Time (s)	6.8	6.8		6.8	6.8		5.9	8.5		5.9	5.9	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)	25.2	25.2		25.2	25.2		54.9	45.5		45.8	39.3	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.59	0.49		0.49	0.42	
v/c Ratio	0.71	0.93		0.38	0.27		0.48	0.58		0.09	1.00	
Control Delay	44.9	48.1		45.4	21.9		17.5	23.0		9.9	63.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.9	48.1		45.4	21.9		17.5	23.0		9.9	63.7	
LOS	D	D		D	C		B	C		A	E	
Approach Delay		47.1			26.3			21.8			61.1	
Approach LOS		D			C			C			E	
Queue Length 50th (m)	35.4	54.2		4.1	12.4		10.0	70.7		2.8	~142.6	
Queue Length 95th (m)	#64.9	#117.3		13.6	27.5		22.6	107.9		6.8	#223.6	
Internal Link Dist (m)		147.5			683.6			123.2			269.8	
Turn Bay Length (m)	100.0			55.0			55.0			25.0		
Base Capacity (vph)	349	540		82	503		323	843		464	716	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.63	0.86		0.34	0.24		0.39	0.58		0.08	1.00	

Intersection Summary

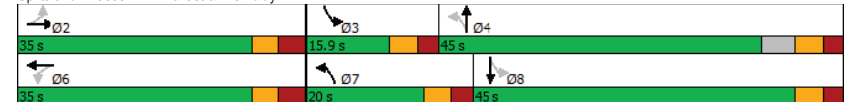
Cycle Length: 100
Actuated Cycle Length: 93.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00

Lanes, Volumes, Timings
1: Belfast & Tremblay

Existing
466 Tremblay Road

Intersection Signal Delay: 43.5	Intersection LOS: D
Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Belfast & Tremblay



Lanes, Volumes, Timings
2: St. Laurent & Tremblay

Existing
466 Tremblay Road

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖		↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	33	31	21	30	24	196	32	1429	31	118	1288	41
Future Volume (vph)	33	31	21	30	24	196	32	1429	31	118	1288	41
Satd. Flow (prot)	1551	1416	0	1658	1490	0	1642	4743	0	1537	3161	1375
Fit Permitted	0.260			0.721			0.201			0.125		
Satd. Flow (perm)	424	1416	0	1258	1490	0	347	4743	0	202	3161	1345
Satd. Flow (RTOR)		22			177			4				43
Lane Group Flow (vph)	35	55	0	32	231	0	34	1537	0	124	1356	43
Turn Type	Perm	NA		Perm	NA		Perm	NA	pm+pt	NA	Perm	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	38.5	38.5		38.5	38.5		39.6	39.6		9.7	37.5	37.5
Total Split (s)	40.0	40.0		40.0	40.0		65.0	65.0		15.0	80.0	80.0
Total Split (%)	33.3%	33.3%		33.3%	33.3%		54.2%	54.2%		12.5%	66.7%	66.7%
Yellow Time (s)	3.3	3.3		3.3	3.3		4.1	4.1		3.7	3.5	3.5
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.6	6.6		4.7	4.5	4.5
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	15.4	15.4		15.4	15.4		78.4	78.4		93.4	93.6	93.6
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.65	0.65		0.78	0.78	0.78
v/c Ratio	0.65	0.28		0.20	0.67		0.15	0.50		0.49	0.55	0.04
Control Delay	94.8	31.9		45.9	22.2		14.1	13.0		11.3	7.4	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	94.8	31.9		45.9	22.2		14.1	13.0		11.3	7.4	2.0
LOS	F	C		D	C		B	B		B	A	A
Approach Delay		56.3			25.1			13.0			7.6	
Approach LOS		E			C			B			A	
Queue Length 50th (m)	8.3	7.4		7.2	12.3		2.4	52.3		4.5	41.0	0.0
Queue Length 95th (m)	16.8	16.3		13.8	31.4		11.8	113.7		18.3	120.2	4.0
Internal Link Dist (m)		399.8			90.6			42.3			137.7	
Turn Bay Length (m)	38.0			30.0			40.0			75.0		
Base Capacity (vph)	118	411		351	543		226	3099		275	2466	1059
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.30	0.13		0.09	0.43		0.15	0.50		0.45	0.55	0.04

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 49 (41%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings
2: St. Laurent & Tremblay

Existing
466 Tremblay Road

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.6

Intersection LOS: B

Intersection Capacity Utilization 89.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: St. Laurent & Tremblay



Appendix D

Collision Data

Location:	BELFAST RD @ TREMBLAY RD						Geo ID:	0002698			
Municipality:	Ottawa						Jurisdiction:	Regional Municipality			
Traffic Control:	Traffic signal						Total Collisions:	8			
Collision ID	Date/Time	Env	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Maneuver	Vehicle Type	First Event	Driver Action	No. Ped
220048282	2022-Feb-25, Fri, 10:17	Snow	Angle	P.D. only	North	Loose snow	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Lost control	0
Comments:					West	Loose snow	Going ahead	Automobile, station wagon		Driving properly	
220042634	2022-Feb-18, Fri, 17:49	Unknown	Rear end	P.D. only	East	Ice	Unknown	Unknown	Other motor vehicle	Driving properly	0
Comments:					East	Ice	Going ahead	Automobile, station wagon		Unknown	
210101035	2021-May-1, Sat, 18:20	Clear	SMV other	Non-fatal injury	North	Dry	Turning right	Automobile, station wagon	Pedestrian	Failed to yield right-of-way	1
Comments:											
200249828	2020-Oct-11, Sun, 17:49	Clear	Turning movement	Non-fatal injury	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	0
Comments:					East	Dry	Turning left	Automobile, station wagon		Lost control	
190279705	2019-Oct-22, Tue, 21:35	Rain	Angle	Non-fatal injury	South	Wet	Going ahead	Bicycle	Other motor vehicle	Improper turn	0
Comments:					East	Wet	Making "U" turn	Automobile, station wagon		Disobeyed traffic control	
190158663	2019-Jun-23, Sun, 15:38	Clear	Rear end	Non-fatal injury	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					North	Dry	Slowing or stopping	Automobile, station wagon		Driving properly	
180285464	2018-Nov-16, Fri, 15:14	Snow	Angle	P.D. only	North	Loose snow	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	0
Comments:					West	Loose snow	Going ahead	Municipal transit bus		Driving properly	
180156016	2018-Jun-27, Wed, 20:53	Other	Rear end	Non-fatal injury	South	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	0
Comments:					South	Wet	Stopped	Automobile, station wagon		Driving properly	

Collision Summary Report

Location: ST. LAURENT BLVD @ TREMBLAY RD		Geo ID: 0002573									
Municipality: Ottawa		Jurisdiction: Regional Municipality									
Traffic Control: Traffic signal		Total Collisions: 45									
Collision ID	Date/Time	Env	Impact Type	Classification	Direction	Surface Con'd'n	Vehicle Manoeuvre	Vehicle Type	First Event	Driver Action	No. Ped
220902147	2022-Dec-13, Tue, 17:35	Clear	Turning movement	P.D. only	North	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					South	Dry	Going ahead	Automobile, station wagon		Unknown	
220900820	2022-Nov-16, Wed, 8:15	Snow	Rear end	P.D. only	North	Slush	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					North	Slush	Slowing or stopping	Automobile, station wagon		Unknown	
220237868	2022-Sep-6, Tue, 23:40	Clear	Rear end	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					North	Dry	Stopped	Automobile, station wagon		Driving properly	
220217189	2022-Aug-17, Wed, 6:50	Clear	Turning movement	P.D. only	South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					North	Dry	Going ahead	Pick-up truck		Driving properly	
220168673	2022-Jun-28, Tue, 15:06	Clear	Angle	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					West	Dry	Going ahead	Pick-up truck		Driving properly	
220159742	2022-Jun-20, Mon, 8:02	Clear	Rear end	Non-fatal injury	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					East	Dry	Going ahead	Delivery van		Driving properly	
220133690	2022-May-24, Tue, 15:30	Clear	Sideswipe	P.D. only	South	Dry			Other motor vehicle		
Comments:					South	Dry	Changing lanes	Pick-up truck		Improper lane change	
220042019	2022-Feb-18, Fri, 9:00	Snow	Rear end	P.D. only	North	Slush	Slowing or stopping	Pick-up truck	Other motor vehicle	Speed too fast for condition	
Comments:					North	Slush	Stopped	Pick-up truck		Driving properly	
220009552	2022-Jan-12, Wed, 13:10	Snow	Angle	Non-fatal injury	West	Slush	Going ahead	Pick-up truck	Other motor vehicle	Disobeyed traffic control	
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Comments:					South	Slush	Going ahead	Pick-up truck	Ran off road	Driving properly	
220005091	2022-Jan-7, Fri, 2:44	Clear	Sideswipe	P.D. only	North	Wet	Changing lanes	Unknown	Other motor vehicle	Unknown	0
Comments:					North	Wet	Going ahead	Automobile, station wagon		Driving properly	
210312100	2021-Dec-3, Fri, 15:42	Clear	Rear end	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					East	Dry	Stopped	Pick-up truck		Driving properly	
210257523	2021-Oct-8, Fri, 13:00	Clear	Rear end	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					North	Dry	Stopped	Pick-up truck		Driving properly	
210111809	2021-May-14, Fri, 12:35	Clear	Turning movement	P.D. only	South	Dry	Turning left	Pick-up truck	Other motor vehicle	Failed to yield right-of-way	0
Comments:					North	Dry	Going ahead	Automobile, station wagon		Driving properly	
210049430	2021-Mar-3, Wed, 23:34	Clear	SMV other	Non-fatal injury	South	Loose snow	Going ahead	Automobile, station wagon	Snowbank/drift	Driving properly	0
Comments:											
210049441	2021-Mar-3, Wed, 23:10	Snow	SMV other	P.D. only	North	Packed snow	Going ahead	Pick-up truck	Other	Driving properly	0
Comments:											
210018453	2021-Jan-24, Sun, 8:41	Clear	SMV other	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Pole (sign, parking meter)	Lost control	0
Comments:											
200304923	2020-Dec-18, Fri, 15:29	Clear	Sideswipe	P.D. only	North	Dry	Changing lanes	Passenger van	Other motor vehicle	Improper lane change	0
Comments:					North	Dry	Going ahead	Automobile, station wagon		Driving properly	
200277059	2020-Nov-13, Fri, 11:57	Clear	Sideswipe	Non-fatal injury	North	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle	Driving properly	0
Comments:					North	Dry	Slowing or stopping	Pick-up truck	Other motor vehicle	Driving properly	
200256263	2020-Oct-19, Mon, 16:15	Clear	Sideswipe	P.D. only	North	Dry	Unknown	Unknown	Other motor vehicle	Unknown	0
Comments:					North	Dry	Going ahead	Pick-up truck		Driving properly	
200221674	2020-Sep-9, Wed, 14:38	Clear	Rear end	Non-fatal injury	West	Dry	Turning right	Pick-up truck	Other motor vehicle	Following too close	0
Comments:					West	Dry	Turning right	Pick-up truck		Driving properly	
200187132	2020-Aug-3, Mon, 6:12	Rain	SMV other	P.D. only	South	Wet	Going ahead	Pick-up truck	Pole (utility, power)	Lost control	0

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Comments:											
200048581	2020-Feb-19, Wed, 20:19	Clear	Rear end	P.D. only	South	Dry	Going ahead	Passenger van	Other motor vehicle	Following too close	0
Comments:					South	Dry	Slowing or stopping	Automobile, station wagon		Driving properly	
190344693	2019-Dec-30, Mon, 15:23	Snow	Rear end	P.D. only	North	Slush	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					North	Slush	Stopped	Automobile, station wagon		Driving properly	
190301135	2019-Nov-13, Wed, 10:20	Clear	Rear end	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					East	Ice	Stopped	Automobile, station wagon		Driving properly	
190296551	2019-Nov-8, Fri, 8:53	Clear	Turning movement	Non-fatal injury	South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Improper turn	0
Comments:					North	Dry	Going ahead	Police vehicle		Driving properly	
190293454	2019-Nov-4, Mon, 12:30	Clear	Sideswipe	P.D. only	South	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle	Improper lane change	0
Comments:					South	Dry	Unknown	Unknown		Unknown	
190281124	2019-Oct-24, Thu, 9:50	Rain	Turning movement	P.D. only	South	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	0
Comments:					North	Wet	Going ahead	Pick-up truck		Failed to yield right-of-way	
190268964	2019-Oct-11, Fri, 11:37	Clear	Turning movement	P.D. only	South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	0
Comments:					North	Dry	Turning right	Automobile, station wagon		Driving properly	
190178402	2019-Jul-12, Fri, 12:12	Clear	Turning movement	Non-fatal injury	South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	0
Comments:					North	Dry	Going ahead	Automobile, station wagon		Driving properly	
190174414	2019-Jun-26, Wed, 16:30	Clear	Rear end	P.D. only	North	Dry	Slowing or stopping	Unknown	Other motor vehicle	Unknown	0
Comments:					North	Dry	Stopped	Automobile, station wagon		Driving properly	
190157000	2019-Jun-21, Fri, 19:14	Clear	Rear end	Non-fatal injury	North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	0
Comments:					North	Dry	Stopped	Automobile, station wagon		Driving properly	
190100544	2019-Apr-23, Tue, 16:15	Clear	Sideswipe	P.D. only	North	Dry	Unknown	Unknown	Other motor vehicle	Unknown	0
Comments:					North	Dry	Stopped	Automobile, station wagon		Driving properly	

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190052512	2019-Mar-2, Sat, 3:04	Clear	SMV other	P.D. only	East	Dry	Turning left	Automobile, station wagon	Ran off road	Improper turn	0
Comments:									Curb		
190040655	2019-Feb-16, Sat, 11:45	Clear	Rear end	P.D. only	North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					North	Wet	Stopped	Automobile, station wagon		Driving properly	
190026452	2019-Jan-31, Thu, 8:20	Clear	SMV other	P.D. only	North	Ice	Turning right	Delivery van	Pole (utility, power)	Lost control	0
Comments:											
180274575	2018-Nov-4, Sun, 3:05	Clear	Sideswipe	P.D. only	South	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle	Driving properly	0
Comments:					South	Dry	Going ahead	Municipal transit bus		Improper lane change	
180244538	2018-Sep-30, Sun, 14:00	Clear	Sideswipe	P.D. only	South	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle	Improper lane change	0
Comments:					South	Dry	Going ahead	Automobile, station wagon		Driving properly	
180191727	2018-Aug-4, Sat, 14:31	Clear	Rear end	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	0
Comments:					North	Dry	Slowing or stopping	Automobile, station wagon		Driving properly	
180183895	2018-Jul-27, Fri, 5:49	Clear	SMV unattended vehicle	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Unattended vehicle	Driving properly	0
Comments:									Curb		
180167343	2018-Jul-9, Mon, 15:50	Clear	SMV other	Non-fatal injury	East	Dry	Going ahead	Automobile, station wagon	Pedestrian	Driving properly	1
Comments:											
180116083	2018-May-17, Thu, 3:24	Clear	Turning movement	P.D. only	South	Dry	Turning right	Unknown	Other motor vehicle	Unknown	0
Comments:					South	Dry	Going ahead	Municipal transit bus		Driving properly	
180100258	2018-Apr-30, Mon, 12:30	Clear	Angle	Non-fatal injury	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	0
Comments:					East	Dry	Going ahead	Automobile, station wagon		Driving properly	
180095882	2018-Apr-25, Wed, 11:10	Rain	Angle	P.D. only	East	Wet	Turning right	Pick-up truck	Other motor vehicle	Failed to yield right-of-way	0
Comments:					South	Wet	Going ahead	Municipal transit bus		Driving properly	
180068405	2018-Mar-24, Sat, 10:59	Clear	Rear end	Non-fatal injury	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0

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Comments:					North	Dry	Stopped	Pick-up truck		Driving properly	
180005602	2018-Jan-8, Mon, 11:11	Snow	Rear end	P.D. only	South	Packed snow	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	0
Comments:					South	Packed snow	Slowing or stopping	Truck - closed		Driving properly	
Location: TREMBLAY RD btwn AVENUE U & boul St-Laurent					Geo ID: __3Z08C0						
Municipality: Ottawa (OT)					Jurisdiction: Regional Municipality						
Traffic Control: No control					Total Collisions: 3						
Collision ID	Date/Time	Env	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle Type	First Event	Driver Action	No. Ped
220902907	2022-Dec-23, Fri, 14:30	Snow	Sideswipe	P.D. only	East	Ice	Going ahead	Automobile, station wagon	Skidding/sliding	Lost control	0
Comments:					East	Unknown	Going ahead	Automobile, station wagon	Other motor vehicle	Unknown	
210054288	2021-Mar-9, Tue, 16:40	Clear	Approaching	P.D. only	East	Dry	Unknown	Unknown	Other motor vehicle	Unknown	0
Comments:					West	Dry	Going ahead	Automobile, station wagon		Driving properly	
190029309	2019-Feb-2, Sat, 23:20	Clear	Approaching	P.D. only	West	Loose snow	Unknown	Unknown	Other motor vehicle	Unknown	0
Comments:					East	Loose snow	Going ahead	Automobile, station wagon		Driving properly	

Appendix E

TDM Checklist

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

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		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 (<i>see Official Plan policy 4.3.3</i>)	☒
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 (<i>see Official Plan policy 4.3.12</i>)	☒

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		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 (<i>see Official Plan policy 4.3.10</i>)	☒
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 (<i>see Official Plan policy 4.3.10</i>)	☒
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 (<i>see Official Plan policy 4.3.11</i>)	☐
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: <i>Residential developments</i>		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 <i>Official Plan policy 4.3.6</i>)	☒
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 <i>Zoning By-law Section 111</i>)	☒
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 <i>Zoning By-law Section 111</i>)	☒
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 <i>Zoning By-law Section 111</i>)	☒
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: <i>Residential developments</i>		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 <i>Zoning By-law Section 94</i>)	☐
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 <i>Zoning By-law Section 104</i>)	☐
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 <i>Zoning By-law Section 111</i>)	☐
6.2 Separate long-term & short-term parking areas		
BETTER	6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:

Residential Developments (multi-family, condominium or subdivision)

Legend	
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

TDM measures: Residential developments		Check if proposed & add descriptions
1. TDM PROGRAM MANAGEMENT		
1.1 Program coordinator		
BASIC ★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☐
1.2 Travel surveys		
BETTER	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
2. WALKING AND CYCLING		
2.1 Information on walking/cycling routes & destinations		
BASIC	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances (<i>multi-family, condominium</i>)	☒
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 (<i>multi-family, condominium</i>)	☒
BETTER	3.1.2 Provide real-time arrival information display at entrances (<i>multi-family, condominium</i>)	☐
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 (<i>subdivision</i>)	☐
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 (<i>multi-family</i>)	☐
BETTER	4.1.2 Provide residents with bikeshare memberships, either free or subsidized (<i>multi-family</i>)	☐
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 (<i>condominium</i>)	☒
BASIC ★	5.1.2 Unbundle parking cost from monthly rent (<i>multi-family</i>)	☒

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

Appendix F

MMLOS Analysis

Multi-Modal Level of Service - Segments Form

Project: 466 Tremblay
Consultant: CGH Transportation
Date: Jul 16, 2026
Scenario: Existing/Future

Segment Name		Tremblay Road	
OP Transect / Policy Area		Within 600m of a rapid transit station	
Segment Component		Majority (>50%)	
Side of Street		N	S
Pedestrian	PLOS Inputs		
	Posted Speed (km/h)	50 km/h	
	Two-Way ADT	3,000	
	Pedestrian Facility	Multi-Use Pathway	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
	Facility Width (m)	3.00m	1.80m
	Offset from Motor Vehicle Travel Lanes (m)	< 0.5m	< 0.5m
	Presence of Adjacent Parking?	-	-
	General Purpose Curb Lane ADT	≤ 3000	≤ 3000
	Max. Distance between Controlled Crossings (m)	≤ 200m	≤ 200m
	Score	4.25	3.50
	PLOS	B	B
Target PLOS	A		
Bicycle	BLOS Inputs		
	Cycling Route Classification	Elsewhere	
	Cycling Facility	Multi-Use Pathway	
	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	Low to Moderate Volume MUP (≤ 100 users per hour)	
	Facility Width	3.0-3.49m	
	Boulevard/Buffer Width (excluding curb)	< 0.6m	
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	
	Number of Travel Lanes at Crossing	-	
	Crossing includes Median Refuge (≥ 2.7m)	-	
	Cross-street Posted Speed (km/h)	-	
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	-	
	Score	2.00	-
	BLOS	D	-
Target BLOS	B		
Transit	TLOS Inputs		
	Transit Facility	Mixed Traffic	
	Facility Type	Mixed Traffic	Mixed Traffic
	Expected Transit Running Time	Unimpeded	Unimpeded
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)
	TLOS	B	B
Target TLOS	E (D for frequent transit routes)		
Public Realm	PRLOS Inputs		
	Context	Other Streets	Other Streets
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m
	Outer Boulevard (Frontage) Width	≥ 3.0m	2.0-2.99m
	Transit Route on Segment?	Yes	Yes
	Bus Stop Elements	No platform, landing zone or shelter	No platform, landing zone or shelter
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2	
	Score	26.70	19.80
	PRLOS	A	C
		B	