1209 St Laurent Boulevard & 1200 Lemieux Street

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Forecasting Report

Step 4 Strategy Report

Prepared for:

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Prepared by:

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May 2022

PN: 2022-026

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1 Screening

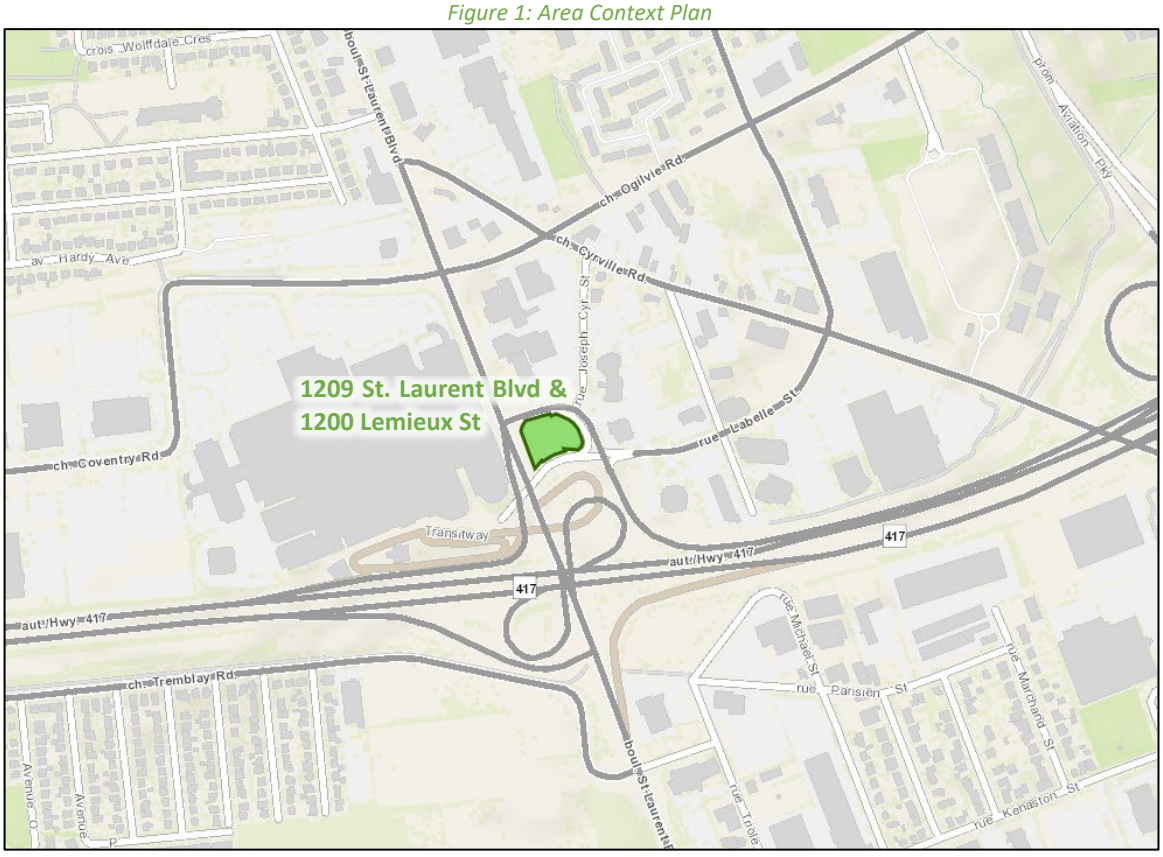
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review component and the Network Impact Component. This study is supporting a site plan application.

2 Existing and Planned Conditions

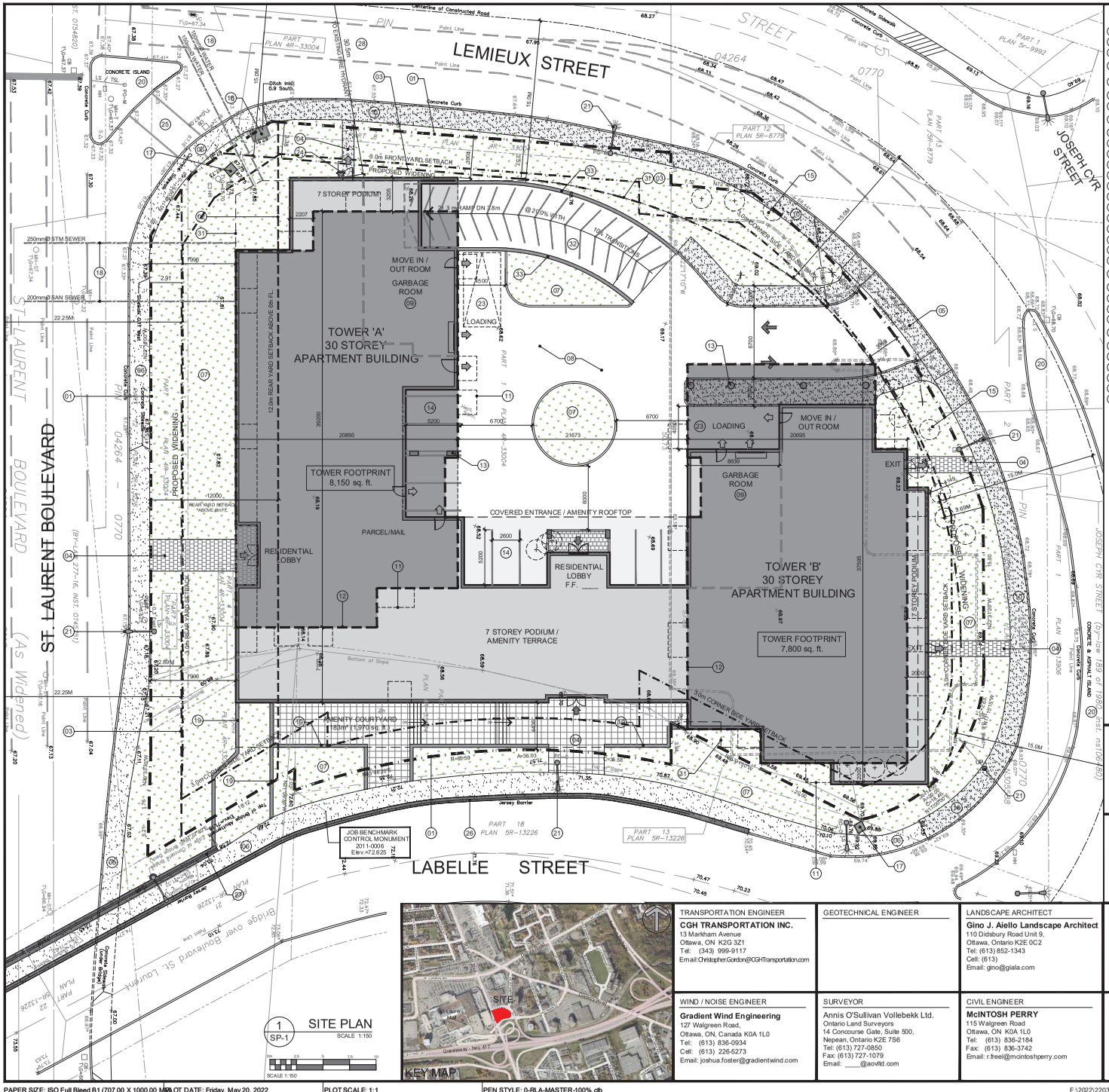
2.1 Proposed Development

The development site is located at 1209 St. Laurent Boulevard within the Industrial Avenue/Trainyards/Cyrville Mixed Use Centre, Tremblay, St Laurent and Cyrville secondary plan, and St Laurent TOD areas, and zoned as Transit Oriented Development Zone (TD3). The development is proposed as two 30-storey residential buildings including 640 units, 333 residential parking spaces, 59 visitor parking spaces, and 640 bicycle parking to be built by 2026. The plan includes an existing full-movement access onto Lemieux Street. 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: March 7, 2022



DRAWING NOTES

1. PROPERTY LINE
2. BUILDING SETBACKS
3. PROPOSED ROAD WIDENING
4. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
5. DEPRESSED CURB AND SIDEWALK TO CITY STANDARDS, SEE CIVIL
6. EXISTING STREET CURB AND SIDEWALK
7. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
8. ASPHALT DRIVING SURFACE / PARKING LOT WITH BARRIER CURB
9. INTERNAL GARBAGE ROOM
10. 2.0m WIDE CONCRETE SIDEWALK
11. OUTLINE OF PRIVATE BALCONY ABOVE
12. OUTLINE OF TOWER ABOVE
13. STRUCTURAL SUPPORT FOR BUILDING ABOVE
14. SURFACE PARKING SPACE 2.6 X 5.2 M
15. EXISTING TREE TO BE REMOVED
16. EXISTING STORM GRATE
17. EXISTING UTILITY HOOK
18. PROPOSED SERVICES
19. RETAINING WALL, SEE C.M.L FOR HEIGHT
20. EXISTING CONCRETE / ASPHALT ISLAND
21. EXISTING UTILITY / LIGHT POLE
22. 1.2 X 1.8 CONCRETE PAD FOR GAS EQUIPMENT (GAS BLOW OFF)
23. 3.5 x 7.0 m LOADING SPACE
24. SIAMESE CONNECTION
25. EXISTING CROSSWALK
26. EXISTING CONCRETE JERSEY BARRIER
27. EXISTING CONCRETE OVERPASS GUARD RAIL WITH METAL PIPE RAILING
28. EXISTING FIRE HYDRANT
29. INTAKE / EXHAUST GRILL
30. BICYCLE PARKING SPACE WITH RACK
31. OUTLINE OF BELOW GRADE PARKING DECK
32. HEATED GARAGE RAMP WITH TRENCH DRAIN
33. CONCRETE RETAINING WALL WITH GUARD RAILING

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- PROPOSED CONCRETE SURFACE
- SOFT LANDSCAPING
- BIKE RACK
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- UNIT BALCONY DOOR / FIRE EXIT
- PROPERTY LINE
- PROPOSED WIDENING
- EXISTING TREE TO BE REMOVED

PROJECT DEVELOPER

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LEGAL DESCRIPTION

PLAN OF SURVEY OF
PART OF LOTS 4 and 14
REGISTERED PLAN 23
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

WIND / NOISE ENGINEER

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PROJECT INFORMATION

ZONING BY-LAW 2008-250		TD3
SITE AREA	0.428 ha.	4,279.77 sq. m 31,388 sq. ft.
GRADE (GEODETIC ELEVATION - ASL)		69.20m
BUILDING HEIGHT		90.0m
DENSITY - MINIMUM 350 units/hectare		122 UNITS
TOWER SEPARATION		24.0m
FRONT YARD SETBACK		3.0m
CORNER YARD SETBACK		3.0m
REAR YARD SETBACK	GROUND TO 6th FLOOR	0.0m
REAR YARD SETBACK	ABOVE 6th STOREY	12.0m
AMENITY AREA - PER UNIT		6.0 sq. m
VEHICLE PARKING - RESIDENTIAL		NOT REQUIRED
VEHICLE PARKING - VISITOR ONLY	MAX. 20 PER BUILDING AFTER 12 UNITS	59
BICYCLE PARKING - RESIDENTIAL - PER UNIT		0.5
AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH		6.0m / 6.7m

PROJECT STATISTICS

30 STOREY BUILDING HEIGHT	94.0m
7 STOREY PODIUM HEIGHT	24.9m
FRONT YARD SETBACK	0.0m
CORNER YARD SETBACK - EAST	0.0m
REAR YARD SETBACK	8.0m
DENSITY - UNITS	640
AMENITY AREA - PER UNIT	6.0 sq. m.
PARKING - PER UNIT (AFTER 12 UNITS)	0.5
VISITOR PARKING - PER UNIT (AFTER 12 UNITS)	0.1
BICYCLE PARKING - PER UNIT	1.0

GROSS BUILDING FLOOR AREA

(OTTAWA ZONING DEFINITION)

BELOW GRADE PARKING LEVEL		0.0 sq. m. 000 sq. ft.
GROUND FLOOR		269.6 sq. m. 2,902 sq. ft.
2nd FL.OOR		985.4 sq. m. 10,607 sq. ft.
3rd - 7th FLOOR	5 x 1,504.66 sq. m 5 x 16,196 sq. ft	7,523.0 sq. m. 80,980 sq. ft.
8th FLOOR - TOWER 'A'		465.4 sq. m. 5,010 sq. ft.
8th FLOOR - TOWER 'B'		500.8 sq. m. 5,391 sq. ft.
9th - 30th FLOOR - TOWER 'A'	22 x 609.17 sq. m 22x 6,634 sq. ft.	13,313.3 sq. m. 143,308 sq. ft.
9th - 30th FLOOR - TOWER 'B'	22 x 575.26 sq. m 22x 6,191 sq. ft	12,655.2 sq. m. 136,224 sq. ft.
TOTAL AREA ABOVE GRADE		35,712.8 sq. m. 384,422 sq. ft.

UNIT STATISTICS

	TOWER A	TOWER B	TOTAL
STUDIO	17	12	29
1 BEDROOM UNIT	174	160	334
2 BEDROOM UNIT	147	130	277
TOTAL	338	302	640

CAR PARKING

REQUIRED		
VISITOR - TOWER A	- 0.1 PER UNIT AFTER 12 UNITS	30
VISITOR - TOWER B	- 0.1 PER UNIT AFTER 12 UNITS	29
TOTAL		59
MAXIMUM PARKING AS PER TABLE 103 = 1.75 PER UNIT		1120
PROVIDED		
RESIDENCE	- 0.520 PER UNIT (640 UNITS)	333
VISITOR	- 0.092 PER UNIT (640 UNITS)	59
TOTAL		392
STANDARD PARKING SPACE		2.6m X 5.2m
SMALL CAR PARKING SPACE		2.4m X 4.6m
LOADING SPACE		3.5m X 7.0m

BICYCLE PARKING

REQUIRED	- 0.5 PER UNIT (640 UNITS)	320
PROVIDED	INTERIOR	640
	EXTERIOR	0

AMENITY AREA

GRADE EXTERIOR - COMMUNAL	183.0 sq. m.
1st FLOOR INTERIOR - COMMUNAL	605.0 sq. m.
2nd FLOOR INTERIOR - COMMUNAL	576.0 sq. m.
2nd FLOOR TERRACE - COMMUNAL	138.0 sq. m.
8th FLOOR INTERIOR - COMMUNAL	119.0 sq. m.
8th FLOOR TERRACE - COMMUNAL	396.0 sq. m.
BALCONIES (ALL LEVELS) - PRIVATE	2,850 sq. m.
TOTAL	4,867.0 sq. m.
TOTAL COMMUNAL	2,017.0 sq. m.
REQUIRED (640 UNITS X 6 m²) = 3,840 sq. m.	
REQUIRED COMMUNAL @ 50% = 1,920 sq. m.	

SITE COVERAGE

BUILDING FOOTPRINT	43.7%	1,869.2 sq. m.
DRIVING SURFACE	22.4%	957.7 sq. m.
LANDSCAPE AREA	33.9%	1,452.9 sq. m.
TOTAL	100.0%	4,279.77 sq. m.

REFUGE REQUIREMENT

(640 UNITS)

GARBAGE	- 0.11 PER UNIT	71 YARDS
RECYCLING GWP	- 0.019 PER UNIT	12 YARDS
RECYCLING FIBER	- 0.039 PER UNIT	25 YARDS
COMPOST	- 240L PER 50 UNITS	7

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

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

No.	DESCRIPTION	DATE
7	ISSUED FOR SPC APPLICATION	May 20, 22
6	ISSUED FOR OWNER / CONSULTANT REVIEW	May 18, 22
5	ISSUED FOR OWNER / CONSULTANT REVIEW	May 13, 22
4	ISSUED FOR OWNER / CONSULTANT REVIEW	Apr. 27, 22
3	ISSUED FOR DESIGN CONCEPT	Apr. 12, 22

REVISIONS:

ARCHITECT SEAL

ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK LAHEY — LICENCE 4575

SEAL DATE: STAMP DATE

NORTH ARROW

CLIENT:

FENGATE Asset Management

Canderel

ARCHITECT:

RODERICK LAHEY ARCHITECT INC
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PROJECT TITLE:

1209 St LAURENT BLVD.

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN:	CHECKED:
RV	R.I.

SCALE: 1:150

PROJECT No.: 2203

SHEET No.: SP-1

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Plan No.: #_____

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 six-lane, divided urban cross-section with sidewalks on both sides of the road. The posted speed limit is 60 km/h and the City-protected right of way is 44.5 metres within the study area. St Laurent Boulevard is designated as a truck route.

Ogilvie Road: Ogilvie Road is a City of Ottawa arterial road with a four-lane, divided urban cross-section with curbside bike lanes and sidewalks on both sides of the road. The posted speed limit is 60 km/h and the City-protected right of way is 44.5 metres within the study area. Ogilvie Road is designated as a truck route.

Coventry Road: Coventry Road is a City of Ottawa arterial road with a four-lane, divided urban cross-section with curbside bike lanes and sidewalks on both sides of the road within the study area. The posted speed limit is 60 km/h and the City-protected right of way is 30.0 metres within the study area. Coventry Road is designated as a truck route.

Cyrville Road: Cyrville Road is a City of Ottawa arterial road southeast of Labelle Street, and a collector road northwest of Labelle Street, each with a two-lane cross-section. Between St. Laurent Boulevard and Ogilvie Road, the cross-section includes a curb with a sidewalk on the northeast side and is uncurbed on the southwest side. Between Ogilvie Road and Cummings Avenue, the cross-section is urban and includes a sidewalk and curb-side bike lane on each side of the road. Between Cummings Avenue and Beauparc Private, the cross-section is rural and includes a bike lane and sidewalk on the south side of the road and a mixed-use path on the north side of the road. South of Beauparc Private, the cross-section is urban and includes a bike lane and sidewalk on both sides of the road. The posted speed limit is 60 km/h and the existing right of way varies between 18.0 metres and 23.0 metres within the study area. Cyrville Road is designated as a truck route.

Labelle Street: Labelle Street is a City of Ottawa major collector road with a two-lane urban cross-section with sidewalks on both sides of the road east of Michael Street North, and on the north side of the road to the west. The unposted speed limit is assumed to be 50 km/h and the existing right of way varies between 20.0 metres and 22.5 metres within the study area.

Lemieux Street: Lemieux Street is a City of Ottawa major collector road with a three-lane urban cross-section with a sidewalk on the north/east side of the road. The posted speed limit is 50 km/h. The City-protected right-of-way is 30.0 metres. Lemieux Street is designated as a truck route.

Joseph Cyr Street: Joseph Cyr Street is a City of Ottawa local road with a two-lane urban cross-section with sidewalks on both sides of the road and on-street parking permitted on the east side of the road. The unposted speed limit is 50 km/h and the City-protected right of way is 20.0 metres.

Highway 417: Highway 417 is a Ministry of Transportation of Ontario urban freeway with a seven-lane cross-section within the study area. The posted speed limit is 100 km/h and the existing right of way is 60.0 metres.

OR 174: OR 174 is City of Ottawa urban freeway with a six-lane rural cross-section east of the study area. The posted speed limit is 100 km/h and the right of way is generally 91.5 metres east of the study area and is Existing Corridor Protected.

Transitway Access: The Transitway Access is a bus-only road that connects St-Laurent Station to St. Laurent Boulevard. It has a two-lane urban cross-section, and it is largely within the Highway 417 interchange right of way.

2.2.2 Existing Intersections

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

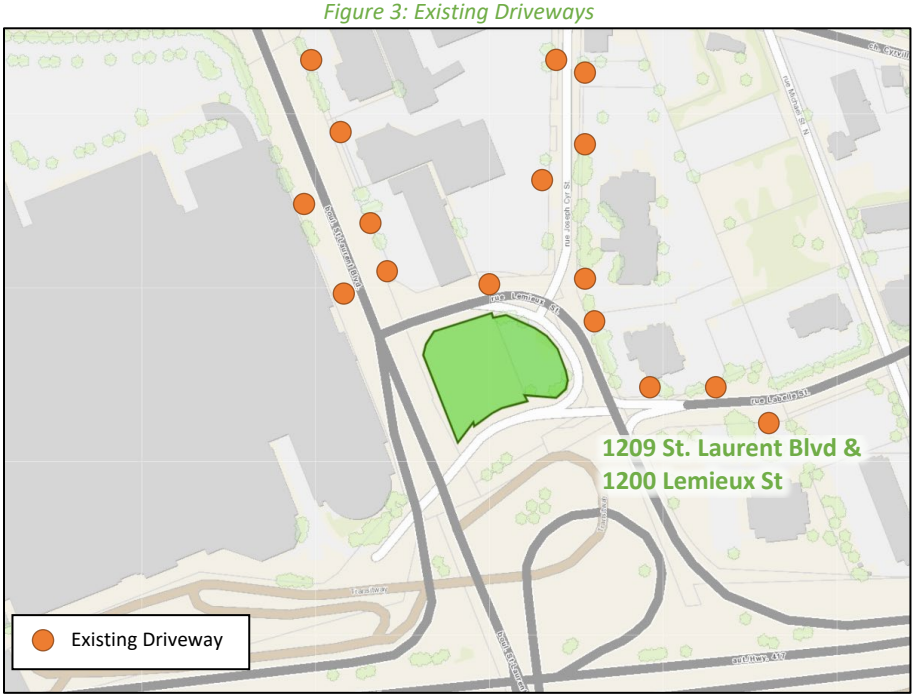
St Laurent Boulevard at Coventry Road/Ogilvie Road	The intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, two through lanes, and a shared through/channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane, three through lanes and an auxiliary channelized right-turn lane. The eastbound and westbound approaches each consist of two auxiliary left-turn lanes, two through lanes, a bike lane, and an auxiliary channelized right-turn lane. U-turns on all approaches are restricted at this intersection.
St Laurent Boulevard at Lemieux Street	The intersection of St Laurent Boulevard at Lemieux Street is a signalized T-intersection. The northbound approach consists of three through lanes and an auxiliary channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane and three through lanes. The westbound approach consists of two left-turn lanes and an auxiliary right-turn lane. Northbound U-turns are restricted at this intersection.
St Laurent at Transitway Access	The intersection of St Laurent at the Transitway access is a signalized T-intersection. The northbound approach consists of three through lanes and a channelized transit-only right-turn, and the southbound approach consists of an auxiliary transit-only left-turn lane and three through lanes. Approximately 80 metres north and 100 metres south of the intersection are on-ramps to the westbound Highway 471. The westbound approach consists of transit only left-turn lane and transit only right-turn lane. Northbound U-turns are restricted at this intersection. Northbound right-turns and southbound left-turns are restricted except for authorized vehicles.
St Laurent at Hwy 417 EB Off-Ramp	The intersection of St Laurent at Hwy 417 Eastbound Off-Ramp is a signalized T-intersection. The northbound and southbound approaches consist of three through lanes. Approximately 45 metres south of the intersection, a transit-only on-ramp to the eastbound Highway 417 and approximately 80 metres north of the intersection an on-ramp to the westbound Highway 417 are provided. The eastbound approach consists of two left-turn lanes and an auxiliary channelized right-turn lane.
Cyrville Road at Ogilvie Road	The intersection of Cyrville Road at Ogilvie Road is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, a shared through/right-turn lane, and a bike lane, and the southbound consists of an auxiliary left-turn lane and a shared through/channelized right-turn lane. The eastbound approach consists of two through lanes, a bike lane, and a right-turn lane, and the westbound approach consist of an auxiliary left-turn lane, two through lanes, a bike lane, and an auxiliary right-turn lane. Eastbound left-turns are restricted at this intersection.

Cyrville Road at Joseph Cyr Street	The intersection of Cyrville Road at Joseph Cyr Street is a stop-controlled T-intersection on the minor approach of Joseph Cyr. The northbound approach consists of a shared left-turn/right-turn lane. The eastbound approach consists of a shared through/right-turn lane, and the westbound consists of an auxiliary left-turn lane and a through lane. The north leg is a private access. No turn restrictions were noted.
Lemieux Street at Joseph Cyr Street	The intersection of Lemieux Street at Joseph Cyr Street is a stop-controlled intersection on the minor approach of Joseph Cyr Street and the private access to a parking lot. The northbound and southbound approaches consist of shared all movement lanes. The eastbound approach consists of an auxiliary left-turn lane and a shared through/right/turn lane, and the westbound consists of a shared left-turn/through lane and a shared through/right-turn lane. No turn restrictions were noted.
Lemieux Street at Labelle Street	The intersection of Lemieux Street at Labelle Street is a stop-controlled intersection on the minor approach of Labelle Street. The northbound approach consists of a shared left-turn/through and a shared through/channelized right-turn lane, and the southbound approach consists of a channelized right-turn lane. The eastbound approach consists of a left-turn lane, and the westbound approach consists of a channelized right-turn lane. Westbound through movements and eastbound through and right-turn movements are restricted at this intersection.

2.2.3 Existing Driveways

Within 200 metres of the site accesses, one driveway to a retail plaza, one driveway to a car dealership, one driveway to a private residence, and two to hotels and a restaurant are located on Joseph Cyr Street. One driveway to a restaurant, and one to a rear alley for a retail plaza, are located on Lemieux Street. On St. Laurent Boulevard, four driveways to a retail plaza and two to a shopping plaza are present. On Labelle Street, two driveways to a restaurant and one to an office building are present. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 7, 2022

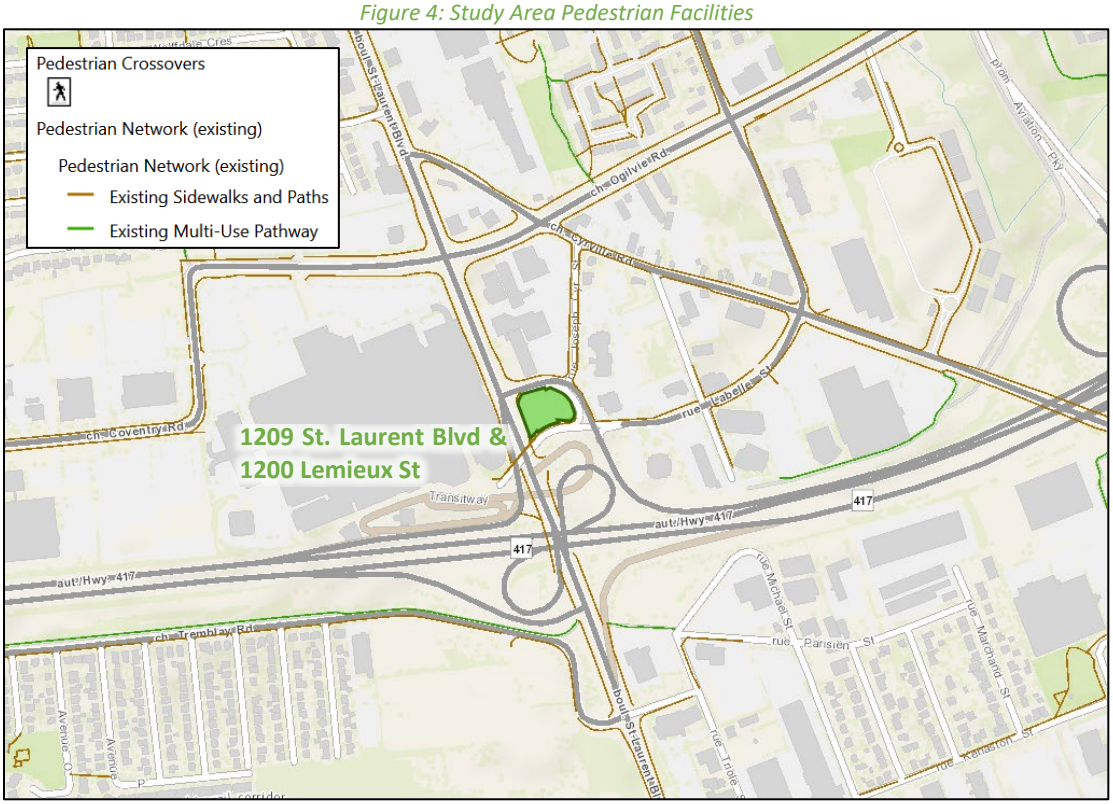
2.2.4 Cycling and Pedestrian Facilities

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

Sidewalks are provided along both sides of St Laurent Boulevard, Ogilvie Road, Coventry Road, Cyrville Road, Labelle Street east of Michael Street N, Joseph Cyr Street, and on the north side of Labelle Street west of Michael Street N and Lemieux Street.

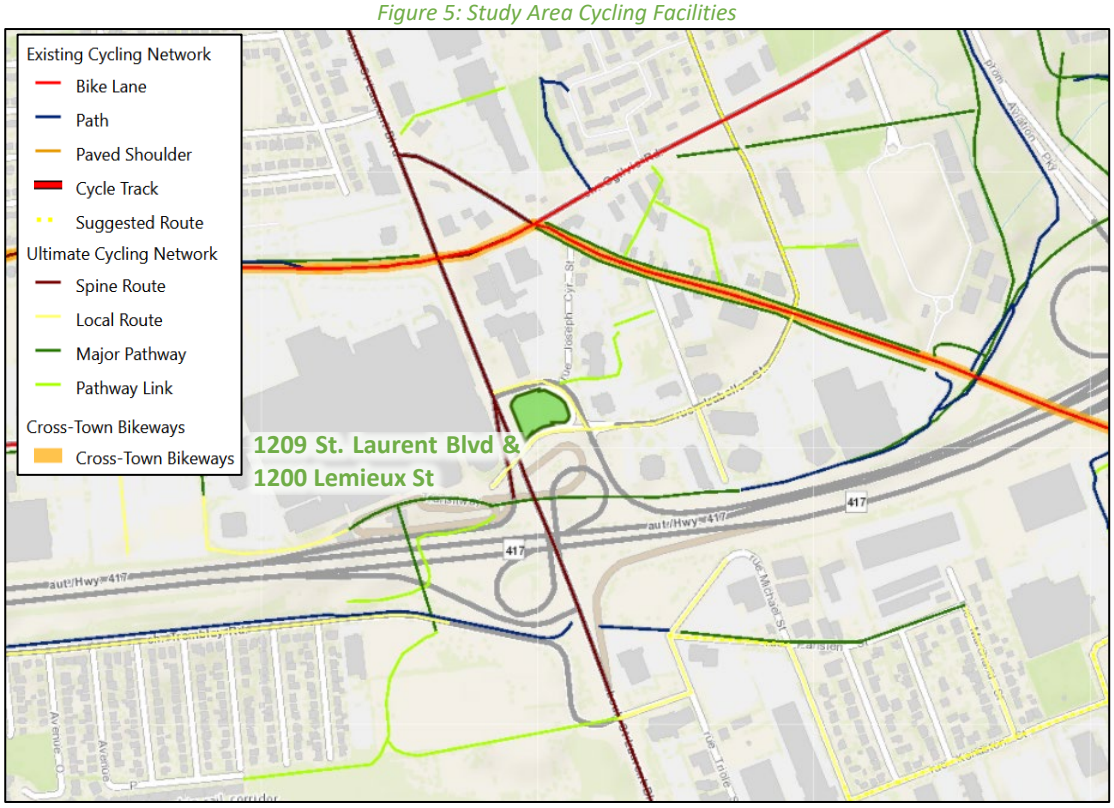
Cycling facilities include bike lanes along Ogilvie Road, Coventry Road, Cyrville Road south of Ogilvie Road, and Joseph Cyr Street. Ogilvie Road west of Cyrville Road and Cyrville Road south of Ogilvie Road are cross-town bikeways. St Laurent Boulevard, Ogilvie Road, Coventry Road, and Cyrville Road are cycling spine routes, and Labelle Street and Lemieux Street are local cycling routes.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 7, 2022

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 7, 2022

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

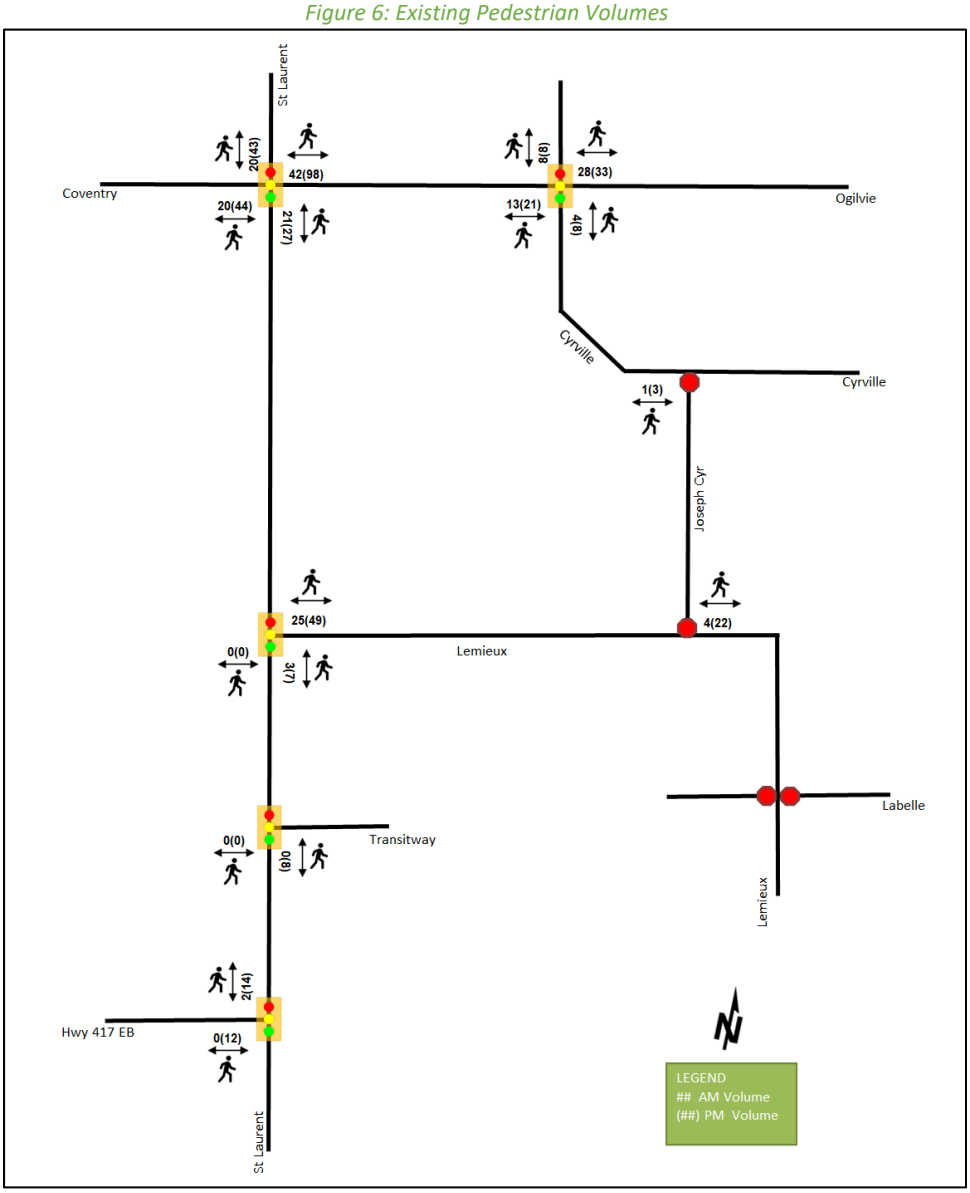
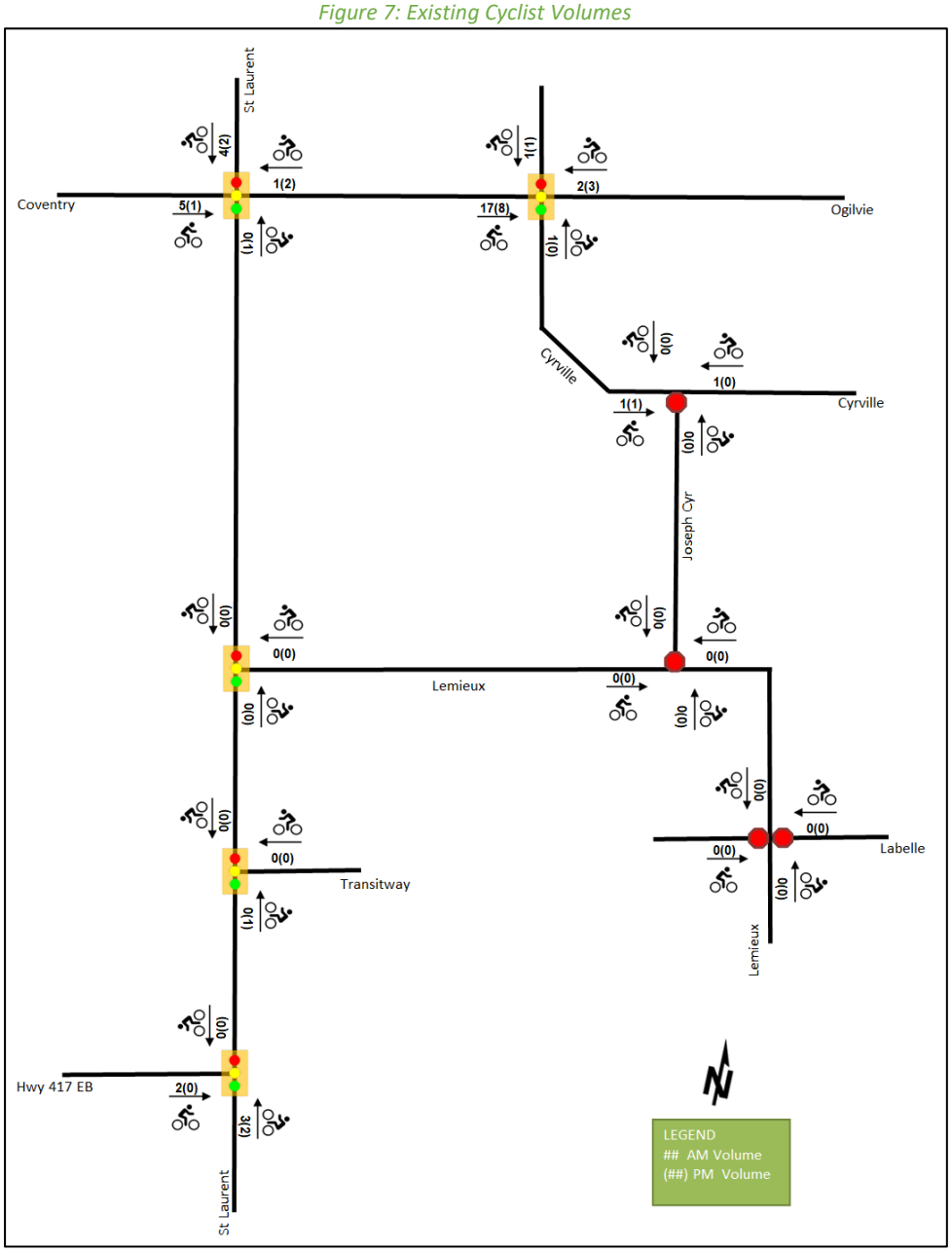


Figure 7: Existing Cyclist Volumes



2.2.5 Existing Transit

Within the study area, routes #7, #12, #14, #19, and #20 travel along St Laurent Boulevard and route #24 travels along Ogilvie Road. The frequency of these routes within proximity of the proposed site currently are:

- Route # 7 – 15-minute service all day, 30-minute service after 7:00 PM
- Route # 12 – 15-minute service all day
- Route # 14 – 15-minute service all day, 30-minute service after 7:00 PM
- Route # 19 – 30-minute service all day
- Route # 20 – 30-minute service all day

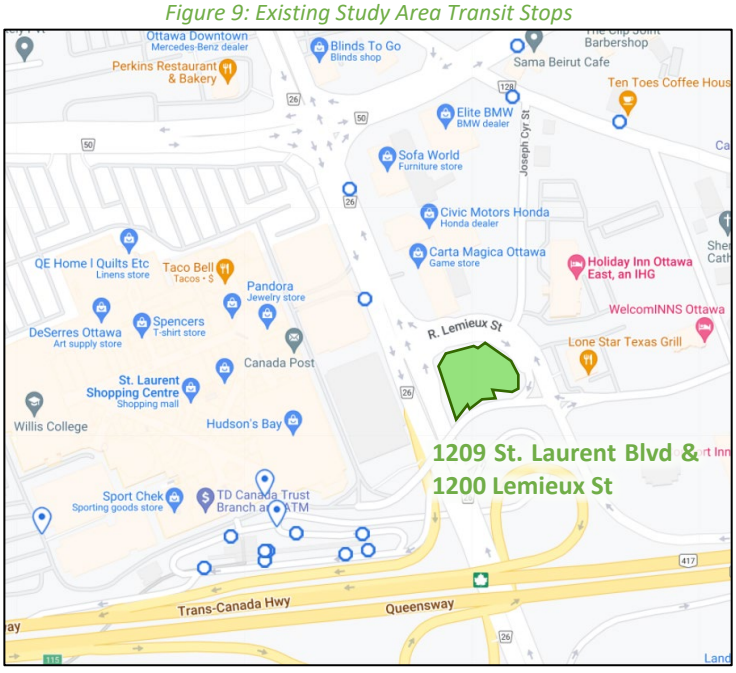
Additionally, the site is approximately a 450-metre walk to St Laurent LRT Station. The following routes stop at St Laurent Station: #7, 12, 14, 18, 19, 20, 24, 27, 40, 47.

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from March 7, 2022, and is included for general information purposes and context to the surrounding area.

Figure 8: Existing Study Area Transit Service

Source: http://www.octranspo.com/ Accessed: March 7, 2022

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: March 7, 2022

2.2.6 Existing Area Traffic Management Measures

On-street parking permitted on Joseph Cyr Street is the only area traffic management measure.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa, The Traffic Specialist, and 1098 Ogilvie Road TIA (Parson, 2020) for the existing study area key intersections, and the volumes were balanced along the roadway corridors. Table 1 summarizes the intersection count dates and sources.

Table 1: Intersection Count Date

Intersection	Count Date	Source
St Laurent Boulevard at Coventry Road/Ogilvie Road	Thursday, June 01, 2017	City of Ottawa
St Laurent Boulevard at Lemieux Street	Wednesday, March 21, 2018	City of Ottawa
St Laurent Boulevard at Transitway Access	Wednesday, January 30, 2019	City of Ottawa
St Laurent Boulevard at Hwy 417 EB Off-Ramp	Wednesday, January 30, 2019	City of Ottawa
Cyrville Road at Ogilvie Road	Wednesday, April 11, 2018	City of Ottawa
Cyrville Road at Joseph Cyr Street	Wednesday, March 23, 2022	The Traffic Specialist
Lemieux Street at Joseph Cyr Street	Wednesday, March 23, 2022	The Traffic Specialist
Lemieux Street at Labelle Street	-	1098 Ogilvie Road TIA (Parsons, 2020)

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 v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. The northbound shared through/right-turn lane at the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a de facto right lane, and it is coded as a right turn lane in Synchro. The intersection counts were balanced along Lemieux Street. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

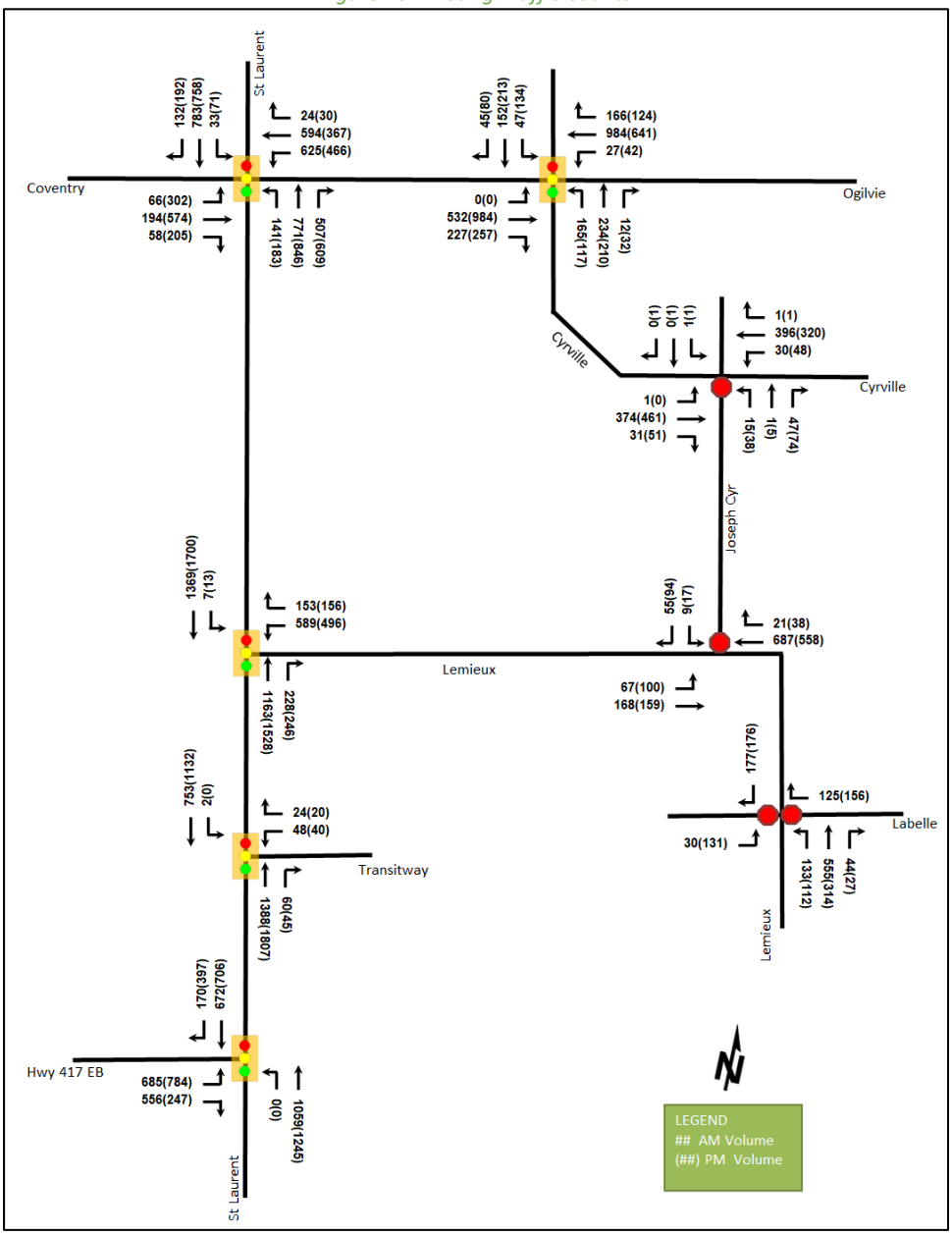


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
St Laurent Boulevard at Coventry Road/Ogilvie Road *Signalized*	EBL	A	0.18	49.2	15.9	C	0.76	61.6	**#56.5**
	EBT	A	0.37	47.1	35.2	C	0.79	50.3	93.9
	EBR	A	0.16	0.9	0.0	A	0.46	9.1	22.9
	WBL	E	0.93	68.6	**#133.4**	**F**	**1.07**	**109.4**	**#110.6**
	WBT	C	0.72	39.9	101.3	A	0.51	35.5	62.3
	WBR	A	0.06	0.2	m0.0	A	0.07	0.3	m0.0
	NBL	D	0.87	**102.9**	**#81.7**	E	0.92	**104.9**	**#92.4**
	NBT	C	0.75	38.3	**#162.7**	E	0.92	49.1	**#155.6**
	NBR	B	0.69	15.7	59.2	E	0.96	41.8	**#96.1**
	SBL	A	0.35	66.5	20.2	B	0.69	**84.5**	**#41.0**
	SBT	B	0.68	46.9	94.5	C	0.73	46.0	82.4
	SBR	A	0.29	3.2	6.4	A	0.43	7.9	19.4
	Overall	**D**	**0.88**	**43.4**	**-**	**E**	**0.96**	**52.6**	**-**
St Laurent Boulevard at Lemieux Street *Signalized*	WBL	D	0.85	54.7	96.5	C	0.77	50.4	79.6
	WBR	A	0.39	27.2	41.1	A	0.51	37.9	50.2
	NBT	A	0.45	8.5	68.4	A	0.54	10.5	86.9
	NBR	A	0.25	1.9	9.5	A	0.26	2.1	7.1
	SBL	A	0.04	11.1	m1.3	A	0.12	6.3	m1.8
	SBT	A	0.52	15.0	m74.5	B	0.61	7.9	m75.0
	Overall	**B**	**0.62**	**19.2**	**-**	**B**	**0.65**	**14.7**	**-**
St Laurent Boulevard at Transitway Access *Signalized*	WBL/R	A	0.48	30.4	17.6	A	0.38	27.2	15.1
	NBT/R	A	0.47	4.3	36.6	A	0.58	10.0	113.0
	SBL	A	0.02	7.5	m0.4	-	-	-	-
	SBT	A	0.26	6.4	51.2	A	0.35	4.3	40.9
	Overall	**A**	**0.54**	**5.5**	**-**	**B**	**0.64**	**8.3**	**-**
St Laurent Boulevard at Hwy 417 EB Off-Ramp *Signalized*	EBL	B	0.67	37.8	104.6	D	0.86	47.1	116.7
	EBR	E	0.98	61.6	**#202.7**	A	0.50	17.2	45.6
	NBT	A	0.50	20.3	80.9	A	0.51	17.0	88.6
	SBT/R	A	0.40	16.2	31.5	A	0.49	10.9	90.5
	Overall	**B**	**0.70**	**30.5**	**-**	**B**	**0.64**	**22.0**	**-**
Cyrville Road at Ogilvie Road *Signalized*	EBT	A	0.28	7.1	33.2	A	0.51	5.7	m55.4
	EBR	A	0.26	1.0	0.0	A	0.29	0.6	m1.2
	WBL	A	0.06	11.2	8.1	A	0.20	13.7	13.3
	WBT	A	0.50	13.9	110.6	A	0.33	11.0	60.7
	WBR	A	0.20	3.2	13.1	A	0.15	2.3	8.7
	NBL	E	0.94	**97.3**	**#73.3**	**F**	**1.05**	**138.2**	**#60.9**
	NBT/R	B	0.65	50.1	81.4	B	0.65	46.0	73.6
	SBL	A	0.32	42.3	20.8	D	0.87	**84.5**	54.2
	SBT/R	A	0.55	44.2	63.6	C	0.80	54.1	89.9
	Overall	**B**	**0.62**	**22.2**	**-**	**B**	**0.66**	**24.1**	**-**

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
Cyrville Road at Joseph Cyr Street *Unsignalized*	EB	A	0.00	8.2	0.0	A	-	0.0	0.0
	WB	A	0.03	8.4	0.8	A	0.05	8.8	1.5
	NB	C	0.16	15.0	4.5	C	0.38	22.1	12.8
	SB	C	0.01	22.8	0.0	C	0.01	22.8	0.0
	Overall	**A**	**-**	**1.4**	**-**	**A**	**-**	**3.1**	**-**
Lemieux Street at Joseph Cyr Street *Unsignalized*	EBL	A	0.09	9.9	2.3	A	0.12	9.4	3.0
	EBT	-	-	-	-	-	-	-	-
	WBL	-	-	-	-	-	-	-	-
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.15	14.2	3.8	B	0.25	14.6	7.5
	Overall	**A**	**-**	**1.6**	**-**	**A**	**-**	**2.6**	**-**
Lemieux Street at Labelle Street *Unsignalized*	EBL	C	0.11	18.2	3.0	C	0.36	18.6	12.0
	WBR	B	0.20	11.6	6.0	B	0.21	10.4	6.0
	NB	-	-	-	-	-	-	-	-
	SBL	-	-	-	-	-	-	-	-
	Overall	**A**	**-**	**2.4**	**-**	**A**	**-**	**5.7**	**-**

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

In the existing conditions, the study area intersections generally operate well with the exception of St Laurent Boulevard at Coventry Road/Ogilvie Road and Cyrville Road at Ogilvie Road.

At the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road, during the AM peak hour, the westbound left-turn, northbound left-turn, and northbound through movements may exhibit extended queues, and northbound left-turn may be subject to high delays and extended queues. During the PM peak hour, the westbound left-turn movement is over theoretical capacity and may be subject to high delays and extended queues. The eastbound left-turn and northbound through and right-turn movements may exhibit extended queues, and the northbound and southbound left-turn movements may be subject to high delays and extended queues.

The intersection of Cyrville Road and Ogilvie Road's northbound left-turn movement may exhibit high delays and extended queues during the AM peak hour and is over theoretical capacity with high delays and extended queues during the PM peak hour. At this intersection residual capacity is available on all conflicting movements, however, and the reallocation of split to the overcapacity movement may reduce the v/c of all movements to 1.00 or below.

In addition, the eastbound right-turn movement at the intersection of St Laurent Boulevard at Highway 417 EB Off-Ramp may exhibit extended queues during the AM 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 are road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 illustrates the intersections and segments analyzed, and Table 4 summarizes the total collisions for each of these locations. Collision data are included in Appendix D.

Table 3: Study Area Collision Summary, 2016-2020

		Number	%
Total Collisions		**135**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	22	16%
	Property Damage Only	113	84%
Initial Impact Type	**Approaching**	2	1%
	Angle	42	31%
	Rear end	48	36%
	Sideswipe	23	17%
	Turning Movement	15	11%
	SMV Unattended	0	0%
	SMV Other	2	1%
	Other	3	2%
Road Surface Condition	**Dry**	96	71%
	Wet	25	19%
	Loose Snow	4	3%
	Slush	3	2%
	Packed Snow	2	1%
	Ice	4	3%
	Unknown	1	1%
Pedestrian Involved		1	1%
Cyclists Involved		0	0%

Figure 11: Representation of Study Area Collisions

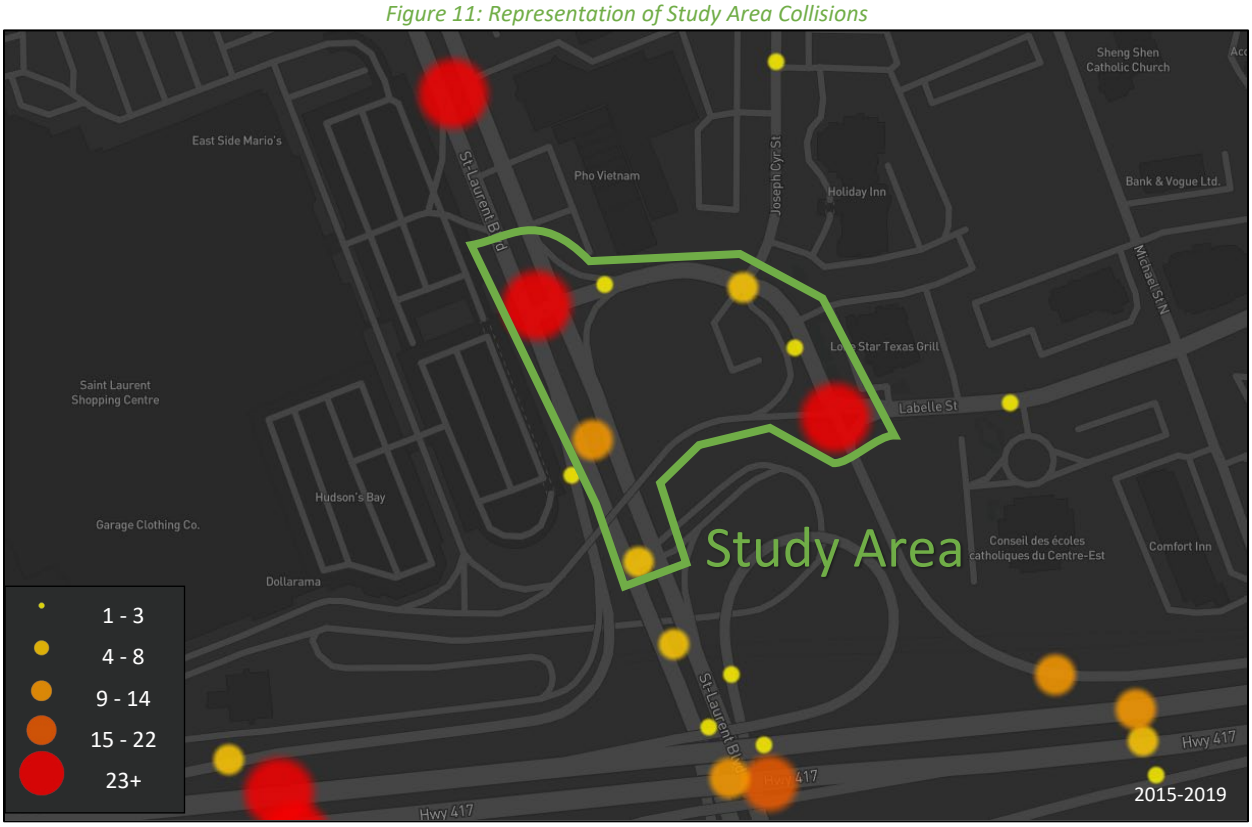


Table 4: Summary of Collision Locations, 2016-2020

	Number	%
Intersections / Segments	**135**	**100%**
Lemieux St @ St. Laurent Blvd	75	56%
Labelle St @ Lemieux St/Hwy417 IC115 Ramp	30	22%
St. Laurent Blvd btwn Hwy417 IC115 Ramp36 & Transit	11	8%
Lemieux St @ Joseph Cyr St	8	6%
St. Laurent Blvd @ Transitway	7	5%
Lemieux St btwn Joseph Cyr St & Ramp	3	2%
Lemieux St btwn St. Laurent Blvd & Lemieux St	1	1%

Within the study area, the intersections of Lemieux Street at St. Laurent Boulevard and Labelle Street at Lemieux Street/the Highway 417 interchange 115 Ramp 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 location, respectively.

Table 5: Lemieux Street at St. Laurent Boulevard Collision Summary

		Number	%
Total Collisions		75	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	13	17%
	Property Damage Only	62	83%
Initial Impact Type	**Approaching**	2	3%
	Angle	14	19%
	Rear end	36	48%
	Sideswipe	12	16%
	Turning Movement	11	15%
Road Surface Condition	**Dry**	54	72%
	Wet	11	15%
	Loose Snow	3	4%
	Slush	3	4%
	Packed Snow	2	3%
	Ice	1	1%
	Unknown	1	1%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The Lemieux Street at St. Laurent Boulevard intersection had a total of 75 collisions during the 2016-2020 time period, with 62 involving property damage only and the remaining 13 having non-fatal injuries. Rear end comprised the majority of collision types at this intersection with 36 collisions, followed by 14 angled, 12 sideswipe, and 11 turning movement collisions with the remaining two collisions represented as approaching. The detailed collision records outline the rear end collisions are predominantly due to the congested conditions along St Laurent Boulevard, with eight on Lemieux Street resulting from improper driver behaviour. The angled, side swiped and turning movement predominantly are the result of northbound and southbound vehicles violating the signal control, failure to yield and improper lane changes. It is noted that collisions involving westbound left-turn movements interacting with southbound vehicles and other westbound vehicles appear to be influenced by the t-intersection configuration and the dual left-turn movement entering three receiving lanes. Weather conditions do not affect collisions at this location.

Overall, the City review the intersection to increase signal compliance to reduce the interaction of north or south bound vehicles with the westbound left-turn movement. As this is likely influenced by the OR-174 on-ramps, close

proximity of signals on the corridor and the overpass to the south of the intersection, it is beyond the purview of the proposed development.

Table 6: Labelle Street at Lemieux Street/Highway 417 IC115 Ramp Collision Summary

		Number	%
Total Collisions		**30**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	2	7%
	Property Damage Only	28	93%
Initial Impact Type	**Angle**	21	70%
	Rear end	1	3%
	Sideswipe	4	13%
	Turning Movement	3	10%
	Other	1	3%
Road Surface Condition	**Dry**	22	73%
	Wet	8	27%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The Labelle Street at Lemieux Street/the Highway 417 interchange 115 Ramp intersection had a total of 30 collisions during the 2016-2020 time period, with 28 involving property damage only and the remaining two having non-fatal injuries. The collision types are most represented by angle with 21 collisions, followed by four sideswipe, three turning movement collisions and with the remaining collisions split between rear end and other. The detailed collision report identifies 23 collisions including improper turns, failure to yield and following too closely, with the remaining seven collisions classified as unknown, lost control or other. Nine of the above collisions are also noted to be a result of drivers violating the turning restrictions and concrete islands. Weather conditions my influence driver speed at this location as the clear and dry conditions could increase driver comfort for travelling at higher speeds. At speeds at or above 70 km/h, the sight lines may begin to be limited for the westbound movements. The MTO and City should review the intersection and speeds to determine if any advanced signage or other improvements, can be included in during the other scheduled 2022 work in this area.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

The subject development is within the Industrial Avenue/Trainyards/Cyrville Mixed Use Centre, Tremblay, St Laurent and Cyrville secondary plan, and St Laurent Transit Oriented Development (TOD) areas.

The St. Laurent TOD plan outlines a new pedestrian overpass over Highway 417 from Tremblay Road to the St Laurent LRT station, along with dedicated cycling facilities along St Laurent Boulevard and shared use lanes on Lemieux Road. Figure 12 and Figure 13 illustrate the St Laurent pedestrian and cycling TOD plans.

Figure 12: St. Laurent TOD Pedestrian Network

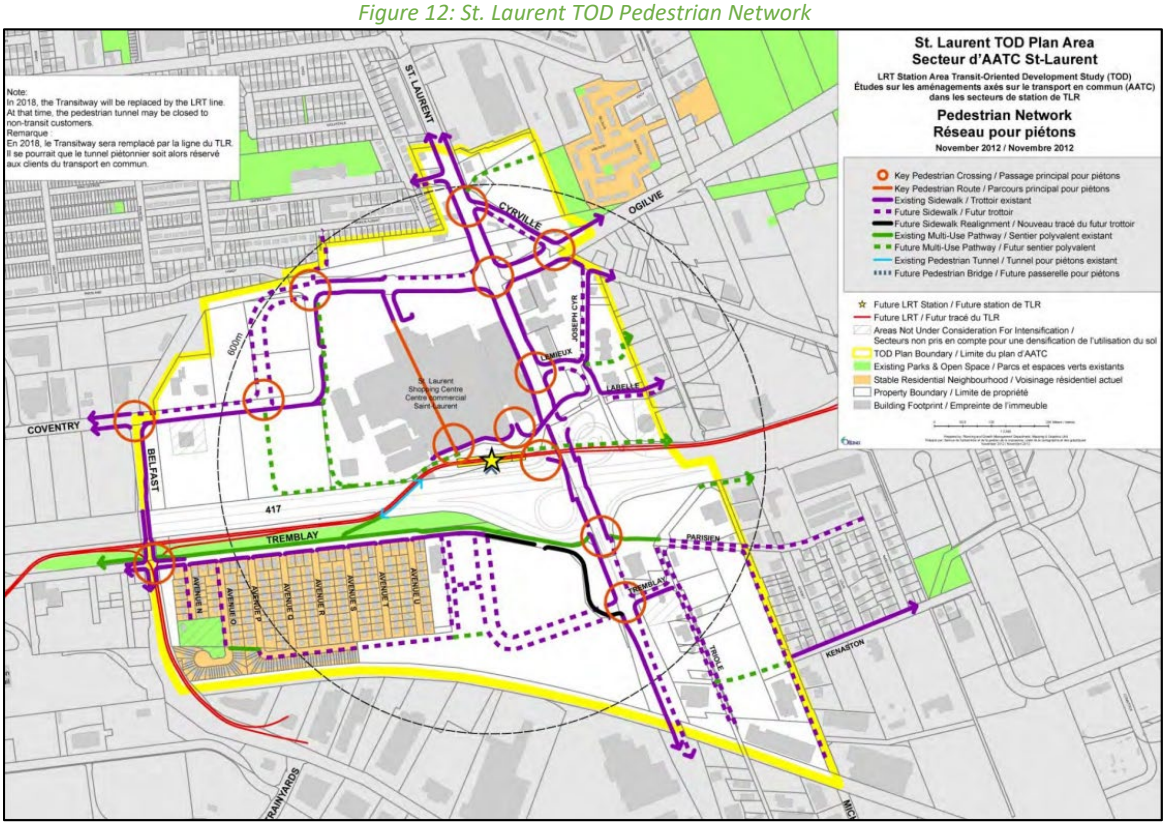
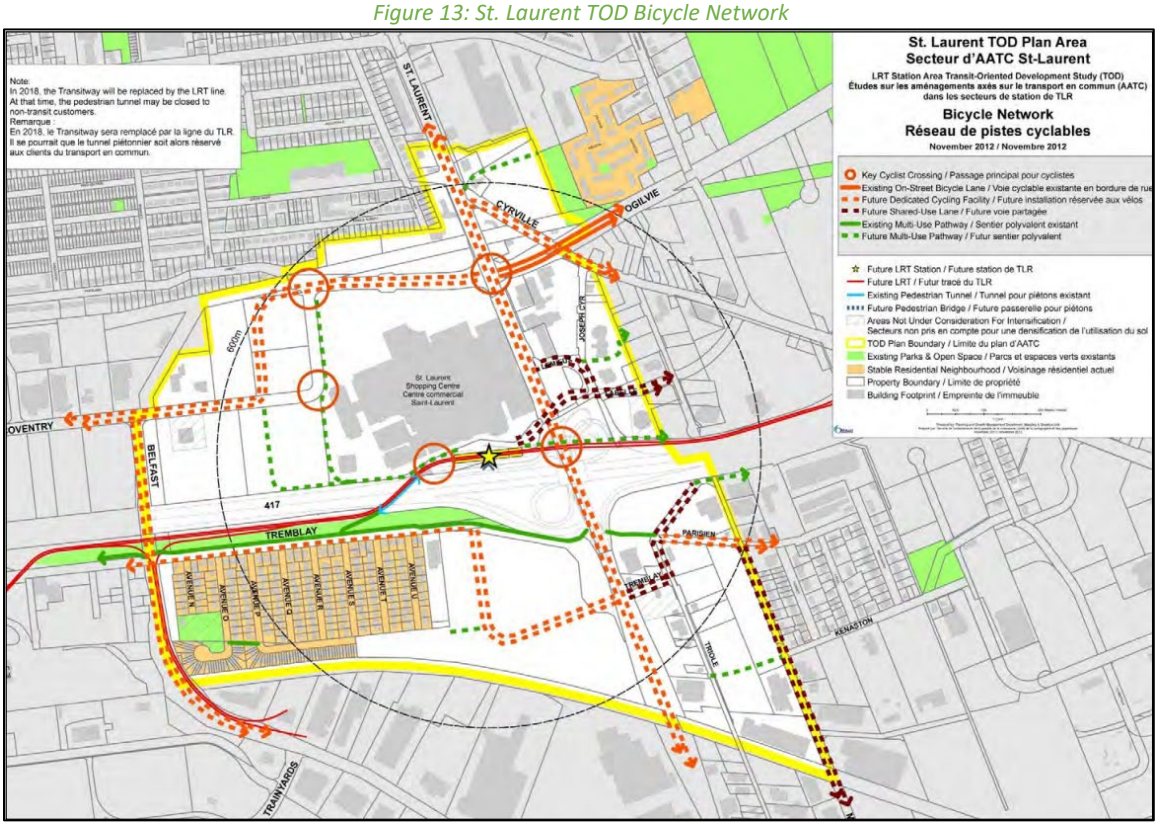


Figure 13: St. Laurent TOD Bicycle Network



Within the Transportation Master Plan, the Road Network's Network Concept diagram shows Cyrville Road between St Laurent Boulevard and Labelle Street as a widened collector, and Coventry Road and Cyrville Road south of Labelle Street as widened arterials. Within the Affordable Network diagram, these sections are shown as segments for phase 3 (2026-2031) widening. The scope of the work per the Affordable Network is the urbanization of the existing two-lane rural cross-section of Cyrville Road between Star Top Road and St Laurent Boulevard, and the widening of Coventry Road from two lanes to four between Belfast Road and the St Laurent Shopping Centre.

Within the Rapid Transit and Transit Priority Network's Network Concept diagram, isolated transit priority measures are shown along Ogilvie Road, however these are not included in the Affordable Network. Both Networks include an isolated measures transit priority corridor along St Laurent Boulevard.

Ottawa construction and infrastructure projects identify bridge renewal along St Laurent LRT station is in progress, the bridge renewal between Lemieux Street and St Laurent LRT station is planned for 2022, and resurfacing Lemieux Street east of St Laurent Boulevard is planned for 2022.

2.3.2 Other Study Area Developments

1098 Ogilvie Road, 1178 Cummings Avenue

The proposed development application includes a site plan for a two-phase development with occupancy horizons of 2022 and 2024, comprising three residential towers and one hotel for 850 residential dwelling units and 175 hotel rooms. The development is expected to generate 148 new AM and 130 new PM peak hour two-way auto trips. (Parsons, 2020)

1298 Ogilvie Road

The proposed development application includes a site plan for seven townhome buildings comprising 78 residential units. The development is expected to generate 39 new AM and 40 new PM peak hour two-way auto trips based upon a 50% auto mode share. The build-out horizon is assumed to be 2023. (Parsons, 2018)

1125 - 1149 Cyrville Road

The proposed development application includes a site plan to construct two residential buildings with a total of 354 units. The development is predicted to generate 22 new AM and 21 new PM two-way peak-hour auto trips. The anticipated build-out horizon is 2023. (Stantec, 2021)

453 and 455 Coventry Road

The proposed development application includes a zoning by-law amendment to permit the construction of a mixed-use mid-rise and three mixed-use high-rise buildings with a combined total of 574 parking spaces. No TIA is included as part of this application, and the file was last updated in 2021.

500, 525, 535 Coventry Road, 1200 St Laurent Boulevard

The proposed development application includes a zoning by-law amendment to permit the construction of freestanding retail buildings with associated surface parking areas. No TIA is included as part of this application, and the file was last updated in 2014.

599 Tremblay Road

The proposed development application includes a draft plan of subdivision application for the construction of 500 apartment units and 150,000 m^2 of federal Office in three phases. Phase one is to construct 200 units and 150,000 m^2 of office space by 2025, phase two is 200 units by 2029, and the remaining 100 units by 2033.

Phase one is predicted to generate 321 new AM and 330 new PM two-way peak-hour auto trips, phase two is predicted to generate 19 new AM and 20 new PM two-way peak-hour auto trips, and phase three is predicted to generate 10 new AM and PM two-way peak-hour auto trips. (WSP, 2021)

530 Tremblay Road & 2098 Avenue P & 1399 Avenue U
The proposed development application includes a site plan to construct two apartment buildings with a total of 124 units. The development is predicted to generate 16 new AM and 17 new PM two-way peak-hour auto trips, and the anticipated build-out horizon is assumed to be 2023. (CGH Transportation, 2019)

1155 Joseph Cyr Road & 1082 Cyrville Road
The proposed development includes a Zoning by-law amendment and site plan application to construct a six-storey mixed-use building with 116 residential dwelling units and a 1425 sq. ft. ground floor commercial component to be built in a single phase by 2023. The development is predicted to generate eight new AM and nine new PM two-way peak-hour auto trips. (CGH Transportation, 2020)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- St Laurent Boulevard at:
  - Coventry Road/Ogilvie Road
  - Lemieux Street
  - Transitway access
  - Hwy 417 EB Off-Ramp
- Lemieux Street at:
  - Joseph Cyr Street
  - Labelle Street
- Cyrville Road at:
  - Ogilvie Road
  - Joseph Cyr Street

The boundary road will be Lemieux Street, St Laurent Boulevard, and Labelle Street, and no screenlines are present within proximity to 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 2026. As a result, the full build-out plus five years horizon year is 2031.

4 Exemption Review

Table 7 summarizes the exemptions for this TIA.

Table 7: Exemption Review

Module	Element	Explanation	Exempt/Required
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	Required
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
Network Impact Component			
4.5 Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Required
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Required
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt

5 Development-Generated Travel Demand

5.1 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 Ottawa East have been summarized in Table 8.

Table 8: TRANS Trip Generation Manual Recommended Mode Shares – Ottawa East

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	39%	40%
Auto Passenger	7%	14%
Transit	38%	28%
Cycling	2%	3%
Walking	13%	15%
Total	**100%**	**100%**

Being within 600 metres-walk of the St. Laurent LRT station, a higher transit mode is considered achievable at this location. A 25% shift to transit mode taken from the auto mode is proposed. The proposed modified mode share targets are summarized in Table 9.

Table 9: Proposed Development Mode Shares – Within 600m of St Laurent LRT station

Travel Mode	Multi-Unit (High-Rise)	
	AM	PM
Auto Driver	14%	15%
Auto Passenger	6%	12%
Transit	65%	55%
Cycling	2%	3%
Walking	13%	15%
Total	**100%**	**100%**

5.2 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 10 summarizes the person trip rates for the proposed residential land uses for each peak period.

Table 10: Trip Generation Person Trip Rates by Peak Period

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

Using the above person trip rates, the total person trip generation has been estimated. Table 11 summarizes the total person trip generation for the residential land uses.

Table 11: Total Residential Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (High-Rise)	640	159	353	512	334	242	576

Using the above mode share targets for an LRT area, 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 12 summarizes the residential trip generation by mode and peak hour.

Table 12: 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	**14%**	11	24	35	**15%**	22	16	38
	Auto Passenger	**5%**	5	10	15	**12%**	17	13	30
	Transit	**65%**	57	126	183	**55%**	86	63	149
	Cycling	**2%**	2	4	6	**3%**	5	3	8
	Walking	**13%**	12	27	39	**15%**	26	19	45
	Total	**100%**	**80**	**177**	**256**	**100%**	**147**	**106**	**253**

As shown above, a total of 35 AM and 38 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

5.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Ottawa East. Table 13 below summarizes the distributions.

Table 13: OD Survey Distribution – Ottawa East

To/From	Residential % of Trips
North	10%
South	30%
East	20%
West	40%
Total	**100%**

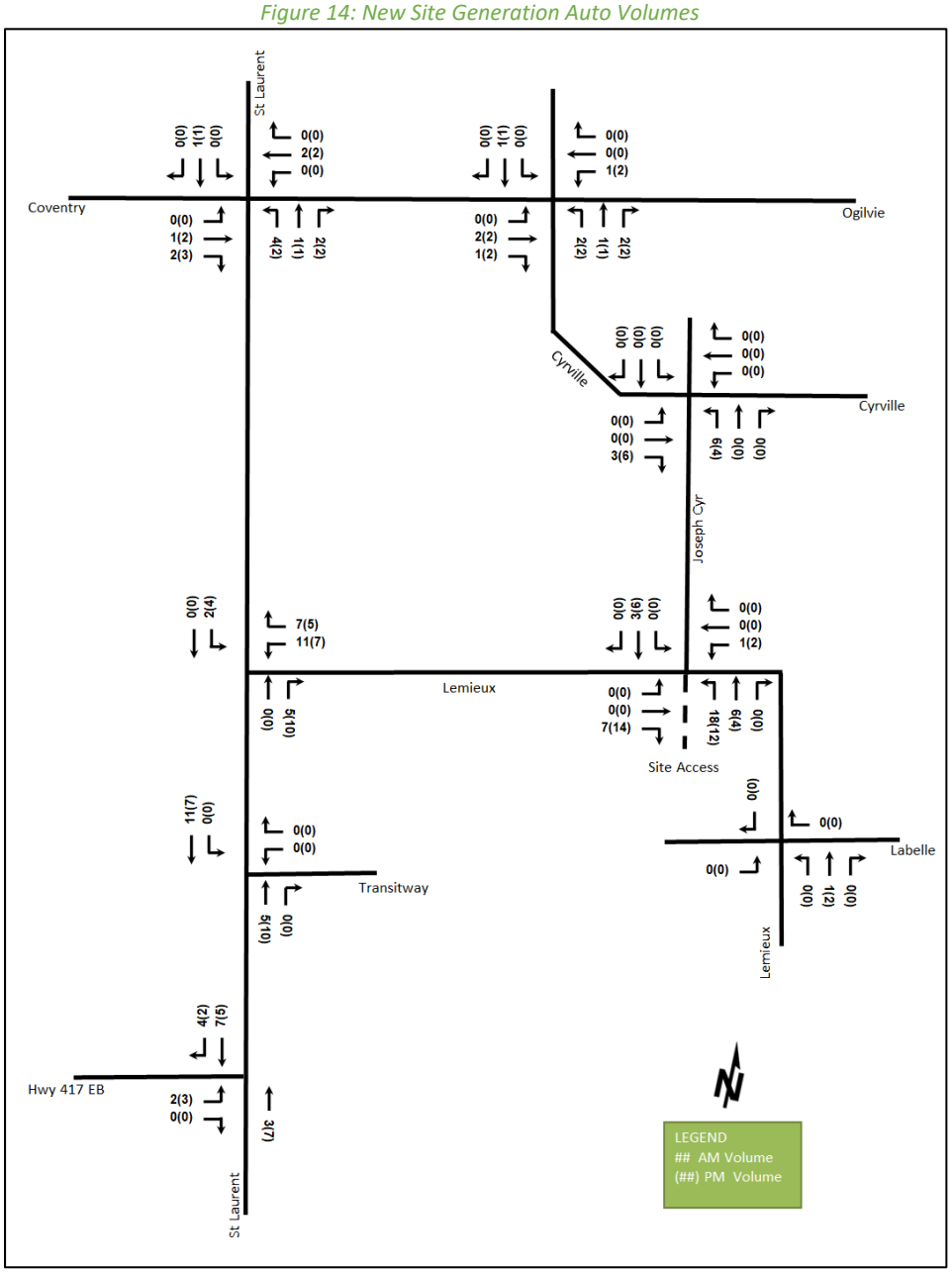
5.4 Trip Assignment

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 14 summarizes the proportional assignment to the study area roadways, and Figure 14 illustrates the new site-generated volumes.

Table 14: Trip Assignment

To/From	Inbound Via	Outbound Via
North	5% Cyrville (N) (via Joseph Cyr) 5% St Laurent (N) (via Lemieux)	5% Cyrville (N) (via Joseph Cyr) 5% St Laurent (N) (via Lemieux)
South	30% St Laurent (S) (via Lemieux)	30% St Laurent (S) (via Lemieux)
East	10% OR 174/Lemieux 10% Ogilvie (E) (via Cyrville)	10% Ogilvie (E) (via St Laurent) 10% Ogilvie (E) (via Cyrville)
West	10% Ogilvie (W) (via Cyrville) 15% Ogilvie (W) (via St Laurent) 15% St Laurent (S) (via Lemieux)	10% Ogilvie (W) (via Cyrville) 15% Ogilvie (W) (via St Laurent) 15% St Laurent (S) (via Lemieux)
Total	**100%**	**100%**

Figure 14: New Site Generation Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. The widening of Cyrville Road is assumed to be beyond 2031, and none of the proposed changes are considered to have any notable impact on the study area traffic volumes and travel patterns.

6.2 Background Growth

A review of the background projections from the City's TRANS Regional Model for the 2011 and 2031 horizons was completed to determine the background growth for each of the study area roadways. The background TRANS model growth rates are summarized in Table 15 and the TRANS model plots are provided in Appendix E.

Table 15: TRANS Regional Model Projections – Study Area Growth Rates

Street	TRANS Rate		2011 to Existing		Existing to 2031	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Ogilvie Rd	0.11%	0.36%	0.98%	-0.55%	-1.19%	1.74%
Lemieux St	3.11%	1.44%	11.99%	1.44%	-8.90%	0.02%
	Northbound	**Southbound**	**Northbound**	**Southbound**	**Northbound**	**Southbound**
St Laurent Blvd	1.21%	0.49%	1.40%	0.61%	0.92%	0.30%
Cyrville Rd	0.40%	1.93%	0.26%	1.04%	0.61%	3.30%

In general, the growth rates in the study area derived from the two TRANS model horizons are projected to be positive along all roadways. A comparison of the 2011 to Existing volumes and the Existing to 2031 volumes illustrates a situation that development has not progressed linearly. It is unlikely that the growth rates will decrease or become negative as the Existing to 2031 summary outlines, therefore it is expected that they will be lower than the 2011 to Existing rates that have been experienced. Table 16 summarizes the recommended growth rates to be considered within the study area.

Table 16: Recommended Area Growth Rates

Street	AM Peak Hour		PM Peak Hour	
	Eastbound	Westbound	Eastbound	Westbound
Ogilvie Rd	0.50%	1.00%	1.00%	0.50%
Lemieux St	0%	0%	0%	0%
	Northbound	**Southbound**	**Northbound**	**Southbound**
St Laurent Blvd	1.00%	0.50%	0.50%	1.00%
Cyrville Rd	0.50%	2.00%	2.00%	0.50%

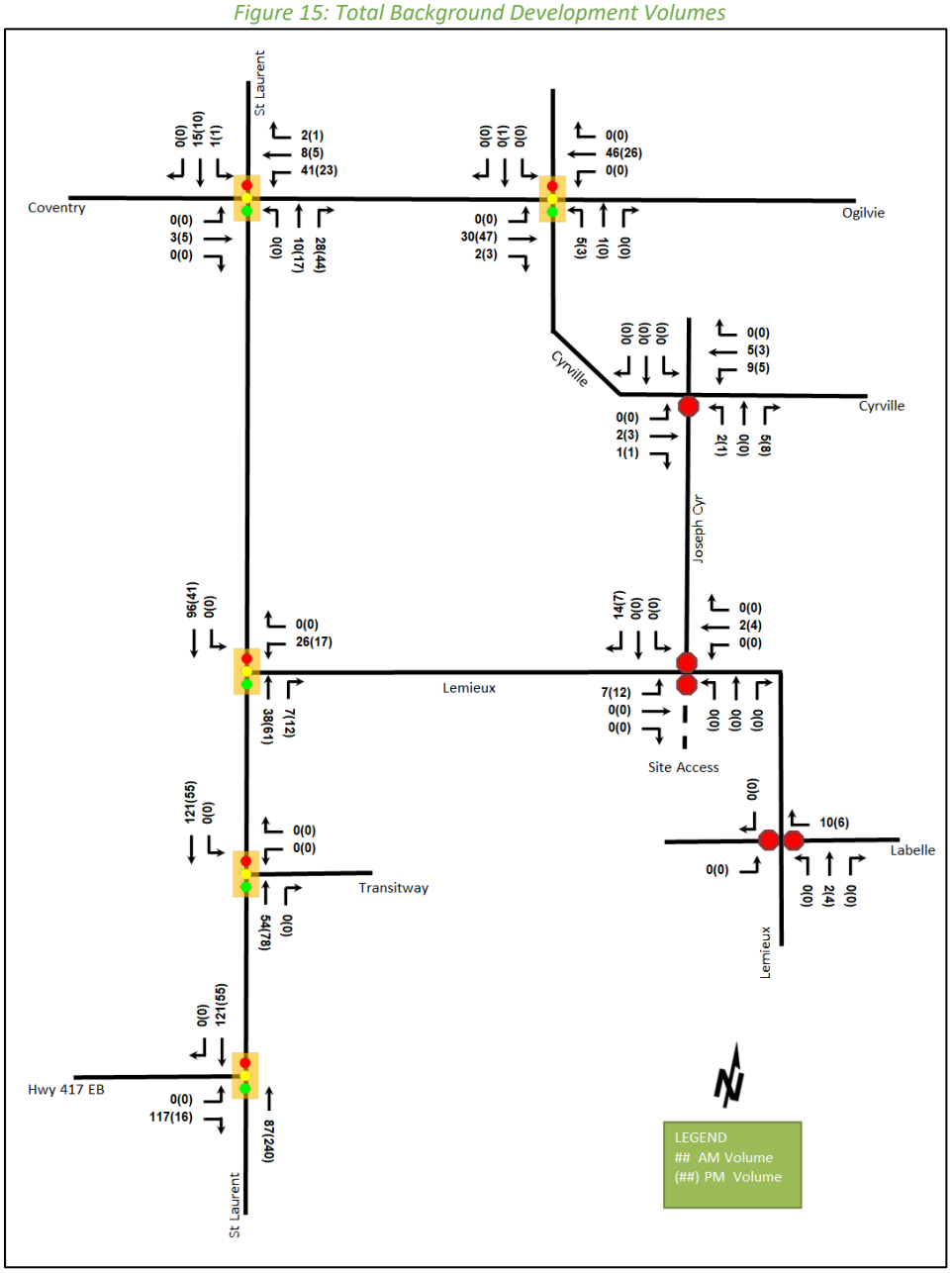
6.3 Other Developments

The background developments explicitly considered beyond the above noted background growth rates (Section 6.2) include:

- 1098 Ogilvie Road, 1178 Cummings Avenue
- 599 Tremblay Road
- 1125 - 1149 Cyrville Road
- 530 Tremblay Road & 2098 Avenue P & 1399 Avenue U
- 1155 Joseph Cyr Road & 1082 Cyrville Road

The total background development volumes have been illustrated in Figure 15, and each background development volumes are provided in Appendix F.

Figure 15: Total Background Development Volumes



7 Demand Rationalization

7.1 2026 Future Background Operations

Figure 16 illustrates the 2026 background volumes and Table 17 summarizes the 2026 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. The northbound shared through/right-turn lane at the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a de facto right lane, and it is coded as a right turn lane in Synchro. The synchro worksheets for the 2026 future background horizon are provided in Appendix G.

Figure 16: 2026 Future Background Volumes

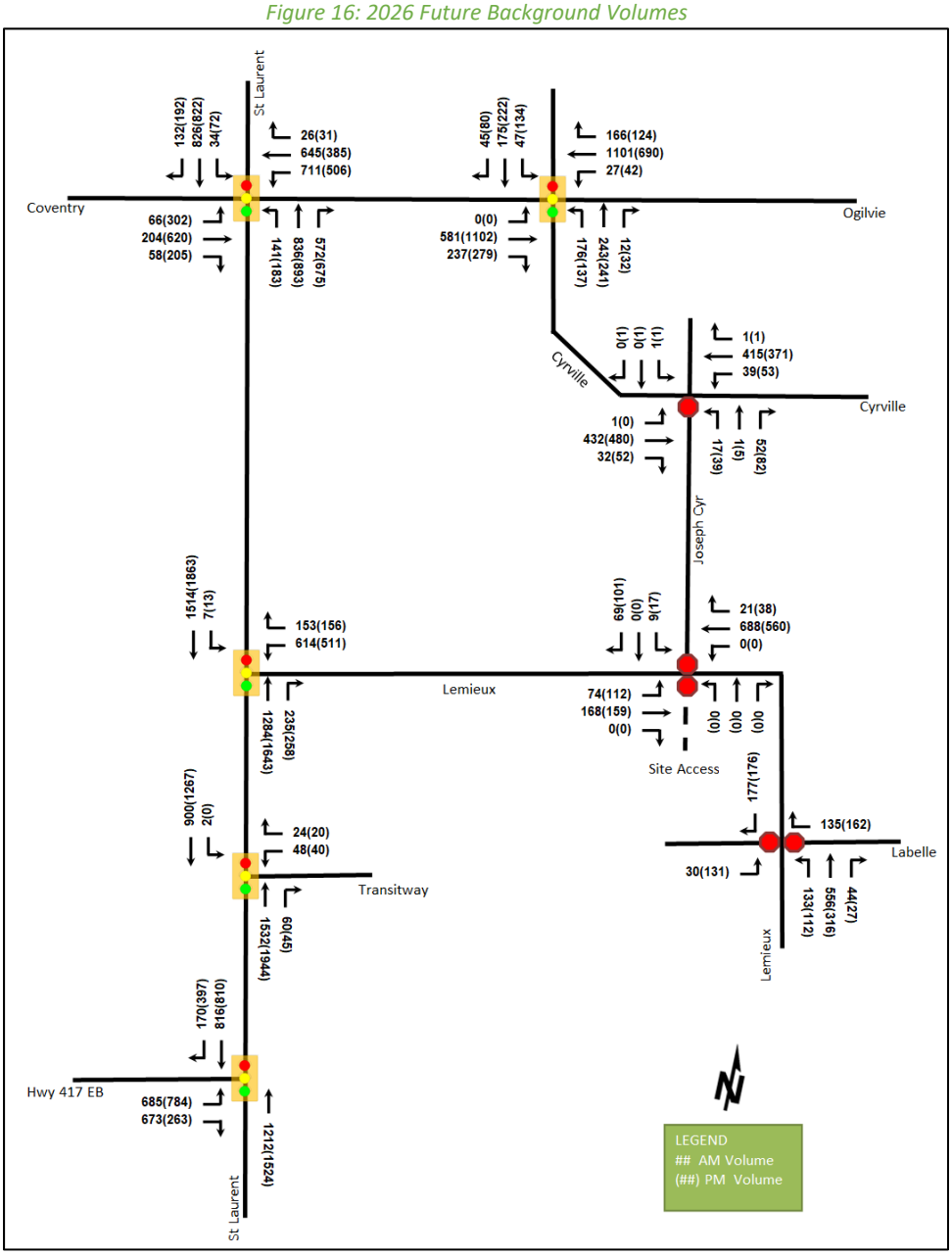


Table 17: 2026 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
St Laurent Boulevard at Coventry Road/Ogilvie Road *Signalized*	EBL	A	0.16	48.1	14.5	B	0.68	57.7	50.2
	EBT	A	0.35	46.8	33.4	C	0.77	49.3	90.8
	EBR	A	0.15	0.8	0.0	A	0.41	7.1	17.1
	WBL	E	0.93	66.8	**#138.9**	**F**	**1.04**	**101.3**	**#107.3**
	WBT	B	0.70	39.3	99.3	A	0.48	35.3	58.9
	WBR	A	0.06	0.2	m0.0	A	0.06	0.2	m0.0
	NBL	D	0.82	**100.6**	**#71.7**	D	0.86	**97.4**	**#80.8**
	NBT	C	0.74	37.8	**#159.2**	D	0.81	39.6	**#142.7**
	NBR	B	0.70	15.3	61.0	E	0.92	34.1	**#97.4**
	SBL	A	0.33	66.1	19.0	B	0.64	79.5	**#36.1**
	SBT	B	0.64	46.0	89.2	B	0.70	44.9	80.3
	SBR	A	0.26	2.1	2.4	A	0.38	6.0	14.0
	Overall	**D**	**0.87**	**42.5**	**-**	**E**	**0.92**	**48.0**	**-**
St Laurent Boulevard at Lemieux Street *Signalized*	WBL	D	0.84	55.3	90.8	C	0.73	48.5	73.4
	WBR	A	0.37	26.0	36.4	A	0.47	34.8	43.9
	NBT	A	0.44	8.3	63.6	A	0.52	10.4	63.2
	NBR	A	0.23	1.9	9.4	A	0.25	2.1	8.1
	SBL	A	0.04	10.6	m1.2	A	0.10	5.6	m1.5
	SBT	A	0.50	14.8	m77.3	A	0.60	7.8	m73.7
	Overall	**A**	**0.60**	**18.8**	**-**	**B**	**0.63**	**14.0**	**-**
St Laurent Boulevard at Transitway Access *Signalized*	WBL/R	A	0.50	32.8	16.2	A	0.41	29.9	14.1
	NBT/R	A	0.46	3.6	30.4	A	0.56	9.4	118.9
	SBL	A	0.02	7.0	m0.3	-	-	-	-
	SBT	A	0.25	5.3	57.9	A	0.35	4.2	40.0
	Overall	**A**	**0.53**	**5.0**	**-**	**B**	**0.61**	**7.8**	**-**
St Laurent Boulevard at Hwy 417 EB Off-Ramp *Signalized*	EBL	A	0.60	35.6	92.1	D	0.83	46.8	101.9
	EBR	**F**	**1.10**	**96.3**	**#243.6**	A	0.51	18.7	44.6
	NBT	A	0.52	20.8	83.9	A	0.54	16.3	101.2
	SBT/R	A	0.42	18.2	33.6	A	0.47	9.7	89.4
	Overall	**C**	**0.76**	**37.2**	**-**	**B**	**0.64**	**20.7**	**-**
Cyrville Road at Ogilvie Road *Signalized*	EBT	A	0.27	7.0	33.0	A	0.51	5.8	m58.5
	EBR	A	0.25	0.9	0.0	A	0.28	0.7	m1.5
	WBL	A	0.06	10.9	7.6	A	0.17	13.0	11.9
	WBT	A	0.50	13.6	111.7	A	0.32	10.6	58.6
	WBR	A	0.18	3.2	12.5	A	0.14	2.4	8.3
	NBL	E	0.94	**98.8**	**#67.8**	**F**	**1.05**	**135.0**	**#60.8**
	NBT/R	B	0.62	49.4	76.0	B	0.68	48.3	75.0
	SBL	A	0.27	41.0	18.7	D	0.85	**83.0**	48.9
	SBT/R	A	0.56	45.4	64.1	C	0.76	52.3	82.4
	Overall	**A**	**0.62**	**22.1**	**-**	**B**	**0.65**	**23.8**	**-**

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
Cyrville Road at Joseph Cyr Street *Unsignalized*	EB	A	0.00	8.2	0.0	A	-	0.0	0.0
	WB	A	0.04	8.4	0.8	A	0.05	8.7	1.5
	NB	C	0.17	15.2	4.5	C	0.35	20.4	11.3
	SB	C	0.01	23.0	0.0	C	0.01	19.9	0.0
	Overall	**A**	**-**	**1.4**	**-**	**A**	**-**	**2.9**	**-**
Lemieux Street at Joseph Cyr Street *Unsignalized*	EBL	A	0.09	9.6	2.3	A	0.12	9.2	3.0
	EBT	-	-	-	-	-	-	-	-
	WBL	-	-	-	-	-	-	-	-
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.15	13.1	3.8	B	0.22	13.4	6.0
	Overall	**A**	**-**	**1.7**	**-**	**A**	**-**	**2.6**	**-**
Lemieux Street at Labelle Street *Unsignalized*	EBL	C	0.09	16.5	2.3	C	0.29	16.4	9.0
	WBR	B	0.19	11.2	5.3	B	0.19	10.2	5.3
	NB	-	-	-	-	-	-	-	-
	SBL	-	-	-	-	-	-	-	-
	Overall	**A**	**-**	**2.4**	**-**	**A**	**-**	**5.3**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

Intersections within the study area will operate similar to existing condition with the incremental improvement to the intersection operations. It is predominantly a result of the peak hour factor adjustment to 1.00 for forecasted conditions.

The eastbound right-turn movement at St Laurent Boulevard and Hwy 417 EB Off-Ramp intersection is expected to be over theoretical capacity and may be subject to high delays and extended queues due to the background developments in the area.

7.2 2031 Future Background Operations

Figure 17 illustrates the 2031 background volumes and Table 18 summarizes the 2031 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. The northbound shared through/right-turn lane at the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a de facto right lane, and it is coded as a right turn lane in Synchro. The synchro worksheets for the 2031 future background horizon are provided in Appendix H.

Figure 17: 2031 Future Background Volumes

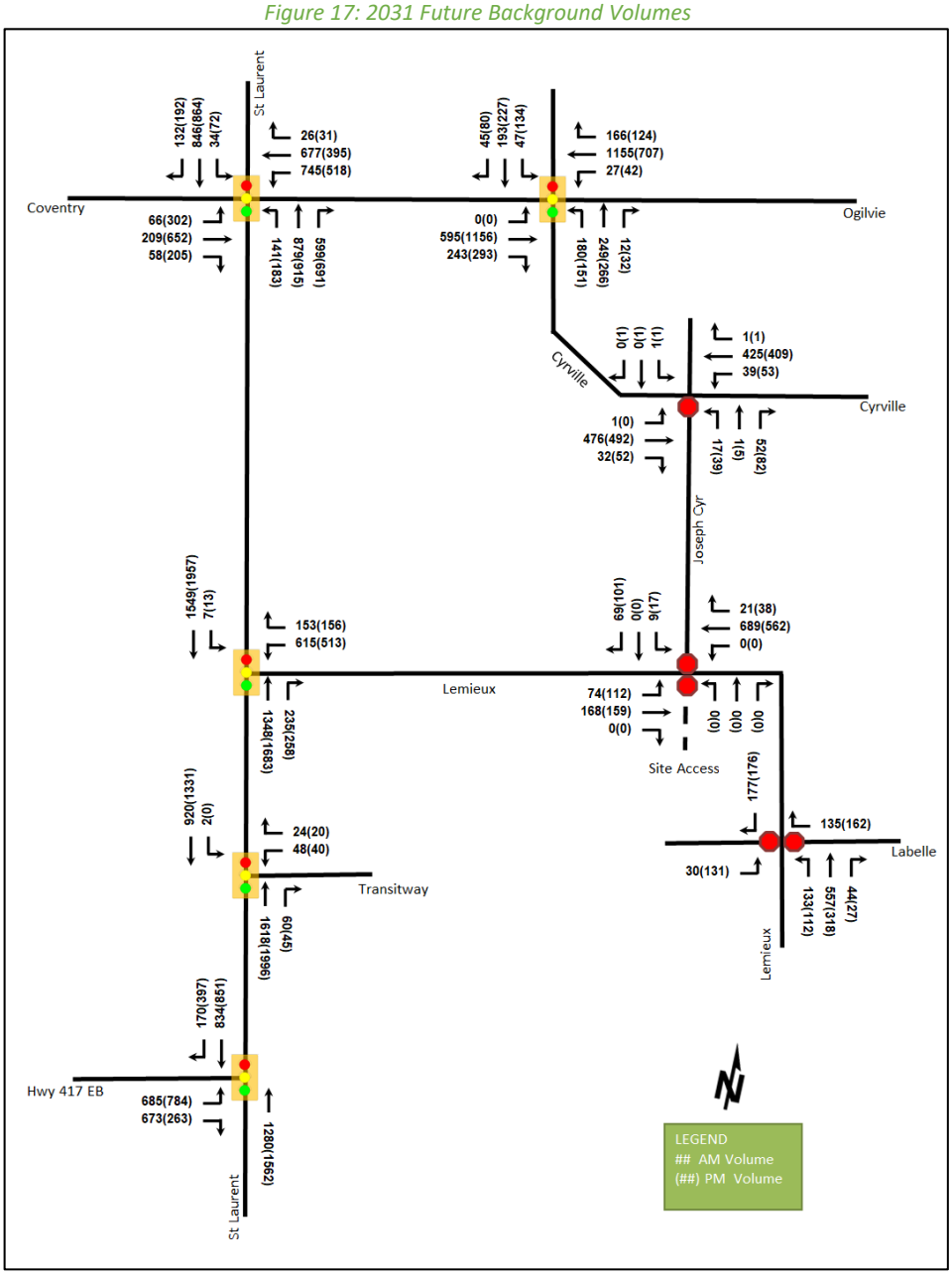


Table 18: 2031 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
St Laurent Boulevard at Coventry Road/Ogilvie Road *Signalized*	EBL	A	0.16	49.2	14.7	B	0.68	57.7	50.2
	EBT	A	0.36	46.9	34.2	D	0.81	51.1	96.3
	EBR	A	0.15	0.8	0.0	A	0.41	7.1	17.1
	WBL	E	0.91	62.5	**#148.6**	**F**	**1.08**	**110.7**	**#111.0**
	WBT	B	0.69	36.8	103.0	A	0.50	34.6	57.1
	WBR	A	0.05	0.2	m0.0	A	0.06	0.2	m0.0
	NBL	D	0.82	**101.5**	**#71.6**	D	0.86	**97.4**	**#80.8**
	NBT	D	0.81	40.5	**#168.3**	D	0.83	40.3	**#149.1**
	NBR	C	0.74	17.6	**#66.0**	E	0.95	38.0	**#103.7**
	SBL	A	0.33	66.1	19.0	B	0.64	79.5	**#36.1**
	SBT	B	0.70	48.3	91.5	C	0.73	45.9	84.9
	SBR	A	0.27	2.2	2.4	A	0.38	6.0	14.0
	Overall	**D**	**0.89**	**42.7**	-	**D**	**0.95**	**49.9**	-
St Laurent Boulevard at Lemieux Street *Signalized*	WBL	D	0.84	55.3	91.0	C	0.73	48.6	73.6
	WBR	A	0.37	27.9	37.9	A	0.47	35.7	44.6
	NBT	A	0.46	9.2	72.8	A	0.53	10.8	75.5
	NBR	A	0.23	2.0	11.6	A	0.25	2.0	7.8
	SBL	A	0.04	10.9	m1.1	A	0.10	5.8	m1.5
	SBT	A	0.52	15.1	m80.5	B	0.63	8.2	m76.3
	Overall	**B**	**0.61**	**19.1**	-	**B**	**0.65**	**14.3**	-
St Laurent Boulevard at Transitway Access *Signalized*	WBL/R	A	0.50	33.6	16.5	A	0.41	29.9	14.1
	NBT/R	A	0.49	3.9	35.4	A	0.57	9.8	124.6
	SBL	A	0.02	7.0	m0.4	-	-	-	-
	SBT	A	0.26	5.5	58.8	A	0.37	4.3	44.8
	Overall	**A**	**0.55**	**5.2**	-	**B**	**0.62**	**8.0**	-
St Laurent Boulevard at Hwy 417 EB Off-Ramp *Signalized*	EBL	A	0.60	35.6	92.1	D	0.83	46.8	101.9
	EBR	**F**	**1.10**	**99.2**	**#245.7**	A	0.52	20.8	47.6
	NBT	A	0.55	21.3	90.2	A	0.55	16.5	104.8
	SBT/R	A	0.43	17.7	33.7	A	0.48	9.8	92.6
	Overall	**C**	**0.78**	**37.4**	-	**B**	**0.65**	**20.8**	-
Cyrville Road at Ogilvie Road *Signalized*	EBT	A	0.28	7.2	33.7	A	0.54	6.6	m66.1
	EBR	A	0.26	0.9	m0.0	A	0.30	0.7	m1.5
	WBL	A	0.06	11.4	7.6	A	0.19	15.0	12.8
	WBT	A	0.54	14.7	119.8	A	0.33	11.7	63.2
	WBR	A	0.18	3.6	13.4	A	0.14	2.6	8.7
	NBL	E	0.97	**105.2**	**#75.5**	**F**	**1.04**	**128.9**	**#65.1**
	NBT/R	B	0.61	48.0	77.8	B	0.69	47.4	80.0
	SBL	A	0.26	39.7	18.7	D	0.85	**82.3**	48.9
	SBT/R	A	0.59	45.7	70.1	C	0.73	48.5	81.7
	Overall	**B**	**0.65**	**22.9**	-	**B**	**0.68**	**23.8**	-
Cyrville Road at Joseph Cyr Street *Unsignalized*	EB	A	0.00	8.2	0.0	A	-	0.0	0.0
	WB	A	0.04	8.6	0.8	A	0.05	8.8	1.5
	NB	C	0.18	16.2	4.5	C	0.37	21.8	12.8
	SB	C	0.01	24.7	0.0	C	0.01	21.0	0.0
	Overall	**A**	-	**1.4**	-	**A**	-	**2.9**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
Lemieux Street at Joseph Cyr Street *Unsignalized*	EBL	A	0.09	9.6	2.3	A	0.12	9.2	3.0
	EBT	-	-	-	-	-	-	-	-
	WBL	-	-	-	-	-	-	-	-
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.15	13.1	3.8	B	0.22	13.5	6.0
	Overall	**A**	**-**	**1.7**	**-**	**A**	**-**	**2.7**	**-**
Lemieux Street at Labelle Street *Unsignalized*	EBL	C	0.09	16.5	2.3	C	0.29	16.4	9.0
	WBR	B	0.19	11.2	5.3	B	0.19	10.2	5.3
	NB	-	-	-	-	-	-	-	-
	SBL	-	-	-	-	-	-	-	-
	Overall	**A**	**-**	**2.3**	**-**	**A**	**-**	**5.3**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both peak hours, the study area intersections operate similar to the 2026 background condition, with the exception of the northbound right-turn movement at St Laurent Boulevard and Coventry Road/Ogilvie Road intersection may be subject to extended queues during the AM peak hour.

7.3 2026 Future Total Operations

Figure 18 illustrates the 2026 future total volumes and Table 19 summarizes the 2026 future total intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. The northbound shared through/right-turn lane at the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a de facto right lane, and it is coded as a right turn lane in Synchro. The synchro worksheets for the 2026 future total horizon are provided in Appendix I.

Figure 18: 2026 Future Total Volumes

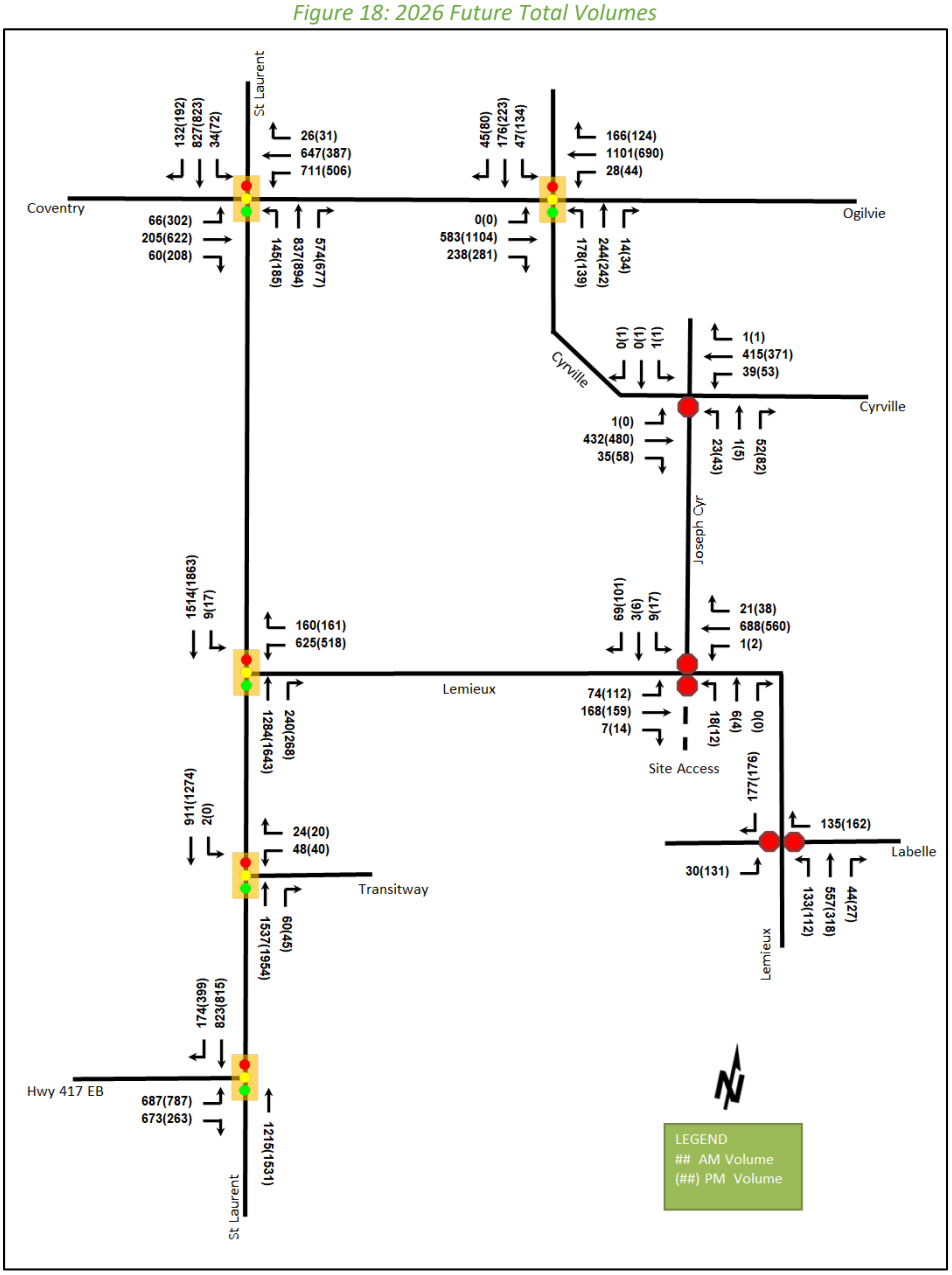


Table 19: 2026 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
St Laurent Boulevard at Coventry Road/Ogilvie Road *Signalized*	EBL	A	0.16	48.2	14.5	B	0.68	57.7	50.2
	EBT	A	0.35	46.8	33.6	C	0.77	49.4	91.2
	EBR	A	0.15	0.8	0.0	A	0.42	7.3	17.7
	WBL	E	0.93	66.7	**#139.0**	**F**	**1.04**	**101.6**	**#107.2**
	WBT	B	0.70	39.2	99.2	A	0.49	35.3	59.1
	WBR	A	0.06	0.2	m0.0	A	0.06	0.2	m0.0
	NBL	D	0.84	**101.6**	**#73.9**	D	0.86	**98.2**	**#81.8**
	NBT	C	0.74	37.7	**#157.7**	D	0.81	39.7	**#143.1**
	NBR	B	0.70	15.4	60.9	E	0.93	34.5	**#98.6**
	SBL	A	0.33	66.1	19.0	B	0.64	79.5	**#36.1**
	SBT	B	0.65	46.2	89.2	B	0.70	45.0	80.4
	SBR	A	0.26	2.1	2.4	A	0.38	6.0	14.0
	Overall	**D**	**0.87**	**42.6**	-	**E**	**0.92**	**48.1**	-
St Laurent Boulevard at Lemieux Street *Signalized*	WBL	D	0.84	55.1	92.0	C	0.74	48.9	74.4
	WBR	A	0.38	26.6	38.1	A	0.48	35.4	45.4
	NBT	A	0.44	8.5	64.7	A	0.52	10.4	63.6
	NBR	A	0.24	1.9	9.6	A	0.26	2.1	8.2
	SBL	A	0.05	11.3	m1.4	A	0.13	6.4	m2.1
	SBT	A	0.51	15.1	m77.3	A	0.60	7.8	m73.8
	Overall	**B**	**0.61**	**19.0**	-	**B**	**0.63**	**14.1**	-
St Laurent Boulevard at Transitway Access *Signalized*	WBL/R	A	0.50	32.8	16.2	A	0.41	29.9	14.1
	NBT/R	A	0.46	3.7	30.6	A	0.56	9.5	119.8
	SBL	A	0.02	7.0	m0.3	-	-	-	-
	SBT	A	0.26	5.4	58.2	A	0.35	4.2	40.2
	Overall	**A**	**0.53**	**5.1**	-	**B**	**0.61**	**7.8**	-
St Laurent Boulevard at Hwy 417 EB Off-Ramp *Signalized*	EBL	A	0.60	35.6	92.4	D	0.83	46.8	102.5
	EBR	**F**	**1.10**	**97.7**	**#244.7**	A	0.51	18.9	45.0
	NBT	A	0.52	20.8	84.1	A	0.54	16.4	102.1
	SBT/R	A	0.43	18.2	33.7	A	0.47	9.8	90.7
	Overall	**C**	**0.76**	**37.4**	-	**B**	**0.64**	**20.8**	-
Cyrville Road at Ogilvie Road *Signalized*	EBT	A	0.27	7.1	33.2	A	0.51	5.8	m58.5
	EBR	A	0.25	0.9	0.0	A	0.28	0.7	m1.5
	WBL	A	0.06	11.1	7.8	A	0.18	13.3	12.6
	WBT	A	0.51	13.7	111.7	A	0.32	10.7	58.6
	WBR	A	0.18	3.2	12.5	A	0.14	2.4	8.3
	NBL	E	0.94	**99.0**	**#69.4**	**F**	**1.05**	**136.0**	**#62.2**
	NBT/R	B	0.63	49.3	76.8	B	0.68	48.1	75.6
	SBL	A	0.27	40.8	18.8	D	0.85	**82.9**	49.0
	SBT/R	A	0.56	45.2	64.7	C	0.76	51.9	82.7
	Overall	**B**	**0.62**	**22.2**	-	**B**	**0.65**	**23.9**	-
Cyrville Road at Joseph Cyr Street *Unsignalized*	EB	A	0.00	8.2	0.0	A	-	0.0	0.0
	WB	A	0.04	8.4	0.8	A	0.05	8.7	1.5
	NB	C	0.19	16.3	5.3	C	0.37	21.3	12.8
	SB	C	0.01	23.0	0.0	C	0.01	19.9	0.0
	Overall	**A**	-	**1.6**	-	**A**	-	**3.0**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
Lemieux Street at Joseph Cyr Street *Unsignalized*	EBL	A	0.09	9.6	2.3	A	0.12	9.2	3.0
	EBT/R	-	-	-	-	-	-	-	-
	WBL/T	A	0.00	7.6	0.0	A	0.00	7.6	0.0
	WBT/R	A	-	0.0	0.0	A	-	0.0	0.0
	NB	C	0.09	19.8	2.3	C	0.06	20.2	1.5
	SB	B	0.17	14.3	4.5	C	0.26	15.1	7.5
	Overall	**A**	**-**	**2.2**	**-**	**A**	**-**	**3.1**	**-**
Lemieux Street at Labelle Street *Unsignalized*	EBL	C	0.09	16.5	2.3	C	0.29	16.4	9.0
	WBR	B	0.19	11.2	5.3	B	0.19	10.2	5.3
	NB	-	-	-	-	-	-	-	-
	SBL	-	-	-	-	-	-	-	-
	Overall	**A**	**-**	**2.3**	**-**	**A**	**-**	**5.3**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both peak hours, the study area intersection operates similar to the 2026 future background horizon.

7.4 2031 Future Total Operations

Figure 19 illustrates the 2031 future total volumes and Table 20 summarizes the 2031 future total intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. The northbound shared through/right-turn lane at the intersection of St Laurent Boulevard at Coventry Road/Ogilvie Road is a de facto right lane, and it is coded as a right turn lane in Synchro. The synchro worksheets for the 2031 future total horizon are provided in Appendix J.

Figure 19: 2031 Future Total Volumes

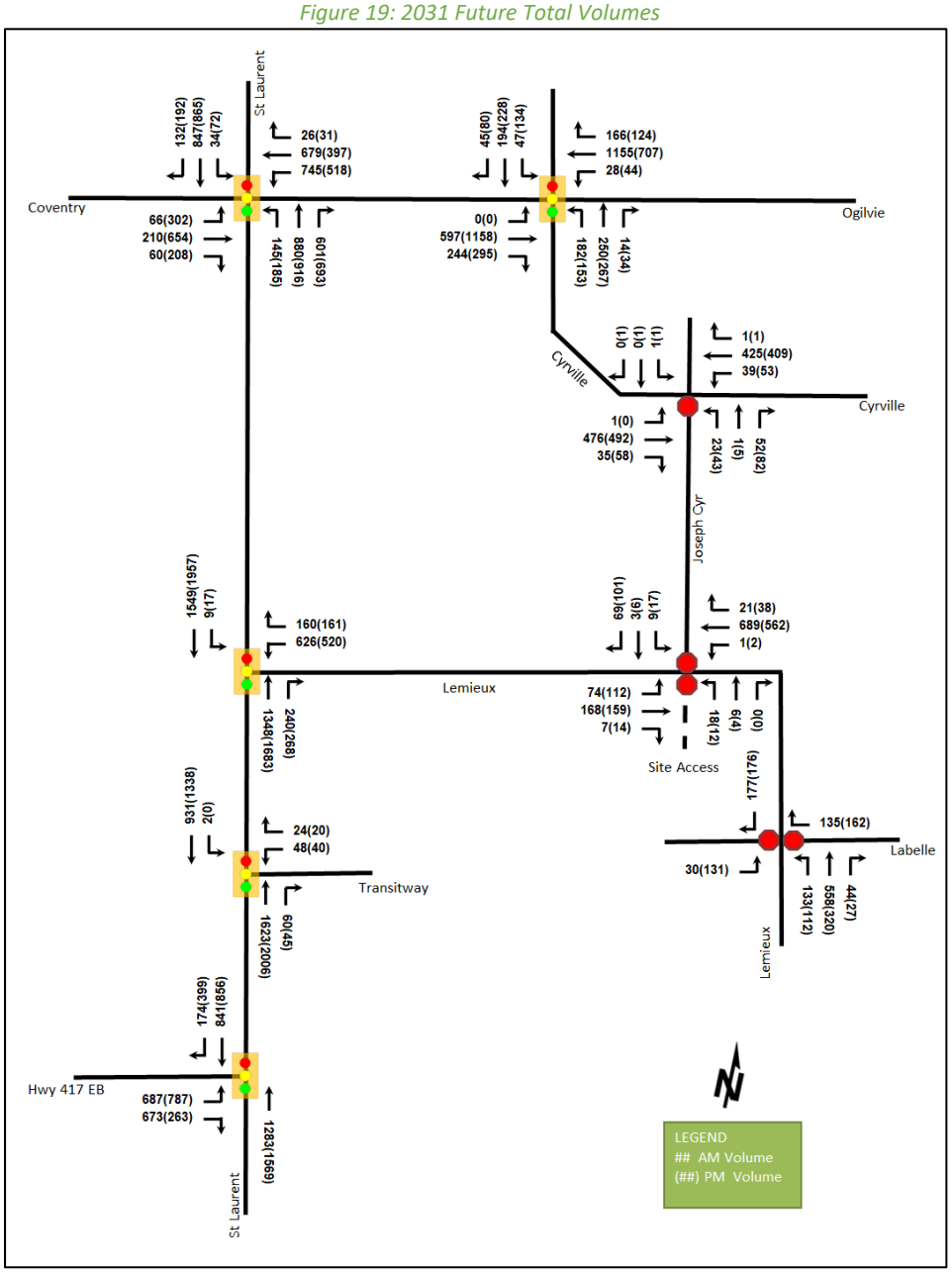


Table 20: 2031 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
St Laurent Boulevard at Coventry Road/Ogilvie Road *Signalized*	EBL	A	0.16	49.2	14.8	B	0.68	57.7	50.2
	EBT	A	0.36	46.9	34.3	D	0.81	51.2	96.6
	EBR	A	0.15	0.8	0.0	A	0.42	7.3	17.7
	WBL	E	0.91	62.5	**#147.9**	**F**	**1.08**	**110.6**	**#111.1**
	WBT	B	0.69	36.6	103.3	A	0.50	34.5	56.0
	WBR	A	0.05	0.2	m0.0	A	0.06	0.2	m0.0
	NBL	D	0.84	**102.4**	**#73.6**	D	0.86	**98.3**	**#81.9**
	NBT	D	0.81	40.7	**#168.2**	D	0.83	40.2	**#149.4**
	NBR	C	0.74	17.7	**#67.8**	E	0.95	38.4	**#104.3**
	SBL	A	0.33	66.1	19.0	B	0.64	79.5	**#36.1**
	SBT	B	0.70	48.6	91.6	C	0.73	46.0	84.9
	SBR	A	0.27	2.2	2.4	A	0.38	6.0	14.0
	Overall	**D**	**0.90**	**42.8**	-	**D**	**0.96**	**50.0**	-
St Laurent Boulevard at Lemieux Street *Signalized*	WBL	D	0.84	55.0	92.3	C	0.74	49.0	74.7
	WBR	A	0.38	28.4	39.6	A	0.48	36.3	46.1
	NBT	A	0.46	9.4	74.2	A	0.53	10.9	76.5
	NBR	A	0.24	2.0	12.0	A	0.26	2.1	7.9
	SBL	A	0.05	11.4	m1.5	A	0.14	6.6	m2.1
	SBT	A	0.52	15.4	m80.5	B	0.63	8.3	m76.4
	Overall	**B**	**0.62**	**19.3**	-	**B**	**0.66**	**14.4**	-
St Laurent Boulevard at Transitway Access *Signalized*	WBL/R	A	0.50	33.6	16.5	A	0.41	29.9	14.1
	NBT/R	A	0.49	3.9	35.8	A	0.57	9.9	125.4
	SBL	A	0.02	7.0	m0.4	-	-	-	-
	SBT	A	0.26	5.5	59.4	A	0.37	4.3	44.9
	Overall	**A**	**0.55**	**5.3**	-	**B**	**0.63**	**8.1**	-
St Laurent Boulevard at Hwy 417 EB Off-Ramp *Signalized*	EBL	A	0.60	35.6	92.4	D	0.83	46.8	102.5
	EBR	**F**	**1.11**	**100.0**	**#246.7**	A	0.52	20.9	47.9
	NBT	A	0.55	21.4	90.5	A	0.56	16.6	105.5
	SBT/R	A	0.44	17.6	33.7	A	0.49	9.9	94.1
	Overall	**C**	**0.78**	**37.5**	-	**B**	**0.65**	**20.9**	-
Cyrville Road at Ogilvie Road *Signalized*	EBT	A	0.28	7.3	34.0	A	0.55	6.7	m67.4
	EBR	A	0.26	0.9	m0.0	A	0.30	0.7	m1.5
	WBL	A	0.06	11.5	7.9	A	0.21	15.5	13.8
	WBT	A	0.54	14.9	119.8	A	0.33	11.9	63.8
	WBR	A	0.19	3.6	13.4	A	0.14	2.6	8.8
	NBL	E	0.97	**105.1**	**#77.1**	**F**	**1.03**	**126.4**	**#65.1**
	NBT/R	B	0.61	47.8	79.0	B	0.69	47.2	80.0
	SBL	A	0.26	39.5	18.8	D	0.84	**80.7**	48.6
	SBT/R	A	0.58	45.3	70.3	C	0.73	47.8	81.1
	Overall	**B**	**0.66**	**23.0**	-	**B**	**0.69**	**23.7**	-
Cyrville Road at Joseph Cyr Street *Unsignalized*	EB	A	0.00	8.2	0.0	A	-	0.0	0.0
	WB	A	0.04	8.6	0.8	A	0.04	8.6	0.8
	NB	C	0.21	17.4	6.0	C	0.39	22.7	13.5
	SB	C	0.01	24.8	0.0	C	0.01	21.1	0.0
	Overall	**A**	-	**1.6**	-	**A**	-	**3.0**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay(s)	Q (95th)	LOS	V/C	Delay(s)	Q (95th)
Lemieux Street at Joseph Cyr Street *Unsignalized*	EBL	A	0.09	9.6	2.3	A	0.12	9.2	3.0
	EBT/R	-	-	-	-	-	-	-	-
	WBL/T	A	0.00	7.6	0.0	A	0.00	7.6	0.0
	WBT/R	A	-	0.0	0.0	A	-	0.0	0.0
	NB	C	0.09	19.8	2.3	C	0.06	20.3	1.5
	SB	B	0.17	14.3	4.5	C	0.26	15.2	7.5
	Overall	**A**	**-**	**2.2**	**-**	**A**	**-**	**3.2**	**-**
Lemieux Street at Labelle Street *Unsignalized*	EBL	C	0.09	16.5	2.3	C	0.29	16.4	9.0
	WBR	B	0.19	11.2	5.3	B	0.19	10.2	5.3
	NB	-	-	-	-	-	-	-	-
	SBL	-	-	-	-	-	-	-	-
	Overall	**A**	**-**	**2.3**	**-**	**A**	**-**	**5.2**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersection operates similar to the 2031 future background horizon.

7.5 Modal Share Sensitivity and Demand Rationalization Conclusions

Capacity constraints have been noted at St Laurent Boulevard on the eastbound right-turn movement at Hwy 417 EB Off-Ramp intersection during the AM peak hour, on the westbound left-turn movement at St Laurent Boulevard at Coventry Road/Ogilvie Road intersection during PM peak hour, and on the northbound left-turn movement at Cyrville Road at Ogilvie Road intersection during the PM peak hour.

During the AM peak hour, a network reduction in volumes of approximately 61 vehicles making the eastbound right-turn movement at St Laurent Boulevard at Hwy 417 EB Off-Ramp intersection or further optimized signal timings may address the constraints and reduce the v/c of all movements to be 1.00 or below. During the PM peak hour, a network reduction in volumes of approximately 35 vehicles making the westbound left-turn movement or further signal optimization at St Laurent Boulevard and Coventry Road/Ogilvie Road intersection may address the constraints. A network reduction in volumes of approximately 25 vehicles making the northbound left-turn movement during PM peak hour may address the constraints at Cyrville Road at Ogilvie Road intersection.

The constraints noted above for the St Laurent Boulevard at Coventry Road/Ogilvie Road and St Laurent Boulevard at Hwy 417 EB Off-Ramp intersections will not be impacted by the site generated volumes and will need to be addressed by City operations. At the Cyrville Road at Ogilvie Road intersection, the proposed site is anticipated to generate less than a 2% increase on the existing volumes on the northbound left-turn movement. As the site-generated volumes are not anticipated to be a contributing factor to the existing network constraints, no further demand rationalization is required for this development.

8 Development Design

8.1 Design for Sustainable Modes

The proposed development includes two high-rise apartment buildings with a two-way access. The vehicle and bicycle parking are proposed as accessing the parking garage ramp with a 10% to 20% slope. Ten surface parking and 382 underground parking spaces are proposed. The 640 bicycle parking spaces will be located on all five

underground levels. Hard surface connections are provided from the building entrances to St. Laurent Boulevard and surround the site.

8.2 Circulation and Access

The proposed development will repurpose the existing full-movement access on the south leg of Lemieux Street at Joseph Cyr Street intersection. The two-way access onto Lemieux Street is 6.7 m wide. The drop-off loop providing access to the main entrances for the two residential buildings. The loading area is provided for each building, and it provides garbage collection and move-in truck parking.

The delivery, move-in and garbage collection vehicle turning templates were reviewed to confirm movements will be permitted on site. Delivery and move-in vehicles, approximated by an MSU, will be able to navigate the site and access the loading zones provided. The garbage collection vehicle, approximated by an HSU, will require to collect from the drop-off loop in front of garbage rooms and a mountable centre island. The turning templates are provided in Appendix K.

Further to the internal circulation, due to the turning movement requirements for an HSU vehicle on the inside radius of the Lemieux Street curvature, inbound movements for larger vehicles will be restricted to enter from Joseph Cyr Street only.

9 Parking

9.1 Parking Supply

The site plan proposes 333 residential parking and 59 visitor parking spaces. Ten surface parking and 382 underground parking spaces will be provided. A total of 640 bicycle parking spaces are proposed located underground.

From the zoning by-law, the maximum vehicle parking provision for the site is 1,120 resident parking spaces, and the minimum visitor parking provision for the site is 59 visitor parking spaces. The minimum bicycle parking provision is 320 spaces. Therefore, the maximum residential parking, minimum visitor parking, and minimum bicycle parking requirements are satisfied.

10 Boundary Street Design

Table 21 summarizes the MMLOS analysis for the boundary streets of Lemieux Street and St. Laurent Boulevard. The boundary street analysis is based on the policy area of within 600 metres of a rapid transit station. The MMLOS worksheets have been provided in Appendix L.

Table 21: Boundary Street MMLOS Analysis

Segment	Horizon	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
		PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Lemieux Street	Existing	F	A	F	B	-	-	B	D
	Future	C							
St Laurent Boulevard	Existing/ Future	F	A	F	C	D	D	A	D

The pedestrian LOS will not be met along the segment of Lemieux Street and St. Laurent Boulevard. To meet the theoretical pedestrian LOS targets, the boulevards would need to be at least 0.5 metres along boundary streets. And the operating speed would need to be lower than 30 km/h along St. Laurent Boulevard segment.

The bicycle LOS will not be met along the segment of Lemieux Street and St. Laurent Boulevard. To meet the theoretical bicycle LOS targets, operating speeds would need to be decreased to less than 40 km/h and travel lanes be decreased to be 2-3 lanes total. Physically separated facilities would also score a LOS of A.

11 Access Intersections Design

11.1 Location and Design of Access

The development will maintain an existing full-movements access onto Lemieux Street as the south leg of Lemieux Street at Joseph Cyr Street intersection.

The access connects to a drop-off loop and surface visitor parking spaces. The access is 6.7 metres wide. The throat length for the access is 19.0 metres for inbound movements and 21.5 metres for outbound movements, and it does not meet the suggested minimum 25 metres from Table 8.9.3 of the TAC Geometric Design Guidelines. It is noted that the total vehicle trips during peak hours would be 35 AM and 38 PM two-way vehicle trips. Therefore, the throat length is not anticipated to be an issue.

11.2 Intersection Control

Based upon the projected volumes, the site access will have stop-control on the minor approaches.

11.3 Access Intersection Design

11.3.1 Future Access Intersection Operations

The operations are noted in Section 7.4 and both 2026 and 2031 future total access intersections operate well with all movements and the overall intersection operating at LOS A.

11.3.2 Access Intersection MMLOS

Based upon the projected volumes, the site access will have stop-control on the minor approaches.

11.3.3 Recommended Design Elements

The access is proposed on the inside of the curve along Lemieux Street and the sight lines were reviewed to determine any additional daylight requirements for the access. Table 22 outlines the stopping sight distance and departure sight requirements for the proposed access, and Appendix M provides the sight line review.

Table 22: Stopping Sight Distance and Departure Sight Requirements

Design Speed (km/hr)	Stopping Sight Distance (m)	Departure Sight line -Left Turn (m)	Departure Sight line - Right Turn (m)
30	35	65	55
40	50	85	75
50	65	105	95
60	85	130	110
70	105	150	130

The intersection of St Laurent Boulevard and Lemieux Street is located within the departure sight distance requirements to the north/west of the site. The 85-metre approximate distance will meet the stopping sight distance requirements for 60 km/h and will need a clear sight line to the intersection from the access. The estimated height for any plantings and ramp wall is 0.2m of the proposed grade at the top of the underground ramp, increasing to 0.8m at the intersection.

To the south of the site, a sight distance of 92.7 metres is provided along Lemieux Street and the OR-174 off-ramp. This distance would meet the departure sight distance requirements for a vehicle speed up to 30 km/h traveling onto Lemieux Street, and the stopping distance requirements for a vehicle speed of 60 km/h.

The intersection of Labelle Street is located approximately 85 metres to the south of the access and will meet the stopping sight distance requirements for a vehicle speed of 50 km/h.

The stopping sight distances from the St Laurent Boulevard intersection and the Labelle Street intersections are considered sufficient, if kept clear, as vehicles are not anticipated to be traveling 50km/h as they are turning onto Lemieux Street. For vehicles travelling along Lemieux Street from the OR 174 off-ramp, advanced signage may be required if the building layout cannot be adjusted to accommodate a 70km/h design speed.

12 Transportation Demand Management

12.1 Context for TDM

The subject site is within the St Laurent TOD area, the mode shares used within the TIA represent a shift from auto mode to transit mode. Overall, the modal shares are likely to be achieved and supporting TDM measures should be provided.

Total bedrooms within the development are 917 bedrooms across both buildings with 363 studio/one-bedroom units and 277 two-bedroom units.

12.2 Need and Opportunity

The subject site has been assumed to rely predominantly on transit due to the proximity to the St Laurent LRT Station. The convenience of the transit station should provide the opportunity to reach the forecast transit mode share.

12.3 TDM Program

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

- Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
- Provide a multimodal travel option information package to new residents
- Contract with providers to install on-site bikeshare (or other micromobility alternatives) and carshare spaces
- Inclusion of a 1-year Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from rental costs

13 Neighbourhood Traffic Management

Site traffic is proposed to access the arterial network via Joseph Cyr Street (a local road) and Lemieux Street (a collector road). The TIA Guidelines propose a neighbourhood traffic management threshold of 120 vehicles per peak hour for local roads and 300 vehicles per peak hour for collector roads, equivalent to two cars and five cars per minute in both directions total, respectively.

The existing volumes on Joseph Cyr Street are 152 two-way vehicles in the AM peak hour and 249 two-way vehicles in the PM peak hour and are above the local road thresholds. Overall, the site is forecasted to generate 9 new AM and 10 new PM two-way vehicle trips along Joseph Cyr Street, resulting in volumes of 161 two-way vehicles in the AM and 259 two-way vehicles in the PM peak hour.

The existing volumes on Lemieux Street east of Joseph Cyr Street are 885 two-way vehicles in the AM peak hour and 772 two-way vehicles in the PM peak hour, both above the collector road thresholds. The site is forecasted to generate 1 new AM and 2 new PM two-way vehicle trips on Lemieux Street east of Joseph Cyr Street, resulting in volumes of 886 two-way vehicles in the AM and 774 two-way vehicles in the PM peak hour.

The existing volumes on Lemieux Street west of Joseph Cyr Street are 977 two-way vehicles in the AM peak hour and 911 two-way vehicles in the PM peak hour, both above the collector road thresholds. The site is forecasted to generate 25 new AM and 26 new PM two-way vehicle trips on Lemieux Street west of Joseph Cyr Street, resulting in volumes of 1,002 two-way vehicles in the AM and 937 two-way vehicles in the PM peak hour.

While over the prescribed theoretical local and collector road thresholds, this volume increase is low, and has negligible impact on Joseph Cyr Street or Lemieux Street.

14 Transit

14.1 Route Capacity

In Section 5.1 the trip generation by mode was estimated, including an estimate of the number of transit trips that will be generated by the proposed development. Table 23 summarizes the transit trip generation.

Table 23: Trip Generation by Transit Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Transit	65% (55%)	57	126	183	86	63	149

The proposed development is anticipated to generate an additional 183 AM peak hour transit trips and 149 PM peak hour transit trips. Of these trips, 126 outbound AM trips and 86 inbound PM trips are anticipated. From the trip distribution found in Section 5.3, these values can be further broken down.

Being 450-metre walk distance to St Laurent LRT Station, it is assumed that approximately 30% of trips to the south and 60% of trips to the east and the west would be accommodated by LRT once LRT Stage 2 is in place.

Ridership increases of approximately 13 outbound trips to the north during the AM peak hour and nine inbound trips from the north during the PM peak hour are anticipated on the routes #7, #12, #19, and #20, and approximately 26 outbound trips to the south during the AM peak hour and 18 inbound trips from the south during the PM peak hour are anticipated on the routes #19.

Ridership increases of approximately ten outbound trips to the east during the AM peak hour and seven inbound trips from the east during the PM peak hour are anticipated on the routes #12, and approximately 20 outbound trips to the west during the AM peak hour and 14 inbound trips from the west during the PM peak hour are anticipated on the routes #7, #14, and #19.

Additionally, routes #18, #24, #40, and #47 at St Laurent LRT Station provide services to the west and the south, which will also be anticipated to accommodate the additional trips.

Overall, the site-generated transit trips are anticipated to require less than half a bus capacity in total in each direction and are anticipated to be accommodated by the existing transit service. No service changes will be required.

14.2 Transit Priority

Examining the study area intersection delays, negligible impacts are noted on the transit movements at the study area intersections. No change in transit LOS is noted throughout the study area.

15 Network Intersection Design

15.1 Network Intersection Control

No change to the existing signalized control is recommended for the network intersections.

15.2 Network Intersection Design

15.2.1 2026 & 2031 Future Total Network Intersection Operations

The operations are noted in Section 7.4 and no mitigation of conditions is required for the subject site traffic.

15.2.2 Network Intersection MMLOS

Table 24 summarizes the MMLOS analysis for the network intersections. The existing and future conditions for both intersections will be the same and are considered in one row. The intersection analysis is based on the policy area of "within 600 metres of a rapid transit station". The MMLOS worksheets have been provided in Appendix L.

Table 24: Study Area Intersection MMLOS Analysis

Intersection	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS		Auto LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	ALOS	Target
St Laurent Boulevard at Coventry Road/Ogilvie Road	F	A	F	A	F	D	B	D	E	E
St Laurent Boulevard at Lemieux Street	F	A	F	B	C	D	A	D	B	E
St Laurent Boulevard at Transitway Access	F	A	F	B	C	D	C	D	B	E
St Laurent Boulevard at Hwy 417 EB Off-Ramp	F	A	-	-	D	D	A	D	B	E
Cyrville Road at Ogilvie Road	F	A	F	A	-	-	B	D	B	E

The pedestrian LOS targets will not be met at the study area intersections. As typical for arterial roads, the crossing distance does not permit the targets to be met. To meet pedestrian LOS targets, the maximum crossing distance on all pedestrian crossings would need to be reduced to two lane-widths.

The bicycle LOS targets will not be met at the study area intersections. To meet bicycle LOS targets, the left-turn configurations would need to be two-stage or include turn boxes. It is noted that the St. Laurent TOD plan outlines dedicated cycling facilities along St Laurent Boulevard, and the bicycle LOS targets might be met once cycling facilities are provided.

The transit LOS will not be met at St Laurent Boulevard at Coventry Road/Ogilvie Road intersection and the delay would need to be reduced to below 30 seconds.

15.2.3 Recommended Design Elements

No study area intersection design elements are proposed as part of this study.

16 Summary of Improvements Indicated and Modifications Options

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

Proposed Site and Screening

- The proposed site includes 640 units, 333 residential parking spaces, 59 visitor parking spaces, and 640 bicycle parking spaces

- The plan includes an existing full-movement access onto Lemieux Street
- Build-out is anticipated to be in a single phase by 2026
- The trip generation trigger, location trigger, and safety trigger were met for the TIA Screening

Existing Conditions

- St Laurent Boulevard, Ogilvie Road, Coventry Road, and Cyrville Road are arterial roads, and Labelle Street and Lemieux Street are major collector roads in the study area
- Sidewalks are provided along both sides of St Laurent Boulevard, Ogilvie Road, Coventry Road, Cyrville Road, Labelle Street east of Michael Street N, Joseph Cyr Street, and on the north side of Labelle Street west of Michael Street N and Lemieux Street
- Bike lanes are provided along Ogilvie Road, Coventry Road, Cyrville Road south of Ogilvie Road, and Joseph Cyr Street
- Ogilvie Road west of Cyrville Road and Cyrville Road south of Ogilvie Road are cross-town bikeways
- St Laurent Boulevard, Ogilvie Road, Coventry Road, and Cyrville Road are cycling spine routes, and Labelle Street and Lemieux Street are local cycling routes
- The high volumes roadways have produced a high number of collisions at the study area intersections, primarily at Lemieux Street at St. Laurent Boulevard intersection, which has 56% of the collisions (75 of 135) within the study area
- The collisions are predominantly rear end collisions due to the congestion along St Laurent Boulevard, and the angled, side swiped and turning movement predominantly are the result of northbound and southbound vehicles violating the signal control, failure to yield and improper lane changes
- The study area intersections generally operate well with the exception of the westbound left-turn movement at St Laurent Boulevard at Coventry Road/Ogilvie Road and the northbound left-turn movement at Cyrville Road at Ogilvie Road during the PM peak hour

Development Generated Travel Demand

- The proposed development is forecasted produce 256 two-way people trips during the AM peak hour and 253 two-way people trips during the PM peak hour
- Of the forecasted people trips, 35 two-way trips will be vehicle trips during the AM peak hour and 38 two-way trips will be vehicle trips during the PM peak hour based on a 14% AM and 15% PM modal share targets
- Of the forecasted trips, 10% are anticipated to travel north, 30% to the south, 20 % to the east, and 40 % to the west

Background Conditions

- The background developments were explicitly included in the background conditions, along with growth rates rounded to the nearest 0.25% and applied to mainline volumes and major turning movements along Ogilvie Road, St Laurent Boulevard, and Cyrville Road peak-directions
- The study area intersections in 2026 future background horizon will operate similar to the existing conditions
- The eastbound right-turn movement at St Laurent Boulevard and Hwy 417 EB Off-Ramp intersection will be over theoretical capacity and may be subject to high delays and extended queues due to other background developments

Development Design

- The vehicle and bicycle parking are proposed as accessing the parking garage ramp with a 10%-20% slope
- Ten surface parking and 382 underground parking spaces are proposed
- The 640 bicycle parking spaces will be located on all five underground levels
- Hard surface connections are provided from the building entrances to St. Laurent Boulevard and surround the site
- The drop-off loop providing access to the main entrances for the two residential buildings
- Delivery and move-in vehicles will be able to navigate the site and access the loading zones provided
- The garbage collection vehicle will require to collect from the drop-off loop in front of garbage rooms and a mountable centre island
- Inbound movements for larger vehicles will be restricted to enter from Joseph Cyr Street only

Parking

- The site provides 333 residential parking, 59 visitor parking, and 640 bicycle spaces
- The maximum residential parking, minimum visitor parking, and minimum bicycle parking requirements are satisfied

Boundary Street Design

- The pedestrian LOS will not be met along the segment of Lemieux Street and St. Laurent Boulevard, and need the boulevards to be at least 0.5 metres along both segments and operating to be lower than 30 km/h along St. Laurent Boulevard segment
- The bicycle LOS will not be met along the segment of Lemieux Street and St. Laurent Boulevard, and requires operating speeds to be decreased to less than 40 km/h and travel lanes be decreased to be 2-3 lanes total

Access Intersections Design

- The development will maintain an existing full-movements access onto Lemieux Street as the south leg of Lemieux Street at Joseph Cyr Street intersection
- The access is 6.7 m wide, and connects to a drop-off loop and surface visitor parking spaces
- The throat length for the access is 19.0 metres, which does not meet the suggested minimum 25 metres, and it is not anticipated to be an issue due to low site-generated volumes
- The 85-metre approximate distance between the access and St Laurent Boulevard will meet the stopping sight distance requirements for 60 km/h and will need a clear sight line to the intersection from the access
- A sight distance of 92.7 metres is provided along Lemieux Street and the OR-174 off-ramp to the south of the site, and would meet the departure sight distance requirements for a vehicle speed up to 30 km/h traveling onto Lemieux Street, and the stopping distance requirements for a vehicle speed of 60 km/h
- Advanced signage may be required if the building layout cannot be adjusted to accommodate a 70km/h design speed for vehicles travelling along Lemieux Street from the OR 174 off-ramp

TDM

- Supportive TDM measures to be included within the proposed development should include:
    - Display local area maps with walking and cycling routes, and transit route information and schedules at major entrances
    - Provide a multimodal travel option information package to new residents

- Contract with providers to install on-site bikeshare (or other micromobility alternatives) and carshare spaces
- Inclusion of a 1-year Presto card for first time apartment rental, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Unbundle parking cost from rental costs

Neighbourhood Traffic Management

- The existing volumes on Joseph Cyr Street, Lemieux Street west of Joseph Cyr Street, and Lemieux Street east of Joseph Cyr Street are above the thresholds
- The site is forecasted to generate 9 new AM and 10 new PM two-way vehicle trips along Joseph Cyr Street, generate 1 new AM and 2 new PM two-way vehicle trips on Uplands Drive east of North Bowesville Road, and generate 25 new AM and 26 new PM two-way vehicle trips on Lemieux Street west of Joseph Cyr Street
- This increased volume is low, and it is not considered a significant impact on Joseph Cyr Street or Lemieux Street requiring of traffic management

Transit

- The existing transit routes by site, routes provided at St Laurent LRT Station, and St Laurent LRT are anticipated to accommodate the additional trips
- The site-generated transit trips are anticipated to require less than half a bus capacity in total in each direction and are anticipated to be accommodated by the existing transit service
- No service changes are anticipated as being required to accommodate site-generated transit trips
- Negligible impacts are noted on the transit movements at the study area intersections, and no change in transit LOS is noted throughout the study area

Network Intersection Design

- Generally, the network intersections will operate similar to background horizons
- The pedestrian LOS targets will not be met at the existing or future intersections within the study area, and the maximum crossing distance on all pedestrian crossings are required to be reduced to two lane-widths
- The bicycle LOS targets will not be met at the existing or future intersections within the study area, and the left-turn configurations are required to be two-stage or include turn boxes
- The bicycle LOS targets might be met once cycling facilities are provided along St Laurent Boulevard
- The transit LOS will not be met at St Laurent Boulevard at Coventry Road/Ogilvie Road intersection and the delay is required to be below 30 seconds

17 Conclusion

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

Prepared By:

Yu-Chu Chen, EIT
Transportation Engineering-Intern

Reviewed By:

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 19-May-22
Project Number: 2022-026
Project Reference: 1209 St. Laurent Boulevard

1.1 Description of Proposed Development	
Municipal Address	1209 St. Laurent Boulevard and 1200 Lemieux Street
Description of Location	Eastsouth corner of St.Laurent boulevard at Rue Lemieux Street intersection
Land Use Classification	Transit Oriented Development Zone (TD3)
Development Size	Approximately 550 residential units
Accesses	An existing full-movement access onto Lemieux St
Phase of Development	Single Phase
Buildout Year	2026
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Townhomes or apartments	
Development Size	640	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 City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	No	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?	Yes	St. Laurent TOD
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?	Yes
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)?	Yes
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?	Yes
Does the development include a drive-thru facility?	No
Safety Trigger	Yes

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

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 s/he meets the four criteria listed below.

CERTIFICATION

1. 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;
2. 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;
3. 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
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering √ or transportation planning □.

[1,2] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at ___Ottawa_____ this __20__ day of _____September_____, 2018.
(City)

Name: _____Andrew Harte_____
(Please Print)

Professional Title: _____Professional Engineer_____

_____
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)
Address: 13 Markham Avenue
City / Postal Code: Ottawa / K2G 3Z1
Telephone / Extension: (613) 697-3797
E-Mail Address: Andrew.Harte@CGHTransportation.com

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

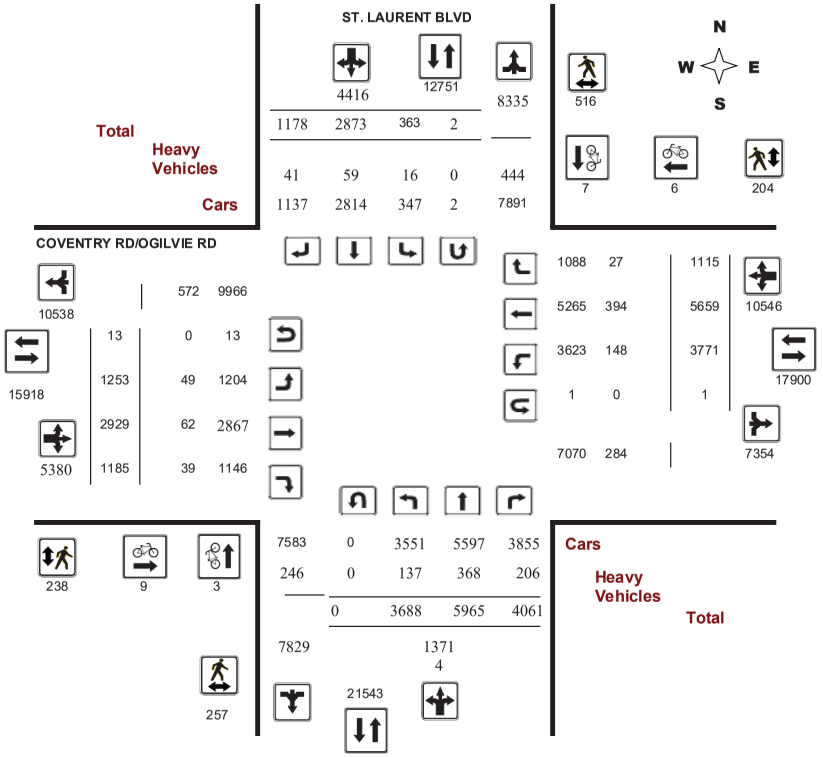
Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Diagram



5474758 - FEB 20, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

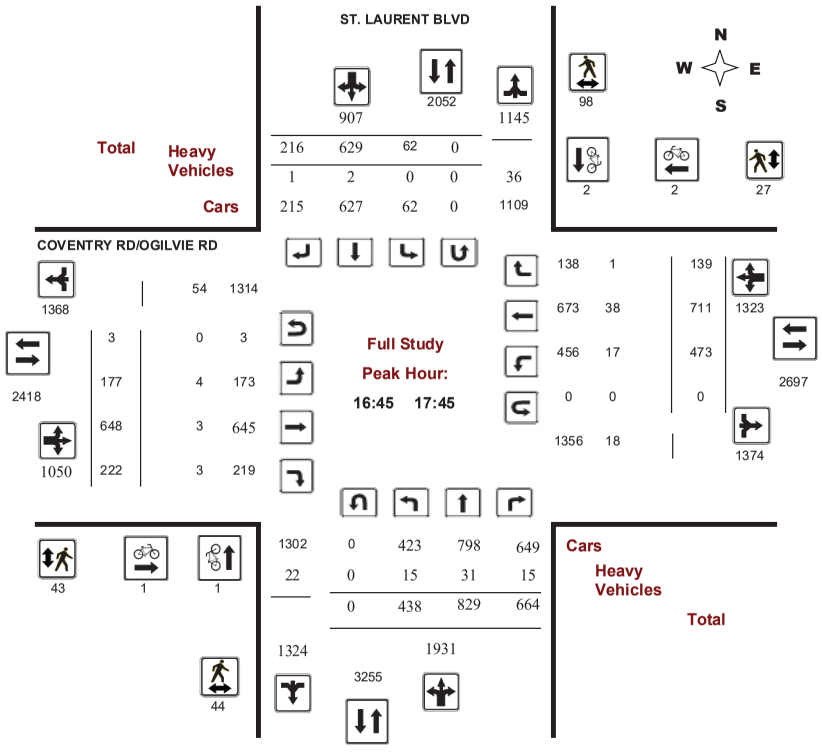
Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Peak Hour Diagram



5474758 - FEB 20, 2020 - 8HRS - LORETTA

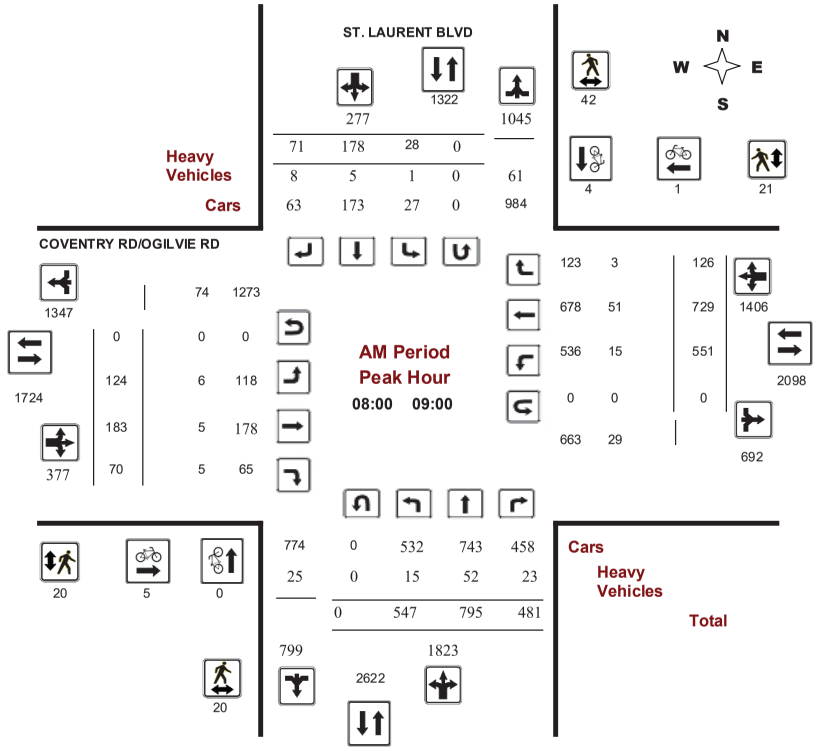
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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



Comments 5474758 - FEB 20, 2020 - 8HRS - LORETTA

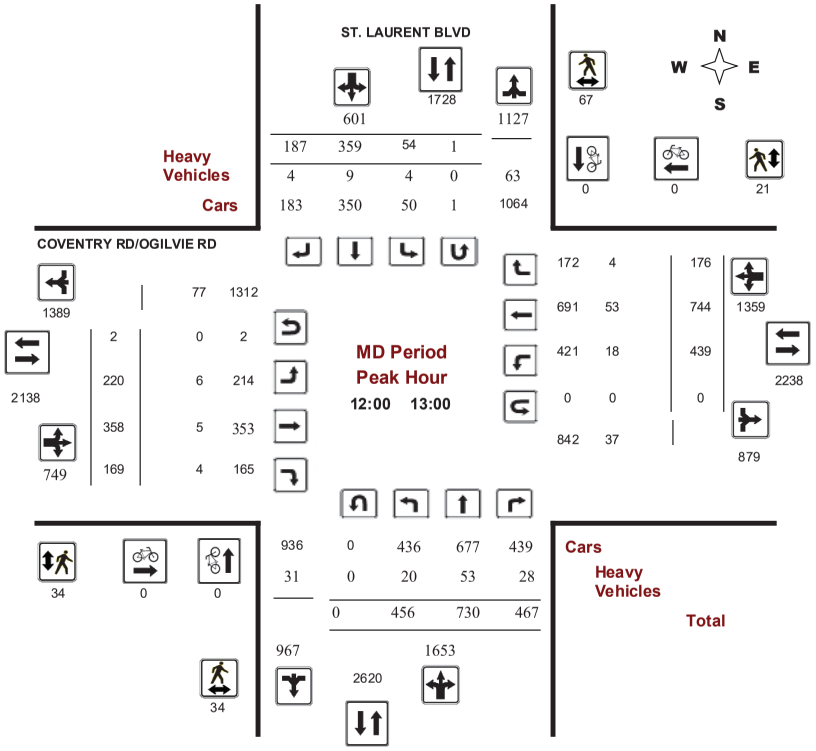
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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



Comments 5474758 - FEB 20, 2020 - 8HRS - LORETTA

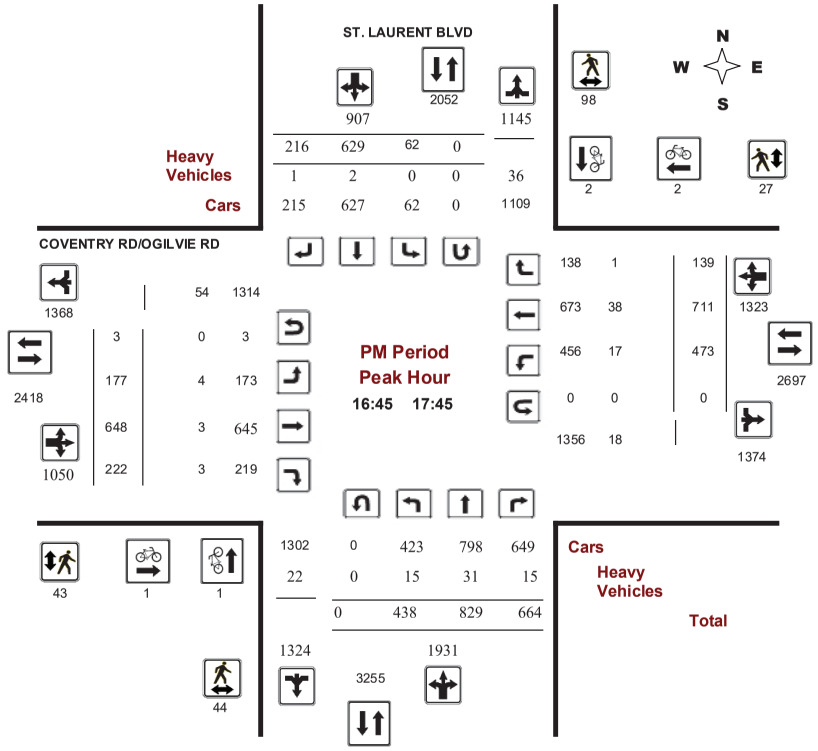
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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



Comments 5474758 - FEB 20, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, February 20, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 2

Eastbound: 13 Westbound: 1

AADT Factor .90

	ST. LAURENT BLVD									COVENTRY RD/OGILVIE 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	517	541	468	**1526**	24	162	42	**228**	**1754**	95	165	43	**303**	538	717	95	**1350**	**1653**	**3407**
08:00 09:00	547	795	481	**1823**	28	178	71	**277**	**2100**	124	183	70	**377**	551	729	126	**1406**	**1783**	**3883**
09:00 10:00	426	633	416	**1475**	28	188	74	**290**	**1765**	145	188	76	**409**	426	637	117	**1180**	**1589**	**3354**
11:30 12:30	434	714	432	**1580**	54	346	180	**580**	**2160**	186	348	170	**704**	418	720	179	**1317**	**2021**	**4181**
12:30 13:30	457	704	466	**1627**	57	342	192	**591**	**2218**	233	340	182	**755**	451	656	154	**1261**	**2016**	**4234**
15:00 16:00	411	917	498	**1826**	57	442	184	**683**	**2509**	133	439	196	**768**	438	797	154	**1389**	**2157**	**4666**
16:00 17:00	462	843	644	**1949**	64	611	206	**881**	**2830**	148	642	216	**1006**	501	677	156	**1334**	**2340**	**5170**
17:00 18:00	434	818	656	**1908**	51	604	229	**884**	**2792**	189	624	232	**1045**	448	726	134	**1308**	**2353**	**5145**
Sub Total	3688	5965	4061	**13714**	363	2873	1178	**4414**	**18128**	1253	2929	1185	**5367**	3771	5659	1115	**10545**	**15912**	**34040**
U Turns				**0**				**2**	**2**				**13**				**1**	**14**	**16**
Total	3688	5965	4061	**13714**	363	2873	1178	**4416**	**18130**	1253	2929	1185	**5380**	3771	5659	1115	**10546**	**15926**	**34056**
EQ 12Hr	5126	8291	5645	**19062**	505	3993	1637	**6138**	**25201**	1742	4071	1647	**7478**	5242	7866	1550	**14659**	**22137**	**47338**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	4348	7033	4788	**16169**	428	3387	1389	**5206**	**22681**	1477	3453	1397	**6343**	4446	6672	1315	**12434**	**19923**	**42604**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	5696	9213	6272	**21181**	561	4437	1819	**6820**	**28001**	1935	4524	1830	**8309**	5824	8740	1722	**16288**	**24597**	**52598**
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

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study 15 Minute Increments

		ST. LAURENT BLVD									COVENTRY RD/OGILVIE 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	107	100	103	310	3	40	6	49	21	17	40	7	64	110	149	19	278	21	701
07:15	07:30	123	128	103	354	9	37	11	57	36	20	39	11	70	125	181	17	323	36	804
07:30	07:45	142	151	119	412	5	46	16	67	22	29	46	16	92	147	201	24	372	22	943
07:45	08:00	145	162	143	450	7	39	9	55	22	29	40	9	79	156	186	35	377	22	961
08:00	08:15	157	185	116	458	6	45	16	67	19	35	44	16	95	157	179	31	367	19	987
08:15	08:30	143	208	113	464	6	40	20	66	33	26	42	20	88	143	187	34	364	33	982
08:30	08:45	122	215	122	459	6	34	19	59	29	29	38	19	86	126	171	35	332	29	936
08:45	09:00	125	187	130	442	10	59	16	85	23	34	59	15	108	125	192	26	343	23	978
09:00	09:15	120	136	102	358	7	52	16	75	26	27	52	15	94	116	160	33	309	26	836
09:15	09:30	100	162	103	365	9	44	16	70	25	41	45	20	106	101	164	24	289	25	830
09:30	09:45	104	160	103	367	5	43	20	68	41	36	44	20	100	103	140	23	266	41	801
09:45	10:00	102	175	108	385	7	49	22	78	38	41	47	21	109	106	173	37	316	38	888
11:30	11:45	90	188	110	388	16	88	45	149	33	32	91	45	168	85	174	38	297	33	1002
11:45	12:00	133	158	100	391	12	76	46	134	29	52	76	43	172	130	163	42	335	29	1032
12:00	12:15	86	188	107	381	11	90	53	154	29	50	92	46	189	85	199	54	338	29	1062
12:15	12:30	125	180	115	420	15	92	36	144	32	52	89	36	177	118	184	45	347	32	1088
12:30	12:45	117	183	123	423	13	105	60	178	28	57	104	48	210	109	189	39	337	28	1148
12:45	13:00	128	179	122	429	15	72	38	125	29	61	73	39	173	127	172	38	337	29	1064
13:00	13:15	102	166	113	381	14	85	46	145	30	49	78	46	173	106	158	38	303	30	1002
13:15	13:30	110	176	108	394	15	80	48	143	31	66	85	49	200	109	137	39	285	31	1022
15:00	15:15	98	225	124	447	5	111	36	152	24	42	112	39	193	104	208	39	351	24	1143
15:15	15:30	116	245	116	477	14	98	55	167	39	34	96	59	191	120	179	36	335	39	1170
15:30	15:45	98	258	131	487	16	122	47	185	26	26	125	48	200	106	226	37	369	26	1241
15:45	16:00	99	189	127	415	22	111	46	179	29	31	106	50	187	108	184	42	334	29	1115
16:00	16:15	109	212	157	478	9	138	46	193	14	38	154	47	239	112	191	35	338	14	1248
16:15	16:30	156	206	161	523	20	139	63	222	22	37	150	68	255	163	179	38	380	22	1380
16:30	16:45	90	219	179	488	15	183	46	244	15	40	188	47	275	95	162	46	303	15	1310
16:45	17:00	107	206	147	460	20	151	51	222	23	33	150	54	237	131	145	37	313	23	1232
17:00	17:15	100	211	148	459	14	156	48	218	16	43	165	49	259	102	190	32	324	16	1260
17:15	17:30	128	211	181	520	18	154	50	222	10	55	162	52	270	127	161	29	317	10	1329
17:30	17:45	103	201	188	492	10	168	67	245	15	46	171	67	284	113	215	41	369	15	1390
17:45	18:00	103	195	139	437	9	126	64	199	18	45	126	64	237	106	160	32	298	18	1171
Total:		3688	5965	4061	1371	363	2873	1178	4416	827	1253	2929	1185	5380	3771	5659	1115	10546	827	34,056

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Cyclist Volume

		ST. LAURENT BLVD			COVENTRY RD/OGILVIE RD			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	1	0	1	1
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	1	1	1	0	1	2
08:30	08:45	0	2	2	2	0	2	4
08:45	09:00	0	1	1	2	1	3	4
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	1	1	2	0	1	1	3
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	1	0	1	0	1	1	2
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	1	1	2	2
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	1	0	1	1
16:45	17:00	0	0	0	0	1	1	1
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	1	2	3	1	1	2	5
17:45	18:00	0	0	0	0	0	0	0
Total		3	7	**10**	9	6	15	25

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Pedestrian Volume

		ST. LAURENT BLVD			COVENTRY RD/OGILVIE RD			
Time Period		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	3	1	**4**	1	3	**4**	**8**
07:15	07:30	6	9	**15**	6	6	**12**	**27**
07:30	07:45	9	11	**20**	9	7	**16**	**36**
07:45	08:00	12	13	**25**	10	9	**19**	**44**
08:00	08:15	7	11	**18**	6	6	**12**	**30**
08:15	08:30	1	9	**10**	1	1	**2**	**12**
08:30	08:45	3	12	**15**	3	5	**8**	**23**
08:45	09:00	9	10	**19**	10	9	**19**	**38**
09:00	09:15	5	12	**17**	5	4	**9**	**26**
09:15	09:30	5	11	**16**	5	5	**10**	**26**
09:30	09:45	5	15	**20**	4	3	**7**	**27**
09:45	10:00	6	13	**19**	6	7	**13**	**32**
11:30	11:45	5	10	**15**	5	3	**8**	**23**
11:45	12:00	9	15	**24**	10	5	**15**	**39**
12:00	12:15	13	15	**28**	12	6	**18**	**46**
12:15	12:30	11	16	**27**	12	7	**19**	**46**
12:30	12:45	7	17	**24**	8	6	**14**	**38**
12:45	13:00	3	19	**22**	2	2	**4**	**26**
13:00	13:15	3	17	**20**	3	6	**9**	**29**
13:15	13:30	7	18	**25**	9	9	**18**	**43**
15:00	15:15	11	18	**29**	11	6	**17**	**46**
15:15	15:30	6	18	**24**	6	0	**6**	**30**
15:30	15:45	15	19	**34**	13	11	**24**	**58**
15:45	16:00	11	18	**29**	10	7	**17**	**46**
16:00	16:15	8	21	**29**	5	8	**13**	**42**
16:15	16:30	5	20	**25**	2	5	**7**	**32**
16:30	16:45	17	32	**49**	10	18	**28**	**77**
16:45	17:00	4	22	**26**	5	3	**8**	**34**
17:00	17:15	13	11	**24**	11	8	**19**	**43**
17:15	17:30	16	31	**47**	16	10	**26**	**73**
17:30	17:45	11	34	**45**	11	6	**17**	**62**
17:45	18:00	11	18	**29**	11	13	**24**	**53**
Total		257	516	**773**	238	204	**442**	**1215**

5474758 - FEB 20, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study Heavy Vehicles

		ST. LAURENT BLVD									COVENTRY RD/OGILVIE 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	2	11	2	**15**	0	5	1	**6**	**21**	1	6	1	**8**	3	7	0	**10**	**18**	**39**
07:15	07:30	5	14	7	**26**	3	5	2	**10**	**36**	0	6	2	**8**	6	5	0	**11**	**19**	**55**
07:30	07:45	5	10	4	**19**	0	1	2	**3**	**22**	2	1	3	**6**	5	11	1	**17**	**23**	**45**
07:45	08:00	5	11	3	**19**	1	2	0	**3**	**22**	0	2	1	**3**	5	9	0	**14**	**17**	**39**
08:00	08:15	0	9	6	**15**	1	2	1	**4**	**19**	2	2	1	**5**	0	10	1	**11**	**16**	**35**
08:15	08:30	5	18	4	**27**	0	2	4	**6**	**33**	1	2	2	**5**	5	13	0	**18**	**23**	**56**
08:30	08:45	7	13	7	**27**	0	1	1	**2**	**29**	3	1	0	**4**	7	14	0	**21**	**25**	**54**
08:45	09:00	3	12	6	**21**	0	0	2	**2**	**23**	0	0	2	**2**	3	14	2	**19**	**21**	**44**
09:00	09:15	3	16	4	**23**	0	1	2	**3**	**26**	4	1	2	**7**	5	18	1	**24**	**31**	**57**
09:15	09:30	3	15	4	**22**	1	2	0	**3**	**25**	6	2	1	**9**	3	12	0	**15**	**24**	**49**
09:30	09:45	4	21	13	**38**	0	1	2	**3**	**41**	5	2	2	**9**	7	11	0	**18**	**27**	**68**
09:45	10:00	8	15	12	**35**	1	0	2	**3**	**38**	4	2	2	**8**	10	12	1	**23**	**31**	**69**
11:30	11:45	5	8	15	**28**	0	3	2	**5**	**33**	1	2	1	**4**	4	20	2	**26**	**30**	**63**
11:45	12:00	9	10	6	**25**	1	2	1	**4**	**29**	1	2	0	**3**	8	13	1	**22**	**25**	**54**
12:00	12:15	4	15	7	**26**	0	2	1	**3**	**29**	0	0	1	**1**	3	9	1	**13**	**14**	**43**
12:15	12:30	5	14	8	**27**	2	3	0	**5**	**32**	1	3	0	**4**	4	15	2	**21**	**25**	**57**
12:30	12:45	4	14	5	**23**	1	3	1	**5**	**28**	5	2	1	**8**	3	17	0	**20**	**28**	**56**
12:45	13:00	7	10	8	**25**	1	1	2	**4**	**29**	0	0	2	**2**	8	12	1	**21**	**23**	**52**
13:00	13:15	5	11	7	**23**	3	3	1	**7**	**30**	0	3	1	**4**	8	17	2	**27**	**31**	**61**
13:15	13:30	5	10	10	**25**	0	3	3	**6**	**31**	1	3	3	**7**	7	11	1	**19**	**26**	**57**
15:00	15:15	4	8	10	**22**	0	1	1	**2**	**24**	0	1	1	**2**	3	18	3	**24**	**26**	**50**
15:15	15:30	4	15	15	**34**	0	2	3	**5**	**39**	2	2	3	**7**	3	13	0	**16**	**23**	**62**
15:30	15:45	0	15	6	**21**	0	2	3	**5**	**26**	0	3	1	**4**	0	16	0	**16**	**20**	**46**
15:45	16:00	10	8	8	**26**	1	1	1	**3**	**29**	1	0	1	**2**	10	10	2	**22**	**24**	**53**
16:00	16:15	1	6	5	**12**	0	1	1	**2**	**14**	2	2	1	**5**	2	14	3	**19**	**24**	**38**
16:15	16:30	3	12	4	**19**	0	3	0	**3**	**22**	1	3	0	**4**	3	15	1	**19**	**23**	**45**
16:30	16:45	3	8	1	**12**	0	3	0	**3**	**15**	1	5	0	**6**	3	14	1	**18**	**24**	**39**
16:45	17:00	4	12	5	**21**	0	1	1	**2**	**23**	0	2	1	**3**	5	11	1	**17**	**20**	**43**
17:00	17:15	1	11	3	**15**	0	1	0	**1**	**16**	1	1	1	**3**	1	9	0	**10**	**13**	**29**
17:15	17:30	2	5	3	**10**	0	0	0	**0**	**10**	1	0	1	**2**	2	11	0	**13**	**15**	**25**
17:30	17:45	8	3	4	**15**	0	0	0	**0**	**15**	2	0	0	**2**	9	7	0	**16**	**18**	**33**
17:45	18:00	3	8	4	**15**	0	2	1	**3**	**18**	1	1	1	**3**	3	6	0	**9**	**12**	**30**
Total:	None	137	368	206	**711**	16	59	41	**116**	**827**	49	62	39	**150**	148	394	27	**569**	**719**	**1,546**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, February 20, 2020 **WO No:** 39517

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

Full Study 15 Minute U-Turn Total

Time Period		ST. LAURENT BLVD Northbound U-Turn Total	ST. LAURENT BLVD Southbound U-Turn Total	COVENTRY RD/OGILVIE RD Eastbound U-Turn Total	COVENTRY RD/OGILVIE RD 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	1	0	1
07:45	08:00	0	0	1	0	1
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	1	0	0	1
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	1	0	1
12:00	12:15	0	0	1	0	1
12:15	12:30	0	1	0	0	1
12:30	12:45	0	0	1	0	1
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	1	1
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	2	0	2
15:30	15:45	0	0	1	0	1
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	2	0	2
17:15	17:30	0	0	1	0	1
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	2	0	2
Total		0	2	13	1	16

Transportation Services - Traffic Services

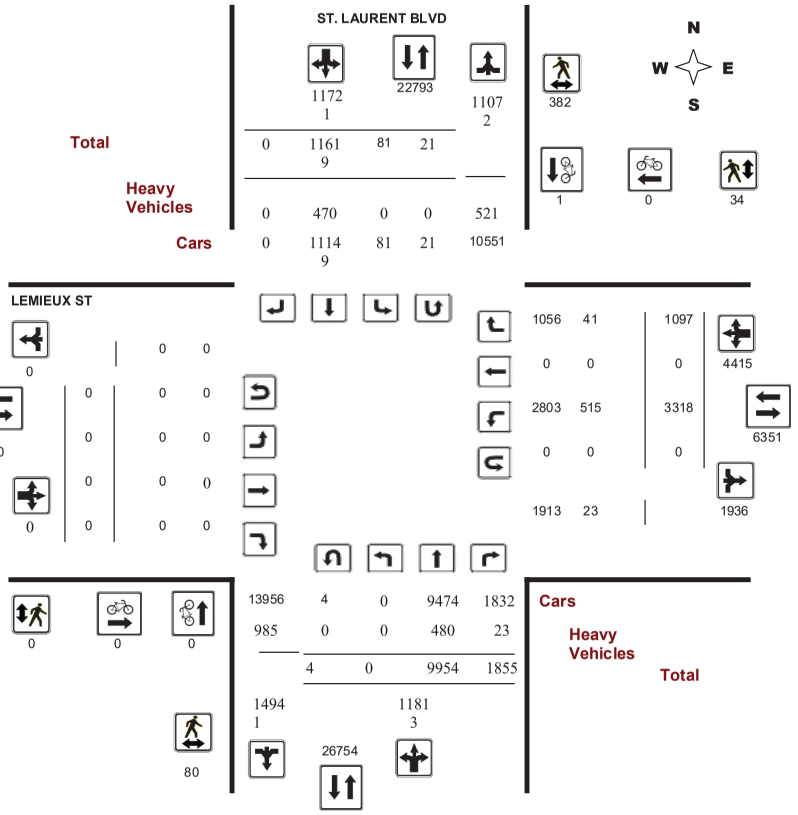
Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Diagram



Transportation Services - Traffic Services

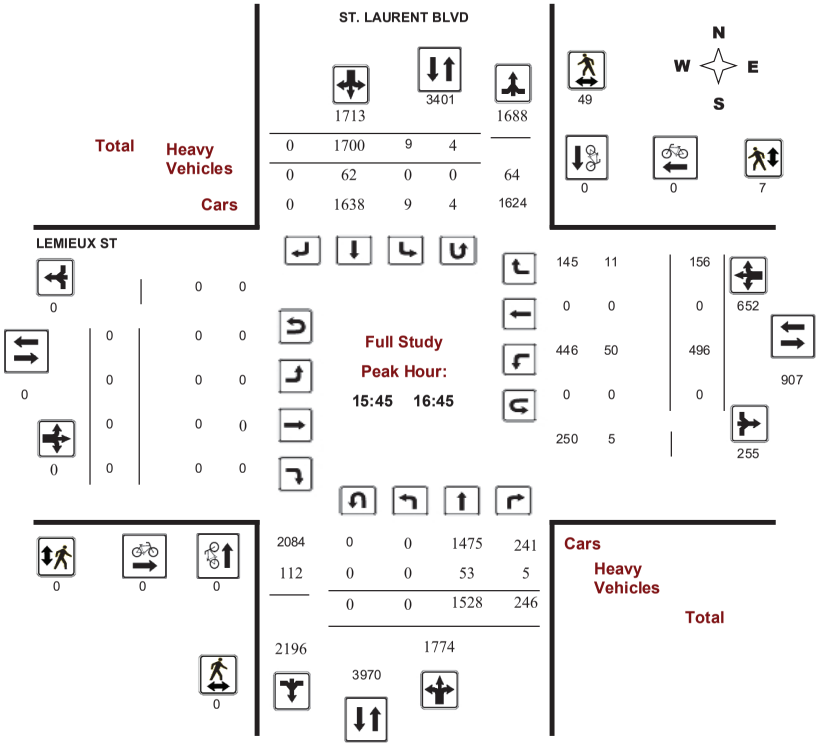
Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Peak Hour Diagram



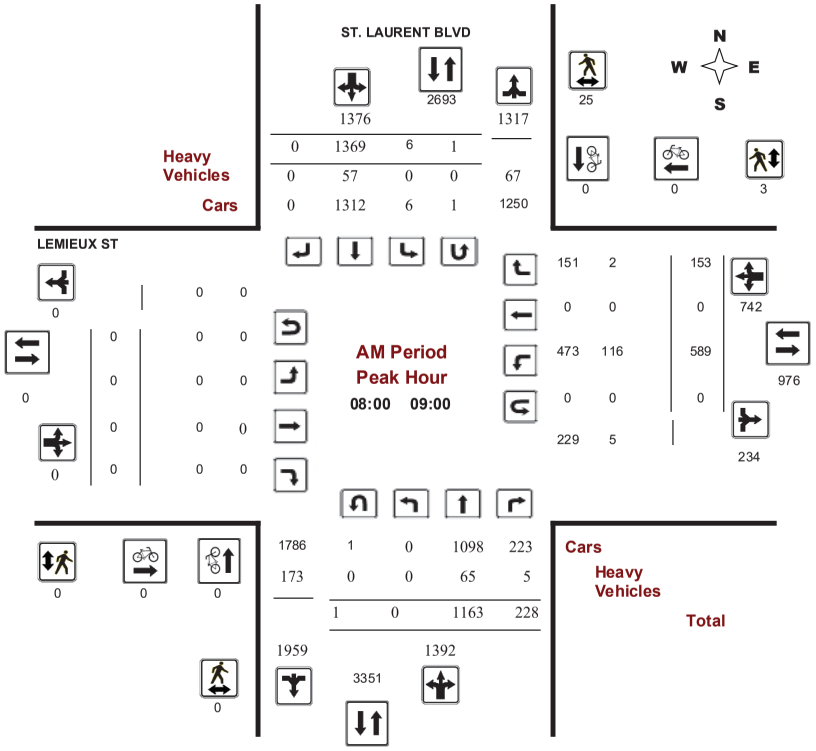
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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



Comments

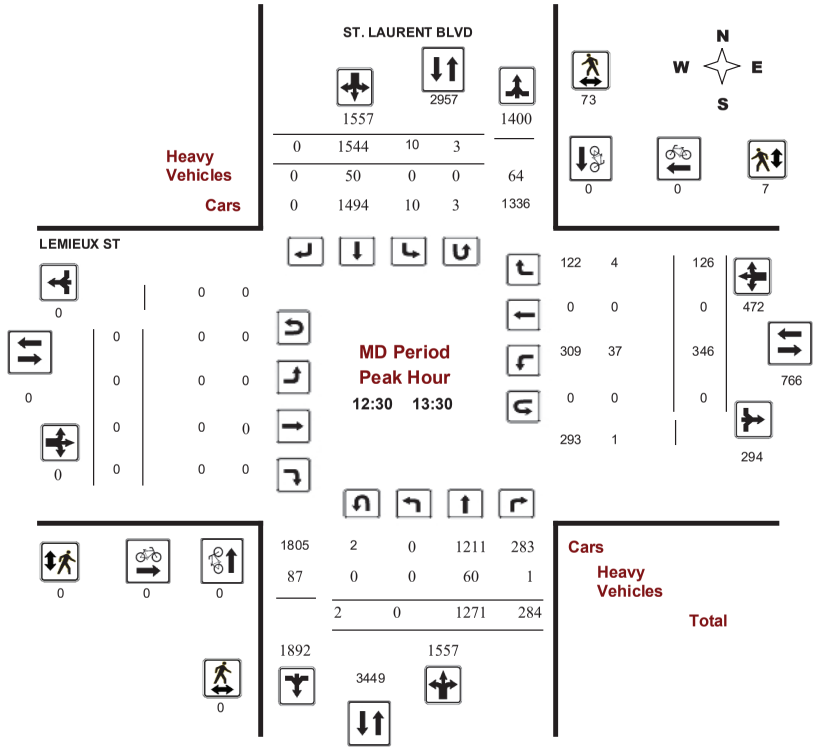
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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



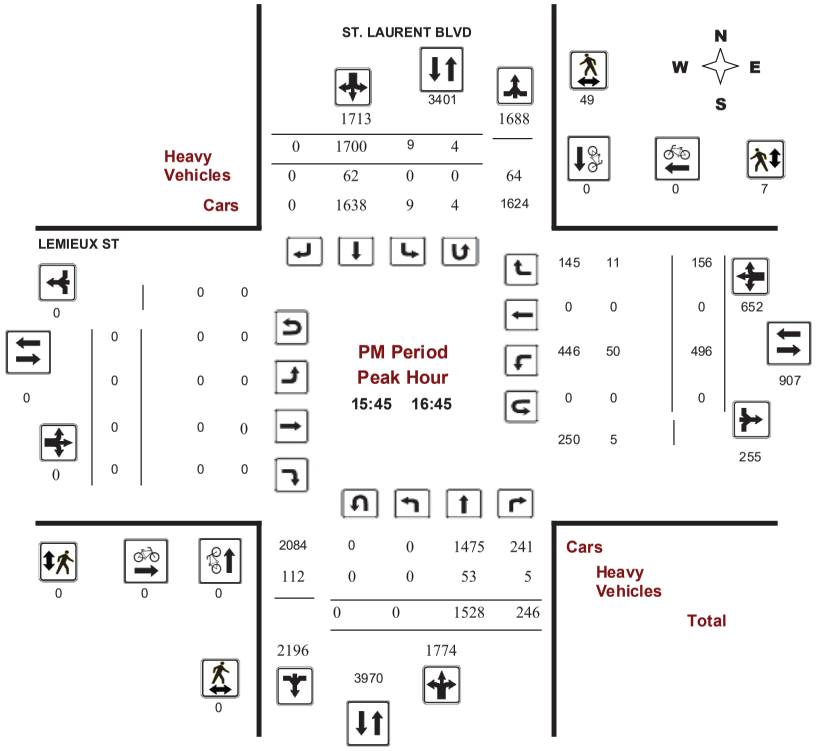
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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



Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, March 21, 2018

Total Observed U-Turns

Northbound: 4 Southbound: 21

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	ST. LAURENT BLVD									LEMIEUX ST									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	1017	187	**1204**	7	1234	0	**1241**	**2445**	0	0	0	**0**	489	0	105	**594**	**594**	**3039**
08:00 09:00	0	1163	228	**1391**	6	1369	0	**1375**	**2766**	0	0	0	**0**	589	0	153	**742**	**742**	**3508**
09:00 10:00	0	1069	221	**1290**	6	1084	0	**1090**	**2380**	0	0	0	**0**	287	0	130	**417**	**417**	**2797**
11:30 12:30	0	1160	252	**1412**	14	1443	0	**1457**	**2869**	0	0	0	**0**	299	0	131	**430**	**430**	**3299**
12:30 13:30	0	1271	284	**1555**	10	1544	0	**1554**	**3109**	0	0	0	**0**	346	0	126	**472**	**472**	**3581**
15:00 16:00	0	1383	172	**1555**	6	1702	0	**1708**	**3263**	0	0	0	**0**	426	0	154	**580**	**580**	**3843**
16:00 17:00	0	1512	268	**1780**	11	1681	0	**1692**	**3472**	0	0	0	**0**	481	0	170	**651**	**651**	**4123**
17:00 18:00	0	1379	243	**1622**	21	1562	0	**1583**	**3205**	0	0	0	**0**	401	0	128	**529**	**529**	**3734**
Sub Total	0	9954	1855	**11809**	81	11619	0	**11700**	**23509**	0	0	0	**0**	3318	0	1097	**4415**	**4415**	**27924**
U Turns				**4**				**21**	**25**				**0**				**0**	**0**	**25**
Total	0	9954	1855	**11813**	81	11619	0	**11721**	**23534**	0	0	0	**0**	3318	0	1097	**4415**	**4415**	**27949**
EQ 12Hr	0	13836	2578	**16420**	113	16150	0	**16292**	**32712**	0	0	0	**0**	4612	0	1525	**6137**	**6137**	**38849**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	0	13040	2430	**15475**	106	15221	0	**15355**	**32712**	0	0	0	**0**	4347	0	1437	**5784**	**6137**	**38849**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	0	17082	3183	**20272**	139	19939	0	**20114**	**40386**	0	0	0	**0**	5694	0	1883	**7577**	**7577**	**47963**
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

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study 15 Minute Increments

		ST. LAURENT BLVD										LEMIEUX ST										
		Northbound				Southbound						Eastbound				Westbound						
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT		LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT		Grand Total
07:00	07:15	0	201	39	240	1	249	0	250	33		0	0	0	0	94	0	25	119	33		609
07:15	07:30	0	251	51	302	4	280	0	284	37		0	0	0	0	119	0	23	142	37		728
07:30	07:45	0	277	46	323	0	352	0	352	35		0	0	0	0	138	0	30	168	35		843
07:45	08:00	0	288	51	339	2	353	0	355	41		0	0	0	0	138	0	27	165	41		859
08:00	08:15	0	286	56	342	1	327	0	328	37		0	0	0	0	167	0	34	201	37		871
08:15	08:30	0	291	52	343	2	317	0	320	27		0	0	0	0	171	0	33	204	27		867
08:30	08:45	0	297	44	342	2	355	0	357	29		0	0	0	0	134	0	45	179	29		878
08:45	09:00	0	289	76	365	1	370	0	371	34		0	0	0	0	117	0	41	158	34		894
09:00	09:15	0	252	66	318	3	288	0	291	39		0	0	0	0	75	0	38	113	39		722
09:15	09:30	0	257	54	311	1	251	0	252	37		0	0	0	0	71	0	29	100	37		663
09:30	09:45	0	278	46	324	2	250	0	252	39		0	0	0	0	65	0	32	97	39		673
09:45	10:00	0	282	55	337	0	295	0	296	37		0	0	0	0	76	0	31	107	37		740
11:30	11:45	0	295	55	350	3	349	0	352	30		0	0	0	0	72	0	23	95	30		797
11:45	12:00	0	255	65	320	4	349	0	353	34		0	0	0	0	83	0	36	119	34		792
12:00	12:15	0	324	65	389	4	360	0	364	25		0	0	0	0	57	0	35	92	25		845
12:15	12:30	0	286	67	353	3	385	0	388	29		0	0	0	0	87	0	37	124	29		865
12:30	12:45	0	342	73	417	4	419	0	424	20		0	0	0	0	92	0	37	129	20		970
12:45	13:00	0	325	82	407	3	396	0	400	22		0	0	0	0	73	0	25	98	22		905
13:00	13:15	0	308	68	376	1	360	0	362	24		0	0	0	0	81	0	27	108	24		846
13:15	13:30	0	296	61	357	2	369	0	371	45		0	0	0	0	100	0	37	137	45		865
15:00	15:15	0	348	41	389	1	475	0	476	39		0	0	0	0	110	0	34	144	39		1009
15:15	15:30	0	312	47	359	4	381	0	387	29		0	0	0	0	100	0	31	131	29		877
15:30	15:45	0	321	37	358	0	443	0	446	24		0	0	0	0	113	0	58	171	24		975
15:45	16:00	0	402	47	449	1	403	0	404	35		0	0	0	0	103	0	31	134	35		987
16:00	16:15	0	387	61	448	1	457	0	458	32		0	0	0	0	147	0	40	187	32		1093
16:15	16:30	0	353	63	416	3	395	0	399	28		0	0	0	0	140	0	45	185	28		1000
16:30	16:45	0	386	75	461	4	445	0	452	25		0	0	0	0	106	0	40	146	25		1059
16:45	17:00	0	386	69	455	3	384	0	390	22		0	0	0	0	88	0	45	133	22		978
17:00	17:15	0	394	60	454	3	421	0	425	22		0	0	0	0	105	0	35	140	22		1019
17:15	17:30	0	379	57	437	3	409	0	413	24		0	0	0	0	120	0	37	157	24		1007
17:30	17:45	0	308	66	374	6	399	0	405	20		0	0	0	0	82	0	25	107	20		886
17:45	18:00	0	298	60	358	9	333	0	344	19		0	0	0	0	94	0	31	125	19		827
Total:		0	9954	1855	1181	81	11619	0	11721	973		0	0	0	0	3318	0	1097	4415	973		27,949

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Cyclist Volume

Time Period		ST. LAURENT BLVD			LEMIEUX ST			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0
09:30	09:45	0	1	1	0	0	0	1
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
Total		0	1	**1**	0	0	0	1

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Pedestrian Volume

Time Period		ST. LAURENT BLVD			LEMIEUX ST			
		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	0	4	**4**	0	0	**0**	**4**
07:15	07:30	0	8	**8**	0	1	**1**	**9**
07:30	07:45	0	8	**8**	0	0	**0**	**8**
07:45	08:00	0	7	**7**	0	0	**0**	**7**
08:00	08:15	0	5	**5**	0	1	**1**	**6**
08:15	08:30	0	9	**9**	0	0	**0**	**9**
08:30	08:45	0	3	**3**	0	0	**0**	**3**
08:45	09:00	0	8	**8**	0	2	**2**	**10**
09:00	09:15	0	3	**3**	0	2	**2**	**5**
09:15	09:30	0	12	**12**	0	1	**1**	**13**
09:30	09:45	0	4	**4**	0	0	**0**	**4**
09:45	10:00	0	4	**4**	0	0	**0**	**4**
11:30	11:45	1	16	**17**	0	2	**2**	**19**
11:45	12:00	0	8	**8**	0	2	**2**	**10**
12:00	12:15	0	20	**20**	0	1	**1**	**21**
12:15	12:30	0	16	**16**	0	1	**1**	**17**
12:30	12:45	0	33	**33**	0	2	**2**	**35**
12:45	13:00	0	24	**24**	0	1	**1**	**25**
13:00	13:15	0	7	**7**	0	2	**2**	**9**
13:15	13:30	0	9	**9**	0	2	**2**	**11**
15:00	15:15	0	13	**13**	0	1	**1**	**14**
15:15	15:30	0	8	**8**	0	0	**0**	**8**
15:30	15:45	0	8	**8**	0	1	**1**	**9**
15:45	16:00	0	7	**7**	0	2	**2**	**9**
16:00	16:15	0	18	**18**	0	3	**3**	**21**
16:15	16:30	0	14	**14**	0	2	**2**	**16**
16:30	16:45	0	10	**10**	0	0	**0**	**10**
16:45	17:00	0	17	**17**	0	1	**1**	**18**
17:00	17:15	12	12	**24**	0	1	**1**	**25**
17:15	17:30	18	18	**36**	0	1	**1**	**37**
17:30	17:45	33	32	**65**	0	1	**1**	**66**
17:45	18:00	16	17	**33**	0	1	**1**	**34**
Total	.....	80	382	**462**	0	34	**34**	**496**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study Heavy Vehicles

		ST. LAURENT BLVD									LEMIEUX ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	21	0	**21**	0	12	0	**12**	**33**	0	0	0	**0**	23	0	0	**23**	**23**	**56**
07:15	07:30	0	22	0	**22**	0	15	0	**15**	**37**	0	0	0	**0**	36	0	2	**38**	**38**	**75**
07:30	07:45	0	18	1	**19**	0	16	0	**16**	**35**	0	0	0	**0**	31	0	3	**34**	**34**	**69**
07:45	08:00	0	21	0	**21**	0	20	0	**20**	**41**	0	0	0	**0**	27	0	0	**27**	**27**	**68**
08:00	08:15	0	20	1	**21**	0	16	0	**16**	**37**	0	0	0	**0**	31	0	0	**31**	**31**	**68**
08:15	08:30	0	14	2	**16**	0	11	0	**11**	**27**	0	0	0	**0**	29	0	2	**31**	**31**	**58**
08:30	08:45	0	17	0	**17**	0	12	0	**12**	**29**	0	0	0	**0**	30	0	0	**30**	**30**	**59**
08:45	09:00	0	14	2	**16**	0	18	0	**18**	**34**	0	0	0	**0**	26	0	0	**26**	**26**	**60**
09:00	09:15	0	21	0	**21**	0	18	0	**18**	**39**	0	0	0	**0**	20	0	0	**20**	**20**	**59**
09:15	09:30	0	22	1	**23**	0	14	0	**14**	**37**	0	0	0	**0**	13	0	1	**14**	**14**	**51**
09:30	09:45	0	21	0	**21**	0	18	0	**18**	**39**	0	0	0	**0**	13	0	2	**15**	**15**	**54**
09:45	10:00	0	13	1	**14**	0	23	0	**23**	**37**	0	0	0	**0**	19	0	0	**19**	**19**	**56**
11:30	11:45	0	15	3	**18**	0	12	0	**12**	**30**	0	0	0	**0**	8	0	1	**9**	**9**	**39**
11:45	12:00	0	11	1	**12**	0	22	0	**22**	**34**	0	0	0	**0**	8	0	1	**9**	**9**	**43**
12:00	12:15	0	13	1	**14**	0	11	0	**11**	**25**	0	0	0	**0**	4	0	2	**6**	**6**	**31**
12:15	12:30	0	13	0	**13**	0	16	0	**16**	**29**	0	0	0	**0**	10	0	4	**14**	**14**	**43**
12:30	12:45	0	13	1	**14**	0	6	0	**6**	**20**	0	0	0	**0**	7	0	1	**8**	**8**	**28**
12:45	13:00	0	10	0	**10**	0	12	0	**12**	**22**	0	0	0	**0**	13	0	1	**14**	**14**	**36**
13:00	13:15	0	15	0	**15**	0	9	0	**9**	**24**	0	0	0	**0**	6	0	0	**6**	**6**	**30**
13:15	13:30	0	22	0	**22**	0	23	0	**23**	**45**	0	0	0	**0**	11	0	2	**13**	**13**	**58**
15:00	15:15	0	15	1	**16**	0	23	0	**23**	**39**	0	0	0	**0**	9	0	0	**9**	**9**	**48**
15:15	15:30	0	11	1	**12**	0	17	0	**17**	**29**	0	0	0	**0**	13	0	0	**13**	**13**	**42**
15:30	15:45	0	14	0	**14**	0	10	0	**10**	**24**	0	0	0	**0**	12	0	1	**13**	**13**	**37**
15:45	16:00	0	17	0	**17**	0	18	0	**18**	**35**	0	0	0	**0**	8	0	0	**8**	**8**	**43**
16:00	16:15	0	15	1	**16**	0	16	0	**16**	**32**	0	0	0	**0**	13	0	2	**15**	**15**	**47**
16:15	16:30	0	11	2	**13**	0	15	0	**15**	**28**	0	0	0	**0**	17	0	6	**23**	**23**	**51**
16:30	16:45	0	10	2	**12**	0	13	0	**13**	**25**	0	0	0	**0**	12	0	3	**15**	**15**	**40**
16:45	17:00	0	12	0	**12**	0	10	0	**10**	**22**	0	0	0	**0**	12	0	1	**13**	**13**	**35**
17:00	17:15	0	7	0	**7**	0	15	0	**15**	**22**	0	0	0	**0**	9	0	5	**14**	**14**	**36**
17:15	17:30	0	14	0	**14**	0	10	0	**10**	**24**	0	0	0	**0**	17	0	1	**18**	**18**	**42**
17:30	17:45	0	10	1	**11**	0	9	0	**9**	**20**	0	0	0	**0**	13	0	0	**13**	**13**	**33**
17:45	18:00	0	8	1	**9**	0	10	0	**10**	**19**	0	0	0	**0**	15	0	0	**15**	**15**	**34**
Total:	None	0	480	23	**503**	0	470	0	**470**	**973**	0	0	0	**0**	515	0	41	**556**	**556**	**1,529**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018 **WO No:** 37620

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

Full Study 15 Minute U-Turn Total

		ST. LAURENT BLVD	LEMIEUX ST			
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
08:00	08:15	0	0	0	0	0
08:15	08:30	0	1	0	0	1
08:30	08:45	1	0	0	0	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
09:30	09:45	0	0	0	0	0
09:45	10:00	0	1	0	0	1
11:30	11:45	0	0	0	0	0
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	2	1	0	0	3
12:45	13:00	0	1	0	0	1
13:00	13:15	0	1	0	0	1
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	2	0	0	2
15:30	15:45	0	3	0	0	3
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	1	0	0	1
16:30	16:45	0	3	0	0	3
16:45	17:00	0	3	0	0	3
17:00	17:15	0	1	0	0	1
17:15	17:30	1	1	0	0	2
17:30	17:45	0	0	0	0	0
17:45	18:00	0	2	0	0	2
Total		4	21	0	0	25

Transportation Services - Traffic Services

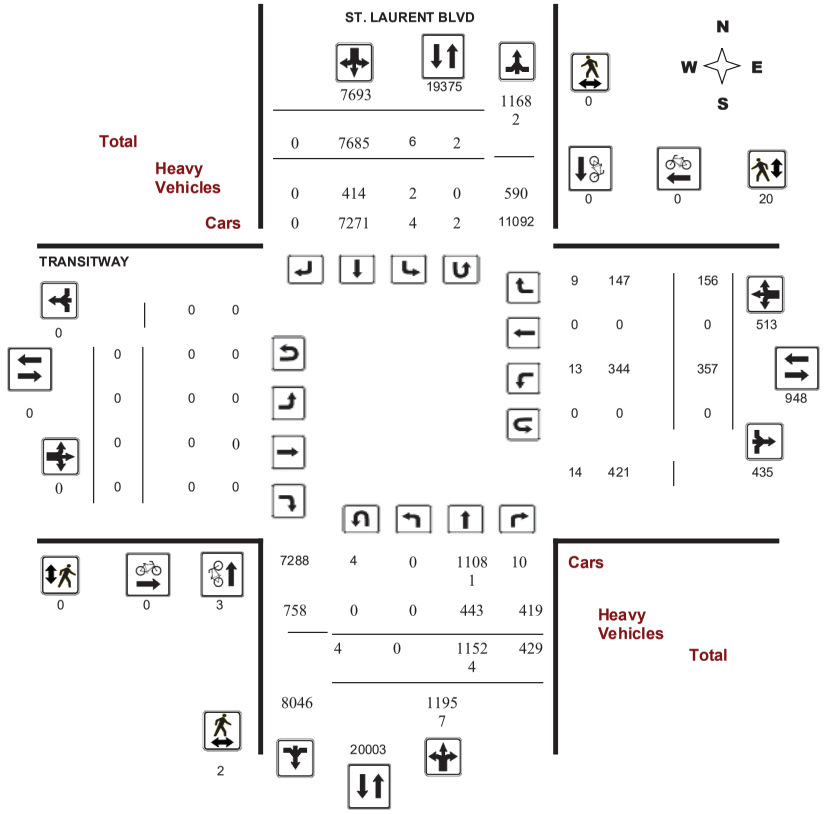
Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Diagram



Transportation Services - Traffic Services

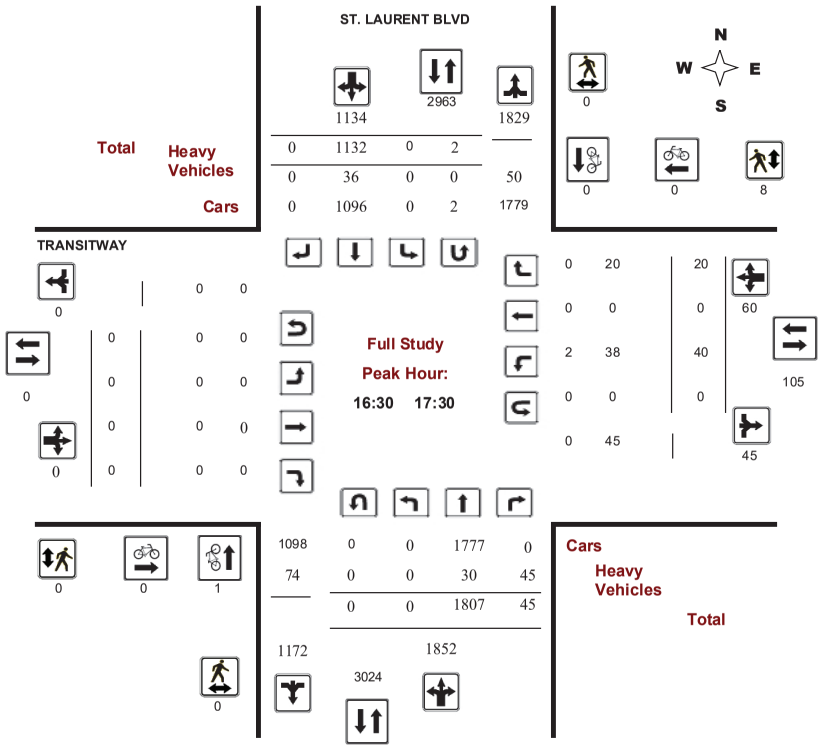
Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Peak Hour Diagram



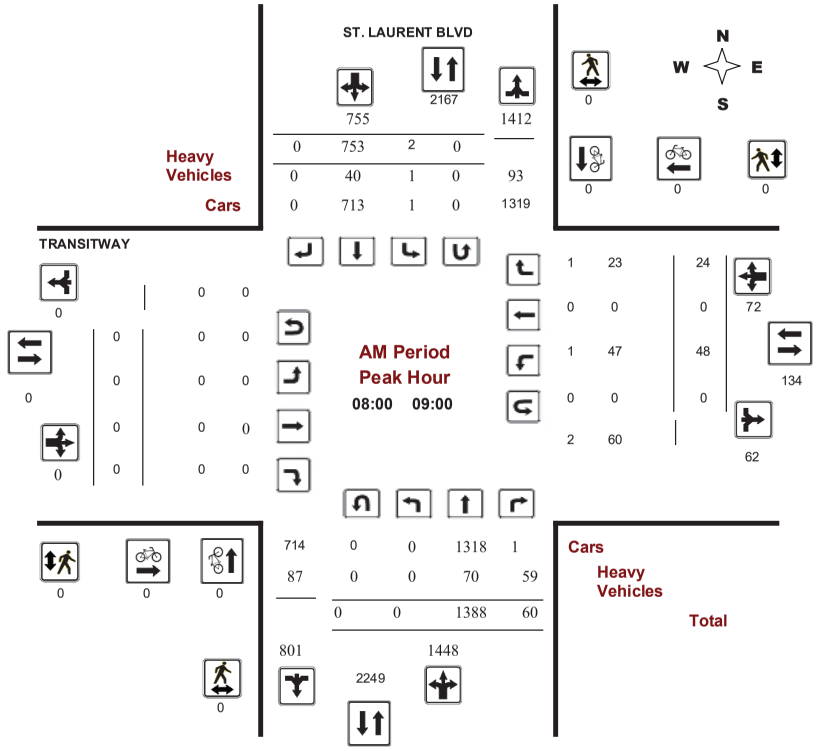
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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



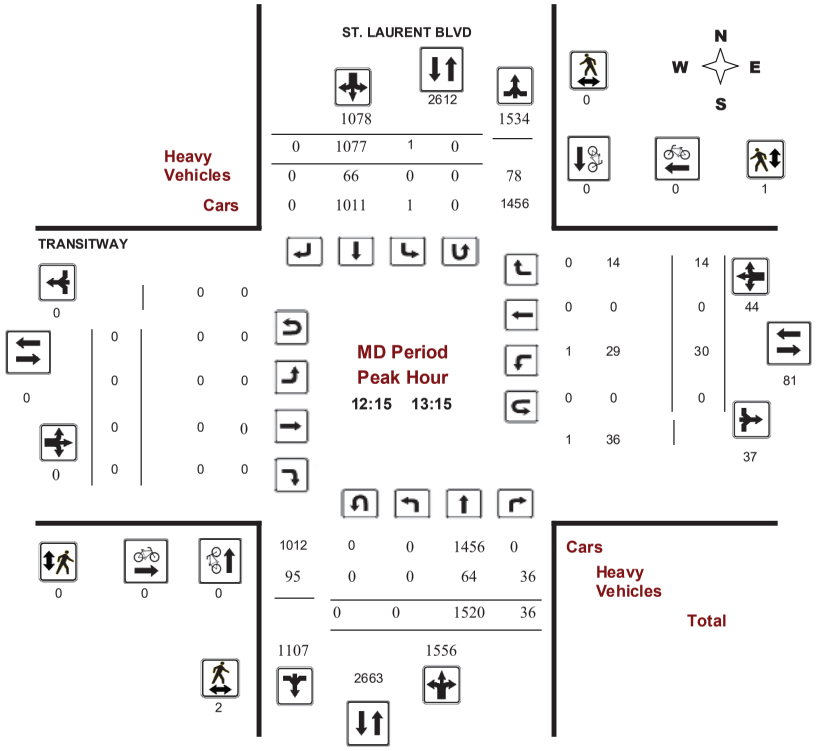
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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



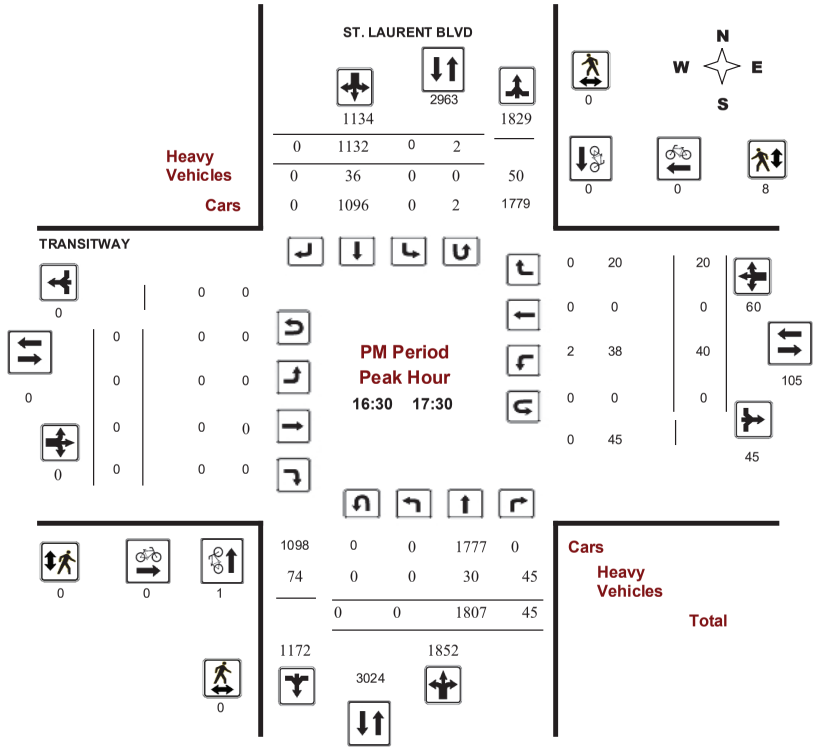
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 30, 201

Total Observed U-Turns

Northbound: 4 Southbound: 2

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	ST. LAURENT BLVD								TRANSITWAY								
	Northbound				Southbound				Eastbound				Westbound				
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	1185	58	**1243**	1	714	0	**715**	**1958**	0	0	0	**0**	54	0	17	**71**	**71**	**2029**
08:00 09:00	0	1388	60	**1448**	2	753	0	**755**	**2203**	0	0	0	**0**	48	0	24	**72**	**72**	**2275**
09:00 10:00	0	1215	69	**1284**	2	717	0	**719**	**2003**	0	0	0	**0**	59	0	17	**76**	**76**	**2079**
11:30 12:30	0	1457	38	**1495**	1	943	0	**944**	**2439**	0	0	0	**0**	43	0	15	**58**	**58**	**2497**
12:30 13:30	0	1395	44	**1439**	0	1097	0	**1097**	**2536**	0	0	0	**0**	34	0	16	**50**	**50**	**2586**
15:00 16:00	0	1530	54	**1584**	0	1210	0	**1210**	**2794**	0	0	0	**0**	36	0	24	**60**	**60**	**2854**
16:00 17:00	0	1671	56	**1727**	0	1172	0	**1172**	**2899**	0	0	0	**0**	45	0	21	**66**	**66**	**2965**
17:00 18:00	0	1683	50	**1733**	0	1079	0	**1079**	**2812**	0	0	0	**0**	38	0	22	**60**	**60**	**2872**
Sub Total	0	11524	429	**11953**	6	7685	0	**7691**	**19644**	0	0	0	**0**	357	0	156	**513**	**513**	**20157**
U Turns	4			**4**	2			**2**	**6**	**0**			**0**	0			**0**	**0**	**6**
Total	4	11524	429	**11957**	8	7685	0	**7693**	**19650**	0	0	0	**0**	357	0	156	**513**	**513**	**20163**
EQ 12Hr	6	16018	596	**16620**	11	10682	0	**10693**	**27313**	0	0	0	**0**	496	0	217	**713**	**713**	**28026**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	6	16018	596	**16620**	11	10682	0	**10693**	**27313**	0	0	0	**0**	496	0	217	**713**	**713**	**28026**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	8	20984	781	**21773**	14	13993	0	**14007**	**35780**	0	0	0	**0**	650	0	284	**934**	**934**	**36714**
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

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study 15 Minute Increments

		ST. LAURENT BLVD									TRANSITWAY									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	234	14	248	1	178	0	179	**427**	0	0	0	0	13	0	5	18	**18**	**445**
07:15	07:30	0	271	12	283	0	153	0	153	**436**	0	0	0	0	11	0	4	15	**15**	**451**
07:30	07:45	0	327	17	344	0	201	0	201	**545**	0	0	0	0	16	0	4	20	**20**	**565**
07:45	08:00	0	353	15	368	0	182	0	182	**550**	0	0	0	0	14	0	4	18	**18**	**568**
08:00	08:15	0	345	16	361	1	172	0	173	**534**	0	0	0	0	16	0	5	21	**21**	**555**
08:15	08:30	0	323	16	339	0	166	0	166	**505**	0	0	0	0	10	0	2	12	**12**	**517**
08:30	08:45	0	366	13	379	0	203	0	203	**582**	0	0	0	0	13	0	6	19	**19**	**601**
08:45	09:00	0	354	15	369	1	212	0	213	**582**	0	0	0	0	9	0	11	20	**20**	**602**
09:00	09:15	0	325	20	345	0	184	0	184	**529**	0	0	0	0	11	0	4	15	**15**	**544**
09:15	09:30	0	267	14	281	0	184	0	184	**465**	0	0	0	0	23	0	2	25	**25**	**490**
09:30	09:45	0	310	17	327	1	180	0	181	**508**	0	0	0	0	11	0	8	19	**19**	**527**
09:45	10:00	0	313	18	331	1	169	0	170	**501**	0	0	0	0	14	0	3	17	**17**	**518**
11:30	11:45	1	334	13	348	0	224	0	224	**572**	0	0	0	0	14	0	6	20	**20**	**592**
11:45	12:00	0	371	9	380	0	247	0	247	**627**	0	0	0	0	11	0	3	14	**14**	**641**
12:00	12:15	0	343	12	355	0	224	0	224	**579**	0	0	0	0	9	0	5	14	**14**	**593**
12:15	12:30	0	409	4	413	1	248	0	249	**662**	0	0	0	0	9	0	1	10	**10**	**672**
12:30	12:45	0	358	12	370	0	285	0	285	**655**	0	0	0	0	8	0	6	14	**14**	**669**
12:45	13:00	0	371	11	382	0	298	0	298	**680**	0	0	0	0	9	0	2	11	**11**	**691**
13:00	13:15	0	382	9	391	0	246	0	246	**637**	0	0	0	0	4	0	5	9	**9**	**646**
13:15	13:30	0	284	12	296	0	268	0	268	**564**	0	0	0	0	13	0	3	16	**16**	**580**
15:00	15:15	0	360	14	374	0	315	0	315	**689**	0	0	0	0	6	0	7	13	**13**	**702**
15:15	15:30	2	400	15	417	0	297	0	297	**714**	0	0	0	0	13	0	2	15	**15**	**729**
15:30	15:45	0	394	11	405	0	318	0	318	**723**	0	0	0	0	6	0	9	15	**15**	**738**
15:45	16:00	0	376	14	390	0	280	0	280	**670**	0	0	0	0	11	0	6	17	**17**	**687**
16:00	16:15	0	392	17	409	0	304	0	304	**713**	0	0	0	0	8	0	8	16	**16**	**729**
16:15	16:30	0	383	9	392	0	298	0	298	**690**	0	0	0	0	13	0	3	16	**16**	**706**
16:30	16:45	0	456	14	470	0	281	0	281	**751**	0	0	0	0	7	0	9	16	**16**	**767**
16:45	17:00	0	440	16	456	1	289	0	290	**746**	0	0	0	0	17	0	1	18	**18**	**764**
17:00	17:15	0	430	11	441	0	306	0	306	**747**	0	0	0	0	9	0	7	16	**16**	**763**
17:15	17:30	0	481	4	485	1	256	0	257	**742**	0	0	0	0	7	0	3	10	**10**	**752**
17:30	17:45	0	416	20	436	0	258	0	258	**694**	0	0	0	0	9	0	6	15	**15**	**709**
17:45	18:00	1	356	15	372	0	259	0	259	**631**	0	0	0	0	13	0	6	19	**19**	**650**
Total:		4	1152	429	1195	8	7685	0	7693	**19650**	0	0	0	0	357	0	156	513	**19650**	**20,163**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Cyclist Volume

		ST. LAURENT BLVD			TRANSITWAY			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	1	0	**1**	0	0	**0**	**1**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	1	0	**1**	0	0	**0**	**1**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	1	0	**1**	0	0	**0**	**1**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		3	0	**3**	0	0	**0**	**3**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Pedestrian Volume

	ST. LAURENT BLVD			TRANSITWAY			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	0	2	**2**	**2**
07:15 07:30	0	0	**0**	0	0	**0**	**0**
07:30 07:45	0	0	**0**	0	0	**0**	**0**
07:45 08:00	0	0	**0**	0	0	**0**	**0**
08:00 08:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	0	0	**0**	0	0	**0**	**0**
08:30 08:45	0	0	**0**	0	0	**0**	**0**
08:45 09:00	0	0	**0**	0	0	**0**	**0**
09:00 09:15	0	0	**0**	0	1	**1**	**1**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	0	0	**0**	**0**
09:45 10:00	0	0	**0**	0	0	**0**	**0**
11:30 11:45	0	0	**0**	0	0	**0**	**0**
11:45 12:00	0	0	**0**	0	0	**0**	**0**
12:00 12:15	0	0	**0**	0	1	**1**	**1**
12:15 12:30	0	0	**0**	0	0	**0**	**0**
12:30 12:45	0	0	**0**	0	1	**1**	**1**
12:45 13:00	0	0	**0**	0	0	**0**	**0**
13:00 13:15	2	0	**2**	0	0	**0**	**2**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	0	0	**0**	0	2	**2**	**2**
15:15 15:30	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	0	1	**1**	**1**
15:45 16:00	0	0	**0**	0	0	**0**	**0**
16:00 16:15	0	0	**0**	0	1	**1**	**1**
16:15 16:30	0	0	**0**	0	3	**3**	**3**
16:30 16:45	0	0	**0**	0	1	**1**	**1**
16:45 17:00	0	0	**0**	0	4	**4**	**4**
17:00 17:15	0	0	**0**	0	2	**2**	**2**
17:15 17:30	0	0	**0**	0	1	**1**	**1**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	0	**0**	0	0	**0**	**0**
Total	2	0	**2**	0	20	**20**	**22**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study Heavy Vehicles

		ST. LAURENT BLVD									TRANSITWAY									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	15	14	**29**	0	6	0	**6**	**35**	0	0	0	**0**	12	0	5	**17**	**17**	**52**
07:15	07:30	0	12	12	**24**	0	7	0	**7**	**31**	0	0	0	**0**	11	0	4	**15**	**15**	**46**
07:30	07:45	0	18	16	**34**	0	9	0	**9**	**43**	0	0	0	**0**	16	0	4	**20**	**20**	**63**
07:45	08:00	0	8	15	**23**	0	7	0	**7**	**30**	0	0	0	**0**	14	0	4	**18**	**18**	**48**
08:00	08:15	0	20	15	**35**	0	13	0	**13**	**48**	0	0	0	**0**	16	0	5	**21**	**21**	**69**
08:15	08:30	0	16	16	**32**	0	7	0	**7**	**39**	0	0	0	**0**	10	0	2	**12**	**12**	**51**
08:30	08:45	0	15	13	**28**	0	5	0	**5**	**33**	0	0	0	**0**	12	0	6	**18**	**18**	**51**
08:45	09:00	0	19	15	**34**	1	15	0	**16**	**50**	0	0	0	**0**	9	0	10	**19**	**19**	**69**
09:00	09:15	0	22	18	**40**	0	19	0	**19**	**59**	0	0	0	**0**	11	0	4	**15**	**15**	**74**
09:15	09:30	0	20	14	**34**	0	23	0	**23**	**57**	0	0	0	**0**	22	0	2	**24**	**24**	**81**
09:30	09:45	0	18	17	**35**	1	16	0	**17**	**52**	0	0	0	**0**	10	0	7	**17**	**17**	**69**
09:45	10:00	0	23	18	**41**	0	14	0	**14**	**55**	0	0	0	**0**	14	0	3	**17**	**17**	**72**
11:30	11:45	0	15	11	**26**	0	11	0	**11**	**37**	0	0	0	**0**	13	0	5	**18**	**18**	**55**
11:45	12:00	0	17	9	**26**	0	14	0	**14**	**40**	0	0	0	**0**	10	0	2	**12**	**12**	**52**
12:00	12:15	0	12	12	**24**	0	13	0	**13**	**37**	0	0	0	**0**	7	0	4	**11**	**11**	**48**
12:15	12:30	0	16	4	**20**	0	11	0	**11**	**31**	0	0	0	**0**	8	0	1	**9**	**9**	**40**
12:30	12:45	0	16	12	**28**	0	16	0	**16**	**44**	0	0	0	**0**	8	0	6	**14**	**14**	**58**
12:45	13:00	0	11	11	**22**	0	21	0	**21**	**43**	0	0	0	**0**	9	0	2	**11**	**11**	**54**
13:00	13:15	0	21	9	**30**	0	18	0	**18**	**48**	0	0	0	**0**	4	0	5	**9**	**9**	**57**
13:15	13:30	0	11	11	**22**	0	16	0	**16**	**38**	0	0	0	**0**	12	0	2	**14**	**14**	**52**
15:00	15:15	0	22	14	**36**	0	26	0	**26**	**62**	0	0	0	**0**	6	0	7	**13**	**13**	**75**
15:15	15:30	0	15	15	**30**	0	19	0	**19**	**49**	0	0	0	**0**	13	0	2	**15**	**15**	**64**
15:30	15:45	0	16	9	**25**	0	17	0	**17**	**42**	0	0	0	**0**	6	0	7	**13**	**13**	**55**
15:45	16:00	0	13	13	**26**	0	13	0	**13**	**39**	0	0	0	**0**	11	0	6	**17**	**17**	**56**
16:00	16:15	0	12	17	**29**	0	18	0	**18**	**47**	0	0	0	**0**	8	0	8	**16**	**16**	**63**
16:15	16:30	0	2	9	**11**	0	10	0	**10**	**21**	0	0	0	**0**	12	0	3	**15**	**15**	**36**
16:30	16:45	0	6	14	**20**	0	12	0	**12**	**32**	0	0	0	**0**	7	0	9	**16**	**16**	**48**
16:45	17:00	0	8	16	**24**	0	8	0	**8**	**32**	0	0	0	**0**	16	0	1	**17**	**17**	**49**
17:00	17:15	0	6	11	**17**	0	10	0	**10**	**27**	0	0	0	**0**	8	0	7	**15**	**15**	**42**
17:15	17:30	0	10	4	**14**	0	6	0	**6**	**20**	0	0	0	**0**	7	0	3	**10**	**10**	**30**
17:30	17:45	0	3	20	**23**	0	8	0	**8**	**31**	0	0	0	**0**	9	0	6	**15**	**15**	**46**
17:45	18:00	0	5	15	**20**	0	6	0	**6**	**26**	0	0	0	**0**	13	0	5	**18**	**18**	**44**
Total:	None	0	443	419	**862**	2	414	0	**416**	**1278**	0	0	0	**0**	344	0	147	**491**	**491**	**1,769**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ TRANSITWAY

Survey Date: Wednesday, January 30, 2019 **WO No:** 38337

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

Full Study 15 Minute U-Turn Total

Time Period		ST. LAURENT BLVD Northbound U-Turn Total	ST. LAURENT BLVD Southbound U-Turn Total	TRANSITWAY Eastbound U-Turn Total	TRANSITWAY 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**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
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**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	1	0	0	0	**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**
12:45	13:00	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	2	0	0	0	**2**
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**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	0	1	0	0	**1**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	1	0	0	**1**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	1	0	0	0	**1**
Total		4	2	0	0	**6**

Transportation Services - Traffic Services

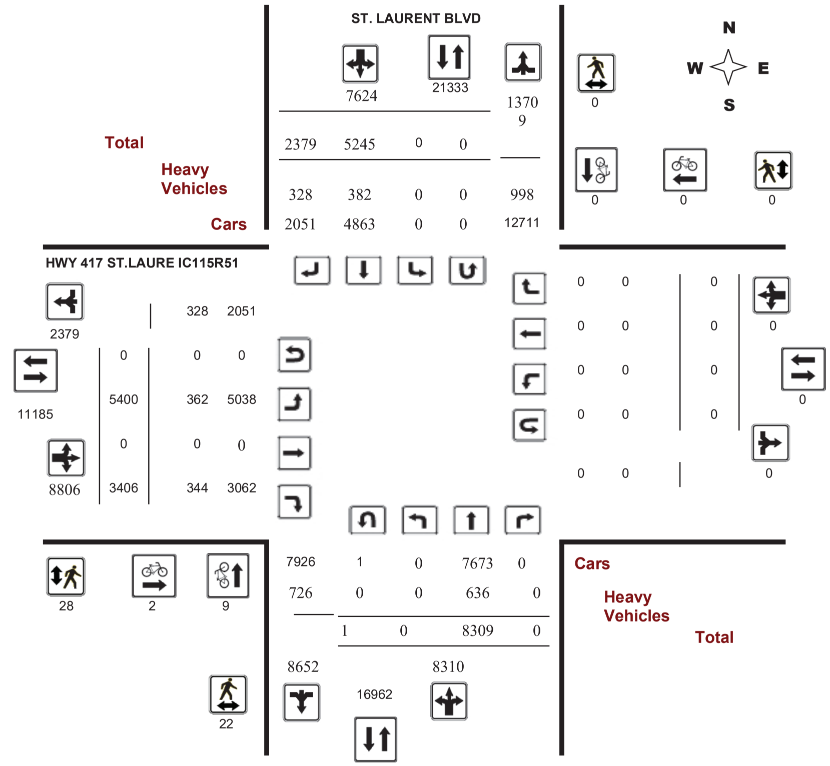
Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Diagram



Transportation Services - Traffic Services

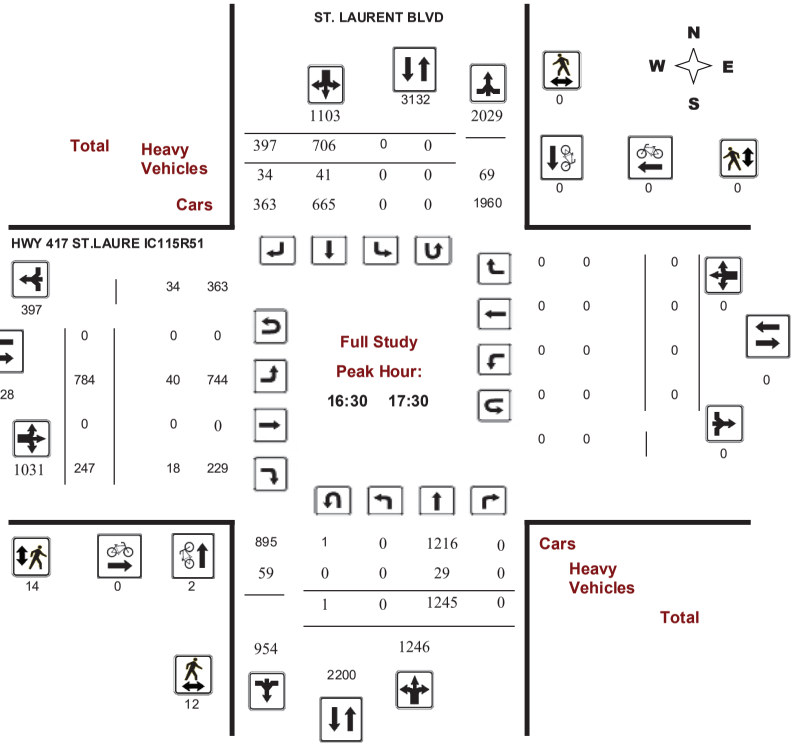
Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Peak Hour Diagram



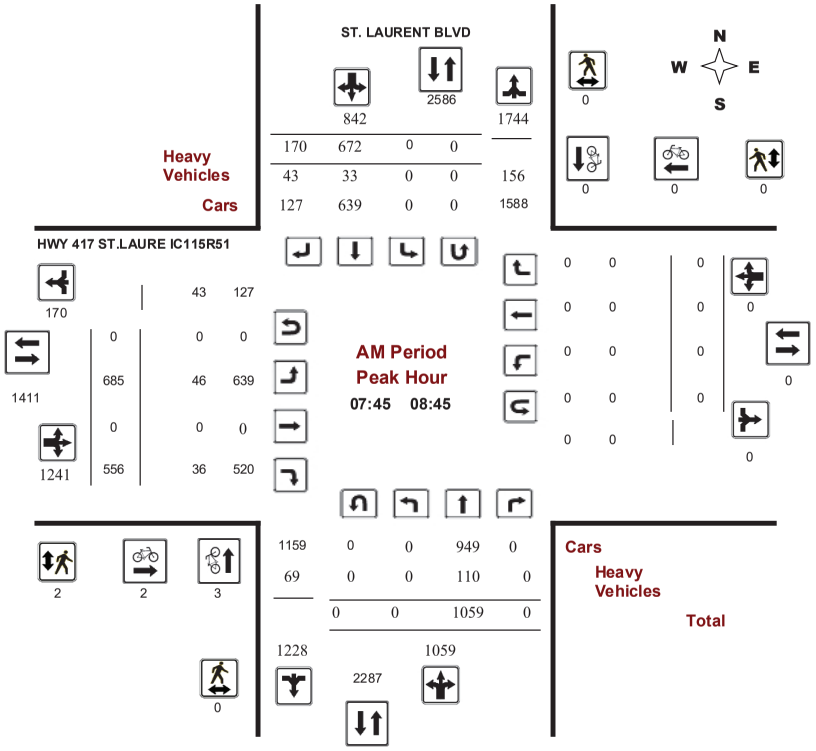
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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



Comments

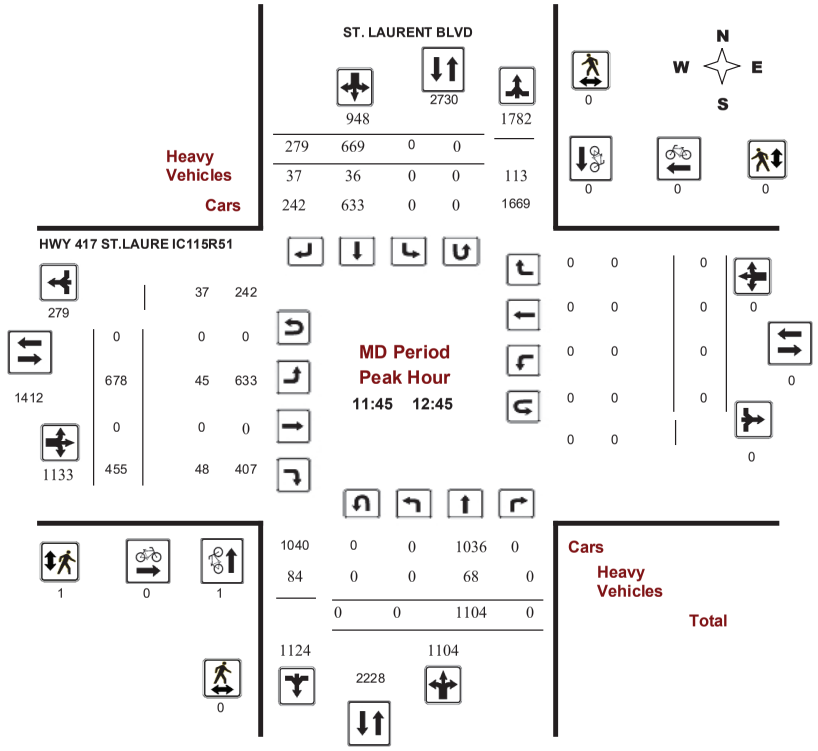
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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



Comments

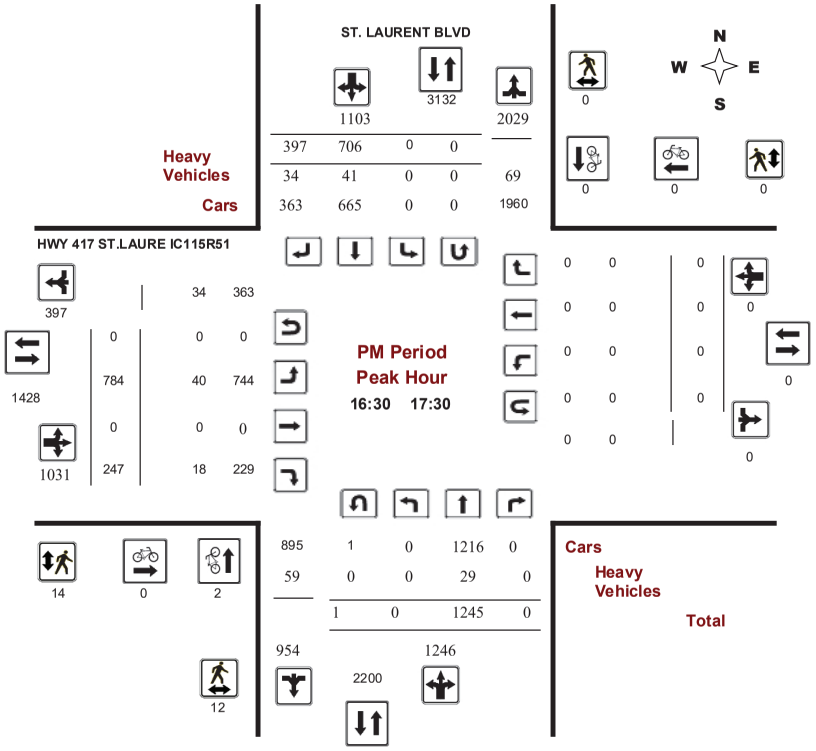
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 30, 201

Total Observed U-Turns

Northbound: 1 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor 1.00

	ST. LAURENT BLVD								HWY 417 ST.LAURE IC115R51									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	796	0	**796**	0	634	152	**786**	**1582**	717	0	546	**1263**	0	0	0	**0**	**1263**	**2845**
08:00 09:00	0	1066	0	**1066**	0	684	162	**846**	**1912**	663	0	529	**1192**	0	0	0	**0**	**1192**	**3104**
09:00 10:00	0	982	0	**982**	0	606	185	**791**	**1773**	688	0	540	**1228**	0	0	0	**0**	**1228**	**3001**
11:30 12:30	0	1114	0	**1114**	0	668	255	**923**	**2037**	658	0	455	**1113**	0	0	0	**0**	**1113**	**3150**
12:30 13:30	0	960	0	**960**	0	598	349	**947**	**1907**	641	0	427	**1068**	0	0	0	**0**	**1068**	**2975**
15:00 16:00	0	1086	0	**1086**	0	741	442	**1183**	**2269**	527	0	330	**857**	0	0	0	**0**	**857**	**3126**
16:00 17:00	0	1150	0	**1150**	0	664	424	**1088**	**2238**	721	0	275	**996**	0	0	0	**0**	**996**	**3234**
17:00 18:00	0	1155	0	**1155**	0	650	410	**1060**	**2215**	785	0	304	**1089**	0	0	0	**0**	**1089**	**3304**
Sub Total	0	8309	0	**8309**	0	5245	2379	**7624**	**15933**	5400	0	3406	**8806**	0	0	0	**0**	**8806**	**24739**
U Turns	1			**1**	0			**0**	**1**	**0**			**0**	0			**0**	**0**	**1**
Total	1	8309	0	**8310**	0	5245	2379	**7624**	**15934**	5400	0	3406	**8806**	0	0	0	**0**	**8806**	**24740**
EQ 12Hr	1	11550	0	**11551**	0	7291	3307	**10598**	**22149**	7506	0	4734	**12240**	0	0	0	**0**	**12240**	**34389**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1	11550	0	**11551**	0	7291	3307	**10598**	**22149**	7506	0	4734	**12240**	0	0	0	**0**	**12240**	**34389**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	1	15130	0	**15131**	0	9551	4332	**13883**	**29014**	9833	0	6202	**16035**	0	0	0	**0**	**16035**	**45049**
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

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study 15 Minute Increments

		ST. LAURENT BLVD									HWY 417 ST.LAURE IC115R51									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	152	0	152	0	152	32	184	**336**	140	0	125	265	0	0	0	0	**265**	**601**
07:15	07:30	0	181	0	181	0	146	27	173	**354**	179	0	146	325	0	0	0	0	**325**	**679**
07:30	07:45	0	214	0	214	0	171	38	209	**423**	196	0	123	319	0	0	0	0	**319**	**742**
07:45	08:00	0	249	0	249	0	165	55	220	**469**	202	0	152	354	0	0	0	0	**354**	**823**
08:00	08:15	0	277	0	277	0	168	47	215	**492**	156	0	126	282	0	0	0	0	**282**	**774**
08:15	08:30	0	253	0	253	0	156	32	188	**441**	163	0	133	296	0	0	0	0	**296**	**737**
08:30	08:45	0	280	0	280	0	183	36	219	**499**	164	0	145	309	0	0	0	0	**309**	**808**
08:45	09:00	0	256	0	256	0	177	47	224	**480**	180	0	125	305	0	0	0	0	**305**	**785**
09:00	09:15	0	220	0	220	0	149	43	192	**412**	153	0	147	300	0	0	0	0	**300**	**712**
09:15	09:30	0	256	0	256	0	172	38	210	**466**	163	0	110	273	0	0	0	0	**273**	**739**
09:30	09:45	0	265	0	265	0	138	46	184	**449**	192	0	158	350	0	0	0	0	**350**	**799**
09:45	10:00	0	241	0	241	0	147	58	205	**446**	180	0	125	305	0	0	0	0	**305**	**751**
11:30	11:45	0	260	0	260	0	152	60	212	**472**	166	0	116	282	0	0	0	0	**282**	**754**
11:45	12:00	0	295	0	295	0	171	73	244	**539**	161	0	124	285	0	0	0	0	**285**	**824**
12:00	12:15	0	267	0	267	0	156	57	213	**480**	160	0	110	270	0	0	0	0	**270**	**750**
12:15	12:30	0	292	0	292	0	189	65	254	**546**	171	0	105	276	0	0	0	0	**276**	**822**
12:30	12:45	0	250	0	250	0	153	84	237	**487**	186	0	116	302	0	0	0	0	**302**	**789**
12:45	13:00	0	230	0	230	0	166	94	260	**490**	141	0	97	238	0	0	0	0	**238**	**728**
13:00	13:15	0	255	0	255	0	127	80	207	**462**	180	0	107	287	0	0	0	0	**287**	**749**
13:15	13:30	0	225	0	225	0	152	91	243	**468**	134	0	107	241	0	0	0	0	**241**	**709**
15:00	15:15	0	284	0	284	0	158	107	265	**549**	121	0	92	213	0	0	0	0	**213**	**762**
15:15	15:30	0	282	0	282	0	174	116	290	**572**	133	0	75	208	0	0	0	0	**208**	**780**
15:30	15:45	0	260	0	260	0	198	109	307	**567**	133	0	97	230	0	0	0	0	**230**	**797**
15:45	16:00	0	260	0	260	0	211	110	321	**581**	140	0	66	206	0	0	0	0	**206**	**787**
16:00	16:15	0	312	0	312	0	136	126	262	**574**	170	0	81	251	0	0	0	0	**251**	**825**
16:15	16:30	0	250	0	250	0	158	116	274	**524**	158	0	69	227	0	0	0	0	**227**	**751**
16:30	16:45	0	292	0	292	0	176	93	269	**561**	197	0	61	258	0	0	0	0	**258**	**819**
16:45	17:00	1	296	0	297	0	194	89	283	**580**	196	0	64	260	0	0	0	0	**260**	**840**
17:00	17:15	0	329	0	329	0	175	118	293	**622**	196	0	58	254	0	0	0	0	**254**	**876**
17:15	17:30	0	328	0	328	0	161	97	258	**586**	195	0	64	259	0	0	0	0	**259**	**845**
17:30	17:45	0	252	0	252	0	149	93	242	**494**	217	0	83	300	0	0	0	0	**300**	**794**
17:45	18:00	0	246	0	246	0	165	102	267	**513**	177	0	99	276	0	0	0	0	**276**	**789**
Total:		1	8309	0	8310	0	5245	2379	7624	**15934**	5400	0	3406	8806	0	0	0	0	**15934**	**24,740**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Cyclist Volume

		ST. LAURENT BLVD			HWY 417 ST.LAURE IC115R51			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	3	0	**3**	2	0	**2**	**5**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	1	0	**1**	0	0	**0**	**1**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	1	0	**1**	0	0	**0**	**1**
12:45	13:00	1	0	**1**	0	0	**0**	**1**
13:00	13:15	1	0	**1**	0	0	**0**	**1**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	1	0	**1**	0	0	**0**	**1**
16:45	17:00	1	0	**1**	0	0	**0**	**1**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		9	0	**9**	2	0	**2**	**11**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Pedestrian Volume

	ST. LAURENT BLVD			HWY 417 ST.LAURE IC115R51			
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	**0**	1	0	**1**	**1**
07:15 07:30	0	0	**0**	1	0	**1**	**1**
07:30 07:45	1	0	**1**	2	0	**2**	**3**
07:45 08:00	0	0	**0**	0	0	**0**	**0**
08:00 08:15	0	0	**0**	1	0	**1**	**1**
08:15 08:30	0	0	**0**	0	0	**0**	**0**
08:30 08:45	0	0	**0**	1	0	**1**	**1**
08:45 09:00	0	0	**0**	0	0	**0**	**0**
09:00 09:15	0	0	**0**	0	0	**0**	**0**
09:15 09:30	0	0	**0**	0	0	**0**	**0**
09:30 09:45	0	0	**0**	0	0	**0**	**0**
09:45 10:00	0	0	**0**	0	0	**0**	**0**
11:30 11:45	0	0	**0**	0	0	**0**	**0**
11:45 12:00	0	0	**0**	0	0	**0**	**0**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	0	0	**0**	1	0	**1**	**1**
12:30 12:45	0	0	**0**	0	0	**0**	**0**
12:45 13:00	0	0	**0**	0	0	**0**	**0**
13:00 13:15	0	0	**0**	0	0	**0**	**0**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	2	0	**2**	1	0	**1**	**3**
15:15 15:30	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	0	0	**0**	**0**
15:45 16:00	0	0	**0**	0	0	**0**	**0**
16:00 16:15	1	0	**1**	2	0	**2**	**3**
16:15 16:30	3	0	**3**	3	0	**3**	**6**
16:30 16:45	4	0	**4**	6	0	**6**	**10**
16:45 17:00	4	0	**4**	5	0	**5**	**9**
17:00 17:15	0	0	**0**	2	0	**2**	**2**
17:15 17:30	4	0	**4**	1	0	**1**	**5**
17:30 17:45	2	0	**2**	0	0	**0**	**2**
17:45 18:00	1	0	**1**	1	0	**1**	**2**
Total	22	0	**22**	28	0	**28**	**50**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study Heavy Vehicles

ST. LAURENT BLVD **HWY 417 ST.LAURE IC115R51**

Time Period		Northbound				Southbound					Eastbound				Westbound					Grand Total
		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	
07:00	07:15	0	35	0	**35**	0	7	7	**14**	**49**	8	0	3	**11**	0	0	0	**0**	**11**	**60**
07:15	07:30	0	33	0	**33**	0	15	7	**22**	**55**	7	0	8	**15**	0	0	0	**0**	**15**	**70**
07:30	07:45	0	30	0	**30**	0	12	9	**21**	**51**	14	0	2	**16**	0	0	0	**0**	**16**	**67**
07:45	08:00	0	23	0	**23**	0	6	10	**16**	**39**	10	0	7	**17**	0	0	0	**0**	**17**	**56**
08:00	08:15	0	34	0	**34**	0	10	19	**29**	**63**	14	0	3	**17**	0	0	0	**0**	**17**	**80**
08:15	08:30	0	25	0	**25**	0	7	8	**15**	**40**	12	0	8	**20**	0	0	0	**0**	**20**	**60**
08:30	08:45	0	28	0	**28**	0	10	6	**16**	**44**	10	0	18	**28**	0	0	0	**0**	**28**	**72**
08:45	09:00	0	41	0	**41**	0	14	9	**23**	**64**	18	0	13	**31**	0	0	0	**0**	**31**	**95**
09:00	09:15	0	27	0	**27**	0	14	10	**24**	**51**	14	0	30	**44**	0	0	0	**0**	**44**	**95**
09:15	09:30	0	20	0	**20**	0	35	10	**45**	**65**	15	0	23	**38**	0	0	0	**0**	**38**	**103**
09:30	09:45	0	21	0	**21**	0	16	9	**25**	**46**	17	0	28	**45**	0	0	0	**0**	**45**	**91**
09:45	10:00	0	21	0	**21**	0	13	16	**29**	**50**	18	0	29	**47**	0	0	0	**0**	**47**	**97**
11:30	11:45	0	20	0	**20**	0	12	12	**24**	**44**	9	0	8	**17**	0	0	0	**0**	**17**	**61**
11:45	12:00	0	20	0	**20**	0	7	12	**19**	**39**	12	0	13	**25**	0	0	0	**0**	**25**	**64**
12:00	12:15	0	15	0	**15**	0	9	6	**15**	**30**	10	0	10	**20**	0	0	0	**0**	**20**	**50**
12:15	12:30	0	16	0	**16**	0	12	8	**20**	**36**	7	0	15	**22**	0	0	0	**0**	**22**	**58**
12:30	12:45	0	17	0	**17**	0	8	11	**19**	**36**	16	0	10	**26**	0	0	0	**0**	**26**	**62**
12:45	13:00	0	16	0	**16**	0	13	15	**28**	**44**	6	0	6	**12**	0	0	0	**0**	**12**	**56**
13:00	13:15	0	11	0	**11**	0	9	9	**18**	**29**	14	0	9	**23**	0	0	0	**0**	**23**	**52**
13:15	13:30	0	15	0	**15**	0	15	12	**27**	**42**	10	0	12	**22**	0	0	0	**0**	**22**	**64**
15:00	15:15	0	38	0	**38**	0	20	8	**28**	**66**	11	0	7	**18**	0	0	0	**0**	**18**	**84**
15:15	15:30	0	21	0	**21**	0	13	19	**32**	**53**	7	0	12	**19**	0	0	0	**0**	**19**	**72**
15:30	15:45	0	26	0	**26**	0	13	10	**23**	**49**	13	0	8	**21**	0	0	0	**0**	**21**	**70**
15:45	16:00	0	14	0	**14**	0	14	14	**28**	**42**	8	0	7	**15**	0	0	0	**0**	**15**	**57**
16:00	16:15	0	14	0	**14**	0	11	10	**21**	**35**	14	0	10	**24**	0	0	0	**0**	**24**	**59**
16:15	16:30	0	7	0	**7**	0	9	11	**20**	**27**	6	0	9	**15**	0	0	0	**0**	**15**	**42**
16:30	16:45	0	8	0	**8**	0	11	8	**19**	**27**	9	0	6	**15**	0	0	0	**0**	**15**	**42**
16:45	17:00	0	9	0	**9**	0	12	12	**24**	**33**	13	0	5	**18**	0	0	0	**0**	**18**	**51**
17:00	17:15	0	5	0	**5**	0	11	9	**20**	**25**	11	0	5	**16**	0	0	0	**0**	**16**	**41**
17:15	17:30	0	7	0	**7**	0	7	5	**12**	**19**	7	0	2	**9**	0	0	0	**0**	**9**	**28**
17:30	17:45	0	11	0	**11**	0	8	7	**15**	**26**	13	0	9	**22**	0	0	0	**0**	**22**	**48**
17:45	18:00	0	8	0	**8**	0	9	10	**19**	**27**	9	0	9	**18**	0	0	0	**0**	**18**	**45**
Total:	None	0	636	0	**636**	0	382	328	**710**	**1346**	362	0	344	**706**	0	0	0	**0**	**706**	**2,052**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HWY 417 ST.LAURE IC115R51 @ ST. LAURENT BLVD

Survey Date: Wednesday, January 30, 2019 **WO No:** 38334

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

Full Study 15 Minute U-Turn Total

ST. LAURENT BLVD **HWY 417 ST.LAURE IC115R51**

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**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
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**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	0	0	0	0	**0**
11:30	11:45	0	0	0	0	**0**
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**
12:45	13:00	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**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	0	0	0	0	**0**
16:45	17:00	1	0	0	0	**1**
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**
17:45	18:00	0	0	0	0	**0**
Total		1	0	0	0	**1**

Transportation Services - Traffic Services

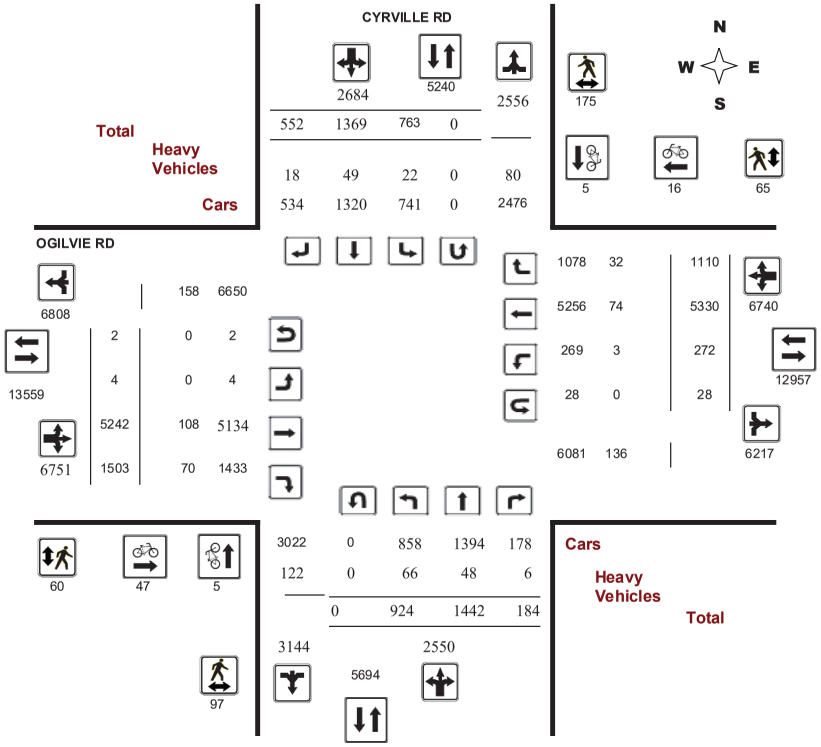
Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Diagram



Transportation Services - Traffic Services

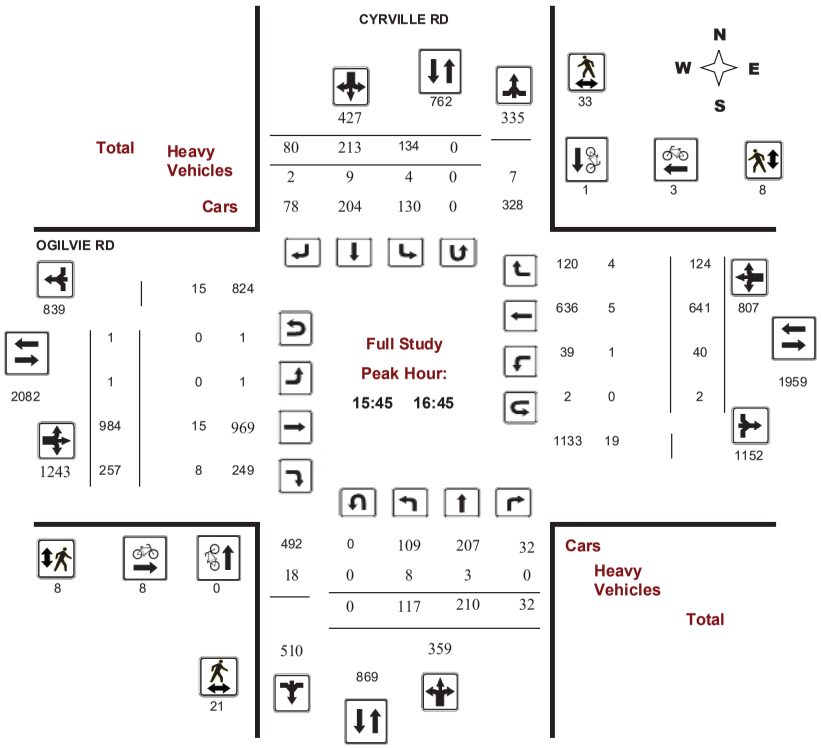
Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Peak Hour Diagram



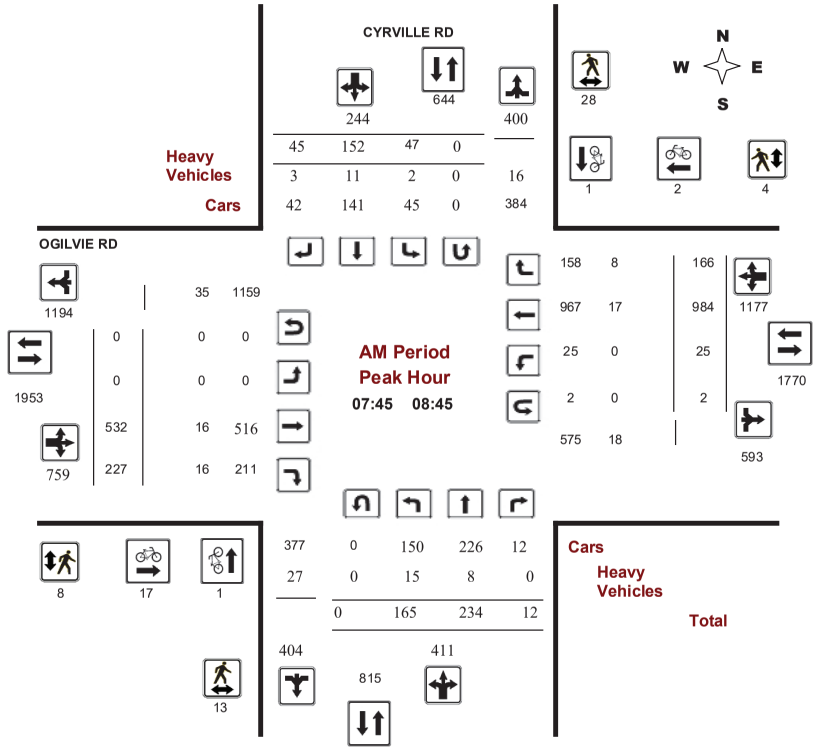
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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



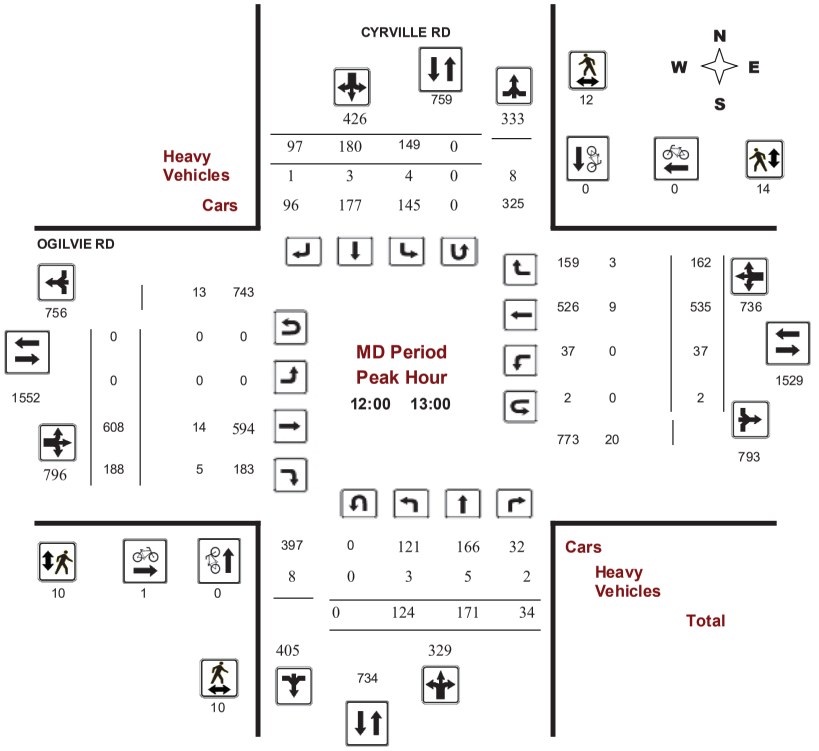
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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



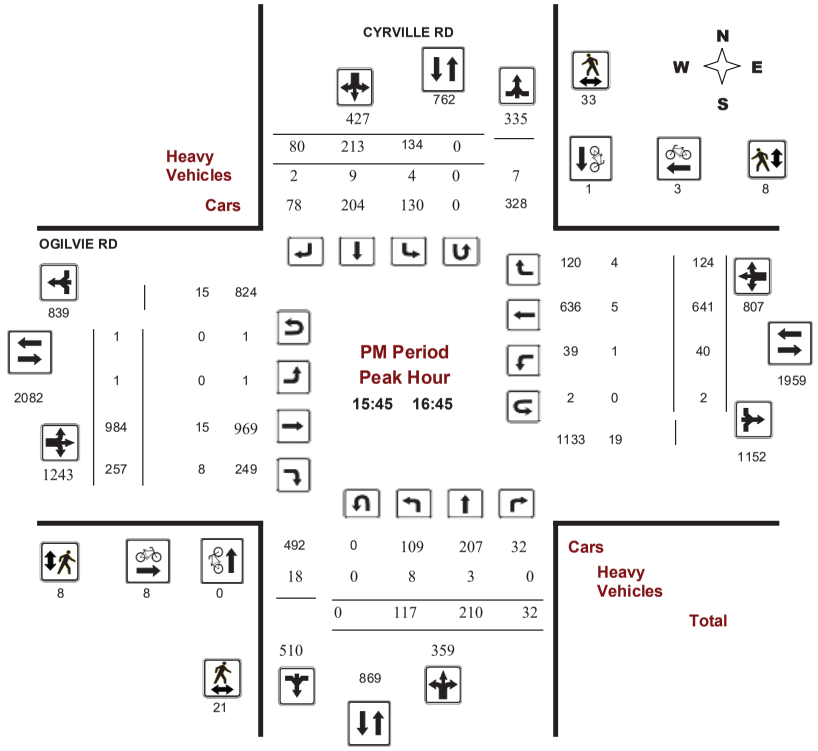
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, April 11, 2018

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 2 Westbound: 28

AADT Factor .90

	CYRVILLE RD									OGILVIE 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	144	156	10	**310**	27	172	35	**234**	**544**	0	556	185	**741**	24	838	146	**1008**	**1749**	**2293**
08:00 09:00	157	230	13	**400**	64	144	49	**257**	**657**	0	545	201	**746**	31	921	172	**1124**	**1870**	**2527**
09:00 10:00	86	133	12	**231**	74	144	52	**270**	**501**	1	475	145	**621**	38	576	126	**740**	**1361**	**1862**
11:30 12:30	113	173	36	**322**	92	156	105	**353**	**675**	0	654	174	**828**	27	523	152	**702**	**1530**	**2205**
12:30 13:30	113	151	35	**299**	146	179	90	**415**	**714**	0	563	188	**751**	44	535	138	**717**	**1468**	**2182**
15:00 16:00	109	178	29	**316**	122	227	64	**413**	**729**	2	828	205	**1035**	33	632	143	**808**	**1843**	**2572**
16:00 17:00	124	215	16	**355**	129	189	86	**404**	**759**	1	736	256	**993**	34	656	117	**807**	**1800**	**2559**
17:00 18:00	78	206	33	**317**	109	158	71	**338**	**655**	0	885	149	**1034**	41	649	116	**806**	**1840**	**2495**
Sub Total	924	1442	184	**2550**	763	1369	552	**2684**	**5234**	4	5242	1503	**6749**	272	5330	1110	**6712**	**13461**	**18695**
U Turns				**0**				**0**	**0**				**2**				**28**	**30**	**30**
Total	924	1442	184	**2550**	763	1369	552	**2684**	**5234**	4	5242	1503	**6751**	272	5330	1110	**6740**	**13491**	**18725**
EQ 12Hr	1284	2004	256	**3544**	1061	1903	767	**3731**	**7275**	6	7286	2089	**9384**	378	7409	1543	**9369**	**18752**	**26028**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1089	1700	217	**3006**	900	1614	651	**3164**	**6548**	5	6180	1772	**7959**	321	6284	1309	**7946**	**16877**	**23425**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	1427	2227	284	**3938**	1178	2114	853	**4145**	**8083**	6	8096	2321	**10427**	420	8232	1714	**10410**	**20837**	**28920**
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

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study 15 Minute Increments

		CYRVILLE RD									OGILVIE 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	26	39	1	66	4	36	9	49	5	0	128	42	170	6	162	37	206	5	491
07:15	07:30	44	28	3	75	6	36	10	52	8	0	146	40	186	3	188	39	230	8	543
07:30	07:45	31	37	3	71	7	53	6	66	9	0	148	39	187	12	236	31	279	9	603
07:45	08:00	43	52	3	98	10	47	10	67	10	0	134	64	198	3	252	39	294	10	657
08:00	08:15	32	50	3	85	12	28	7	47	10	0	131	52	183	6	270	38	314	10	629
08:15	08:30	44	73	3	120	10	31	13	54	8	0	140	58	198	8	252	33	295	8	667
08:30	08:45	46	59	3	108	15	46	15	76	11	0	127	53	180	8	210	56	274	11	638
08:45	09:00	35	48	4	87	27	39	14	80	11	0	147	38	185	9	189	45	243	11	595
09:00	09:15	21	31	3	55	16	48	10	74	7	0	126	40	166	12	163	52	227	7	522
09:15	09:30	26	35	1	62	15	27	15	57	4	0	130	32	162	9	140	26	175	4	456
09:30	09:45	16	35	5	56	27	46	19	92	10	1	126	39	166	14	150	24	188	10	502
09:45	10:00	23	32	3	58	16	23	8	47	9	0	93	34	127	3	123	24	153	9	385
11:30	11:45	30	40	9	79	31	33	25	89	3	0	166	41	207	7	128	28	163	3	538
11:45	12:00	23	45	8	76	16	37	22	75	12	0	160	44	204	7	126	35	179	12	534
12:00	12:15	32	46	11	89	24	38	30	92	2	0	150	33	183	7	144	37	189	2	553
12:15	12:30	28	42	8	78	21	48	28	97	3	0	178	56	234	6	125	52	184	3	593
12:30	12:45	30	40	7	77	73	36	15	124	8	0	130	44	174	11	143	34	188	8	563
12:45	13:00	34	43	8	85	31	58	24	113	5	0	150	55	205	13	123	39	175	5	578
13:00	13:15	29	39	12	80	27	42	28	97	10	0	139	49	188	10	126	29	165	10	530
13:15	13:30	20	29	8	57	15	43	23	81	5	0	144	40	184	10	143	36	190	5	512
15:00	15:15	34	40	5	79	35	55	23	113	5	0	195	47	243	12	158	28	198	5	633
15:15	15:30	23	49	3	75	30	53	14	97	4	2	206	36	244	6	143	38	187	4	603
15:30	15:45	25	48	5	78	26	46	16	88	3	0	179	46	225	9	184	38	232	3	623
15:45	16:00	27	41	16	84	31	73	11	115	9	0	248	76	324	6	147	39	192	9	715
16:00	16:15	31	70	3	104	40	45	15	100	6	0	259	55	315	13	171	23	207	6	726
16:15	16:30	22	48	4	74	30	47	28	105	5	0	233	78	311	14	154	32	201	5	691
16:30	16:45	37	51	9	97	33	48	26	107	6	1	244	48	293	7	169	30	207	6	704
16:45	17:00	34	46	0	80	26	49	17	92	5	0	0	75	75	0	162	32	194	5	441
17:00	17:15	17	63	9	89	28	49	12	89	5	0	283	44	327	11	167	26	205	5	710
17:15	17:30	19	47	7	73	34	43	17	94	4	0	245	38	283	16	182	31	231	4	681
17:30	17:45	22	55	8	85	31	38	20	89	2	0	197	29	226	5	145	27	177	2	577
17:45	18:00	20	41	9	70	16	28	22	66	5	0	160	38	198	9	155	32	198	5	532
Total:		924	1442	184	2550	763	1369	552	2684	209	4	5242	1503	6751	272	5330	1110	6740	209	18,725

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Cyclist Volume

		CYRVILLE RD			OGILVIE 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	1	0	1	1	1	2	3
07:30	07:45	0	1	1	1	2	3	4
07:45	08:00	1	0	1	3	1	4	5
08:00	08:15	0	0	0	8	0	8	8
08:15	08:30	0	1	1	4	1	5	6
08:30	08:45	0	0	0	2	0	2	2
08:45	09:00	0	1	1	3	0	3	4
09:00	09:15	1	0	1	1	0	1	2
09:15	09:30	0	0	0	2	0	2	2
09:30	09:45	0	0	0	1	1	2	2
09:45	10:00	0	0	0	1	0	1	1
11:30	11:45	1	0	1	0	0	0	1
11:45	12:00	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	1	0	1	1
12:45	13:00	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	1	1	2	2
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	2	0	2	2
15:45	16:00	0	0	0	2	0	2	2
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	1	1	2	1	3	4
16:30	16:45	0	0	0	4	2	6	6
16:45	17:00	0	0	0	0	1	1	1
17:00	17:15	0	0	0	4	2	6	6
17:15	17:30	0	1	1	1	1	2	3
17:30	17:45	1	0	1	1	2	3	4
17:45	18:00	0	0	0	1	0	1	1
Total		5	5	**10**	47	16	63	73

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Pedestrian Volume

		CYRVILLE RD			OGILVIE RD			
Time Period		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	2	3	**5**	1	2	**3**	**8**
07:15	07:30	2	6	**8**	2	1	**3**	**11**
07:30	07:45	1	5	**6**	2	2	**4**	**10**
07:45	08:00	5	8	**13**	0	1	**1**	**14**
08:00	08:15	3	5	**8**	3	1	**4**	**12**
08:15	08:30	3	7	**10**	2	0	**2**	**12**
08:30	08:45	2	8	**10**	3	2	**5**	**15**
08:45	09:00	6	7	**13**	4	1	**5**	**18**
09:00	09:15	4	7	**11**	3	2	**5**	**16**
09:15	09:30	3	3	**6**	0	2	**2**	**8**
09:30	09:45	0	2	**2**	0	2	**2**	**4**
09:45	10:00	0	2	**2**	0	0	**0**	**2**
11:30	11:45	7	3	**10**	0	2	**2**	**12**
11:45	12:00	4	4	**8**	1	2	**3**	**11**
12:00	12:15	7	1	**8**	3	4	**7**	**15**
12:15	12:30	1	4	**5**	6	2	**8**	**13**
12:30	12:45	1	4	**5**	0	3	**3**	**8**
12:45	13:00	1	3	**4**	1	5	**6**	**10**
13:00	13:15	2	6	**8**	1	1	**2**	**10**
13:15	13:30	1	7	**8**	3	2	**5**	**13**
15:00	15:15	6	4	**10**	1	1	**2**	**12**
15:15	15:30	6	5	**11**	7	3	**10**	**21**
15:30	15:45	0	4	**4**	1	2	**3**	**7**
15:45	16:00	2	6	**8**	4	1	**5**	**13**
16:00	16:15	8	16	**24**	2	5	**7**	**31**
16:15	16:30	5	3	**8**	2	2	**4**	**12**
16:30	16:45	6	8	**14**	0	0	**0**	**14**
16:45	17:00	0	8	**8**	4	6	**10**	**18**
17:00	17:15	2	7	**9**	1	1	**2**	**11**
17:15	17:30	5	7	**12**	1	3	**4**	**16**
17:30	17:45	1	7	**8**	0	1	**1**	**9**
17:45	18:00	1	5	**6**	2	3	**5**	**11**
Total	.....	97	175	**272**	60	65	**125**	**397**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study Heavy Vehicles

		CYRVILLE RD									OGILVIE 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	1	2	0	**3**	1	1	0	**2**	**5**	0	7	2	**9**	0	3	1	**4**	**13**	**18**
07:15	07:30	4	1	0	**5**	1	1	1	**3**	**8**	0	4	1	**5**	0	1	1	**2**	**7**	**15**
07:30	07:45	4	4	1	**9**	0	0	0	**0**	**9**	0	5	2	**7**	0	3	0	**3**	**10**	**19**
07:45	08:00	6	3	0	**9**	0	0	1	**1**	**10**	0	6	3	**9**	0	7	2	**9**	**18**	**28**
08:00	08:15	1	3	0	**4**	1	4	1	**6**	**10**	0	5	3	**8**	0	4	0	**4**	**12**	**22**
08:15	08:30	3	0	0	**3**	1	4	0	**5**	**8**	0	4	4	**8**	0	1	1	**2**	**10**	**18**
08:30	08:45	5	2	0	**7**	0	3	1	**4**	**11**	0	1	6	**7**	0	5	5	**10**	**17**	**28**
08:45	09:00	3	0	1	**4**	1	5	1	**7**	**11**	0	3	1	**4**	0	2	1	**3**	**7**	**18**
09:00	09:15	3	1	1	**5**	0	2	0	**2**	**7**	0	5	3	**8**	0	3	1	**4**	**12**	**19**
09:15	09:30	1	2	0	**3**	0	0	1	**1**	**4**	0	4	4	**8**	0	2	0	**2**	**10**	**14**
09:30	09:45	3	4	0	**7**	1	2	0	**3**	**10**	0	3	3	**6**	0	4	1	**5**	**11**	**21**
09:45	10:00	4	5	0	**9**	0	0	0	**0**	**9**	0	3	2	**5**	0	5	2	**7**	**12**	**21**
11:30	11:45	1	1	0	**2**	1	0	0	**1**	**3**	0	7	2	**9**	0	1	1	**2**	**11**	**14**
11:45	12:00	2	5	0	**7**	0	1	4	**5**	**12**	0	1	1	**2**	0	3	2	**5**	**7**	**19**
12:00	12:15	1	0	0	**1**	1	0	0	**1**	**2**	0	3	0	**3**	0	2	1	**3**	**6**	**8**
12:15	12:30	1	2	0	**3**	0	0	0	**0**	**3**	0	3	2	**5**	0	2	0	**2**	**7**	**10**
12:30	12:45	0	2	2	**4**	2	2	0	**4**	**8**	0	6	3	**9**	0	4	1	**5**	**14**	**22**
12:45	13:00	1	1	0	**2**	1	1	1	**3**	**5**	0	2	0	**2**	0	1	1	**2**	**4**	**9**
13:00	13:15	2	4	0	**6**	1	1	2	**4**	**10**	0	2	3	**5**	1	6	1	**8**	**13**	**23**
13:15	13:30	3	0	0	**3**	1	1	0	**2**	**5**	0	0	1	**1**	0	1	2	**3**	**4**	**9**
15:00	15:15	1	0	1	**2**	0	2	1	**3**	**5**	0	10	2	**12**	0	4	2	**6**	**18**	**23**
15:15	15:30	2	0	0	**2**	0	2	0	**2**	**4**	0	5	3	**8**	0	1	1	**2**	**10**	**14**
15:30	15:45	1	0	0	**1**	1	1	0	**2**	**3**	0	1	1	**2**	1	0	0	**1**	**3**	**6**
15:45	16:00	5	0	0	**5**	0	4	0	**4**	**9**	0	2	2	**4**	0	1	3	**4**	**8**	**17**
16:00	16:15	1	3	0	**4**	1	1	0	**2**	**6**	0	8	1	**9**	0	3	1	**4**	**13**	**19**
16:15	16:30	0	0	0	**0**	1	3	1	**5**	**5**	0	3	2	**5**	1	0	0	**1**	**6**	**11**
16:30	16:45	2	0	0	**2**	2	1	1	**4**	**6**	0	2	3	**5**	0	1	0	**1**	**6**	**12**
16:45	17:00	1	0	0	**1**	0	4	0	**4**	**5**	0	0	4	**4**	0	1	0	**1**	**5**	**10**
17:00	17:15	1	1	0	**2**	1	2	0	**3**	**5**	0	1	2	**3**	0	1	0	**1**	**4**	**9**
17:15	17:30	1	1	0	**2**	1	0	1	**2**	**4**	0	1	1	**2**	0	0	1	**1**	**3**	**7**
17:30	17:45	1	1	0	**2**	0	0	0	**0**	**2**	0	1	2	**3**	0	2	0	**2**	**5**	**7**
17:45	18:00	1	0	0	**1**	2	1	1	**4**	**5**	0	0	1	**1**	0	0	0	**0**	**1**	**6**
Total:	None	66	48	6	**120**	22	49	18	**89**	**209**	0	108	70	**178**	3	74	32	**109**	**287**	**496**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

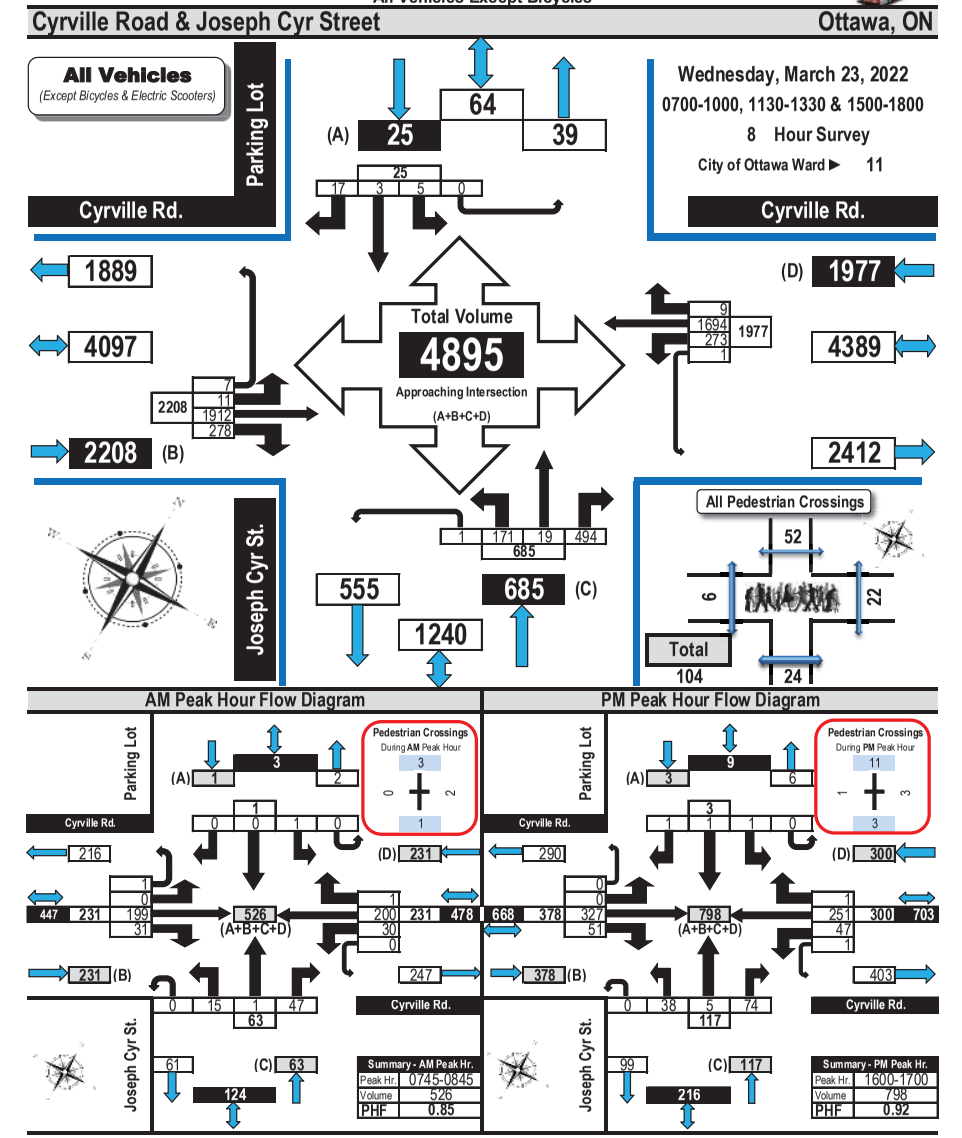
Survey Date: Wednesday, April 11, 2018 **WO No:** 37723

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

Full Study 15 Minute U-Turn Total

Time Period		CYRVILLE RD Northbound U-Turn Total	CYRVILLE RD Southbound U-Turn Total	OGILVIE RD Eastbound U-Turn Total	OGILVIE RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	1	1
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
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	2	2
08:30	08:45	0	0	0	0	0
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
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	3	3
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	11	11
12:00	12:15	0	0	0	1	1
12:15	12:30	0	0	0	1	1
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	1	1
15:00	15:15	0	0	1	0	1
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	1	1
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	1	0	1
16:15	16:30	0	0	0	1	1
16:30	16:45	0	0	0	1	1
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	1	1
17:15	17:30	0	0	0	2	2
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	2	2
Total		0	0	2	28	30

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

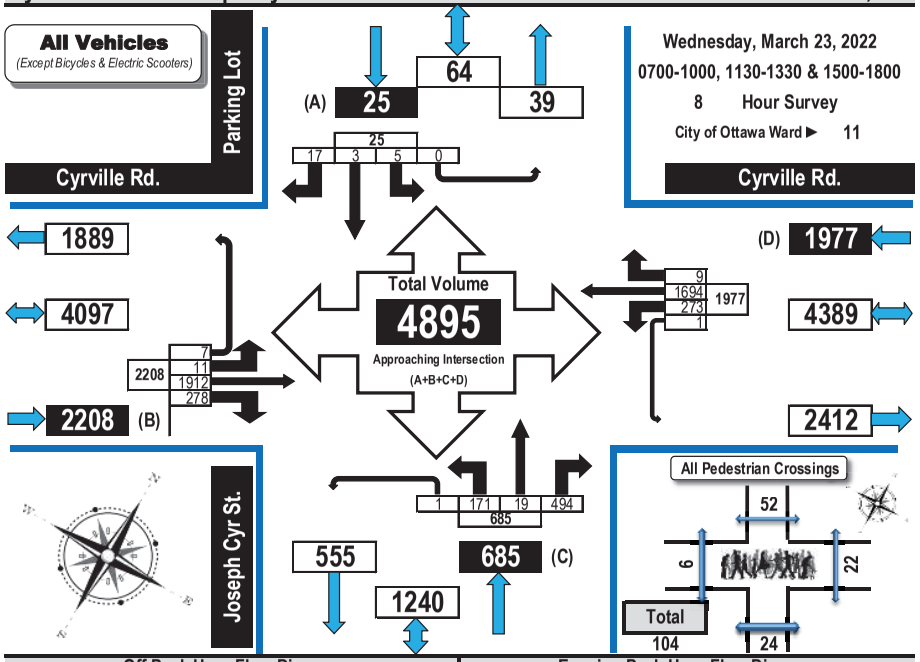


Turning Movement Count
Summary, OFF and EVENING Peak Hour Flow Diagrams
All Vehicles Except Bicycles

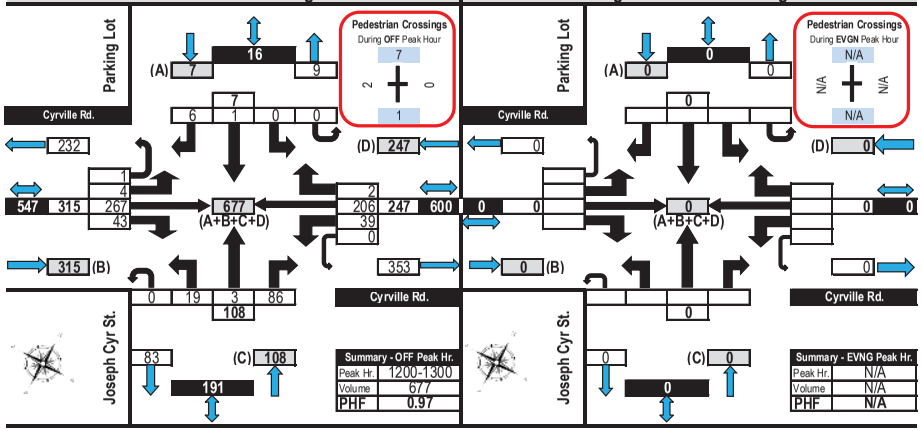
Cyrville Road & Joseph Cyr Street — **Ottawa, ON**

All Vehicles (Except Bicycles & Electric Scooters)

Wednesday, March 23, 2022
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 11



Off Peak Hour Flow Diagram



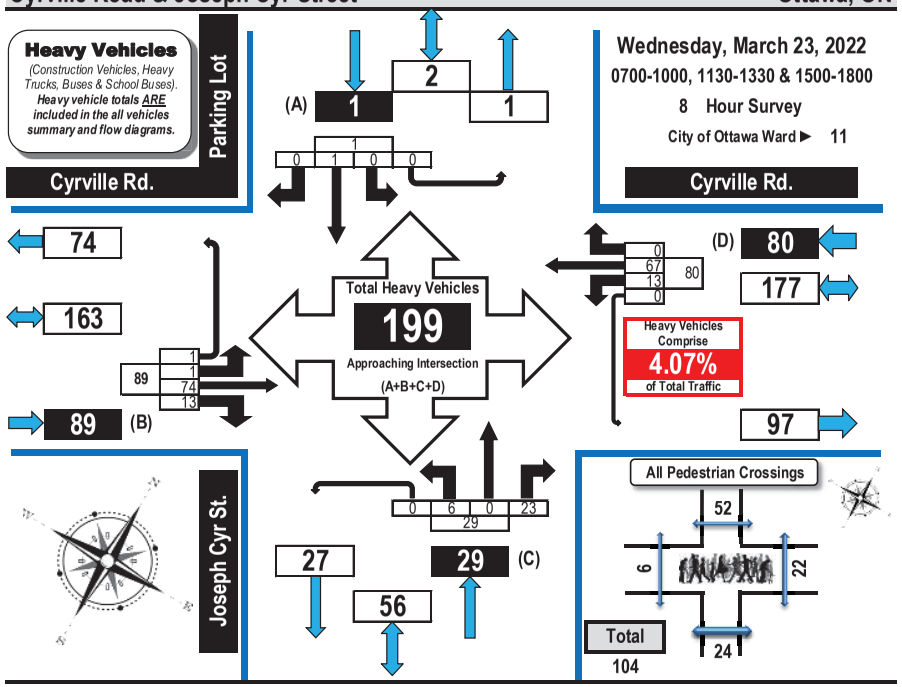
Evening Peak Hour Flow Diagram

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

Cyrville Road & Joseph Cyr Street — **Ottawa, ON**

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

Wednesday, March 23, 2022
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 11



	Cyrville Rd. Eastbound					Cyrville Rd. Westbound					Joseph Cyr St. Northbound					Parking Lot Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	0	5	1	0	6	2	19	0	0	21	1	0	1	0	2	0	0	0	0	0	29
0800-0900	0	6	2	0	8	1	6	0	0	7	1	0	4	0	5	0	0	0	0	0	20
0900-1000	0	8	4	0	12	1	10	0	0	11	3	0	4	0	7	0	0	0	0	0	30
1130-1230	1	6	1	0	8	1	10	0	0	11	1	0	3	0	4	0	1	0	0	1	24
1230-1330	0	15	1	1	17	4	11	0	0	15	0	0	3	0	3	0	0	0	0	0	35
1500-1600	0	14	0	0	14	2	4	0	0	6	0	0	3	0	3	0	0	0	0	0	23
1600-1700	0	11	0	0	11	2	4	0	0	6	0	0	1	0	1	0	0	0	0	0	18
1700-1800	0	9	4	0	13	0	3	0	0	3	0	0	4	0	4	0	0	0	0	0	20
Totals	1	74	13	1	89	13	67	0	0	80	6	0	23	0	29	0	1	0	0	1	199

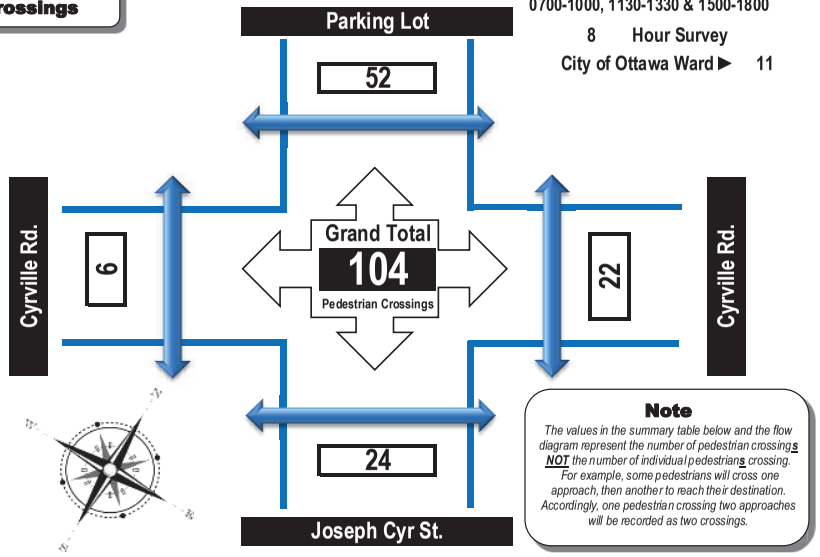
Comments:
Buses, private buses and school buses comprise 13.57% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle and 1 E-scooter (stand-up).

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Cyrville Road & Joseph Cyr Street — Ottawa, ON

Pedestrian Crossings

Wednesday, March 23, 2022
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 11



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

Time Period	West Side Crossing Cyrville Rd.	East Side Crossing Cyrville Rd.	Street Total	South Side Crossing Joseph Cyr St.	North Side Crossing Parking Lot	Street Total	Grand Total
0700-0800	1	2	3	2	1	3	6
0800-0900	0	1	1	1	3	4	5
0900-1000	0	0	0	2	3	5	5
1130-1230	0	0	0	3	5	8	8
1230-1330	2	1	3	2	11	13	16
1500-1600	1	15	16	9	15	24	40
1600-1700	1	3	4	3	11	14	18
1700-1800	1	0	1	2	3	5	6
Totals	6	22	28	24	52	76	104

Comments:
Buses, private buses and school buses comprise 13.57% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle and 1 E-scooter (stand-up).

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

Cyrville Road & Joseph Cyr Street — Ottawa, ON

Survey Date: Wednesday, March 23, 2022 **Start Time:** 0700 **AADT Factor:** 1.0
Weather AM: Mostly cloudy -2° C **Survey Duration:** 8 Hrs. **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800
Weather PM: Overcast +3° C **Surveyor(s):** T. Carmody

	Cyrville Rd. Eastbound					Cyrville Rd. Westbound						Joseph Cyr St. Northbound					Parking Lot Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	0	187	14	0	201	37	146	0	0	183	384	14	2	40	0	56	0	0	0	0	0	56	440
0800-0900	0	187	36	2	225	27	197	1	0	225	450	14	0	41	0	55	2	0	0	0	2	57	507
0900-1000	1	184	30	2	217	20	164	1	0	185	402	19	0	61	1	81	0	0	0	0	0	81	483
1130-1230	2	240	30	1	273	36	224	2	0	262	535	18	2	64	0	84	0	1	5	0	6	90	625
1230-1330	6	256	41	2	305	29	204	1	0	234	539	23	2	81	0	106	1	0	4	0	5	111	650
1500-1600	0	278	32	0	310	37	265	1	0	303	613	20	5	73	0	98	0	1	4	0	5	103	716
1600-1700	0	327	51	0	378	47	251	1	1	300	678	38	5	74	0	117	1	1	1	0	3	120	798
1700-1800	2	253	44	0	299	40	243	2	0	285	584	25	3	60	0	88	1	0	3	0	4	92	676
Totals	11	1912	278	7	2208	273	1694	9	1	1977	4185	171	19	494	1	685	5	3	17	0	25	710	4895

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	15	2658	386	10	3069	379	2355	13	1	2748	5817	238	26	687	1	952	7	4	24	0	35	987	6804
Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 1.0																							
AADT 12-hr	15	2658	386	10	3069	379	2355	13	1	2748	5817	238	26	687	1	952	7	4	24	0	35	987	6804
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	20	3482	506	13	4021	497	3085	16	2	3600	7620	311	35	900	2	1247	9	5	31	0	46	1293	8913

AADT and expansion factors provided by the City of Ottawa

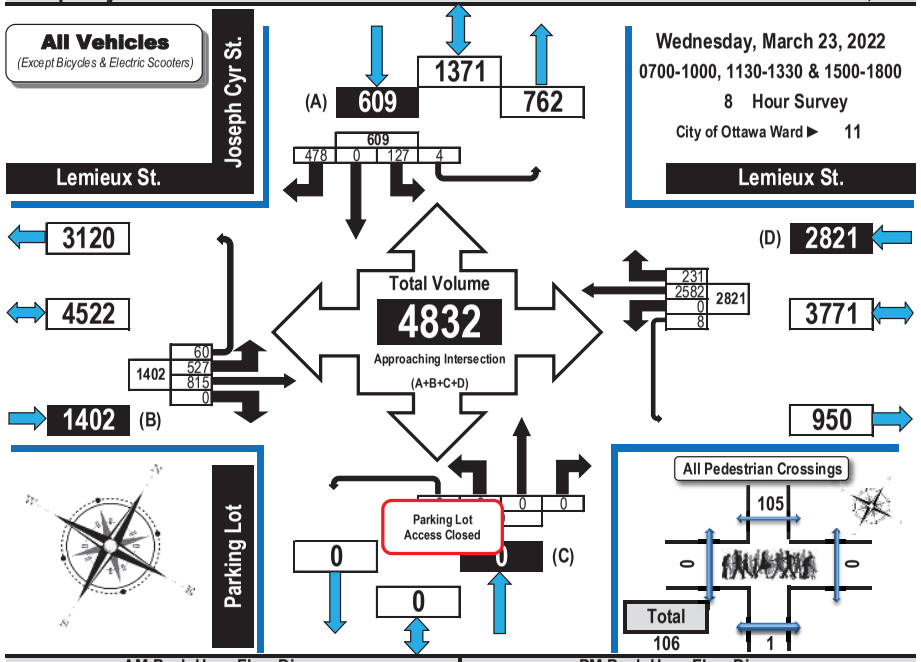
AM Peak Hour Factor ➡ 0.85												Highest Hourly Vehicle Volume Between 0700h & 1000h											
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0745-0845	0	199	31	1	231	30	200	1	0	231	462	15	1	47	0	63	1	0	0	0	1	64	526
OFF Peak Hour Factor ➡ 0.97												Highest Hourly Vehicle Volume Between 1130h & 1330h											
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	4	267	43	1	315	39	206	2	0	247	562	19	3	86	0	108	0	1	6	0	7	115	677
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.
1600-1700	0	327	51	0	378	47	251	1	1	300	678	38	5	74	0	117	1	1	1	0	3	120	798

Comments:
Buses, private buses and school buses comprise 13.57% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle and 1 E-scooter (stand-up).

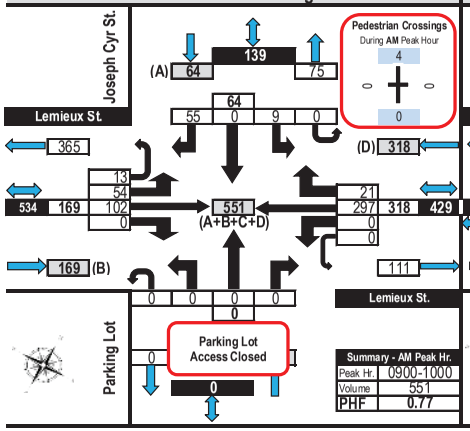
Notes:
1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2. When expansion and AADT factors are applied, the results will differ slightly due to rounding.

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

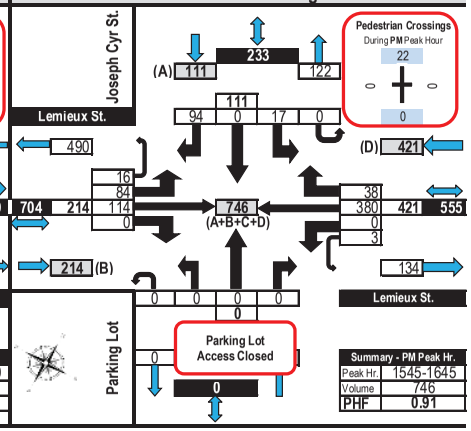
Joseph Cyr Street & Lemieux Street — **Ottawa, ON**



AM Peak Hour Flow Diagram

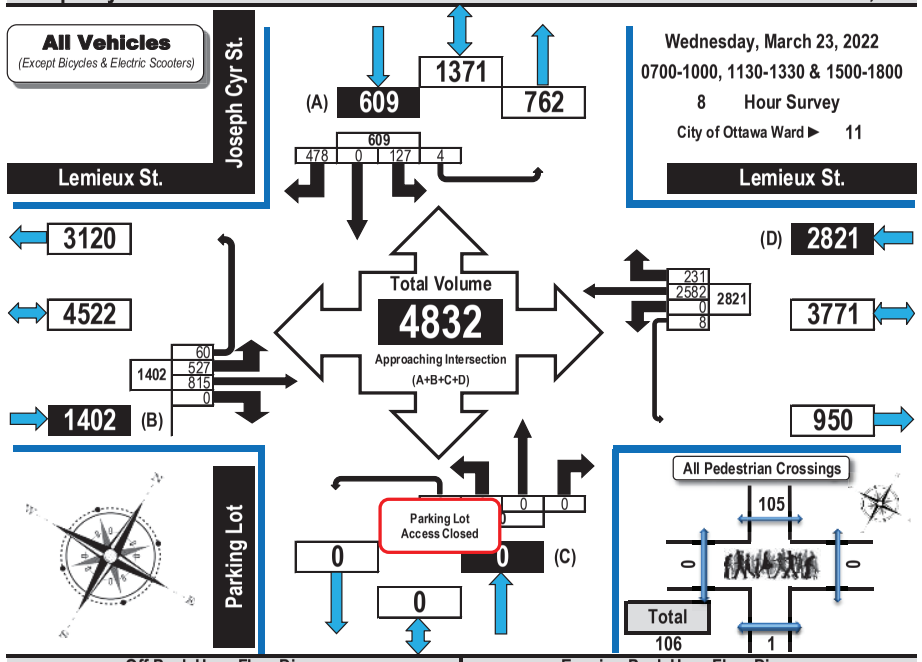


PM Peak Hour Flow Diagram

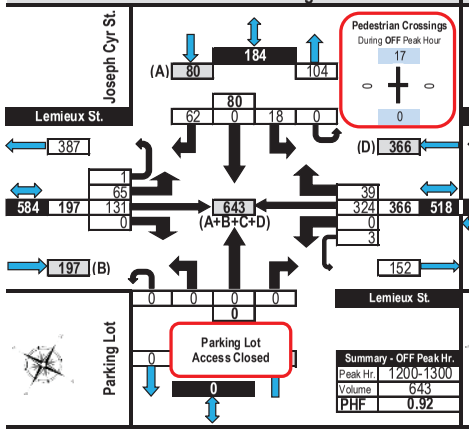


Turning Movement Count
Summary, OFF and EVENING Peak Hour Flow Diagrams
All Vehicles Except Bicycles

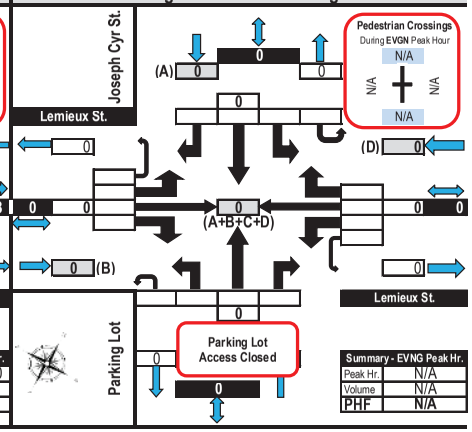
Joseph Cyr Street & Lemieux Street — **Ottawa, ON**



Off Peak Hour Flow Diagram



Evening Peak Hour Flow Diagram

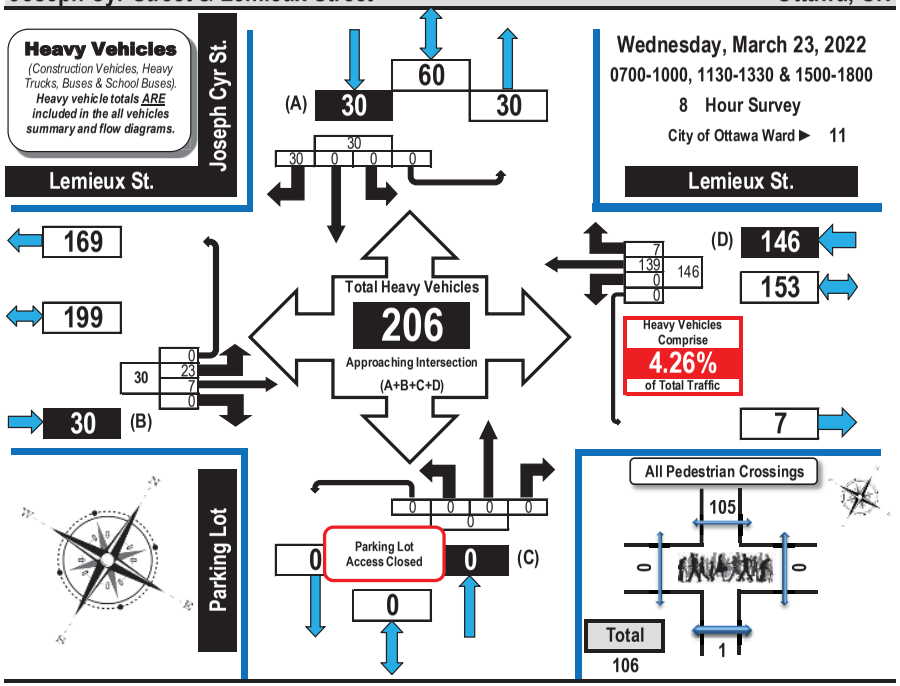


Turning Movement Count
Heavy Vehicle Summary (FHWA Class 4-13)
Flow Diagram

Joseph Cyr Street & Lemieux Street — **Ottawa, ON**

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

Wednesday, March 23, 2022
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 11



	Lemieux St. Eastbound					Lemieux St. Westbound					Parking Lot Northbound					Joseph Cyr St. Southbound					
Time Period	LT	ST	RT	UT	EB Tot	LT	ST	RT	UT	WB Tot	LT	ST	RT	UT	NB Tot	LT	ST	RT	UT	SB Tot	GR Tot
0700-0800	3	0	0	0	3	0	14	1	0	15	0	0	0	0	0	0	0	3	0	3	21
0800-0900	3	1	0	0	4	0	25	3	0	28	0	0	0	0	0	0	0	4	0	4	36
0900-1000	4	0	0	0	4	0	29	0	0	29	0	0	0	0	0	0	0	3	0	3	36
1130-1230	2	1	0	0	3	0	5	1	0	6	0	0	0	0	0	0	0	3	0	3	12
1230-1330	2	2	0	0	4	0	23	0	0	23	0	0	0	0	0	0	0	7	0	7	34
1500-1600	4	1	0	0	5	0	11	0	0	11	0	0	0	0	0	0	0	4	0	4	20
1600-1700	1	1	0	0	2	0	16	1	0	17	0	0	0	0	0	0	0	3	0	3	22
1700-1800	4	1	0	0	5	0	16	1	0	17	0	0	0	0	0	0	0	3	0	3	25
Totals	23	7	0	0	30	0	139	7	0	146	0	0	0	0	0	0	0	30	0	30	206

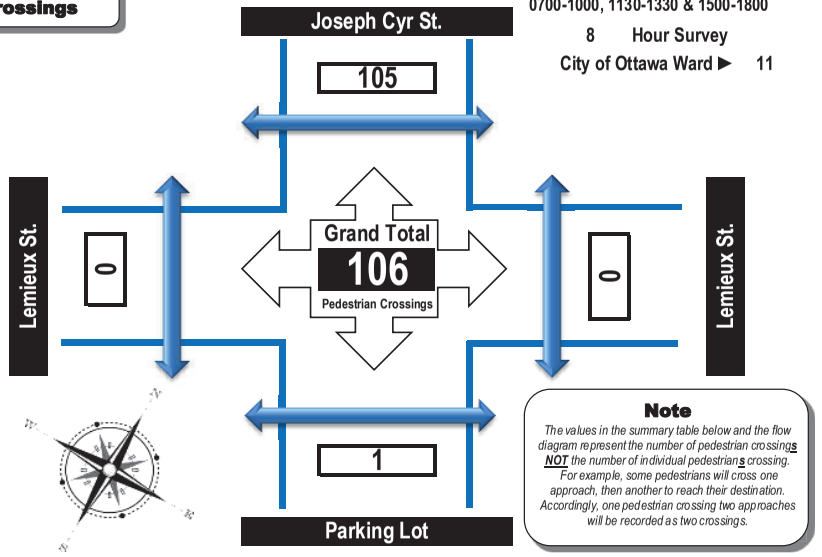
Comments:
Buses, private buses and school buses comprise 40.29% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle. In the eastbound direction, 3 drivers drove on the wrong side of the median east of Joseph Cyr Street.

Turning Movement Count
Pedestrian Crossings Summary and Flow Diagram

Joseph Cyr Street & Lemieux Street — **Ottawa, ON**

Pedestrian Crossings

Wednesday, March 23, 2022
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 11



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

Time Period	West Side Crossing Lemieux St.	East Side Crossing Lemieux St.	Street Total	South Side Crossing Parking Lot	North Side Crossing Joseph Cyr St.	Street Total	Grand Total
0700-0800	0	0	0	0	8	8	8
0800-0900	0	0	0	1	10	11	11
0900-1000	0	0	0	0	4	4	4
1130-1230	0	0	0	0	21	21	21
1230-1330	0	0	0	0	9	9	9
1500-1600	0	0	0	0	14	14	14
1600-1700	0	0	0	0	18	18	18
1700-1800	0	0	0	0	21	21	21
Totals	0	0	0	1	105	106	106

Comments:
Buses, private buses and school buses comprise 40.29% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle. In the eastbound direction, 3 drivers drove on the wrong side of the median east of Joseph Cyr Street.

ACCURATE TRUSTED TRAFFIC DATA

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

Joseph Cyr Street & Lemieux Street — Ottawa, ON

Survey Date: Wednesday, March 23, 2022 **Start Time:** 0700 **AADT Factor:** 1.0
Weather AM: Mostly cloudy -2° C **Survey Duration:** 8 Hrs. **Survey Hours:** 0700-1000, 1130-1330 & 1500-1800
Weather PM: Overcast +3° C **Surveyor(s):** T. Carmody

	Lemieux St.					Lemieux St.						Parking Lot					Joseph Cyr St.						
	Eastbound					Westbound						Northbound					Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	66	39	0	3	108	0	287	13	1	301	409	0	0	0	0	0	18	0	35	0	53	53	462
0800-0900	54	50	0	5	109	0	283	17	0	300	409	0	0	0	0	0	9	0	48	0	57	57	466
0900-1000	54	102	0	13	169	0	297	21	0	318	487	0	0	0	0	0	9	0	55	0	64	64	551
1130-1230	64	127	0	5	196	0	303	35	3	341	537	Parking Lot Access Closed				0	23	0	47	0	70	70	607
1230-1330	69	123	0	4	196	0	331	32	1	364	560					0	13	0	57	0	70	70	630
1500-1600	83	130	0	9	222	0	389	34	0	423	645	0	0	0	0	0	10	0	69	1	80	80	725
1600-1700	78	116	0	14	208	0	352	44	3	399	607	0	0	0	0	0	17	0	95	0	112	112	719
1700-1800	59	128	0	7	194	0	340	35	0	375	569	0	0	0	0	0	28	0	72	3	103	103	672
Totals	527	815	0	60	1402	0	2582	231	8	2821	4223	0	0	0	0	0	127	0	478	4	609	609	4832

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	733	1133	0	83	1949	0	3589	321	11	3921	5870	0	0	0	0	0	177	0	664	6	847	847	6716

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 1.0

AADT 12-hr	733	1133	0	83	1949	0	3589	321	11	3921	5870	0	0	0	0	0	177	0	664	6	847	847	6716

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	960	1484	0	109	2553	0	4702	421	15	5137	7690	0	0	0	0	0	231	0	870	7	1109	1109	8799

AADT and expansion factors provided by the City of Ottawa

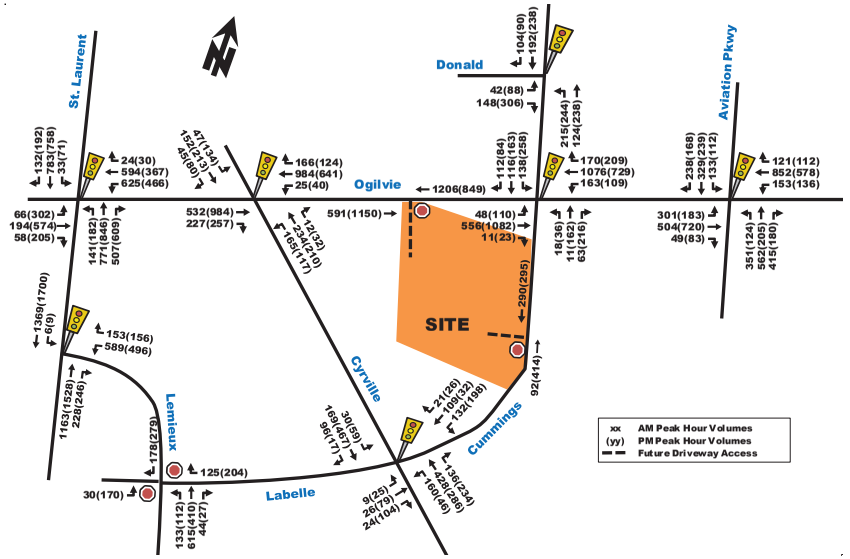
AM Peak Hour Factor ➡ 0.77												Highest Hourly Vehicle Volume Between 0700h & 1000h										
AM Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
0900-1000	54	102	0	13	169	0	297	21	0	318	487	0	0	0	0	0	9	0	55	0	64	64	551
OFF Peak Hour Factor ➡ 0.92												Highest Hourly Vehicle Volume Between 1130h & 1330h										
OFF Peak Hr	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	LT	ST	RT	UT	Total	LT	ST	RT	UT	Total	Str. Tot.	Gr. Tot.
1200-1300	65	131	0	1	197	0	324	39	3	366	563	0	0	0	0	0	18	0	62	0	80	80	643
PM Peak Hour Factor ➡ 0.91												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	84	114	0	16	214	0	380	38	3	421	635	0	0	0	0	0	17	0	94	0	111	111	746

Comments:
Buses, private buses and school buses comprise 40.29% of the heavy vehicle traffic. The bicycle totals include 1 E-bicycle. In the eastbound direction, 3 drivers drove on the wrong side of the median east of Joseph Cyr Street.

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

PARSONS

Figure 4: Existing Peak Hour Traffic Volumes



Appendix C

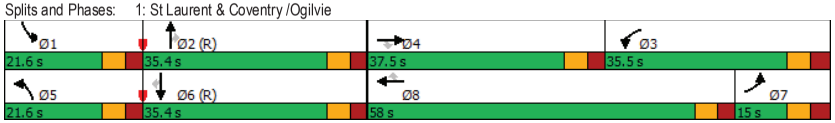
Synchro Intersection Worksheets – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	194	58	625	594	24	141	771	507	33	783	132
Future Volume (vph)	66	194	58	625	594	24	141	771	507	33	783	132
Satd. Flow (prot)	3010	3283	1388	3216	3103	1339	1523	3161	1441	1642	4764	1427
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2904	3283	1331	3156	3103	1253	1511	3161	1384	1628	4764	1367
Satd. Flow (RTOR)			195			140			489			196
Lane Group Flow (vph)	73	216	64	694	660	27	157	857	563	37	870	147
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	15.0	37.5	37.5	35.5	58.0	58.0	21.6	35.4	35.4	21.6	35.4	35.4
Total Split (%)	11.5%	28.8%	28.8%	27.3%	44.6%	44.6%	16.6%	27.2%	27.2%	16.6%	27.2%	27.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	17.6	23.1	23.1	30.1	38.2	38.2	15.5	47.3	47.3	8.4	35.1	35.1
Actuated g/C Ratio	0.14	0.18	0.18	0.23	0.29	0.29	0.12	0.36	0.36	0.06	0.27	0.27
v/c Ratio	0.18	0.37	0.16	0.93	0.72	0.06	0.87	0.75	0.69	0.35	0.68	0.29
Control Delay	49.2	47.1	0.9	68.6	39.9	0.2	102.9	38.3	15.7	66.5	46.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	47.1	0.9	68.6	39.9	0.2	102.9	38.3	15.7	66.5	46.9	3.2
LOS	D	D	A	E	D	A	F	D	B	E	D	A
Approach Delay		39.2			53.6			36.7			41.5	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.9	23.8	0.0	96.3	87.0	0.0	42.5	119.8	38.3	9.3	78.2	0.0
Queue Length 95th (m)	15.9	35.2	0.0	#133.4	101.3	m0.0	#81.7	#162.7	59.2	20.2	94.5	6.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	415	782	465	744	1229	580	184	1150	814	191	1287	512
Starvation Cap Reductn	0	0	0	0	17	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.28	0.14	0.93	0.54	0.05	0.85	0.75	0.69	0.19	0.68	0.29

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93
Intersection Signal Delay: 43.4 Intersection LOS: D
Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry /Ogilvie

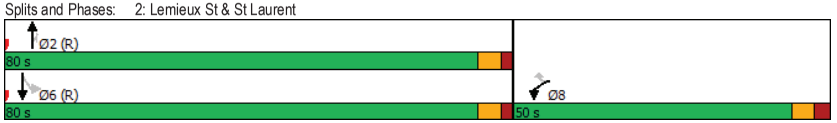


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	589	153	1163	228	7	1369
Future Volume (vph)	589	153	1163	228	7	1369
Satd. Flow (prot)	2734	1483	4584	1483	1658	4672
Flt Permitted	0.950				0.173	
Satd. Flow (perm)	2734	1418	4584	1444	302	4672
Satd. Flow (RTOR)		52		253		
Lane Group Flow (vph)	654	170	1292	253	8	1521
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	36.7	36.7	81.7	81.7	81.7	81.7
Actuated g/C Ratio	0.28	0.28	0.63	0.63	0.63	0.63
v/c Ratio	0.85	0.39	0.45	0.25	0.04	0.52
Control Delay	54.7	27.2	8.3	1.9	11.1	15.0
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	54.7	27.2	8.5	1.9	11.1	15.0
LOS	D	C	A	A	B	B
Approach Delay	49.0		7.4			15.0
Approach LOS	D		A			B
Queue Length 50th (m)	81.0	23.8	29.7	0.3	0.9	68.0
Queue Length 95th (m)	96.5	41.1	68.4	9.5	m1.3	m74.5
Internal Link Dist (m)	80.2		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	923	513	2880	1001	189	2936
Starvation Cap Reductn	0	0	625	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.33	0.57	0.25	0.04	0.52

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 59.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Lemieux St & St Laurent



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	24	1388	60	2	753
Future Volume (vph)	48	24	1388	60	2	753
Satd. Flow (prot)	833	0	4437	0	1127	4628
Flt Permitted	0.968				0.133	
Satd. Flow (perm)	833	0	4437	0	158	4628
Satd. Flow (RTOR)	9		13			
Lane Group Flow (vph)	80	0	1609	0	2	837
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		22.5	22.5
Total Split (s)	30.0		35.0		35.0	35.0
Total Split (%)	46.2%		53.8%		53.8%	53.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	12.4		49.7		49.7	49.7
Actuated g/C Ratio	0.19		0.76		0.76	0.76
v/c Ratio	0.48		0.47		0.02	0.24
Control Delay	30.4		4.3		7.5	5.5
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	30.4		4.3		7.5	5.5
LOS	C		A		A	A
Approach Delay	30.4		4.3			5.5
Approach LOS	C		A			A
Queue Length 50th (m)	7.9		23.1		0.1	21.3
Queue Length 95th (m)	17.6		36.6		m0.4	51.2
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)					13.0	
Base Capacity (vph)	319		3393		120	3536
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.25		0.47		0.02	0.24

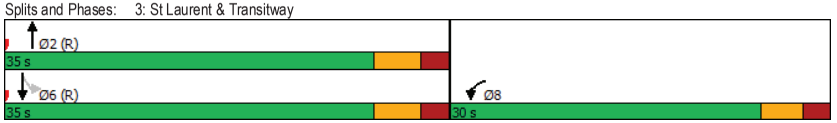
Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 38 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 47.6%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	685	556	0	1059	672	170
Future Volume (vph)	685	556	0	1059	672	170
Satd. Flow (prot)	3066	1427	0	4418	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3066	1409	0	4418	4302	0
Satd. Flow (RTOR)		170			72	
Lane Group Flow (vph)	761	618	0	1177	936	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	55.0	55.0		75.0	75.0	
Total Split (%)	42.3%	42.3%		57.7%	57.7%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	48.2	48.2		69.2	69.2	
Actuated g/C Ratio	0.37	0.37		0.53	0.53	
v/c Ratio	0.67	0.98		0.50	0.40	
Control Delay	37.8	61.6		20.3	16.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	37.8	61.6		20.3	16.8	
LOS	D	E		C	B	
Approach Delay	48.4			20.3	16.8	
Approach LOS	D			C	B	
Queue Length 50th (m)	83.1	123.5		68.3	33.4	
Queue Length 95th (m)	104.6	#202.7		80.9	31.5	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1143	632		2353	2324	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.67	0.98		0.50	0.40	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 25 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

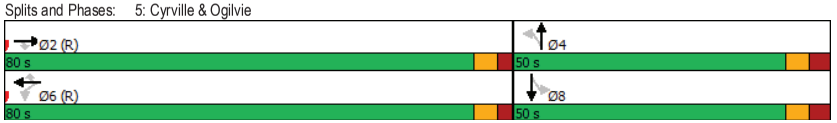
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	532	227	27	984	166	165	234	12	47	152	45
Future Volume (vph)	0	532	227	27	984	166	165	234	12	47	152	45
Satd. Flow (prot)	0	3283	1414	1658	3316	1441	1551	1716	0	1626	1600	0
Flt Permitted				0.413			0.494			0.396		
Satd. Flow (perm)	0	3283	1326	712	3316	1312	802	1716	0	676	1600	0
Satd. Flow (RTOR)			252			158		2			12	
Lane Group Flow (vph)	0	591	252	30	1093	184	183	273	0	52	219	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		85.0	85.0	85.0	85.0	85.0	31.7	31.7		31.7	31.7	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
v/c Ratio		0.28	0.26	0.06	0.50	0.20	0.94	0.65		0.32	0.55	
Control Delay		7.1	1.0	11.2	13.9	3.2	97.3	50.1		42.3	44.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.1	1.0	11.2	13.9	3.2	97.3	50.1		42.3	44.2	
LOS		A	A	B	B	A	F	D		D	D	
Approach Delay		5.3			12.3			69.0			43.9	
Approach LOS		A			B			E			D	
Queue Length 50th (m)		22.2	0.0	2.6	71.8	2.2	45.9	62.4		10.9	46.3	
Queue Length 95th (m)		33.2	0.0	8.1	110.6	13.1	#73.3	81.4		20.8	63.6	
Internal Link Dist (m)		123.7			139.9			46.0			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2146	954	465	2168	912	264	567		223	536	
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		0.28	0.26	0.06	0.50	0.20	0.69	0.48		0.23	0.41	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 72.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	125	133	555	44	0	0	177
Future Vol, veh/h	30	0	0	0	0	125	133	555	44	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	0	0	0	139	148	617	49	0	0	197

Major/Minor	Minor2			Minor1			Major1			
Conflicting Flow All	605	-	-	-	-	309	0	0	-	
Stage 1	0	-	-	-	-	-	-	-	-	
Stage 2	605	-	-	-	-	-	-	-	-	
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	
Pot Cap-1 Maneuver	382	0	0	0	0	687	-	-	0	
Stage 1	-	0	0	0	0	-	-	-	0	
Stage 2	451	0	0	0	0	-	-	-	0	
Platoon blocked, %								-		
Mov Cap-1 Maneuver	305	-	-	-	-	687	-	-	-	
Mov Cap-2 Maneuver	305	-	-	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	-	-	-	
Stage 2	360	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB
HCM Control Delay, s	18.2	11.6	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	305	687
HCM Lane V/C Ratio	-	-	0.109	0.202
HCM Control Delay (s)	-	-	18.2	11.6
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.4	0.8

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	168	687	21	9	55
Future Vol, veh/h	67	168	687	21	9	55
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	2	10	2	2	5
Mvmt Flow	74	187	763	23	10	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	790	0	-	0	1114	397
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	4.19	-	-	-	6.63	6.975
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.257	-	-	-	3.519	3.3475
Pot Cap-1 Maneuver	806	-	-	-	216	596
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	724	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	803	-	-	-	195	594
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	803	-	-	-	461
HCM Lane V/C Ratio	0.093	-	-	-	0.154
HCM Control Delay (s)	9.9	-	-	-	14.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	374	31	30	396	1	15	1	47	1	0	0
Future Vol, veh/h	1	374	31	30	396	1	15	1	47	1	0	0
Conflicting Peds, #/hr	3	0	1	1	0	3	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	6	3	3	2	7	2	9	2	2	2
Mvmt Flow	1	416	34	33	440	1	17	1	52	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	444	0	0	451	0	0	943	946	436	974	963	444
Stage 1	-	-	-	-	-	-	436	436	-	510	510	-
Stage 2	-	-	-	-	-	-	507	510	-	464	453	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.17	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.563	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1116	-	-	1104	-	-	238	262	606	231	256	614
Stage 1	-	-	-	-	-	-	589	580	-	546	538	-
Stage 2	-	-	-	-	-	-	539	538	-	578	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1113	-	-	1103	-	-	230	250	605	203	245	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	230	250	-	203	245	-
Stage 1	-	-	-	-	-	-	588	579	-	544	515	-
Stage 2	-	-	-	-	-	-	517	515	-	526	569	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	15	22.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	1113	-	-	1103	-	-	203
HCM Lane V/C Ratio	0.163	0.001	-	-	0.03	-	-	0.005
HCM Control Delay (s)	15	8.2	0	-	8.4	0	-	22.8
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	574	205	466	367	30	183	846	609	71	758	192
Future Volume (vph)	302	574	205	466	367	30	183	846	609	71	758	192
Satd. Flow (prot)	3216	3316	1483	3154	3075	1469	1566	3252	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2870	3316	1390	3088	3075	1285	1540	3252	1416	1643	4764	1385
Satd. Flow (RTOR)			213			210			375			211
Lane Group Flow (vph)	336	638	228	518	408	33	203	940	677	79	842	213
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	23.5	37.5	37.5	23.5	37.5	37.5	23.6	44.0	44.0	15.0	35.4	35.4
Total Split (%)	19.6%	31.3%	31.3%	19.6%	31.3%	31.3%	19.7%	36.7%	36.7%	12.5%	29.5%	29.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	29.2	29.2	18.4	31.0	31.0	17.0	37.9	37.9	8.3	29.2	29.2
Actuated g/C Ratio	0.14	0.24	0.24	0.15	0.26	0.26	0.14	0.32	0.32	0.07	0.24	0.24
v/c Ratio	0.76	0.79	0.46	1.07	0.51	0.07	0.92	0.92	0.96	0.69	0.73	0.43
Control Delay	61.6	50.3	9.1	109.4	35.5	0.3	104.9	49.1	41.8	84.5	46.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	50.3	9.1	109.4	35.5	0.3	104.9	49.1	41.8	84.5	46.0	7.9
LOS	E	D	A	F	D	A	F	D	D	F	D	A
Approach Delay		45.6			74.2			52.6			41.6	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	39.7	72.8	2.7	~76.8	46.2	0.0	47.9	124.6	111.1	18.5	67.2	0.4
Queue Length 95th (m)	#56.5	93.9	22.9	#110.6	62.3	m0.0	#92.4	#155.6	#96.1	#41.0	82.4	19.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	444	856	517	483	794	487	224	1026	704	118	1160	496
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.75	0.44	1.07	0.51	0.07	0.91	0.92	0.96	0.67	0.73	0.43

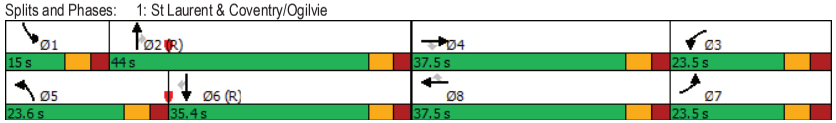
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 52.6	Intersection LOS: D
Intersection Capacity Utilization 94.5%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	496	156	1528	246	13	1700
Future Volume (vph)	496	156	1528	246	13	1700
Satd. Flow (prot)	2982	1414	4718	1483	1658	4672
Flt Permitted	0.950				0.105	
Satd. Flow (perm)	2982	1316	4718	1433	183	4672
Satd. Flow (RTOR)		29		273		
Lane Group Flow (vph)	551	173	1698	273	14	1889
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	7		2			6
Permitted Phases		7		2	6	
Detector Phase	7	7	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.7	28.7	79.7	79.7	79.7	79.7
Actuated g/C Ratio	0.24	0.24	0.66	0.66	0.66	0.66
v/c Ratio	0.77	0.51	0.54	0.26	0.12	0.61
Control Delay	50.4	37.9	10.2	2.1	6.3	7.9
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	50.4	37.9	10.5	2.1	6.3	7.9
LOS	D	D	B	A	A	A
Approach Delay	47.4		9.3			7.9
Approach LOS	D		A			A
Queue Length 50th (m)	61.8	29.0	88.3	8.0	0.7	70.4
Queue Length 95th (m)	79.6	50.2	86.9	7.1	m1.8	m75.0
Internal Link Dist (m)	75.1		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	792	371	3134	1043	121	3103
Starvation Cap Reductn	0	0	707	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.47	0.70	0.26	0.12	0.61

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent

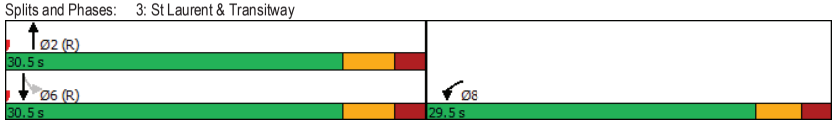
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	1807	45	0	1132
Future Volume (vph)	40	20	1807	45	0	1132
Satd. Flow (prot)	914	0	4633	0	1745	4718
Flt Permitted	0.968					
Satd. Flow (perm)	914	0	4633	0	1745	4718
Satd. Flow (RTOR)	1		7			
Lane Group Flow (vph)	66	0	2058	0	0	1258
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		24.0	24.0
Total Split (s)	29.5		30.5		30.5	30.5
Total Split (%)	49.2%		50.8%		50.8%	50.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	11.3		45.8			45.8
Actuated g/C Ratio	0.19		0.76			0.76
v/c Ratio	0.38		0.58			0.35
Control Delay	27.2		10.0			4.4
Queue Delay	0.0		0.0			0.0
Total Delay	27.2		10.0			4.4
LOS	C		B			A
Approach Delay	27.2		10.0			4.4
Approach LOS	C		B			A
Queue Length 50th (m)	6.5		82.5			26.7
Queue Length 95th (m)	15.1		113.0			40.9
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)						
Base Capacity (vph)	366		3535			3598
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.18		0.58			0.35

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 28 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	784	247	0	1245	706	397
Future Volume (vph)	784	247	0	1245	706	397
Satd. Flow (prot)	3124	1414	0	4764	4225	0
Flt Permitted	0.950					
Satd. Flow (perm)	3124	1376	0	4764	4225	0
Satd. Flow (RTOR)		147			181	
Lane Group Flow (vph)	871	274	0	1383	1225	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	50.0	50.0		70.0	70.0	
Total Split (%)	41.7%	41.7%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	39.0	39.0		68.4	68.4	
Actuated g/C Ratio	0.32	0.32		0.57	0.57	
v/c Ratio	0.86	0.50		0.51	0.49	
Control Delay	47.1	17.2		17.0	10.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.1	17.2		17.0	10.9	
LOS	D	B		B	B	
Approach Delay	39.9			17.0	10.9	
Approach LOS	D			B	B	
Queue Length 50th (m)	97.1	22.4		70.4	59.5	
Queue Length 95th (m)	116.7	45.6		88.6	90.5	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1132	592		2716	2486	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.77	0.46		0.51	0.49	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 62.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	984	257	42	641	124	117	210	32	134	213	80
Future Volume (vph)	0	984	257	42	641	124	117	210	32	134	213	80
Satd. Flow (prot)	0	3316	1469	1658	3316	1469	1580	1706	0	1642	1637	0
Flt Permitted				0.215			0.310			0.412		
Satd. Flow (perm)	0	3316	1362	373	3316	1327	514	1706	0	709	1637	0
Satd. Flow (RTOR)			286			138		7			18	
Lane Group Flow (vph)	0	1093	286	47	712	138	130	269	0	149	326	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		77.7	77.7	77.7	77.7	77.7	29.0	29.0		29.0	29.0	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
v/c Ratio		0.51	0.29	0.20	0.33	0.15	1.05	0.65		0.87	0.80	
Control Delay		5.5	0.6	13.7	11.0	2.3	138.2	46.0		84.5	54.1	
Queue Delay		0.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		5.7	0.6	13.7	11.0	2.3	138.2	46.0		84.5	54.1	
LOS		A	A	B	B	A	F	D		F	D	
Approach Delay		4.7			9.8			76.0			63.7	
Approach LOS		A			A			E			E	
Queue Length 50th (m)		29.1	0.1	4.1	36.1	0.0	~33.8	56.0		34.1	69.1	
Queue Length 95th (m)		m55.4	m1.2	13.3	60.7	8.7	#60.9	73.6		54.2	89.9	
Internal Link Dist (m)		123.7			139.9			44.2			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2147	982	241	2147	907	183	614		253	596	
Starvation Cap Reductn		391	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		0.62	0.29	0.20	0.33	0.15	0.71	0.44		0.59	0.55	

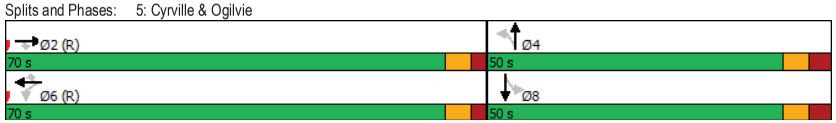
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 83.2%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	0	0	0	156	112	314	27	0	0	176
Future Vol, veh/h	131	0	0	0	0	156	112	314	27	0	0	176
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	146	0	0	0	0	173	124	349	30	0	0	196

Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	423	-	-	-	-	175	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	423	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	515	0	0	0	0	838	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	579	0	0	0	0	-	-	-	0			
Platoon blocked, %								-				
Mov Cap-1 Maneuver	408	-	-	-	-	838	-	-	-			
Mov Cap-2 Maneuver	408	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	459	-	-	-	-	-	-	-	-			

Approach	EB	WB	NB
HCM Control Delay, s	18.6	10.4	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	408	838
HCM Lane V/C Ratio	-	-	0.357	0.207
HCM Control Delay (s)	-	-	18.6	10.4
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.6	0.8

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	159	558	38	17	94
Future Vol, veh/h	100	159	558	38	17	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	3	2	3
Mvmt Flow	111	177	620	42	19	104

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	662	0	-	0	1040	331
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	399	-
Critical Hdwy	4.13	-	-	-	6.63	6.945
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.3285
Pot Cap-1 Maneuver	925	-	-	-	240	663
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	925	-	-	-	211	663
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	925	-	-	-	499
HCM Lane V/C Ratio	0.12	-	-	-	0.247
HCM Control Delay (s)	9.4	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	461	51	48	320	1	38	5	74	1	1	1
Future Vol, veh/h	0	461	51	48	320	1	38	5	74	1	1	1
Conflicting Peds, #/hr	11	0	3	3	0	11	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	0	512	57	53	356	1	42	6	82	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	572	0	0	1009	1018	547	1062	1046	369
Stage 1	-	-	-	-	-	-	544	544	-	474	474	-
Stage 2	-	-	-	-	-	-	465	474	-	588	572	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1191	-	-	991	-	-	219	237	537	201	228	677
Stage 1	-	-	-	-	-	-	523	519	-	571	558	-
Stage 2	-	-	-	-	-	-	578	558	-	495	504	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1181	-	-	989	-	-	206	219	535	157	210	671
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	219	-	157	210	-
Stage 1	-	-	-	-	-	-	522	518	-	566	516	-
Stage 2	-	-	-	-	-	-	537	516	-	413	503	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	22.1	20.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	339	1181	-	-	989	-	-	238
HCM Lane V/C Ratio	0.383	-	-	-	0.054	-	-	0.014
HCM Control Delay (s)	22.1	0	-	-	8.8	0	-	20.3
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.2	-	-	0

Appendix D

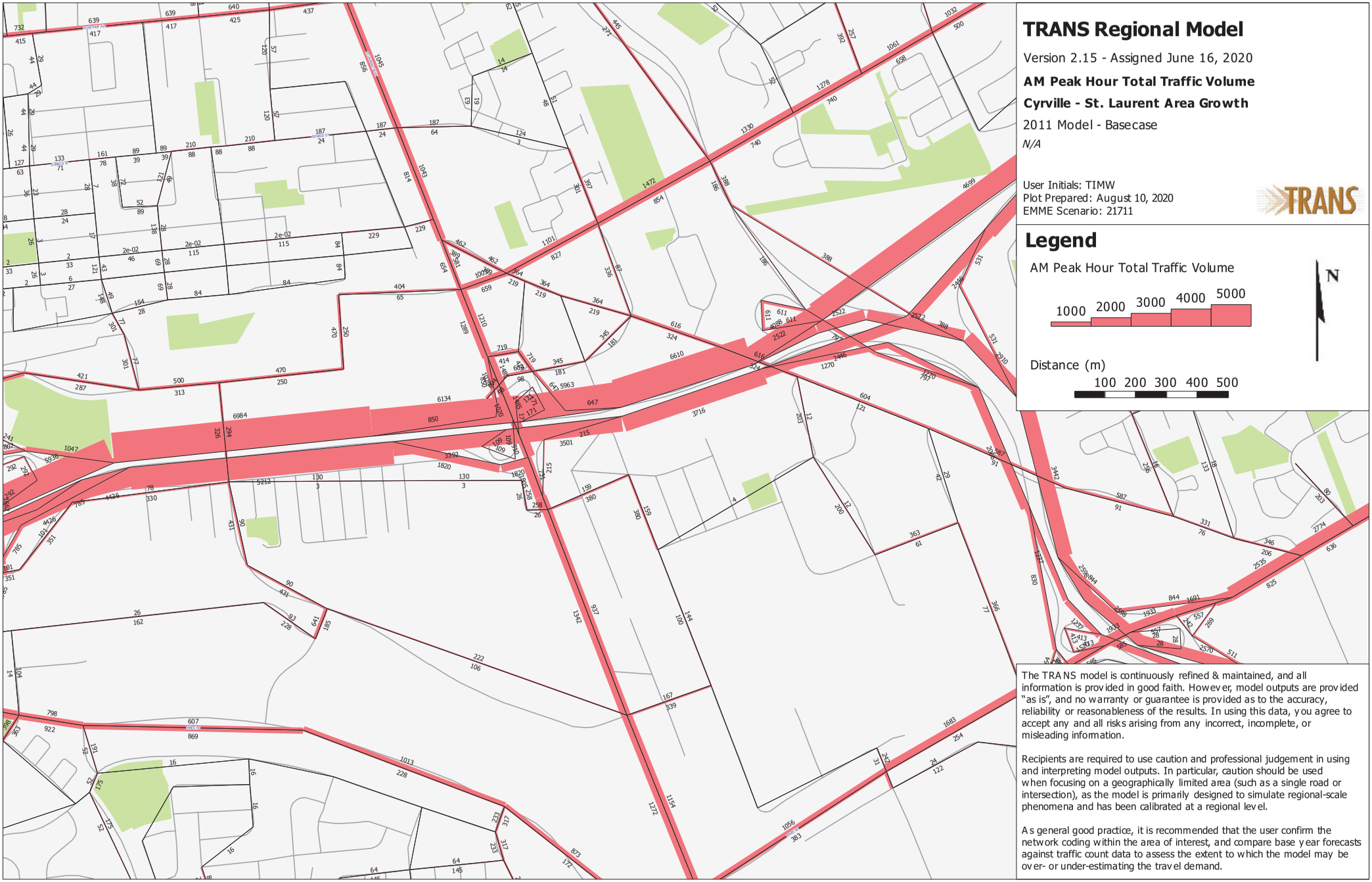
Collision Data

CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
10/6/2016	2016	10:18	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	05 - Turning movement	01 - Dry	3	0	0	0
10/11/2016	2016	15:35	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	00 - Unknown	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
11/9/2016	2016	18:23	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	03 - Rear end	01 - Dry	3	0	0	0
11/10/2016	2016	17:35	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
10/21/2016	2016	21:55	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	02 - Wet	3	0	0	0
11/23/2016	2016	11:53	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	02 - Angle	01 - Dry	2	0	0	0
11/23/2016	2016	16:43	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
12/1/2016	2016	18:05	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	04 - Slush	3	0	0	0
12/14/2016	2016	9:29	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	02 - Angle	01 - Dry	2	0	0	0
12/9/2016	2016	17:49	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
2/16/2016	2016	19:18	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	04 - Slush	2	0	0	0
2/25/2016	2016	14:29	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	03 - Loose snow	2	0	0	0
2/14/2016	2016	14:31	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	03 - Rear end	01 - Dry	2	0	0	0
3/18/2016	2016	15:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
3/17/2016	2016	12:05	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
4/2/2016	2016	12:46	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
4/16/2016	2016	9:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
4/16/2016	2016	13:03	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
6/28/2016	2016	0:11	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
6/13/2016	2016	20:43	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
7/24/2016	2016	16:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
9/11/2016	2016	13:18	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
11/4/2017	2017	17:15	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	05 - Dusk	01 - Traffic signal	00 - Unknown	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
10/28/2017	2017	18:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
1/31/2017	2017	11:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
12/15/2017	2017	17:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
12/18/2017	2017	12:10	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	04 - Slush	2	0	0	0
2/15/2017	2017	8:17	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	05 - Packed snow	2	0	0	0
4/10/2017	2017	18:32	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	1	0	0
5/5/2017	2017	8:30	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
5/9/2017	2017	20:47	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	00 - Unknown	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
5/26/2017	2017	13:22	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
8/14/2017	2017	17:42	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	4	0	0	0
9/5/2017	2017	16:40	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
10/1/2018	2018	12:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	00 - Unknown	3	0	0	0
11/23/2018	2018	15:01	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
11/7/2018	2018	14:14	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
11/7/2018	2018	14:15	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
12/25/2018	2018	21:43	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
12/18/2018	2018	Unknown	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	00 - Unknown	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
12/14/2018	2018	21:20	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	04 - Freezing Rain	07 - Dark	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	03 - Rear end	06 - Ice	2	0	0	0
1/5/2018	2018	19:13	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
3/1/2018	2018	23:06	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
3/28/2018	2018	15:44	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	05 - Turning movement	01 - Dry	2	0	0	0
1/6/2018	2018	18:56	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
1/6/2018	2018	19:06	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	01 - Dry	3	0	0	0
4/25/2018	2018	10:17	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	02 - Wet	2	0	0	0
4/9/2018	2018	9:28	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
1/8/2018	2018	8:27	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	01 - Approaching	03 - Loose snow	2	0	0	0
5/17/2018	2018	7:47	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
6/1/2018	2018	14:57	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
6/26/2018	2018	20:29	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	3	0	0	0
7/28/2018	2018	17:58	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
8/22/2018	2018	16:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	3	0	0	0
9/3/2019	2019	9:11	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	02 - Angle	01 - Dry	2	0	0	0
9/4/2019	2019	18:31	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	01 - Approaching	01 - Dry	2	0	0	0
8/26/2019	2019	20:25	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	1	0	0
10/11/2019	2019	16:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
10/22/2019	2019	15:40	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	02 - Wet	2	0	0	0
11/8/2019	2019	10:30	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	2	0	0	0
11/27/2019	2019	9:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	02 - Wet	2	0	0	0
1/29/2019	2019	9:07	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	03 - Loose snow	2	0	0	0
4/13/2019	2019	14:17	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	05 - Turning movement	01 - Dry	2	0	0	0
4/20/2019	2019	17:47	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	02 - Rain	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
6/8/2019	2019	20:05	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
8/5/2019	2019	15:45	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	00 - Unknown	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
1/22/2020	2020	9:16	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	02 - Wet	2	0	0	0
1/4/2020	2020	18:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	05 - Turning movement	02 - Wet	2	0	0	0
2/14/2020	2020	17:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
2/26/2020	2020	18:28	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	03 - Snow	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	05 - Packed snow	2	0	0	0
4/2/2020	2020	11:30	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	04 - Sideswipe	01 - Dry	2	0	0	0
8/9/2020	2020	15:30	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	03 - Rear end	01 - Dry	2	0	0	0
9/3/2020	2020	17:00	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	00 - Unknown	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
12/15/2020	2020	22:02	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
12/6/2020	2020	10:36	LEMIEUX ST @ ST. LAURENT BLVD (0002021)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	3	0	0	0
11/1/2018	2018	9:43	LEMIEUX ST btwn ST. LAURENT BLVD & LEMIEUX ST (__3ZA2PF)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	02 - Angle	01 - Dry	2	0	0	0
2/15/2017	2017	9:48	ST. LAURENT BLVD @ TRANSITWAY (0009137)	03 - Snow	01 - Daylight	01 - Traffic signal	00 - Unknown	02 - Non-fatal injury	03 - Rear end	03 - Loose snow	3	0	0	0
1/5/2018	2018	9:35	ST. LAURENT BLVD @ TRANSITWAY (0009137)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	02 - Non-fatal injury	03 - Rear end	02 - Wet	2	0	0	0
6/5/2018	2018	21:03	ST. LAURENT BLVD @ TRANSITWAY (0009137)	01 - Clear	05 - Dusk	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
1/23/2019	2019	9:30	ST. LAURENT BLVD @ TRANSITWAY (0009137)	03 - Snow	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	06 - Ice	2	0	0	0
11/19/2019	2019	9:16	ST. LAURENT BLVD @ TRANSITWAY (0009137)	01 - Clear	01 - Daylight	01 - Traffic signal	01 - Functioning	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
1/27/2019	2019	1:18	ST. LAURENT BLVD @ TRANSITWAY (0009137)	01 - Clear	07 - Dark	01 - Traffic signal	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
3/16/2019	2019	18:28	ST. LAURENT BLVD @ TRANSITWAY (0009137)	01 - Clear	07 - Dark	01 - Traffic signal	00 - Unknown	03 - P.D. only	04 - Sideswipe	06 - Ice	2	0	0	0
10/20/2016	2016	20:37	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	02 - Rain	07 - Dark	10 - No control	0	03 - P.D. only	03 - Rear end	02 - Wet	2	0	0	0
2/3/2016	2016	19:59	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	06 - Strong wind	07 - Dark	10 - No control	0	02 - Non-fatal injury	07 - SMV other	02 - Wet	1	0	0	0
5/18/2016	2016	15:22	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
3/2/2017	2017	17:05	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
7/2/2017	2017	17:15	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
9/26/2018	2018	13:46	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	02 - Rain	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	02 - Wet	2	0	0	0
10/25/2018	2018	12:52	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
11/23/2018	2018	16:43	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	05 - Dusk	10 - No control	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	2	0	0	0
7/6/2018	2018	18:16	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	2	0	0	0
8/31/2019	2019	21:10	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	07 - Dark	10 - No control	0	02 - Non-fatal injury	03 - Rear end	01 - Dry	2	0	0	0
2/21/2020	2020	19:20	ST. LAURENT BLVD btwn HWY417 IC115 RAMP36 & TRANSIT (__3ZA1KA)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	03 - Rear end	06 - Ice	2	0	0	0
3/5/2016	2016	10:02	LEMIEUX ST btwn JOSEPH CYR ST & RAMP (__3ZA8L0)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
9/22/2016	2016	14:45	LEMIEUX ST btwn JOSEPH CYR ST & RAMP (__3ZA8L0)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
11/2/2017	2017	9:23	LEMIEUX ST btwn JOSEPH CYR ST & RAMP (__3ZA8L0)	02 - Rain	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	02 - Wet	2	0	0	0
11/4/2016	2016	17:01	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	05 - Dusk	02 - Stop sign	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
12/10/2016	2016	12:49	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	00 - Unknown	03 - P.D. only	99 - Other	01 - Dry	2	0	0	0
5/1/2016	2016	18:28	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	01 - Functioning	02 - Non-fatal injury	07 - SMV other	01 - Dry	1	0	0	1
10/14/2017	2017	15:20	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	00 - Unknown	03 - P.D. only	04 - Sideswipe	01 - Dry	2	0	0	0
4/11/2017	2017	13:45	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	00 - Unknown	03 - P.D. only	05 - Turning movement	01 - Dry	2	0	0	0
5/30/2017	2017	18:30	JOSEPH CYR ST @ LEMIEUX ST (0009480)	02 - Rain	01 - Daylight	02 - Stop sign	01 - Functioning	03 - P.D. only	02 - Angle	02 - Wet	2	0	0	0
10/9/2019	2019	8:15	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0
10/8/2020	2020	9:52	JOSEPH CYR ST @ LEMIEUX ST (0009480)	01 - Clear	01 - Daylight	02 - Stop sign	01 - Functioning	03 - P.D. only	99 - Other	01 - Dry	2	0	0	0
1/22/2016	2016	13:15	LABELLE ST/RAMP @ LEMIEUX ST/HWY417 IC115 RAMP (0012538)	01 - Clear	01 - Daylight	02 - Stop sign	01 - Functioning	03 - P.D. only	02 - Angle	01 - Dry	2	0	0	0

Appendix E

TRANS Model Plots



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Cyrville - St. Laurent Area Growth

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: August 10, 2020
EMME Scenario: 21711

TRANS

Legend

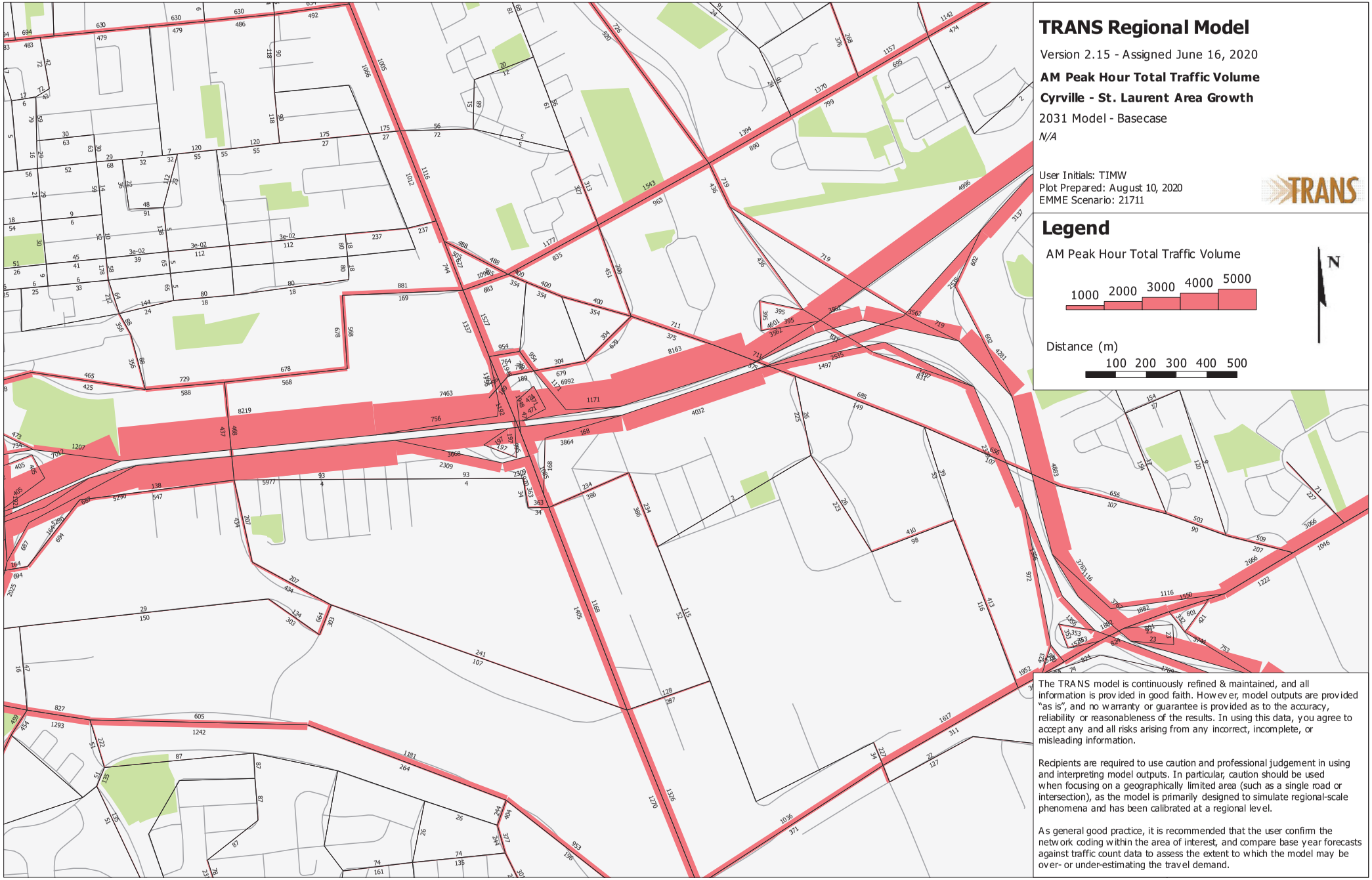
AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

100 200 300 400 500

N



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Cyrville - St. Laurent Area Growth

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: August 10, 2020
EMME Scenario: 21711

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

100 200 300 400 500

N

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

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

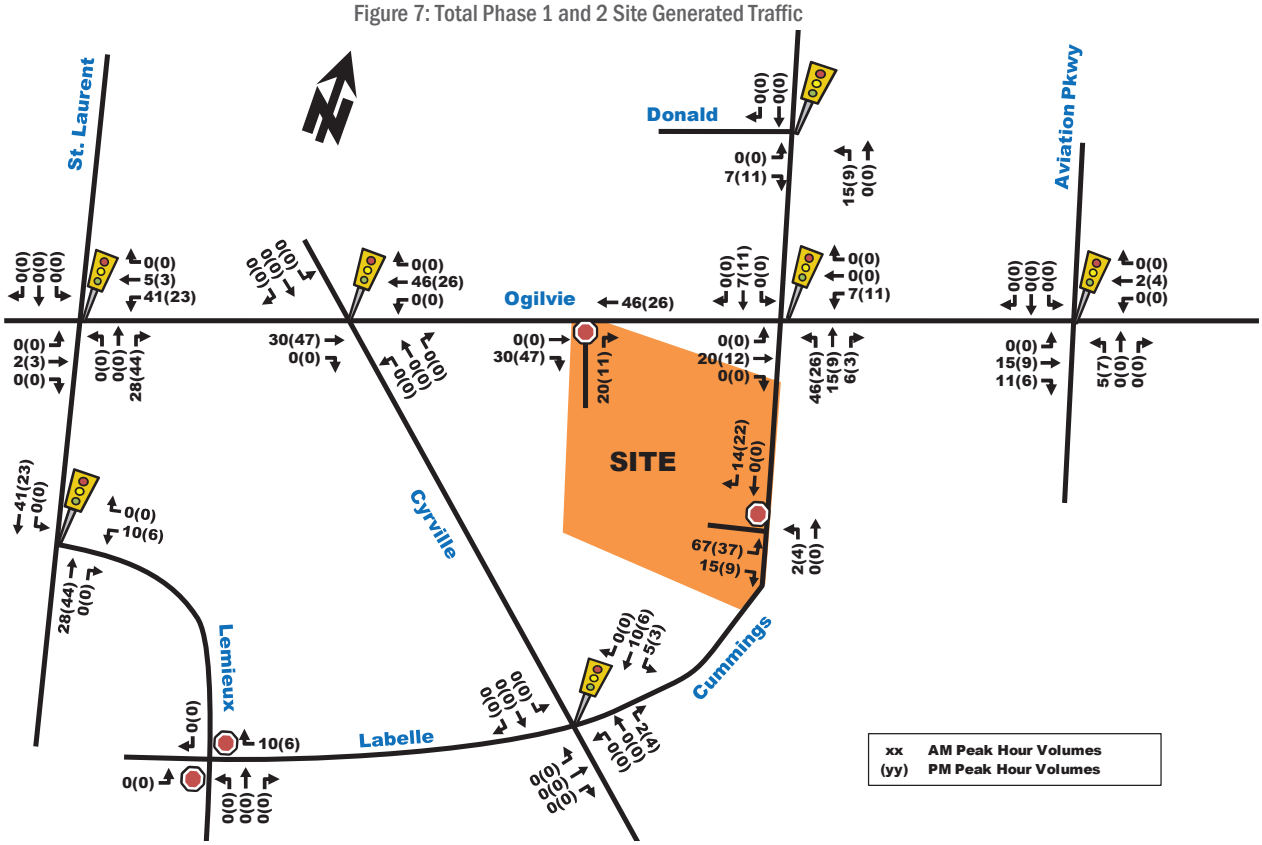
As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

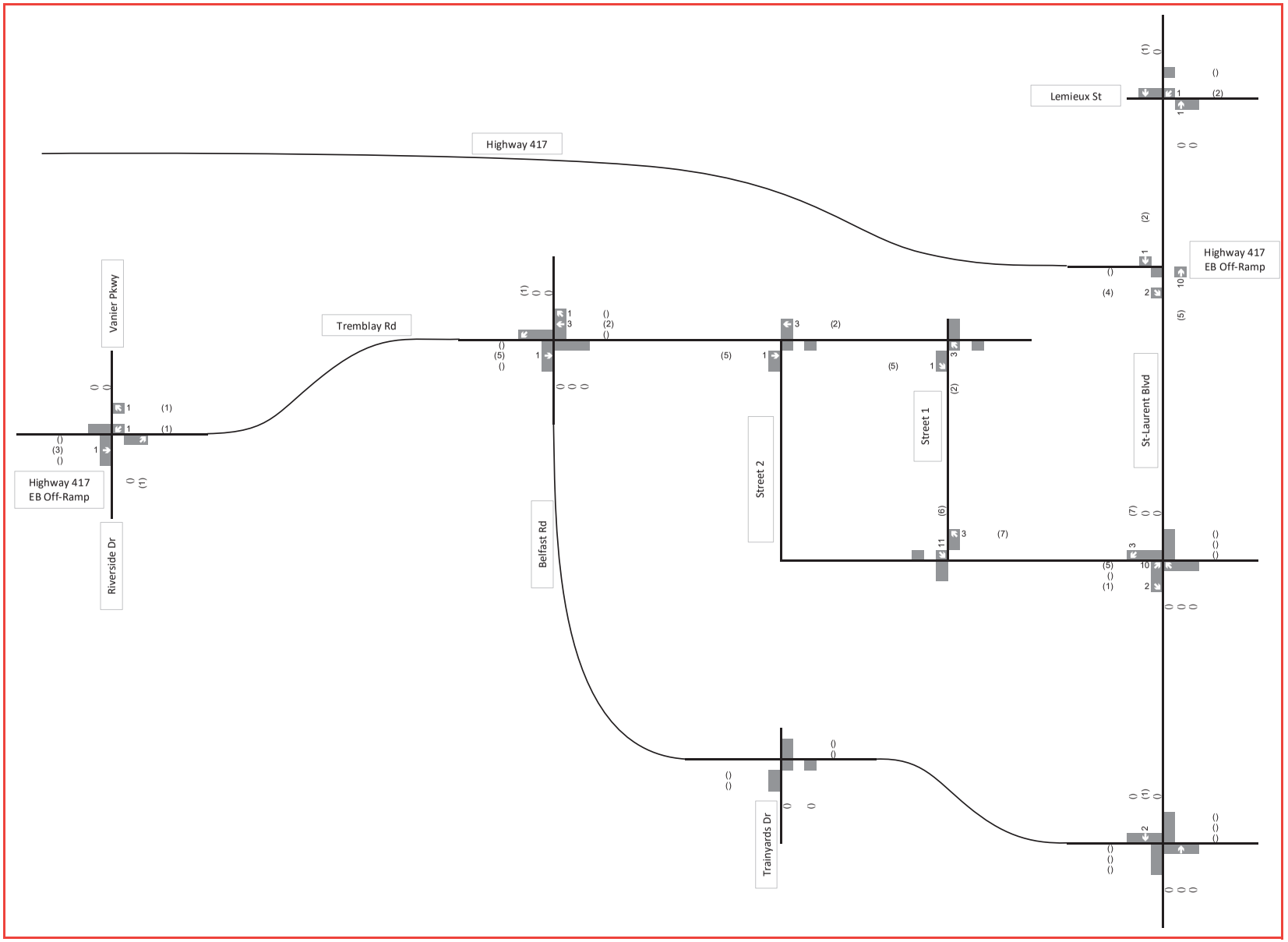
Appendix F

Background Development Volumes

CGH TRANSPORTATION

Figure 7: Total Phase 1 and 2 Site Generated Traffic



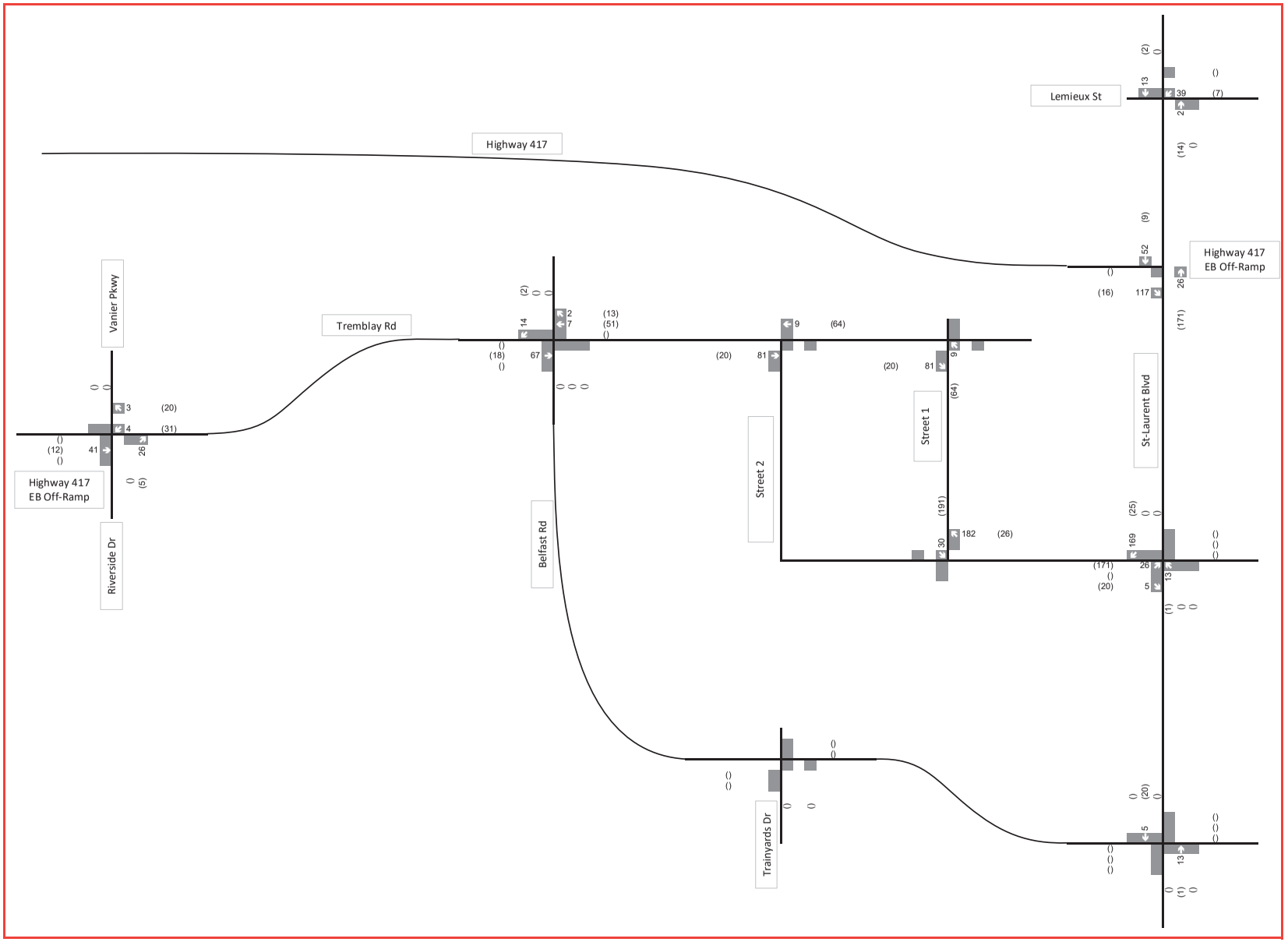


Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 3-2
2025 Residential
Trips Generated

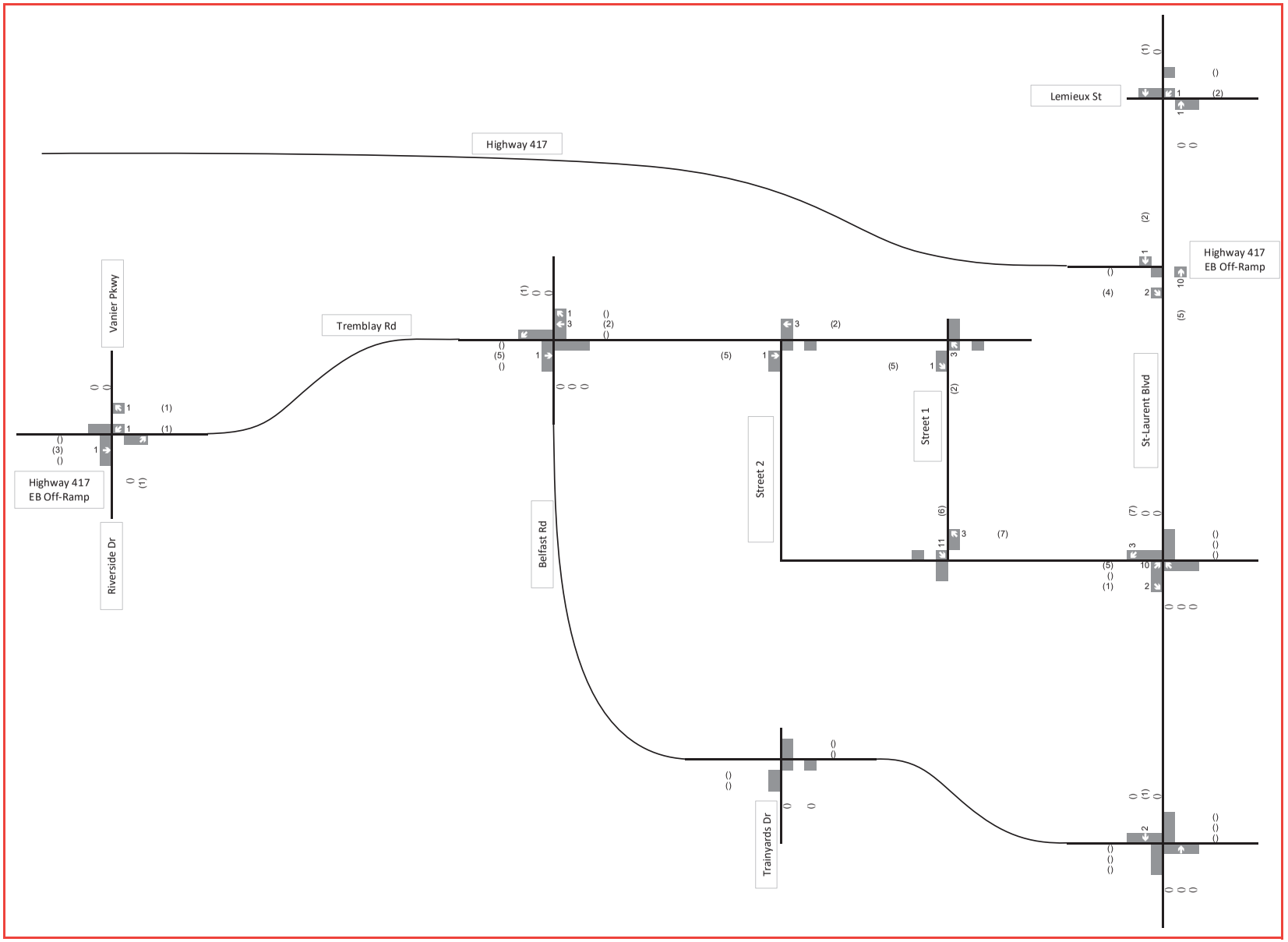


Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 3-3
2025 Office Trips Generated



Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 3-4
2029 Residential Trip Generation

Figure 10 - Site Traffic Assignment

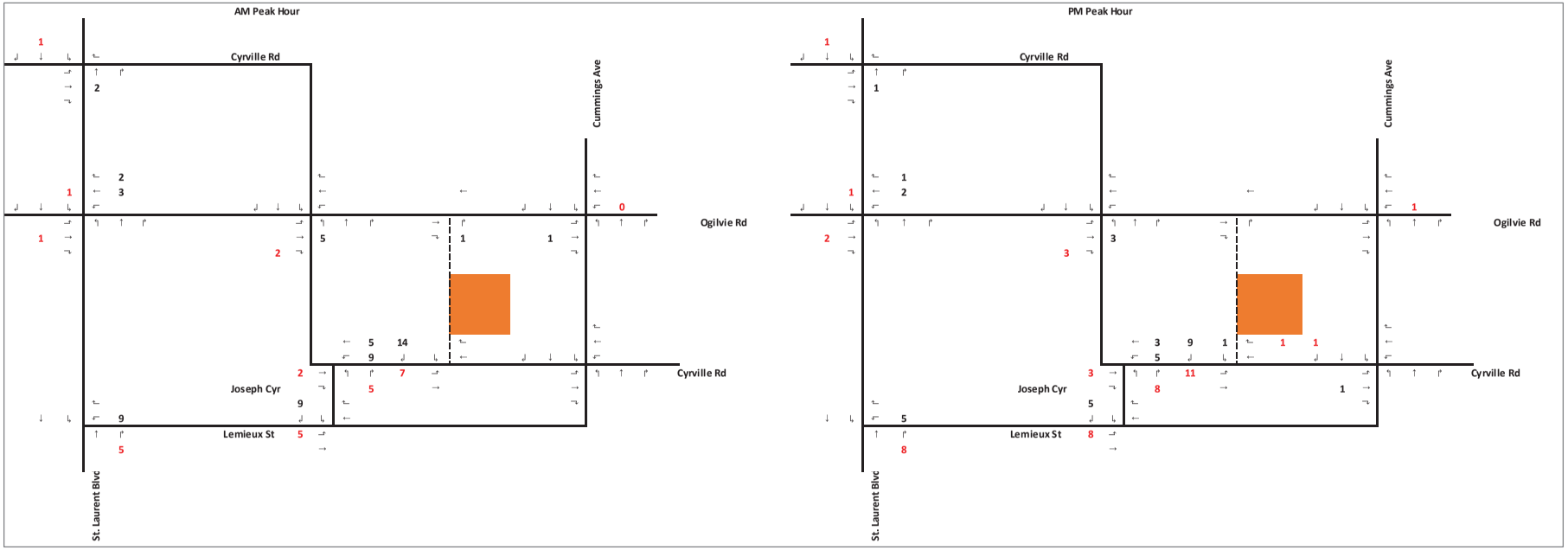


Figure 18: New Site Generation Auto Volumes Scenario 1

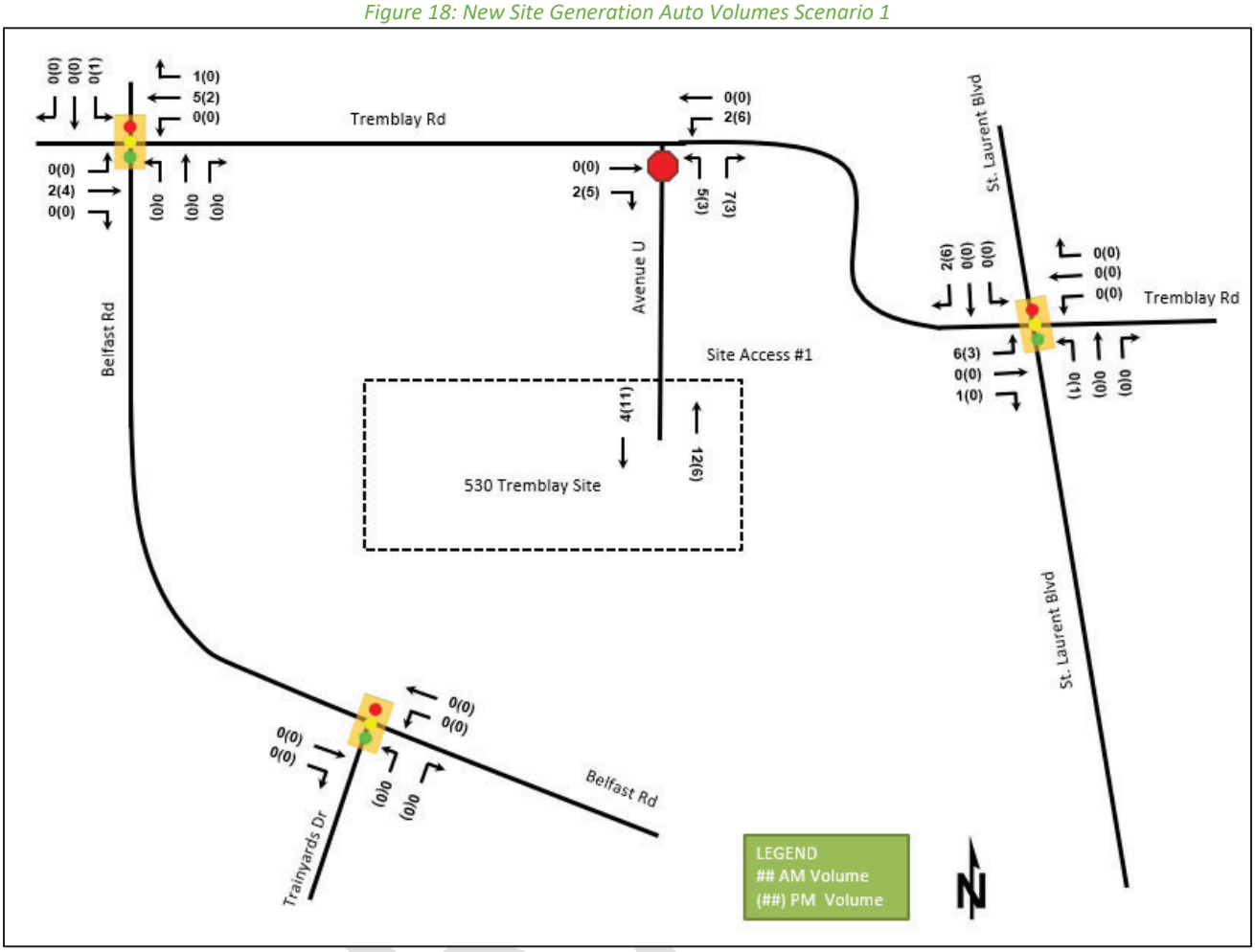


Figure 20: New Site Generation Auto Volumes Scenario 2

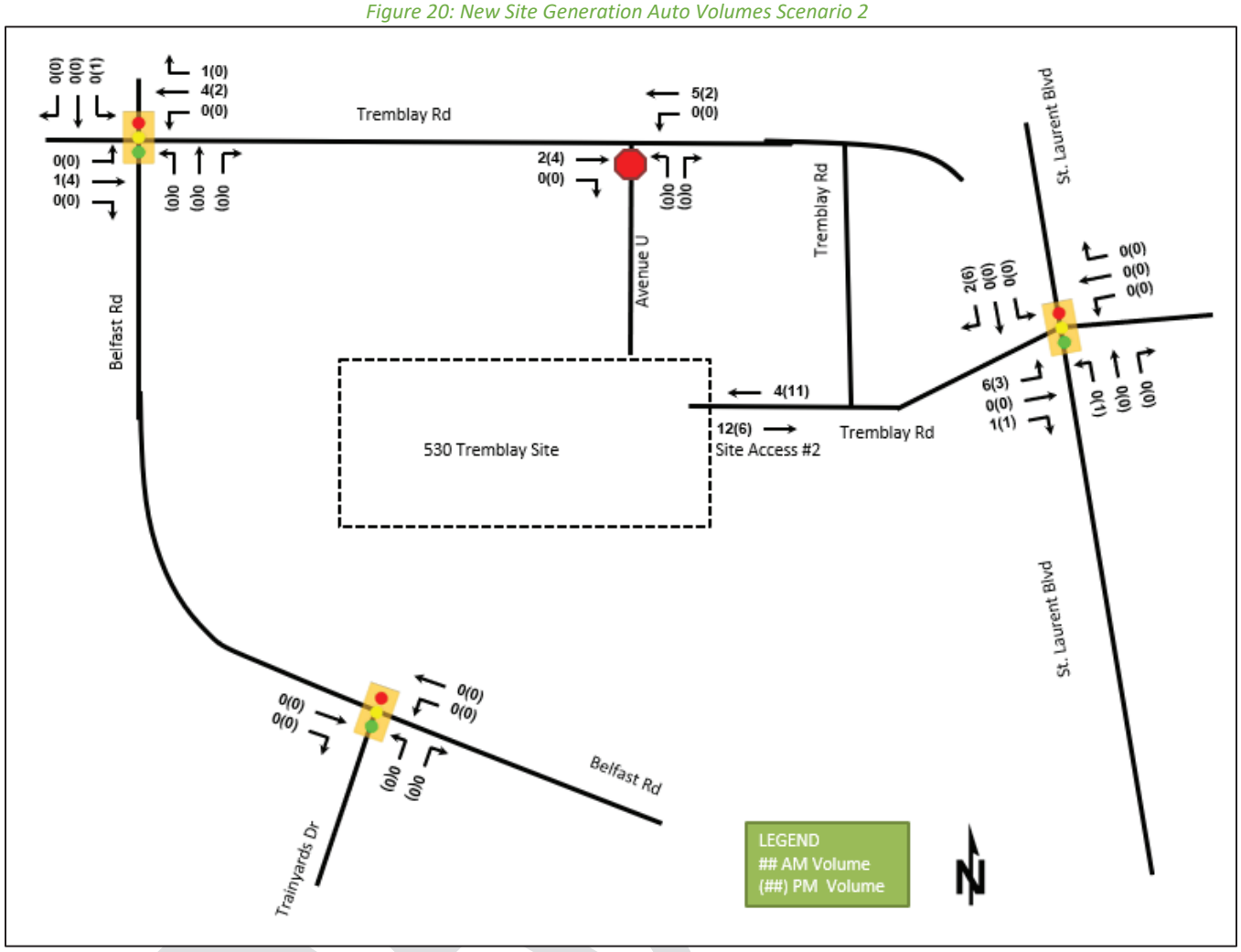
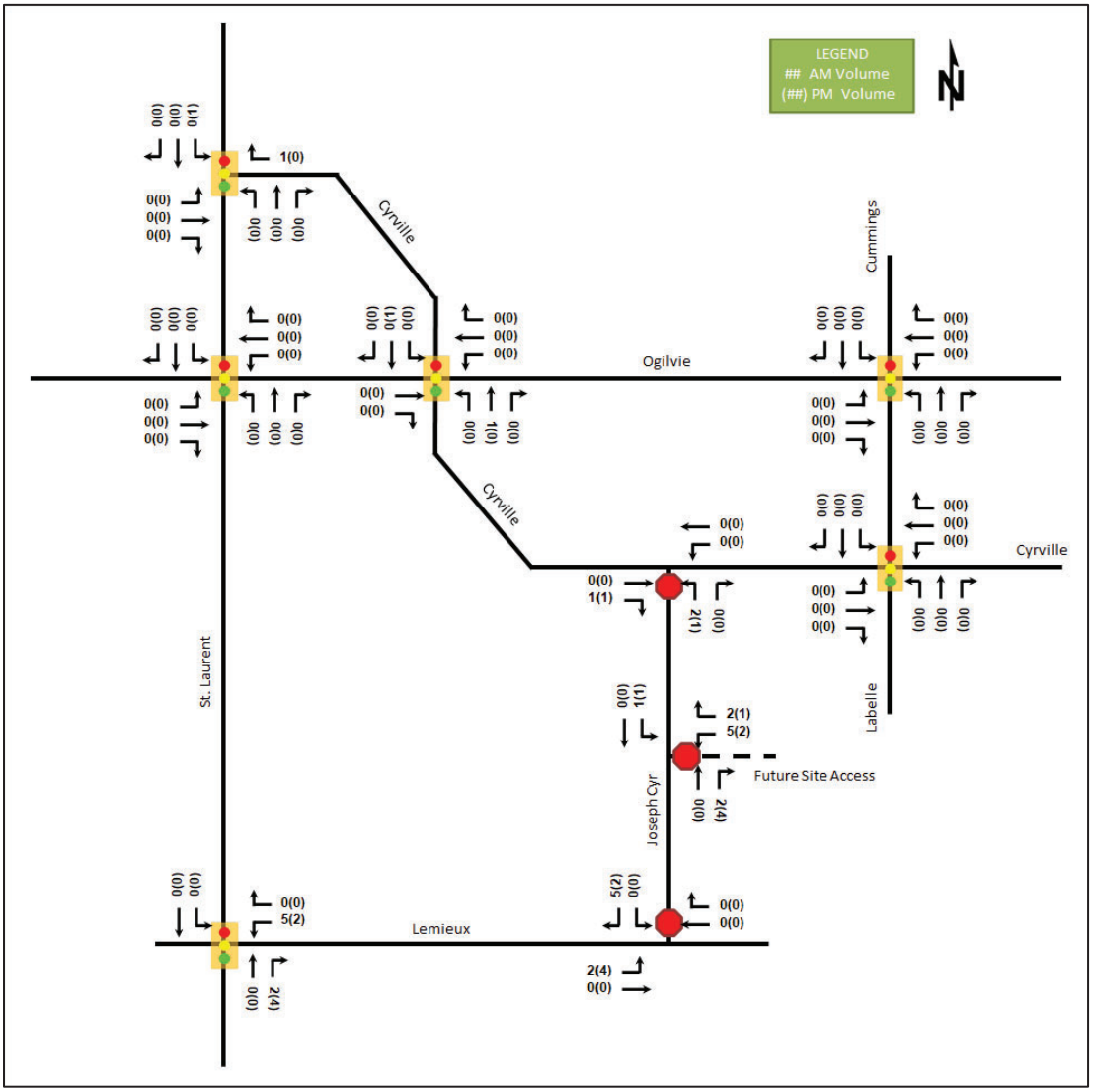


Figure 9: New Site Generation Auto Volumes



Appendix G

Synchro Intersection Worksheets – 2026 Future Background Conditions

CGH TRANSPORTATION

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	204	58	711	645	26	141	836	572	34	826	132
Future Volume (vph)	66	204	58	711	645	26	141	836	572	34	826	132
Satd. Flow (prot)	3010	3283	1388	3216	3103	1339	1523	3161	1441	1642	4764	1427
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2901	3283	1331	3155	3103	1253	1510	3161	1384	1627	4764	1367
Satd. Flow (RTOR)			195			140			510			196
Lane Group Flow (vph)	66	204	58	711	645	26	141	836	572	34	826	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	15.0	37.5	37.5	35.5	58.0	58.0	21.6	35.4	35.4	21.6	35.4	35.4
Total Split (%)	11.5%	28.8%	28.8%	27.3%	44.6%	44.6%	16.6%	27.2%	27.2%	16.6%	27.2%	27.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	18.2	23.0	23.0	31.1	38.4	38.4	14.6	46.6	46.6	8.2	35.2	35.2
Actuated g/C Ratio	0.14	0.18	0.18	0.24	0.30	0.30	0.11	0.36	0.36	0.06	0.27	0.27
v/c Ratio	0.16	0.35	0.15	0.93	0.70	0.06	0.82	0.74	0.70	0.33	0.64	0.26
Control Delay	48.1	46.8	0.8	66.8	39.3	0.2	100.6	37.8	14.8	66.1	46.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	48.1	46.8	0.8	66.8	39.3	0.2	100.6	37.8	15.3	66.1	46.0	2.1
LOS	D	D	A	E	D	A	F	D	B	E	D	A
Approach Delay		38.9			52.7			35.2			40.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.1	22.4	0.0	~99.4	85.1	0.0	38.2	114.5	32.7	8.5	73.4	0.0
Queue Length 95th (m)	14.5	33.4	0.0	#138.9	99.3	m0.0	#71.7	#159.2	61.0	19.0	89.2	2.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	431	782	465	768	1229	580	179	1133	823	191	1288	512
Starvation Cap Reductn	0	0	0	0	0	0	0	0	55	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.26	0.12	0.93	0.52	0.04	0.79	0.74	0.74	0.18	0.64	0.26

Intersection Summary

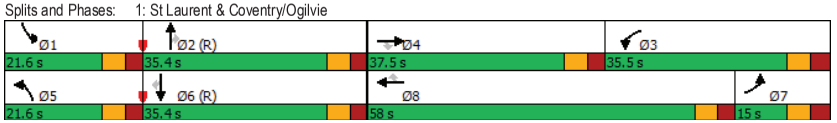
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 92.5%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	614	153	1284	235	7	1514
Future Volume (vph)	614	153	1284	235	7	1514
Satd. Flow (prot)	2734	1483	4584	1483	1658	4672
Flt Permitted	0.950				0.177	
Satd. Flow (perm)	2734	1418	4584	1444	309	4672
Satd. Flow (RTOR)		53		235		
Lane Group Flow (vph)	614	153	1284	235	7	1514
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	34.9	34.9	83.5	83.5	83.5	83.5
Actuated g/C Ratio	0.27	0.27	0.64	0.64	0.64	0.64
v/c Ratio	0.84	0.37	0.44	0.23	0.04	0.50
Control Delay	55.3	26.0	8.1	1.9	10.6	14.8
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	55.3	26.0	8.3	1.9	10.6	14.8
LOS	E	C	A	A	B	B
Approach Delay	49.4		7.3			14.8
Approach LOS	D		A			B
Queue Length 50th (m)	76.8	20.4	32.3	0.4	0.7	70.4
Queue Length 95th (m)	90.8	36.4	63.6	9.4	m1.2	m77.3
Internal Link Dist (m)	80.2		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	923	513	2943	1011	198	3000
Starvation Cap Reductn	0	0	666	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.30	0.56	0.23	0.04	0.50

Intersection Summary

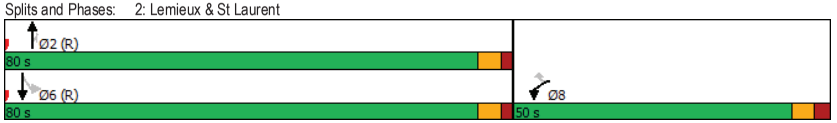
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	24	1532	60	2	900
Future Volume (vph)	48	24	1532	60	2	900
Satd. Flow (prot)	834	0	4452	0	1127	4628
Flt Permitted	0.968				0.136	
Satd. Flow (perm)	834	0	4452	0	161	4628
Satd. Flow (RTOR)	10		11			
Lane Group Flow (vph)	72	0	1592	0	2	900
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		22.5	22.5
Total Split (s)	30.0		35.0		35.0	35.0
Total Split (%)	46.2%		53.8%		53.8%	53.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.6		50.2		50.2	50.2
Actuated g/C Ratio	0.16		0.77		0.77	0.77
v/c Ratio	0.50		0.46		0.02	0.25
Control Delay	32.8		3.6		7.0	5.3
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	32.8		3.6		7.0	5.3
LOS	C		A		A	A
Approach Delay	32.8		3.6			5.3
Approach LOS	C		A			A
Queue Length 50th (m)	6.9		16.0		0.1	18.4
Queue Length 95th (m)	16.2		30.4		m0.3	57.9
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)					13.0	
Base Capacity (vph)	320		3439		124	3572
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.23		0.46		0.02	0.25

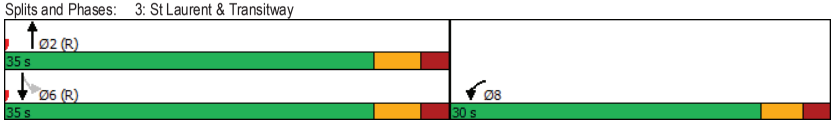
Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 38 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 46.6%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	685	673	0	1212	816	170
Future Volume (vph)	685	673	0	1212	816	170
Satd. Flow (prot)	3066	1427	0	4418	4346	0
Flt Permitted	0.950					
Satd. Flow (perm)	3066	1409	0	4418	4346	0
Satd. Flow (RTOR)		142			52	
Lane Group Flow (vph)	685	673	0	1212	986	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	55.0	55.0		75.0	75.0	
Total Split (%)	42.3%	42.3%		57.7%	57.7%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	48.5	48.5		68.9	68.9	
Actuated g/C Ratio	0.37	0.37		0.53	0.53	
v/c Ratio	0.60	1.10		0.52	0.42	
Control Delay	35.6	96.3		20.8	18.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	35.6	96.3		20.8	18.2	
LOS	D	F		C	B	
Approach Delay	65.7			20.8	18.2	
Approach LOS	E			C	B	
Queue Length 50th (m)	72.4	~170.7		71.1	39.5	
Queue Length 95th (m)	92.1	#243.6		83.9	33.6	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1143	614		2341	2327	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.60	1.10		0.52	0.42	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 25 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10
Intersection Signal Delay: 37.2 Intersection LOS: D
Intersection Capacity Utilization 82.8% 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: 4: Hwy 417 EB Off-Ramp & St Laurent

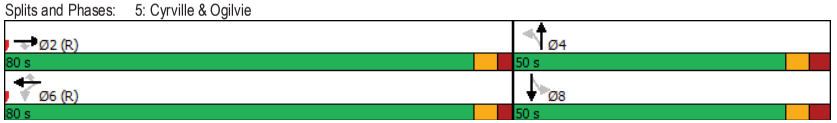
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	581	237	27	1101	166	176	243	12	47	175	45
Future Volume (vph)	0	581	237	27	1101	166	176	243	12	47	175	45
Satd. Flow (prot)	0	3283	1414	1658	3316	1441	1551	1716	0	1626	1605	0
Flt Permitted				0.419			0.486			0.421		
Satd. Flow (perm)	0	3283	1326	722	3316	1312	789	1716	0	719	1605	0
Satd. Flow (RTOR)			237			142		2			11	
Lane Group Flow (vph)	0	581	237	27	1101	166	176	255	0	47	220	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		85.8	85.8	85.8	85.8	85.8	30.9	30.9		30.9	30.9	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.24	0.24		0.24	0.24	
v/c Ratio		0.27	0.25	0.06	0.50	0.18	0.94	0.62		0.27	0.56	
Control Delay		7.0	0.9	10.9	13.6	3.2	98.8	49.4		41.0	45.4	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.0	0.9	10.9	13.6	3.2	98.8	49.4		41.0	45.4	
LOS		A	A	B	B	A	F	D		D	D	
Approach Delay		5.2			12.2			69.5			44.7	
Approach LOS		A			B			E			D	
Queue Length 50th (m)		21.7	0.0	2.3	70.7	2.0	44.4	58.1		9.9	47.3	
Queue Length 95th (m)		33.0	0.0	7.6	111.7	12.5	#67.8	76.0		18.7	64.1	
Internal Link Dist (m)		123.7			139.9			46.0			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2165	955	476	2187	913	260	567		237	537	
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		0.27	0.25	0.06	0.50	0.18	0.68	0.45		0.20	0.41	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94
Intersection Signal Delay: 22.1 — Intersection LOS: C
Intersection Capacity Utilization 77.0% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	135	133	556	44	0	0	177
Future Vol, veh/h	30	0	0	0	0	135	133	556	44	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	135	133	556	44	0	0	177

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	544	-	-	-	-	278	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	544	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	422	0	0	0	0	719	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	491	0	0	0	0	-	-	-	0
Platoon blocked, %								-	
Mov Cap-1 Maneuver	343	-	-	-	-	719	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	399	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	16.5	11.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	343	719
HCM Lane V/C Ratio	-	-	0.087	0.188
HCM Control Delay (s)	-	-	16.5	11.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.7

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	168	688	21	9	69
Future Vol, veh/h	74	168	688	21	9	69
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	2	10	2	2	5
Mvmt Flow	74	168	688	21	9	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	713	0	-	0	1019	359
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	4.19	-	-	-	6.63	6.975
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.257	-	-	-	3.519	3.3475
Pot Cap-1 Maneuver	863	-	-	-	247	631
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	860	-	-	-	225	629
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	860	-	-	-	521
HCM Lane V/C Ratio	0.086	-	-	-	0.15
HCM Control Delay (s)	9.6	-	-	-	13.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	432	32	39	415	1	17	1	52	1	0	0
Future Vol, veh/h	1	432	32	39	415	1	17	1	52	1	0	0
Conflicting Peds, #/hr	3	0	1	1	0	3	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	6	3	3	2	7	2	9	2	2	2
Mvmt Flow	1	432	32	39	415	1	17	1	52	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	465	0	0	945	948	451	976	964	419
Stage 1	-	-	-	-	-	-	451	451	-	497	497	-
Stage 2	-	-	-	-	-	-	494	497	-	479	467	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.17	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.563	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1140	-	-	1091	-	-	237	261	594	230	255	634
Stage 1	-	-	-	-	-	-	578	571	-	555	545	-
Stage 2	-	-	-	-	-	-	548	545	-	568	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1137	-	-	1090	-	-	228	248	593	201	242	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	248	-	201	242	-
Stage 1	-	-	-	-	-	-	577	570	-	553	518	-
Stage 2	-	-	-	-	-	-	522	518	-	516	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	15.2	23
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	1137	-	-	1090	-	-	201
HCM Lane V/C Ratio	0.166	0.001	-	-	0.036	-	-	0.005
HCM Control Delay (s)	15.2	8.2	0	-	8.4	0	-	23
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	620	205	506	385	31	183	893	675	72	822	192
Future Volume (vph)	302	620	205	506	385	31	183	893	675	72	822	192
Satd. Flow (prot)	3216	3316	1483	3154	3075	1469	1566	3252	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2859	3316	1390	3086	3075	1285	1539	3252	1416	1642	4764	1385
Satd. Flow (RTOR)			210			210			382			211
Lane Group Flow (vph)	302	620	205	506	385	31	183	893	675	72	822	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	23.5	37.5	37.5	23.5	37.5	37.5	23.6	44.0	44.0	15.0	35.4	35.4
Total Split (%)	19.6%	31.3%	31.3%	19.6%	31.3%	31.3%	19.7%	36.7%	36.7%	12.5%	29.5%	29.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	29.1	29.1	18.5	31.0	31.0	16.4	40.6	40.6	8.2	29.8	29.8
Actuated g/C Ratio	0.14	0.24	0.24	0.15	0.26	0.26	0.14	0.34	0.34	0.07	0.25	0.25
v/c Ratio	0.68	0.77	0.41	1.04	0.48	0.06	0.86	0.81	0.92	0.64	0.70	0.38
Control Delay	57.7	49.3	7.1	101.3	35.3	0.2	97.4	39.6	34.1	79.5	44.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	49.3	7.1	101.3	35.3	0.2	97.4	39.6	34.1	79.5	44.9	6.0
LOS	E	D	A	F	D	A	F	D	C	E	D	A
Approach Delay		43.9			70.3			43.6			40.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.3	70.3	0.0	~73.5	43.4	0.0	43.0	118.3	108.5	16.8	65.3	0.0
Queue Length 95th (m)	50.2	90.8	17.1	#107.3	58.9	m0.0	#80.8	#142.7	#97.4	#36.1	80.3	14.0
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	444	856	514	486	794	487	224	1099	731	118	1181	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.72	0.40	1.04	0.48	0.06	0.82	0.81	0.92	0.61	0.70	0.38

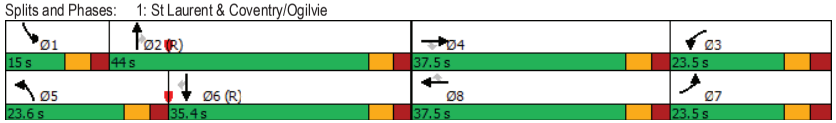
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 48.0	Intersection LOS: D
Intersection Capacity Utilization 96.0%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	511	156	1643	258	13	1863
Future Volume (vph)	511	156	1643	258	13	1863
Satd. Flow (prot)	2982	1414	4718	1483	1658	4672
Flt Permitted	0.950				0.114	
Satd. Flow (perm)	2982	1316	4718	1433	199	4672
Satd. Flow (RTOR)		33		258		
Lane Group Flow (vph)	511	156	1643	258	13	1863
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	7		2			6
Permitted Phases		7		2	6	
Detector Phase	7	7	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.3	28.3	80.1	80.1	80.1	80.1
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
v/c Ratio	0.73	0.47	0.52	0.25	0.10	0.60
Control Delay	48.5	34.8	10.1	2.1	5.6	7.8
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	48.5	34.8	10.4	2.1	5.6	7.8
LOS	D	C	B	A	A	A
Approach Delay	45.3		9.2			7.7
Approach LOS	D		A			A
Queue Length 50th (m)	56.3	24.3	90.2	8.8	0.6	69.8
Queue Length 95th (m)	73.4	43.9	63.2	8.1	m1.5	m73.7
Internal Link Dist (m)	75.1		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	792	374	3150	1042	133	3119
Starvation Cap Reductn	0	0	680	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.42	0.67	0.25	0.10	0.60

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent

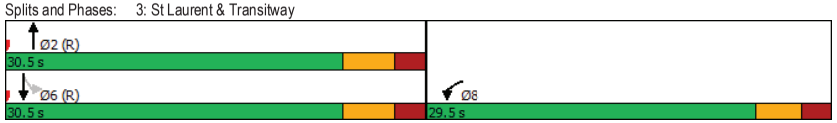
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	1944	45	0	1267
Future Volume (vph)	40	20	1944	45	0	1267
Satd. Flow (prot)	914	0	4646	0	1745	4718
Flt Permitted	0.968					
Satd. Flow (perm)	914	0	4646	0	1745	4718
Satd. Flow (RTOR)	1		7			
Lane Group Flow (vph)	60	0	1989	0	0	1267
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		24.0	24.0
Total Split (s)	29.5		30.5		30.5	30.5
Total Split (%)	49.2%		50.8%		50.8%	50.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.5		46.2			46.2
Actuated g/C Ratio	0.16		0.77			0.77
v/c Ratio	0.41		0.56			0.35
Control Delay	29.9		9.4			4.2
Queue Delay	0.0		0.0			0.0
Total Delay	29.9		9.4			4.2
LOS	C		A			A
Approach Delay	29.9		9.4			4.2
Approach LOS	C		A			A
Queue Length 50th (m)	6.0		71.1			27.5
Queue Length 95th (m)	14.1		118.9			40.0
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)						
Base Capacity (vph)	366		3576			3630
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.16		0.56			0.35

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 28 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	784	263	0	1524	810	397
Future Volume (vph)	784	263	0	1524	810	397
Satd. Flow (prot)	3124	1414	0	4764	4257	0
Flt Permitted	0.950					
Satd. Flow (perm)	3124	1376	0	4764	4257	0
Satd. Flow (RTOR)		137			157	
Lane Group Flow (vph)	784	263	0	1524	1207	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	50.0	50.0		70.0	70.0	
Total Split (%)	41.7%	41.7%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	36.3	36.3		71.1	71.1	
Actuated g/C Ratio	0.30	0.30		0.59	0.59	
v/c Ratio	0.83	0.51		0.54	0.47	
Control Delay	46.8	18.7		16.3	9.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.8	18.7		16.3	9.7	
LOS	D	B		B	A	
Approach Delay	39.7			16.3	9.7	
Approach LOS	D			B	A	
Queue Length 50th (m)	88.2	23.4		74.6	49.1	
Queue Length 95th (m)	101.9	44.6		101.2	89.4	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1132	586		2820	2584	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.69	0.45		0.54	0.47	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1102	279	42	690	124	137	241	32	134	222	80
Future Volume (vph)	0	1102	279	42	690	124	137	241	32	134	222	80
Satd. Flow (prot)	0	3316	1469	1658	3316	1469	1580	1710	0	1642	1639	0
Flt Permitted				0.215			0.340			0.394		
Satd. Flow (perm)	0	3316	1362	373	3316	1327	563	1710	0	678	1639	0
Satd. Flow (RTOR)			279			124		6			17	
Lane Group Flow (vph)	0	1102	279	42	690	124	137	273	0	134	302	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		78.7	78.7	78.7	78.7	78.7	28.0	28.0		28.0	28.0	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.51	0.28	0.17	0.32	0.14	1.05	0.68		0.85	0.76	
Control Delay		5.5	0.7	13.0	10.6	2.4	135.0	48.3		83.0	52.3	
Queue Delay		0.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		5.8	0.7	13.0	10.6	2.4	135.0	48.3		83.0	52.3	
LOS		A	A	B	B	A	F	D		F	D	
Approach Delay		4.7			9.5			77.3			61.7	
Approach LOS		A			A			E			E	
Queue Length 50th (m)		27.3	0.1	3.5	33.3	0.0	~36.0	58.2		30.6	63.9	
Queue Length 95th (m)		m58.5	m1.5	11.9	58.6	8.3	#60.8	75.0		48.9	82.4	
Internal Link Dist (m)		123.7			139.9			44.2			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2174	989	244	2174	912	201	615		242	596	
Starvation Cap Reductn		397	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		0.62	0.28	0.17	0.32	0.14	0.68	0.44		0.55	0.51	

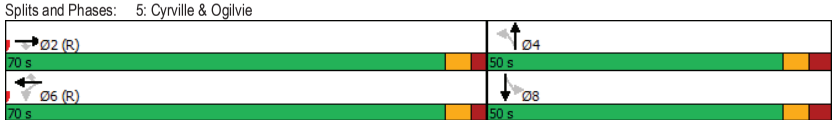
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 83.5%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	0	0	0	162	112	316	27	0	0	176
Future Vol, veh/h	131	0	0	0	0	162	112	316	27	0	0	176
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	0	0	0	0	162	112	316	27	0	0	176

Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	382	-	-	-	-	158	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	382	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	551	0	0	0	0	859	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	612	0	0	0	0	-	-	-	0			
Platoon blocked, %								-				
Mov Cap-1 Maneuver	447	-	-	-	-	859	-	-	-			
Mov Cap-2 Maneuver	447	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	497	-	-	-	-	-	-	-	-			

Approach	EB	WB	NB
HCM Control Delay, s	16.4	10.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	447	859
HCM Lane V/C Ratio	-	-	0.293	0.189
HCM Control Delay (s)	-	-	16.4	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.7

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	112	159	560	38	17	101
Future Vol, veh/h	112	159	560	38	17	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	4	3	2	3
Mvmt Flow	112	159	560	38	17	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	598	0	-	0	962	299
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.13	-	-	-	6.63	6.945
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.3285
Pot Cap-1 Maneuver	977	-	-	-	268	695
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	977	-	-	-	237	695
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	977	-	-	-	544
HCM Lane V/C Ratio	0.115	-	-	-	0.217
HCM Control Delay (s)	9.2	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.8

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	480	52	53	371	1	39	5	82	1	1	1
Future Vol, veh/h	0	480	52	53	371	1	39	5	82	1	1	1
Conflicting Peds, #/hr	11	0	3	3	0	11	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	0	480	52	53	371	1	39	5	82	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	383	0	0	535	0	0	989	998	512	1042	1024	384
Stage 1	-	-	-	-	-	-	509	509	-	489	489	-
Stage 2	-	-	-	-	-	-	480	489	-	553	535	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1175	-	-	1023	-	-	226	244	562	208	235	664
Stage 1	-	-	-	-	-	-	547	538	-	561	549	-
Stage 2	-	-	-	-	-	-	567	549	-	517	524	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1165	-	-	1021	-	-	213	226	559	164	217	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	226	-	164	217	-
Stage 1	-	-	-	-	-	-	546	537	-	556	509	-
Stage 2	-	-	-	-	-	-	528	509	-	436	523	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	20.4	19.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	1165	-	-	1021	-	-	245
HCM Lane V/C Ratio	0.352	-	-	-	0.052	-	-	0.012
HCM Control Delay (s)	20.4	0	-	-	8.7	0	-	19.9
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.5	0	-	-	0.2	-	-	0

Appendix H

Synchro Intersection Worksheets – 2031 Future Background Conditions

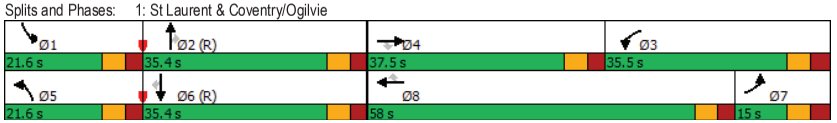
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	209	58	745	677	26	141	879	599	34	846	132
Future Volume (vph)	66	209	58	745	677	26	141	879	599	34	846	132
Satd. Flow (prot)	3010	3283	1388	3216	3103	1339	1523	3161	1441	1642	4764	1427
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2906	3283	1331	3156	3103	1253	1511	3161	1384	1628	4764	1367
Satd. Flow (RTOR)			195			140			507			196
Lane Group Flow (vph)	66	209	58	745	677	26	141	879	599	34	846	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	15.0	37.5	37.5	35.5	58.0	58.0	21.6	35.4	35.4	21.6	35.4	35.4
Total Split (%)	11.5%	28.8%	28.8%	27.3%	44.6%	44.6%	16.6%	27.2%	27.2%	16.6%	27.2%	27.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	17.6	23.0	23.0	33.0	41.0	41.0	14.6	44.6	44.6	8.2	33.2	33.2
Actuated g/C Ratio	0.14	0.18	0.18	0.25	0.32	0.32	0.11	0.34	0.34	0.06	0.26	0.26
v/c Ratio	0.16	0.36	0.15	0.91	0.69	0.05	0.82	0.81	0.74	0.33	0.70	0.27
Control Delay	49.2	46.9	0.8	62.5	36.7	0.2	101.5	40.5	16.8	66.1	48.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	49.2	46.9	0.8	62.5	36.8	0.2	101.5	40.5	17.6	66.1	48.3	2.2
LOS	D	D	A	E	D	A	F	D	B	E	D	A
Approach Delay		39.3			49.4			37.3			42.9	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.3	23.0	0.0	~109.0	88.2	0.0	38.2	~126.8	34.4	8.5	75.6	0.0
Queue Length 95th (m)	14.7	34.2	0.0	#148.6	103.0	m0.0	#71.6	#168.3	#66.0	19.0	91.5	2.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	418	782	465	816	1258	590	179	1085	808	191	1216	495
Starvation Cap Reductn	0	0	0	0	20	0	0	0	52	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.27	0.12	0.91	0.55	0.04	0.79	0.81	0.79	0.18	0.70	0.27

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91
Intersection Signal Delay: 42.7 Intersection LOS: D
Intersection Capacity Utilization 93.5% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	153	1348	235	7	1549
Future Volume (vph)	615	153	1348	235	7	1549
Satd. Flow (prot)	2734	1483	4584	1483	1658	4672
Flt Permitted	0.950				0.163	
Satd. Flow (perm)	2734	1418	4584	1444	284	4672
Satd. Flow (RTOR)		46		235		
Lane Group Flow (vph)	615	153	1348	235	7	1549
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	34.9	34.9	83.5	83.5	83.5	83.5
Actuated g/C Ratio	0.27	0.27	0.64	0.64	0.64	0.64
v/c Ratio	0.84	0.37	0.46	0.23	0.04	0.52
Control Delay	55.3	27.9	9.0	2.0	10.9	15.1
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	55.3	27.9	9.2	2.0	10.9	15.1
LOS	E	C	A	A	B	B
Approach Delay	49.9		8.1			15.1
Approach LOS	D		A			B
Queue Length 50th (m)	77.0	21.9	37.6	1.2	0.7	72.9
Queue Length 95th (m)	91.0	37.9	72.8	11.6	m1.1	m80.5
Internal Link Dist (m)	80.2		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	923	509	2942	1011	182	2999
Starvation Cap Reductn	0	0	669	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.30	0.59	0.23	0.04	0.52

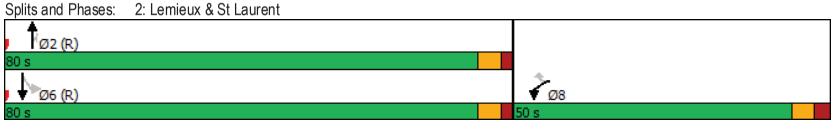
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	24	1618	60	2	920
Future Volume (vph)	48	24	1618	60	2	920
Satd. Flow (prot)	834	0	4463	0	1127	4628
Flt Permitted	0.968				0.122	
Satd. Flow (perm)	834	0	4463	0	145	4628
Satd. Flow (RTOR)	7		11			
Lane Group Flow (vph)	72	0	1678	0	2	920
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		22.5	22.5
Total Split (s)	30.0		35.0		35.0	35.0
Total Split (%)	46.2%		53.8%		53.8%	53.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.7		50.1		50.1	50.1
Actuated g/C Ratio	0.16		0.77		0.77	0.77
v/c Ratio	0.50		0.49		0.02	0.26
Control Delay	33.6		3.9		7.0	5.5
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	33.6		3.9		7.0	5.5
LOS	C		A		A	A
Approach Delay	33.6		3.9			5.5
Approach LOS	C		A			A
Queue Length 50th (m)	7.2		17.6		0.1	21.2
Queue Length 95th (m)	16.5		35.4		m0.4	58.8
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)					13.0	
Base Capacity (vph)	318		3439		111	3564
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.23		0.49		0.02	0.26

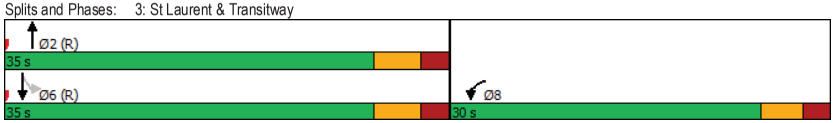
Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 38 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 48.3%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	685	673	0	1280	834	170
Future Volume (vph)	685	673	0	1280	834	170
Satd. Flow (prot)	3066	1427	0	4418	4354	0
Flt Permitted	0.950					
Satd. Flow (perm)	3066	1409	0	4418	4354	0
Satd. Flow (RTOR)		136			51	
Lane Group Flow (vph)	685	673	0	1280	1004	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	55.0	55.0		75.0	75.0	
Total Split (%)	42.3%	42.3%		57.7%	57.7%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	48.5	48.5		68.9	68.9	
Actuated g/C Ratio	0.37	0.37		0.53	0.53	
v/c Ratio	0.60	1.10		0.55	0.43	
Control Delay	35.6	99.2		21.3	17.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	35.6	99.2		21.3	17.7	
LOS	D	F		C	B	
Approach Delay	67.1			21.3	17.7	
Approach LOS	E			C	B	
Queue Length 50th (m)	72.4	~172.7		76.8	39.4	
Queue Length 95th (m)	92.1	#245.7		90.2	33.7	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1143	610		2341	2331	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.60	1.10		0.55	0.43	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 25 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

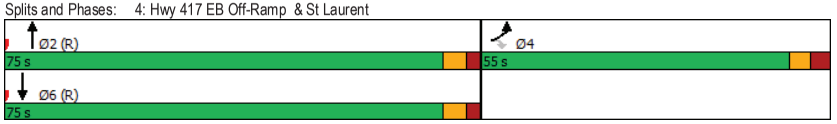
Maximum v/c Ratio: 1.10

Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 82.8%	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: 4: Hwy 417 EB Off-Ramp & St Laurent



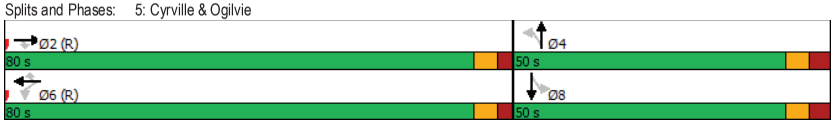
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	595	243	27	1155	166	180	249	12	47	193	45
Future Volume (vph)	0	595	243	27	1155	166	180	249	12	47	193	45
Satd. Flow (prot)	0	3283	1414	1658	3316	1441	1551	1716	0	1626	1611	0
Flt Permitted				0.410			0.463			0.422		
Satd. Flow (perm)	0	3283	1326	706	3316	1312	752	1716	0	720	1611	0
Satd. Flow (RTOR)			243			135		2			10	
Lane Group Flow (vph)	0	595	243	27	1155	166	180	261	0	47	238	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		84.5	84.5	84.5	84.5	84.5	32.2	32.2		32.2	32.2	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.25	0.25		0.25	0.25	
v/c Ratio		0.28	0.26	0.06	0.54	0.18	0.97	0.61		0.26	0.59	
Control Delay		7.2	0.9	11.4	14.7	3.6	105.2	48.0		39.7	45.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.2	0.9	11.4	14.7	3.6	105.2	48.0		39.7	45.7	
LOS		A	A	B	B	A	F	D		D	D	
Approach Delay		5.3			13.3			71.4			44.7	
Approach LOS		A			B			E			D	
Queue Length 50th (m)		21.9	0.0	2.4	79.5	2.7	45.4	58.6		9.7	51.2	
Queue Length 95th (m)		33.7	m0.0	7.6	119.8	13.4	#75.5	77.8		18.7	70.1	
Internal Link Dist (m)		123.7			139.9			46.0			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2133	946	458	2154	899	248	567		237	538	
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		0.28	0.26	0.06	0.54	0.18	0.73	0.46		0.20	0.44	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97
Intersection Signal Delay: 22.9 Intersection LOS: C
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	135	133	557	44	0	0	177
Future Vol, veh/h	30	0	0	0	0	135	133	557	44	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	135	133	557	44	0	0	177

Major/Minor	Minor2			Minor1			Major1			
Conflicting Flow All	545	-	-	-	-	279	0	0	-	
Stage 1	0	-	-	-	-	-	-	-	-	
Stage 2	545	-	-	-	-	-	-	-	-	
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	
Pot Cap-1 Maneuver	421	0	0	0	0	718	-	-	0	
Stage 1	-	0	0	0	0	-	-	-	0	
Stage 2	490	0	0	0	0	-	-	-	0	
Platoon blocked, %								-		
Mov Cap-1 Maneuver	342	-	-	-	-	718	-	-	-	
Mov Cap-2 Maneuver	342	-	-	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	-	-	-	
Stage 2	398	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB
HCM Control Delay, s	16.5	11.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	342	718
HCM Lane V/C Ratio	-	-	0.088	0.188
HCM Control Delay (s)	-	-	16.5	11.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.7

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	168	689	21	9	69
Future Vol, veh/h	74	168	689	21	9	69
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	2	10	2	2	5
Mvmt Flow	74	168	689	21	9	69

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	714	0	-	0	1020	359
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	4.19	-	-	-	6.63	6.975
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.257	-	-	-	3.519	3.3475
Pot Cap-1 Maneuver	862	-	-	-	247	631
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	859	-	-	-	225	629
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	859	-	-	-	521
HCM Lane V/C Ratio	0.086	-	-	-	0.15
HCM Control Delay (s)	9.6	-	-	-	13.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	476	32	39	425	1	17	1	52	1	0	0
Future Vol, veh/h	1	476	32	39	425	1	17	1	52	1	0	0
Conflicting Peds, #/hr	3	0	1	1	0	3	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	6	3	3	2	7	2	9	2	2	2
Mvmt Flow	1	476	32	39	425	1	17	1	52	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	429	0	0	509	0	0	999	1002	495	1030	1018	429
Stage 1	-	-	-	-	-	-	495	495	-	507	507	-
Stage 2	-	-	-	-	-	-	504	507	-	523	511	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.17	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.563	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1130	-	-	1051	-	-	218	242	561	212	237	626
Stage 1	-	-	-	-	-	-	547	546	-	548	539	-
Stage 2	-	-	-	-	-	-	541	539	-	537	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1127	-	-	1050	-	-	209	229	560	184	224	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	229	-	184	224	-
Stage 1	-	-	-	-	-	-	546	545	-	546	512	-
Stage 2	-	-	-	-	-	-	514	512	-	485	536	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	16.2	24.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	1127	-	-	1050	-	-	184
HCM Lane V/C Ratio	0.179	0.001	-	-	0.037	-	-	0.005
HCM Control Delay (s)	16.2	8.2	0	-	8.6	0	-	24.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	652	205	518	395	31	183	915	691	72	864	192
Future Volume (vph)	302	652	205	518	395	31	183	915	691	72	864	192
Satd. Flow (prot)	3216	3316	1483	3154	3075	1469	1566	3252	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2864	3316	1390	3089	3075	1285	1541	3252	1416	1642	4764	1385
Satd. Flow (RTOR)			210			210			379			211
Lane Group Flow (vph)	302	652	205	518	395	31	183	915	691	72	864	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	23.5	37.5	37.5	23.5	37.5	37.5	23.6	44.0	44.0	15.0	35.4	35.4
Total Split (%)	19.6%	31.3%	31.3%	19.6%	31.3%	31.3%	19.7%	36.7%	36.7%	12.5%	29.5%	29.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	29.3	29.3	18.3	31.0	31.0	16.4	40.6	40.6	8.2	29.8	29.8
Actuated g/C Ratio	0.14	0.24	0.24	0.15	0.26	0.26	0.14	0.34	0.34	0.07	0.25	0.25
v/c Ratio	0.68	0.81	0.41	1.08	0.50	0.06	0.86	0.83	0.95	0.64	0.73	0.38
Control Delay	57.7	51.1	7.1	110.7	34.6	0.2	97.4	40.3	38.0	79.5	45.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	51.1	7.1	110.7	34.6	0.2	97.4	40.3	38.0	79.5	45.9	6.0
LOS	E	D	A	F	C	A	F	D	D	E	D	A
Approach Delay		45.0			75.2			45.2			41.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.3	74.8	0.0	~76.7	44.8	0.0	43.2	121.7	113.4	16.8	69.3	0.0
Queue Length 95th (m)	50.2	96.3	17.1	#111.0	57.1	m0.0	#80.8	#149.1	#103.7	#36.1	84.9	14.0
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	444	856	514	481	794	487	224	1099	729	118	1181	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.76	0.40	1.08	0.50	0.06	0.82	0.83	0.95	0.61	0.73	0.38

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

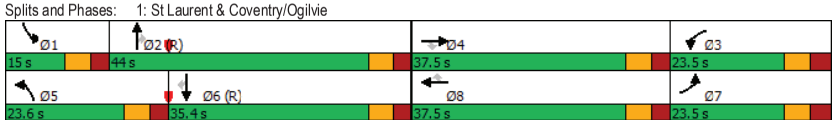
Intersection Signal Delay: 49.9	Intersection LOS: D
Intersection Capacity Utilization 96.6%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

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

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	513	156	1683	258	13	1957
Future Volume (vph)	513	156	1683	258	13	1957
Satd. Flow (prot)	2982	1414	4718	1483	1658	4672
Flt Permitted	0.950				0.108	
Satd. Flow (perm)	2982	1316	4718	1433	188	4672
Satd. Flow (RTOR)		30		258		
Lane Group Flow (vph)	513	156	1683	258	13	1957
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	7		2			6
Permitted Phases		7		2	6	
Detector Phase	7	7	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.3	28.3	80.1	80.1	80.1	80.1
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
v/c Ratio	0.73	0.47	0.53	0.25	0.10	0.63
Control Delay	48.6	35.7	10.5	2.0	5.8	8.0
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.2
Total Delay	48.6	35.7	10.8	2.0	5.8	8.2
LOS	D	D	B	A	A	A
Approach Delay	45.6		9.6			8.2
Approach LOS	D		A			A
Queue Length 50th (m)	56.6	24.9	94.2	8.5	0.7	73.0
Queue Length 95th (m)	73.6	44.6	75.5	7.8	m1.5	m76.3
Internal Link Dist (m)	75.1		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	792	371	3149	1042	125	3118
Starvation Cap Reductn	0	0	682	0	0	404
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.42	0.68	0.25	0.10	0.72

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

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

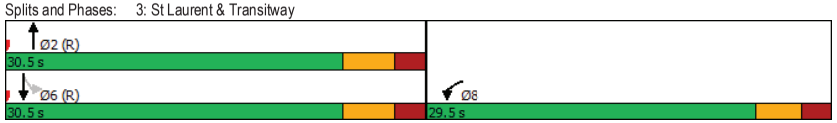
Splits and Phases: 2: St Laurent & Lemieux

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	1996	45	0	1331
Future Volume (vph)	40	20	1996	45	0	1331
Satd. Flow (prot)	914	0	4648	0	1745	4718
Flt Permitted	0.968					
Satd. Flow (perm)	914	0	4648	0	1745	4718
Satd. Flow (RTOR)	1		6			
Lane Group Flow (vph)	60	0	2041	0	0	1331
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		24.0	24.0
Total Split (s)	29.5		30.5		30.5	30.5
Total Split (%)	49.2%		50.8%		50.8%	50.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.5		46.2			46.2
Actuated g/C Ratio	0.16		0.77			0.77
v/c Ratio	0.41		0.57			0.37
Control Delay	29.9		9.8			4.3
Queue Delay	0.0		0.0			0.0
Total Delay	29.9		9.8			4.3
LOS	C		A			A
Approach Delay	29.9		9.8			4.3
Approach LOS	C		A			A
Queue Length 50th (m)	6.0		75.4			29.6
Queue Length 95th (m)	14.1		124.6			44.8
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)						
Base Capacity (vph)	366		3577			3630
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.16		0.57			0.37

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 28 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	784	263	0	1562	851	397
Future Volume (vph)	784	263	0	1562	851	397
Satd. Flow (prot)	3124	1414	0	4764	4265	0
Flt Permitted	0.950					
Satd. Flow (perm)	3124	1376	0	4764	4265	0
Satd. Flow (RTOR)		123			150	
Lane Group Flow (vph)	784	263	0	1562	1248	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	50.0	50.0		70.0	70.0	
Total Split (%)	41.7%	41.7%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	36.3	36.3		71.1	71.1	
Actuated g/C Ratio	0.30	0.30		0.59	0.59	
v/c Ratio	0.83	0.52		0.55	0.48	
Control Delay	46.8	20.8		16.5	9.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.8	20.8		16.5	9.8	
LOS	D	C		B	A	
Approach Delay	40.3			16.5	9.8	
Approach LOS	D			B	A	
Queue Length 50th (m)	88.2	26.4		77.4	52.5	
Queue Length 95th (m)	101.9	47.6		104.8	92.6	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1132	577		2820	2586	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.69	0.46		0.55	0.48	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1156	293	42	707	124	151	266	32	134	227	80
Future Volume (vph)	0	1156	293	42	707	124	151	266	32	134	227	80
Satd. Flow (prot)	0	3316	1469	1658	3316	1469	1580	1714	0	1642	1640	0
Flt Permitted				0.195			0.353			0.369		
Satd. Flow (perm)	0	3316	1362	338	3316	1327	585	1714	0	635	1640	0
Satd. Flow (RTOR)			293			124		6			16	
Lane Group Flow (vph)	0	1156	293	42	707	124	151	298	0	134	307	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		76.9	76.9	76.9	76.9	76.9	29.8	29.8		29.8	29.8	
Actuated g/C Ratio		0.64	0.64	0.64	0.64	0.64	0.25	0.25		0.25	0.25	
v/c Ratio		0.54	0.30	0.19	0.33	0.14	1.04	0.69		0.85	0.73	
Control Delay		6.3	0.7	15.0	11.7	2.6	128.9	47.4		82.3	48.5	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		6.6	0.7	15.0	11.7	2.6	128.9	47.4		82.3	48.5	
LOS		A	A	B	B	A	F	D		F	D	
Approach Delay		5.4			10.5			74.8			58.8	
Approach LOS		A			B			E			E	
Queue Length 50th (m)		33.3	0.0	3.8	36.9	0.0	~38.5	62.8		30.2	63.5	
Queue Length 95th (m)		m66.1	m1.5	12.8	63.2	8.7	#65.1	80.0		48.9	81.7	
Internal Link Dist (m)		123.7			139.9			44.2			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2123	977	216	2123	894	209	616		227	596	
Starvation Cap Reductn		345	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		0.65	0.30	0.19	0.33	0.14	0.72	0.48		0.59	0.52	

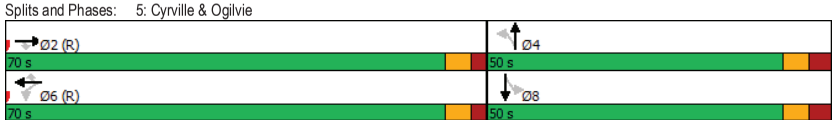
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 84.2%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	0	0	0	162	112	318	27	0	0	176
Future Vol, veh/h	131	0	0	0	0	162	112	318	27	0	0	176
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	0	0	0	0	162	112	318	27	0	0	176

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	383	-	-	-	-	159	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	383	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	550	0	0	0	0	858	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	611	0	0	0	0	-	-	-	0
Platoon blocked, %								-	
Mov Cap-1 Maneuver	446	-	-	-	-	858	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	496	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	16.4	10.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	446	858
HCM Lane V/C Ratio	-	-	0.294	0.189
HCM Control Delay (s)	-	-	16.4	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.7

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	112	159	562	38	17	101
Future Vol, veh/h	112	159	562	38	17	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	22	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	4	3	2	3
Mvmt Flow	112	159	562	38	17	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	600	0	-	0	964	300
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	4.13	-	-	-	6.63	6.945
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.3285
Pot Cap-1 Maneuver	975	-	-	-	268	694
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	975	-	-	-	237	694
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	975	-	-	-	543
HCM Lane V/C Ratio	0.115	-	-	-	0.217
HCM Control Delay (s)	9.2	-	-	-	13.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.8

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	492	52	53	409	1	39	5	82	1	1	1
Future Vol, veh/h	0	492	52	53	409	1	39	5	82	1	1	1
Conflicting Peds, #/hr	11	0	3	3	0	11	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	0	492	52	53	409	1	39	5	82	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	547	0	0	1039	1048	524	1092	1074	422
Stage 1	-	-	-	-	-	-	521	521	-	527	527	-
Stage 2	-	-	-	-	-	-	518	527	-	565	547	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1138	-	-	1012	-	-	209	228	553	192	220	632
Stage 1	-	-	-	-	-	-	539	532	-	535	528	-
Stage 2	-	-	-	-	-	-	541	528	-	510	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1128	-	-	1010	-	-	196	210	550	151	203	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	210	-	151	203	-
Stage 1	-	-	-	-	-	-	538	531	-	530	488	-
Stage 2	-	-	-	-	-	-	502	488	-	429	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	21.8	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	339	1128	-	-	1010	-	-	228
HCM Lane V/C Ratio	0.372	-	-	-	0.052	-	-	0.013
HCM Control Delay (s)	21.8	0	-	-	8.8	0	-	21
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.2	-	-	0

Appendix I

Synchro Intersection Worksheets – 2026 Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	205	60	711	647	26	145	837	574	34	827	132
Future Volume (vph)	66	205	60	711	647	26	145	837	574	34	827	132
Satd. Flow (prot)	3010	3283	1388	3216	3103	1339	1523	3161	1441	1642	4764	1427
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2902	3283	1331	3155	3103	1253	1510	3161	1384	1627	4764	1367
Satd. Flow (RTOR)			195			140			510			196
Lane Group Flow (vph)	66	205	60	711	647	26	145	837	574	34	827	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	15.0	37.5	37.5	35.5	58.0	58.0	21.6	35.4	35.4	21.6	35.4	35.4
Total Split (%)	11.5%	28.8%	28.8%	27.3%	44.6%	44.6%	16.6%	27.2%	27.2%	16.6%	27.2%	27.2%
Maximum Green (s)	8.1	31.0	31.0	28.6	51.5	51.5	15.2	29.0	29.0	15.2	29.0	29.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		20	20		42	42		21	21		20	20
Act Effct Green (s)	18.1	23.0	23.0	31.1	38.5	38.5	14.8	46.6	46.6	8.2	34.9	34.9
Actuated g/C Ratio	0.14	0.18	0.18	0.24	0.30	0.30	0.11	0.36	0.36	0.06	0.27	0.27
v/c Ratio	0.16	0.35	0.15	0.93	0.70	0.06	0.84	0.74	0.70	0.33	0.65	0.26
Control Delay	48.2	46.8	0.8	66.7	39.2	0.2	101.6	37.7	14.9	66.1	46.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	48.2	46.8	0.8	66.7	39.2	0.2	101.6	37.7	15.4	66.1	46.2	2.1
LOS	D	D	A	E	D	A	F	D	B	E	D	A
Approach Delay		38.8			52.6			35.4			41.0	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.1	22.5	0.0	~99.5	85.4	0.0	39.3	115.1	32.7	8.5	73.5	0.0
Queue Length 95th (m)	14.5	33.6	0.0	#139.0	99.2	m0.0	#73.9	#157.7	60.9	19.0	89.2	2.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	430	782	465	768	1229	580	180	1133	823	191	1280	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	50	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.26	0.13	0.93	0.53	0.04	0.81	0.74	0.74	0.18	0.65	0.26

Intersection Summary

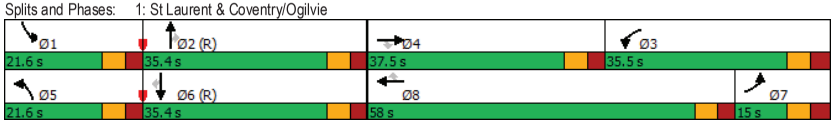
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 42.6 Intersection LOS: D
Intersection Capacity Utilization 92.7% ICU Level of Service F
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.

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

Splits and Phases: 1: St Laurent & Coventry/Ogilvie

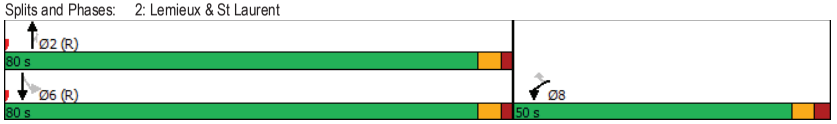


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	625	160	1284	240	9	1514
Future Volume (vph)	625	160	1284	240	9	1514
Satd. Flow (prot)	2734	1483	4584	1483	1658	4672
Flt Permitted	0.950				0.176	
Satd. Flow (perm)	2734	1418	4584	1444	307	4672
Satd. Flow (RTOR)		53		240		
Lane Group Flow (vph)	625	160	1284	240	9	1514
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Maximum Green (s)	43.9	43.9	74.5	74.5	74.5	74.5
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	21.0	21.0		
Flash Dont Walk (s)	23.0	23.0	9.0	9.0		
Pedestrian Calls (#/hr)	25	25	3	3		
Act Effct Green (s)	35.4	35.4	83.0	83.0	83.0	83.0
Actuated g/C Ratio	0.27	0.27	0.64	0.64	0.64	0.64
v/c Ratio	0.84	0.38	0.44	0.24	0.05	0.51
Control Delay	55.1	26.6	8.3	1.9	11.3	15.1
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	55.1	26.6	8.5	1.9	11.3	15.1
LOS	E	C	A	A	B	B
Approach Delay	49.3		7.4			15.0
Approach LOS	D		A			B
Queue Length 50th (m)	78.1	21.8	32.4	0.4	0.9	70.4
Queue Length 95th (m)	92.0	38.1	64.7	9.6	m1.4	m77.3
Internal Link Dist (m)	80.2		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	923	513	2926	1008	196	2982
Starvation Cap Reductn	0	0	652	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.31	0.56	0.24	0.05	0.51

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Lemieux & St Laurent

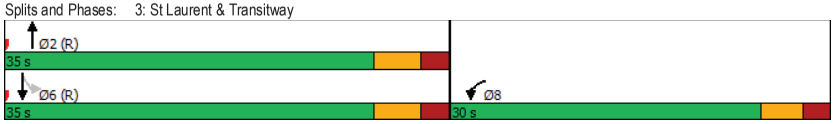


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	24	1537	60	2	911
Future Volume (vph)	48	24	1537	60	2	911
Satd. Flow (prot)	834	0	4452	0	1127	4628
Flt Permitted	0.968				0.136	
Satd. Flow (perm)	834	0	4452	0	161	4628
Satd. Flow (RTOR)	10		11			
Lane Group Flow (vph)	72	0	1597	0	2	911
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		22.5	22.5
Total Split (s)	30.0		35.0		35.0	35.0
Total Split (%)	46.2%		53.8%		53.8%	53.8%
Maximum Green (s)	24.5		29.0		29.0	29.0
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0			
Flash Dont Walk (s)	17.0		17.0			
Pedestrian Calls (#/hr)	0		0			
Act Effct Green (s)	10.6		50.2		50.2	50.2
Actuated g/C Ratio	0.16		0.77		0.77	0.77
v/c Ratio	0.50		0.46		0.02	0.26
Control Delay	32.8		3.7		7.0	5.4
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	32.8		3.7		7.0	5.4
LOS	C		A		A	A
Approach Delay	32.8		3.7			5.4
Approach LOS	C		A			A
Queue Length 50th (m)	6.9		16.2		0.1	20.0
Queue Length 95th (m)	16.2		30.6		m0.3	58.2
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)					13.0	
Base Capacity (vph)	320		3439		124	3572
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.23		0.46		0.02	0.26

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 38 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 5.1 Intersection LOS: A
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	687	673	0	1215	823	174
Future Volume (vph)	687	673	0	1215	823	174
Satd. Flow (prot)	3066	1427	0	4418	4345	0
Flt Permitted	0.950					
Satd. Flow (perm)	3066	1409	0	4418	4345	0
Satd. Flow (RTOR)		139			54	
Lane Group Flow (vph)	687	673	0	1215	997	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	55.0	55.0		75.0	75.0	
Total Split (%)	42.3%	42.3%		57.7%	57.7%	
Maximum Green (s)	48.5	48.5		68.9	68.9	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0			25.0	
Flash Dont Walk (s)	21.0	21.0			9.0	
Pedestrian Calls (#/hr)	0	0			2	
Act Effct Green (s)	48.5	48.5		68.9	68.9	
Actuated g/C Ratio	0.37	0.37		0.53	0.53	
v/c Ratio	0.60	1.10		0.52	0.43	
Control Delay	35.6	97.7		20.8	18.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	35.6	97.7		20.8	18.2	
LOS	D	F		C	B	
Approach Delay	66.4			20.8	18.2	
Approach LOS	E			C	B	
Queue Length 50th (m)	72.7	~171.7		71.3	39.3	
Queue Length 95th (m)	92.4	#244.7		84.1	33.7	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1143	612		2341	2328	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.60	1.10		0.52	0.43	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 25 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 82.8% 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.

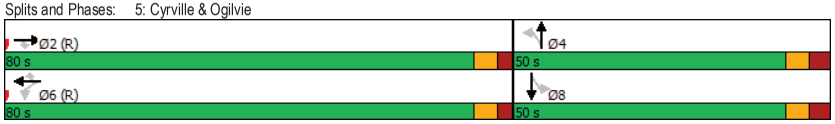
Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	583	238	28	1101	166	178	244	14	47	176	45
Future Volume (vph)	0	583	238	28	1101	166	178	244	14	47	176	45
Satd. Flow (prot)	0	3283	1414	1658	3316	1441	1551	1714	0	1626	1605	0
Flt Permitted				0.417			0.486			0.418		
Satd. Flow (perm)	0	3283	1326	718	3316	1312	789	1714	0	714	1605	0
Satd. Flow (RTOR)			238			142		2			11	
Lane Group Flow (vph)	0	583	238	28	1101	166	178	258	0	47	221	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)		73.8	73.8	73.8	73.8	73.8	42.9	42.9		42.9	42.9	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Walk Time (s)		9.0	9.0	9.0	9.0	9.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	17.0	33.0	33.0		33.0	33.0	
Pedestrian Calls (#/hr)		13	13	28	28	28	4	4		8	8	
Act Effct Green (s)		85.5	85.5	85.5	85.5	85.5	31.2	31.2		31.2	31.2	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.24	0.24		0.24	0.24	
v/c Ratio		0.27	0.25	0.06	0.51	0.18	0.94	0.63		0.27	0.56	
Control Delay		7.1	0.9	11.1	13.7	3.2	99.0	49.3		40.8	45.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.1	0.9	11.1	13.7	3.2	99.0	49.3		40.8	45.2	
LOS		A	A	B	B	A	F	D		D	D	
Approach Delay		5.3			12.3			69.6			44.4	
Approach LOS		A			B			E			D	
Queue Length 50th (m)		21.9	0.0	2.4	71.5	2.0	44.8	58.7		9.8	47.3	
Queue Length 95th (m)		33.2	0.0	7.8	111.7	12.5	#69.4	76.8		18.8	64.7	
Internal Link Dist (m)		123.7			139.9			46.0			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2159	953	472	2180	911	260	566		235	537	
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		0.27	0.25	0.06	0.51	0.18	0.68	0.46		0.20	0.41	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	135	133	557	44	0	0	177
Future Vol, veh/h	30	0	0	0	0	135	133	557	44	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	135	133	557	44	0	0	177

Major/Minor	Minor2			Minor1			Major1			
Conflicting Flow All	545	-	-	-	-	279	0	0	-	
Stage 1	0	-	-	-	-	-	-	-	-	
Stage 2	545	-	-	-	-	-	-	-	-	
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	
Pot Cap-1 Maneuver	421	0	0	0	0	718	-	-	0	
Stage 1	-	0	0	0	0	-	-	-	0	
Stage 2	490	0	0	0	0	-	-	-	0	
Platoon blocked, %								-		
Mov Cap-1 Maneuver	342	-	-	-	-	718	-	-	-	
Mov Cap-2 Maneuver	342	-	-	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	-	-	-	
Stage 2	398	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB
HCM Control Delay, s	16.5	11.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	342	718
HCM Lane V/C Ratio	-	-	0.088	0.188
HCM Control Delay (s)	-	-	16.5	11.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.7

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	168	7	1	688	21	18	6	0	9	3	69
Future Vol, veh/h	74	168	7	1	688	21	18	6	0	9	3	69
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	22	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	2	2	2	10	2	2	2	2	2	2	5
Mvmt Flow	74	168	7	1	688	21	18	6	0	9	3	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	175	0	0	668	1035	172	1028	1028	359
Stage 1	-	-	-	-	-	-	320	320	-	705	705	-
Stage 2	-	-	-	-	-	-	348	715	-	323	323	-
Critical Hdwy	4.19	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.257	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.3475
Pot Cap-1 Maneuver	863	-	-	1400	-	-	358	231	871	200	233	631
Stage 1	-	-	-	-	-	-	691	652	-	394	438	-
Stage 2	-	-	-	-	-	-	642	434	-	688	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	860	-	-	1400	-	-	294	210	871	182	212	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	294	210	-	182	212	-
Stage 1	-	-	-	-	-	-	632	596	-	359	436	-
Stage 2	-	-	-	-	-	-	567	432	-	622	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	19.8	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	860	-	-	1400	-	-	467
HCM Lane V/C Ratio	0.09	0.086	-	-	0.001	-	-	0.173
HCM Control Delay (s)	19.8	9.6	-	-	7.6	0	-	14.3
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	432	35	39	415	1	23	1	52	1	0	0
Future Vol, veh/h	1	432	35	39	415	1	23	1	52	1	0	0
Conflicting Peds, #/hr	3	0	1	1	0	3	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	6	3	3	2	7	2	9	2	2	2
Mvmt Flow	1	432	35	39	415	1	23	1	52	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	468	0	0	947	950	453	977	967	419
Stage 1	-	-	-	-	-	-	453	453	-	497	497	-
Stage 2	-	-	-	-	-	-	494	497	-	480	470	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.17	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.563	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1140	-	-	1088	-	-	236	260	592	230	254	634
Stage 1	-	-	-	-	-	-	577	570	-	555	545	-
Stage 2	-	-	-	-	-	-	548	545	-	567	560	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1137	-	-	1087	-	-	227	247	591	201	241	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	247	-	201	241	-
Stage 1	-	-	-	-	-	-	576	569	-	553	518	-
Stage 2	-	-	-	-	-	-	522	518	-	515	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	16.3	23
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	1137	-	-	1087	-	-	201
HCM Lane V/C Ratio	0.193	0.001	-	-	0.036	-	-	0.005
HCM Control Delay (s)	16.3	8.2	0	-	8.4	0	-	23
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	622	208	506	387	31	185	894	677	72	823	192
Future Volume (vph)	302	622	208	506	387	31	185	894	677	72	823	192
Satd. Flow (prot)	3216	3316	1483	3154	3075	1469	1566	3252	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2860	3316	1390	3086	3075	1285	1539	3252	1416	1642	4764	1385
Satd. Flow (RTOR)			210			210			382			211
Lane Group Flow (vph)	302	622	208	506	387	31	185	894	677	72	823	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	23.5	37.5	37.5	23.5	37.5	37.5	23.6	44.0	44.0	15.0	35.4	35.4
Total Split (%)	19.6%	31.3%	31.3%	19.6%	31.3%	31.3%	19.7%	36.7%	36.7%	12.5%	29.5%	29.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	29.1	29.1	18.5	31.0	31.0	16.5	40.6	40.6	8.2	29.7	29.7
Actuated g/C Ratio	0.14	0.24	0.24	0.15	0.26	0.26	0.14	0.34	0.34	0.07	0.25	0.25
v/c Ratio	0.68	0.77	0.42	1.04	0.49	0.06	0.86	0.81	0.93	0.64	0.70	0.38
Control Delay	57.7	49.4	7.3	101.6	35.3	0.2	98.2	39.7	34.5	79.5	45.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	49.4	7.3	101.6	35.3	0.2	98.2	39.7	34.5	79.5	45.0	6.0
LOS	E	D	A	F	D	A	F	D	C	E	D	A
Approach Delay		43.9			70.5			43.9			40.4	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.3	70.5	0.0	~73.5	43.6	0.0	43.5	118.4	109.0	16.8	65.4	0.0
Queue Length 95th (m)	50.2	91.2	17.7	#107.2	59.1	m0.0	#81.8	#143.1	#98.6	#36.1	80.4	14.0
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	444	856	514	486	794	487	224	1099	731	118	1180	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.73	0.40	1.04	0.49	0.06	0.83	0.81	0.93	0.61	0.70	0.38

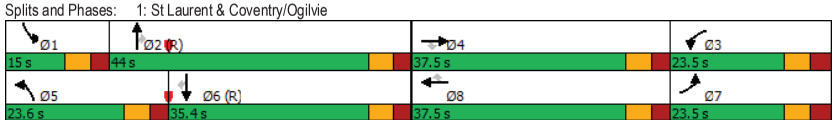
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 48.1	Intersection LOS: D
Intersection Capacity Utilization 96.1%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	518	161	1643	268	17	1863
Future Volume (vph)	518	161	1643	268	17	1863
Satd. Flow (prot)	2982	1414	4718	1483	1658	4672
Flt Permitted	0.950				0.114	
Satd. Flow (perm)	2982	1316	4718	1433	199	4672
Satd. Flow (RTOR)		33		268		
Lane Group Flow (vph)	518	161	1643	268	17	1863
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	7		2			6
Permitted Phases		7		2	6	
Detector Phase	7	7	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.3	28.3	80.1	80.1	80.1	80.1
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
v/c Ratio	0.74	0.48	0.52	0.26	0.13	0.60
Control Delay	48.9	35.4	10.1	2.1	6.4	7.8
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	48.9	35.4	10.4	2.1	6.4	7.8
LOS	D	D	B	A	A	A
Approach Delay	45.7		9.2			7.7
Approach LOS	D		A			A
Queue Length 50th (m)	57.3	25.4	90.5	9.2	0.9	69.8
Queue Length 95th (m)	74.4	45.4	63.6	8.2	m2.1	m73.8
Internal Link Dist (m)	75.1		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	792	374	3148	1045	133	3117
Starvation Cap Reductn	0	0	685	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.43	0.67	0.26	0.13	0.60

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent

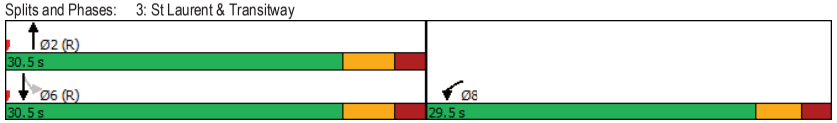
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	1954	45	0	1274
Future Volume (vph)	40	20	1954	45	0	1274
Satd. Flow (prot)	914	0	4646	0	1745	4718
Flt Permitted	0.968					
Satd. Flow (perm)	914	0	4646	0	1745	4718
Satd. Flow (RTOR)	1		7			
Lane Group Flow (vph)	60	0	1999	0	0	1274
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		24.0	24.0
Total Split (s)	29.5		30.5		30.5	30.5
Total Split (%)	49.2%		50.8%		50.8%	50.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.5		46.2			46.2
Actuated g/C Ratio	0.16		0.77			0.77
v/c Ratio	0.41		0.56			0.35
Control Delay	29.9		9.5			4.2
Queue Delay	0.0		0.0			0.0
Total Delay	29.9		9.5			4.2
LOS	C		A			A
Approach Delay	29.9		9.5			4.2
Approach LOS	C		A			A
Queue Length 50th (m)	6.0		72.1			27.5
Queue Length 95th (m)	14.1		119.8			40.2
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)						
Base Capacity (vph)	366		3576			3630
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.16		0.56			0.35

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 28 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 54.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	787	263	0	1531	815	399
Future Volume (vph)	787	263	0	1531	815	399
Satd. Flow (prot)	3124	1414	0	4764	4257	0
Flt Permitted	0.950					
Satd. Flow (perm)	3124	1376	0	4764	4257	0
Satd. Flow (RTOR)		135			157	
Lane Group Flow (vph)	787	263	0	1531	1214	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	50.0	50.0		70.0	70.0	
Total Split (%)	41.7%	41.7%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	36.4	36.4		71.0	71.0	
Actuated g/C Ratio	0.30	0.30		0.59	0.59	
v/c Ratio	0.83	0.51		0.54	0.47	
Control Delay	46.8	18.9		16.4	9.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.8	18.9		16.4	9.8	
LOS	D	B		B	A	
Approach Delay	39.8			16.4	9.8	
Approach LOS	D			B	A	
Queue Length 50th (m)	88.6	23.7		75.3	49.8	
Queue Length 95th (m)	102.5	45.0		102.1	90.7	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1132	584		2817	2582	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.70	0.45		0.54	0.47	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1104	281	44	690	124	139	242	34	134	223	80
Future Volume (vph)	0	1104	281	44	690	124	139	242	34	134	223	80
Satd. Flow (prot)	0	3316	1469	1658	3316	1469	1580	1710	0	1642	1639	0
Flt Permitted				0.214			0.341			0.391		
Satd. Flow (perm)	0	3316	1362	371	3316	1327	565	1710	0	673	1639	0
Satd. Flow (RTOR)			281			124		7			17	
Lane Group Flow (vph)	0	1104	281	44	690	124	139	276	0	134	303	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		78.5	78.5	78.5	78.5	78.5	28.2	28.2		28.2	28.2	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
v/c Ratio		0.51	0.28	0.18	0.32	0.14	1.05	0.68		0.85	0.76	
Control Delay		5.6	0.7	13.3	10.7	2.4	136.0	48.1		82.9	51.9	
Queue Delay		0.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		5.8	0.7	13.3	10.7	2.4	136.0	48.1		82.9	51.9	
LOS		A	A	B	B	A	F	D		F	D	
Approach Delay		4.8			9.6			77.5			61.4	
Approach LOS		A			A			E			E	
Queue Length 50th (m)		28.0	0.1	3.7	33.6	0.0	~36.4	58.5		30.6	63.9	
Queue Length 95th (m)		m58.5	m1.5	12.6	58.6	8.3	#62.2	75.6		49.0	82.7	
Internal Link Dist (m)		123.7			139.9			44.2			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2168	987	242	2168	910	201	615		240	596	
Starvation Cap Reductn		391	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		0.62	0.28	0.18	0.32	0.14	0.69	0.45		0.56	0.51	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 85.3%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	0	0	0	162	112	318	27	0	0	176
Future Vol, veh/h	131	0	0	0	0	162	112	318	27	0	0	176
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	0	0	0	0	162	112	318	27	0	0	176

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	383	-	-	-	-	159	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	383	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	550	0	0	0	0	858	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	611	0	0	0	0	-	-	-	0
Platoon blocked, %								-	
Mov Cap-1 Maneuver	446	-	-	-	-	858	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	496	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	16.4	10.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	446	858
HCM Lane V/C Ratio	-	-	0.294	0.189
HCM Control Delay (s)	-	-	16.4	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.7

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	159	14	2	560	38	12	4	0	17	6	101
Future Vol, veh/h	112	159	14	2	560	38	12	4	0	17	6	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	22	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	4	3	2	2	2	2	2	3
Mvmt Flow	112	159	14	2	560	38	12	4	0	17	6	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	598	0	0	173	0	0	677	992	166	975	980	299
Stage 1	-	-	-	-	-	-	390	390	-	583	583	-
Stage 2	-	-	-	-	-	-	287	602	-	392	397	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.3285
Pot Cap-1 Maneuver	977	-	-	1402	-	-	352	245	878	218	249	695
Stage 1	-	-	-	-	-	-	633	607	-	466	498	-
Stage 2	-	-	-	-	-	-	697	488	-	632	603	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	977	-	-	1402	-	-	269	216	878	196	220	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	216	-	196	220	-
Stage 1	-	-	-	-	-	-	560	537	-	412	497	-
Stage 2	-	-	-	-	-	-	587	487	-	555	534	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.6	0	20.2	15.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	977	-	-	1402	-	-	478
HCM Lane V/C Ratio	0.063	0.115	-	-	0.001	-	-	0.259
HCM Control Delay (s)	20.2	9.2	-	-	7.6	0	-	15.1
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	480	58	53	371	1	43	5	82	1	1	1
Future Vol, veh/h	0	480	58	53	371	1	43	5	82	1	1	1
Conflicting Peds, #/hr	11	0	3	3	0	11	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	0	480	58	53	371	1	43	5	82	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	383	0	0	541	0	0	992	1001	515	1045	1030	384
Stage 1	-	-	-	-	-	-	512	512	-	489	489	-
Stage 2	-	-	-	-	-	-	480	489	-	556	541	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1175	-	-	1018	-	-	225	243	560	207	233	664
Stage 1	-	-	-	-	-	-	545	536	-	561	549	-
Stage 2	-	-	-	-	-	-	567	549	-	515	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1165	-	-	1016	-	-	212	225	557	163	215	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	225	-	163	215	-
Stage 1	-	-	-	-	-	-	544	535	-	556	508	-
Stage 2	-	-	-	-	-	-	527	508	-	434	520	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	21.3	19.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	1165	-	-	1016	-	-	244
HCM Lane V/C Ratio	0.372	-	-	-	0.052	-	-	0.012
HCM Control Delay (s)	21.3	0	-	-	8.7	0	-	19.9
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.2	-	-	0

Appendix J

Synchro Intersection Worksheets – 2031 Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	210	60	745	679	26	145	880	601	34	847	132
Future Volume (vph)	66	210	60	745	679	26	145	880	601	34	847	132
Satd. Flow (prot)	3010	3283	1388	3216	3103	1339	1523	3161	1441	1642	4764	1427
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2902	3283	1331	3156	3103	1253	1510	3161	1384	1628	4764	1367
Satd. Flow (RTOR)			195			140			509			196
Lane Group Flow (vph)	66	210	60	745	679	26	145	880	601	34	847	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	15.0	37.5	37.5	35.5	58.0	58.0	21.6	35.4	35.4	21.6	35.4	35.4
Total Split (%)	11.5%	28.8%	28.8%	27.3%	44.6%	44.6%	16.6%	27.2%	27.2%	16.6%	27.2%	27.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	17.6	23.0	23.0	33.0	41.0	41.0	14.8	44.6	44.6	8.2	33.0	33.0
Actuated g/C Ratio	0.14	0.18	0.18	0.25	0.32	0.32	0.11	0.34	0.34	0.06	0.25	0.25
v/c Ratio	0.16	0.36	0.15	0.91	0.69	0.05	0.84	0.81	0.74	0.33	0.70	0.27
Control Delay	49.2	46.9	0.8	62.8	37.0	0.2	102.4	40.7	16.9	66.1	48.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	49.2	46.9	0.8	62.8	37.0	0.2	102.4	40.7	17.7	66.1	48.6	2.2
LOS	D	D	A	E	D	A	F	D	B	E	D	A
Approach Delay		39.2			49.6			37.7			43.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.3	23.2	0.0	~109.2	88.4	0.0	39.4	~127.1	34.2	8.5	75.6	0.0
Queue Length 95th (m)	14.8	34.3	0.0	#147.8	103.2	m0.0	#73.6	#168.2	#67.8	19.0	91.6	2.4
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	417	782	465	816	1258	590	180	1084	809	191	1207	493
Starvation Cap Reductn	0	0	0	0	20	0	0	0	49	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.27	0.13	0.91	0.55	0.04	0.81	0.81	0.79	0.18	0.70	0.27

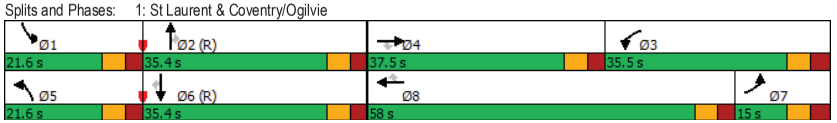
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	626	160	1348	240	9	1549
Future Volume (vph)	626	160	1348	240	9	1549
Satd. Flow (prot)	2734	1483	4584	1483	1658	4672
Flt Permitted	0.950				0.162	
Satd. Flow (perm)	2734	1418	4584	1444	282	4672
Satd. Flow (RTOR)		46		240		
Lane Group Flow (vph)	626	160	1348	240	9	1549
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	35.5	35.5	82.9	82.9	82.9	82.9
Actuated g/C Ratio	0.27	0.27	0.64	0.64	0.64	0.64
v/c Ratio	0.84	0.38	0.46	0.24	0.05	0.52
Control Delay	55.0	28.4	9.2	2.0	11.4	15.4
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	55.0	28.4	9.4	2.0	11.4	15.4
LOS	E	C	A	A	B	B
Approach Delay	49.6		8.3			15.4
Approach LOS	D		A			B
Queue Length 50th (m)	78.2	23.4	37.6	1.2	1.0	72.9
Queue Length 95th (m)	92.3	39.6	74.2	12.0	m1.5	m80.5
Internal Link Dist (m)	80.2		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	923	509	2924	1008	180	2980
Starvation Cap Reductn	0	0	655	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.31	0.59	0.24	0.05	0.52

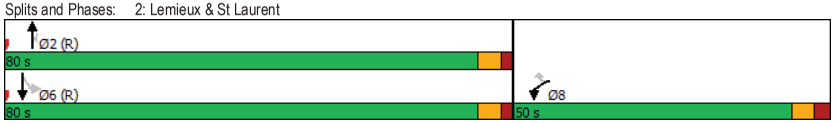
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	24	1623	60	2	931
Future Volume (vph)	48	24	1623	60	2	931
Satd. Flow (prot)	834	0	4464	0	1127	4628
Flt Permitted	0.968				0.121	
Satd. Flow (perm)	834	0	4464	0	144	4628
Satd. Flow (RTOR)	7		11			
Lane Group Flow (vph)	72	0	1683	0	2	931
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		22.5	22.5
Total Split (s)	30.0		35.0		35.0	35.0
Total Split (%)	46.2%		53.8%		53.8%	53.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.7		50.1		50.1	50.1
Actuated g/C Ratio	0.16		0.77		0.77	0.77
v/c Ratio	0.50		0.49		0.02	0.26
Control Delay	33.6		3.9		7.0	5.5
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	33.6		3.9		7.0	5.5
LOS	C		A		A	A
Approach Delay	33.6		3.9			5.5
Approach LOS	C		A			A
Queue Length 50th (m)	7.2		17.6		0.1	22.7
Queue Length 95th (m)	16.5		35.8		m0.4	59.4
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)					13.0	
Base Capacity (vph)	318		3440		111	3564
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.23		0.49		0.02	0.26

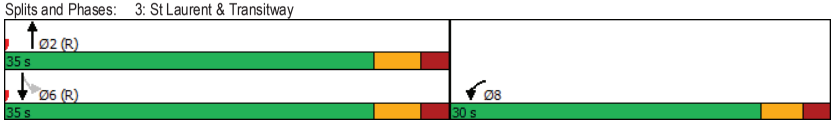
Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 38 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	687	673	0	1283	841	174
Future Volume (vph)	687	673	0	1283	841	174
Satd. Flow (prot)	3066	1427	0	4418	4347	0
Flt Permitted	0.950					
Satd. Flow (perm)	3066	1409	0	4418	4347	0
Satd. Flow (RTOR)		133			52	
Lane Group Flow (vph)	687	673	0	1283	1015	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	55.0	55.0		75.0	75.0	
Total Split (%)	42.3%	42.3%		57.7%	57.7%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	48.5	48.5		68.9	68.9	
Actuated g/C Ratio	0.37	0.37		0.53	0.53	
v/c Ratio	0.60	1.11		0.55	0.44	
Control Delay	35.6	100.0		21.4	17.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	35.6	100.0		21.4	17.6	
LOS	D	F		C	B	
Approach Delay	67.5			21.4	17.6	
Approach LOS	E			C	B	
Queue Length 50th (m)	72.7	~173.8		77.1	39.3	
Queue Length 95th (m)	92.4	#246.7		90.5	33.7	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1143	609		2341	2328	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.60	1.11		0.55	0.44	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 25 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

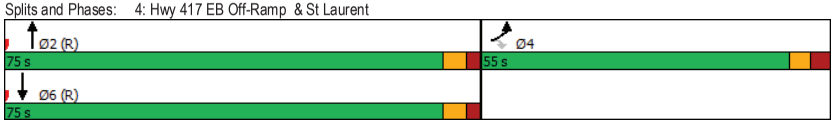
Maximum v/c Ratio: 1.11

Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 82.8%	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: 4: Hwy 417 EB Off-Ramp & St Laurent



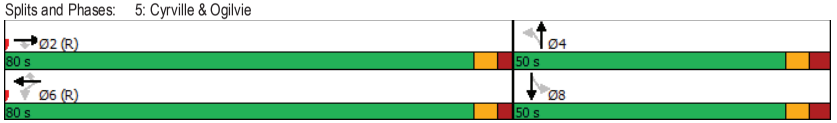
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	597	244	28	1155	166	182	250	14	47	194	45
Future Volume (vph)	0	597	244	28	1155	166	182	250	14	47	194	45
Satd. Flow (prot)	0	3283	1414	1658	3316	1441	1551	1714	0	1626	1611	0
Flt Permitted				0.410			0.456			0.411		
Satd. Flow (perm)	0	3283	1326	706	3316	1312	741	1714	0	702	1611	0
Satd. Flow (RTOR)			244			135		2			10	
Lane Group Flow (vph)	0	597	244	28	1155	166	182	264	0	47	239	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		85.1	85.1	85.1	85.1	85.1	31.6	31.6		31.6	31.6	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
v/c Ratio		0.28	0.26	0.06	0.53	0.18	1.01	0.63		0.28	0.60	
Control Delay		7.0	0.9	11.2	14.4	3.5	117.5	49.2		40.7	46.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.0	0.9	11.2	14.4	3.5	117.5	49.2		40.7	46.6	
LOS		A	A	B	B	A	F	D		D	D	
Approach Delay		5.2			13.0			77.1			45.6	
Approach LOS		A			B			E			D	
Queue Length 50th (m)		21.6	0.0	2.4	77.9	2.7	46.8	59.9		9.8	52.0	
Queue Length 95th (m)		34.0	m0.0	7.9	119.8	13.4	#78.1	79.0		18.8	70.3	
Internal Link Dist (m)		123.7			139.9			46.0			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2148	952	461	2169	905	244	566		231	538	
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		0.28	0.26	0.06	0.53	0.18	0.75	0.47		0.20	0.44	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 79.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	135	133	558	44	0	0	177
Future Vol, veh/h	30	0	0	0	0	135	133	558	44	0	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	135	133	558	44	0	0	177

Major/Minor	Minor2			Minor1			Major1			
Conflicting Flow All	545	-	-	-	-	279	0	0	-	
Stage 1	0	-	-	-	-	-	-	-	-	
Stage 2	545	-	-	-	-	-	-	-	-	
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	
Pot Cap-1 Maneuver	421	0	0	0	0	718	-	-	0	
Stage 1	-	0	0	0	0	-	-	-	0	
Stage 2	490	0	0	0	0	-	-	-	0	
Platoon blocked, %								-		
Mov Cap-1 Maneuver	342	-	-	-	-	718	-	-	-	
Mov Cap-2 Maneuver	342	-	-	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	-	-	-	
Stage 2	398	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB
HCM Control Delay, s	16.5	11.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	342	718
HCM Lane V/C Ratio	-	-	0.088	0.188
HCM Control Delay (s)	-	-	16.5	11.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.7

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	168	7	1	689	21	18	6	0	9	3	69
Future Vol, veh/h	74	168	7	1	689	21	18	6	0	9	3	69
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	22	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	6	2	2	2	10	2	2	2	2	2	2	5
Mvmt Flow	74	168	7	1	689	21	18	6	0	9	3	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	714	0	0	175	0	0	668	1036	172	1029	1029	359
Stage 1	-	-	-	-	-	-	320	320	-	706	706	-
Stage 2	-	-	-	-	-	-	348	716	-	323	323	-
Critical Hdwy	4.19	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.257	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.3475
Pot Cap-1 Maneuver	862	-	-	1400	-	-	358	231	871	200	233	631
Stage 1	-	-	-	-	-	-	691	652	-	394	438	-
Stage 2	-	-	-	-	-	-	642	433	-	688	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	859	-	-	1400	-	-	294	210	871	182	212	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	294	210	-	182	212	-
Stage 1	-	-	-	-	-	-	632	596	-	359	436	-
Stage 2	-	-	-	-	-	-	567	431	-	622	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	19.8	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	859	-	-	1400	-	-	467
HCM Lane V/C Ratio	0.09	0.086	-	-	0.001	-	-	0.173
HCM Control Delay (s)	19.8	9.6	-	-	7.6	0	-	14.3
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	476	35	39	425	1	23	1	52	1	0	0
Future Vol, veh/h	1	476	35	39	425	1	23	1	52	1	0	0
Conflicting Peds, #/hr	3	0	1	1	0	3	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	6	3	3	2	7	2	9	2	2	2
Mvmt Flow	1	476	35	39	425	1	23	1	52	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	429	0	0	512	0	0	1001	1004	497	1031	1021	429
Stage 1	-	-	-	-	-	-	497	497	-	507	507	-
Stage 2	-	-	-	-	-	-	504	507	-	524	514	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.17	6.52	6.29	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.563	4.018	3.381	3.518	4.018	3.318
Pot Cap-1 Maneuver	1130	-	-	1048	-	-	217	242	559	211	236	626
Stage 1	-	-	-	-	-	-	546	545	-	548	539	-
Stage 2	-	-	-	-	-	-	541	539	-	537	535	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1127	-	-	1047	-	-	209	229	558	183	223	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	229	-	183	223	-
Stage 1	-	-	-	-	-	-	545	544	-	546	512	-
Stage 2	-	-	-	-	-	-	514	512	-	485	534	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	17.4	24.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	366	1127	-	-	1047	-	-	183
HCM Lane V/C Ratio	0.208	0.001	-	-	0.037	-	-	0.005
HCM Control Delay (s)	17.4	8.2	0	-	8.6	0	-	24.8
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	654	208	518	397	31	185	916	693	72	865	192
Future Volume (vph)	302	654	208	518	397	31	185	916	693	72	865	192
Satd. Flow (prot)	3216	3316	1483	3154	3075	1469	1566	3252	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2860	3316	1390	3089	3075	1285	1539	3252	1416	1642	4764	1385
Satd. Flow (RTOR)			210			210			379			211
Lane Group Flow (vph)	302	654	208	518	397	31	185	916	693	72	865	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4	35.4	11.4	35.4	35.4
Total Split (s)	23.5	37.5	37.5	23.5	37.5	37.5	23.6	44.0	44.0	15.0	35.4	35.4
Total Split (%)	19.6%	31.3%	31.3%	19.6%	31.3%	31.3%	19.7%	36.7%	36.7%	12.5%	29.5%	29.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.5	6.5	6.9	6.5	6.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	29.3	29.3	18.3	31.0	31.0	16.5	40.6	40.6	8.2	29.7	29.7
Actuated g/C Ratio	0.14	0.24	0.24	0.15	0.26	0.26	0.14	0.34	0.34	0.07	0.25	0.25
v/c Ratio	0.68	0.81	0.42	1.08	0.50	0.06	0.86	0.83	0.95	0.64	0.73	0.38
Control Delay	57.7	51.2	7.3	110.7	34.7	0.2	98.3	40.2	38.4	79.5	46.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	51.2	7.3	110.7	34.7	0.2	98.3	40.2	38.4	79.5	46.0	6.0
LOS	E	D	A	F	C	A	F	D	D	E	D	A
Approach Delay		45.1			75.1			45.5			41.4	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.3	75.1	0.0	~76.5	45.1	0.0	43.6	121.9	114.1	16.8	69.4	0.0
Queue Length 95th (m)	50.2	96.6	17.7	#111.1	57.2	m0.0	#81.9	#149.4	#104.3	#36.1	84.9	14.0
Internal Link Dist (m)		213.9			123.7			114.3			252.7	
Turn Bay Length (m)	100.0		64.0	75.0			47.5			40.0		45.0
Base Capacity (vph)	444	856	514	481	794	487	224	1099	729	118	1180	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.76	0.40	1.08	0.50	0.06	0.83	0.83	0.95	0.61	0.73	0.38

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

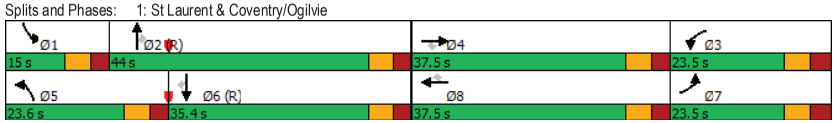
Intersection Signal Delay: 50.1	Intersection LOS: D
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

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

Splits and Phases: 1: St Laurent & Coventry/Ogilvie



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	520	161	1683	268	17	1957
Future Volume (vph)	520	161	1683	268	17	1957
Satd. Flow (prot)	2982	1414	4718	1483	1658	4672
Flt Permitted	0.950				0.108	
Satd. Flow (perm)	2982	1316	4718	1433	188	4672
Satd. Flow (RTOR)		30		268		
Lane Group Flow (vph)	520	161	1683	268	17	1957
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	7		2			6
Permitted Phases		7		2	6	
Detector Phase	7	7	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	43.5	43.5	16.0	16.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.3	28.3	80.1	80.1	80.1	80.1
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
v/c Ratio	0.74	0.48	0.53	0.26	0.14	0.63
Control Delay	49.0	36.3	10.6	2.1	6.6	8.0
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.2
Total Delay	49.0	36.3	10.9	2.1	6.6	8.3
LOS	D	D	B	A	A	A
Approach Delay	46.0		9.7			8.2
Approach LOS	D		A			A
Queue Length 50th (m)	57.5	26.1	94.5	8.8	0.9	73.0
Queue Length 95th (m)	74.7	46.1	76.5	7.9	m2.1	m76.4
Internal Link Dist (m)	75.1		117.1			60.0
Turn Bay Length (m)		51.5		53.5	115.0	
Base Capacity (vph)	792	371	3147	1045	125	3117
Starvation Cap Reductn	0	0	687	0	0	403
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.43	0.68	0.26	0.14	0.72

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Lemieux & St Laurent

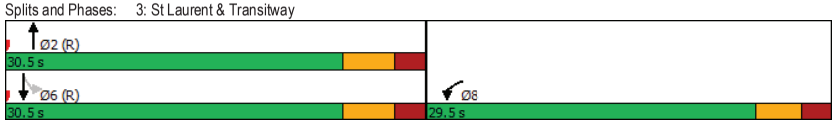
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	2006	45	0	1338
Future Volume (vph)	40	20	2006	45	0	1338
Satd. Flow (prot)	914	0	4649	0	1745	4718
Flt Permitted	0.968					
Satd. Flow (perm)	914	0	4649	0	1745	4718
Satd. Flow (RTOR)	1		6			
Lane Group Flow (vph)	60	0	2051	0	0	1338
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		10.0		10.0	10.0
Minimum Split (s)	29.5		30.0		24.0	24.0
Total Split (s)	29.5		30.5		30.5	30.5
Total Split (%)	49.2%		50.8%		50.8%	50.8%
Yellow Time (s)	3.3		3.7		3.7	3.7
All-Red Time (s)	2.2		2.3		2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5		6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.5		46.2			46.2
Actuated g/C Ratio	0.16		0.77			0.77
v/c Ratio	0.41		0.57			0.37
Control Delay	29.9		9.9			4.3
Queue Delay	0.0		0.0			0.0
Total Delay	29.9		9.9			4.3
LOS	C		A			A
Approach Delay	29.9		9.9			4.3
Approach LOS	C		A			A
Queue Length 50th (m)	6.0		76.4			29.7
Queue Length 95th (m)	14.1		125.4			44.9
Internal Link Dist (m)	43.2		196.1			117.1
Turn Bay Length (m)						
Base Capacity (vph)	366		3578			3630
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.16		0.57			0.37

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 28 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: St Laurent & Transitway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	787	263	0	1569	856	399
Future Volume (vph)	787	263	0	1569	856	399
Satd. Flow (prot)	3124	1414	0	4764	4265	0
Flt Permitted	0.950					
Satd. Flow (perm)	3124	1376	0	4764	4265	0
Satd. Flow (RTOR)		122			150	
Lane Group Flow (vph)	787	263	0	1569	1255	0
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0		10.0	10.0	
Minimum Split (s)	34.5	34.5		24.1	42.1	
Total Split (s)	50.0	50.0		70.0	70.0	
Total Split (%)	41.7%	41.7%		58.3%	58.3%	
Yellow Time (s)	3.3	3.3		3.7	3.7	
All-Red Time (s)	3.2	3.2		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.1	6.1	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	
Act Effct Green (s)	36.4	36.4		71.0	71.0	
Actuated g/C Ratio	0.30	0.30		0.59	0.59	
v/c Ratio	0.83	0.52		0.56	0.49	
Control Delay	46.8	20.9		16.6	9.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	46.8	20.9		16.6	9.9	
LOS	D	C		B	A	
Approach Delay	40.3			16.6	9.9	
Approach LOS	D			B	A	
Queue Length 50th (m)	88.6	26.6		78.2	53.4	
Queue Length 95th (m)	102.5	47.9		105.5	94.1	
Internal Link Dist (m)	73.5			158.0	196.1	
Turn Bay Length (m)						
Base Capacity (vph)	1132	576		2817	2584	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.70	0.46		0.56	0.49	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 66.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Hwy 417 EB Off-Ramp & St Laurent

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1158	295	44	707	124	153	267	34	134	228	80
Future Volume (vph)	0	1158	295	44	707	124	153	267	34	134	228	80
Satd. Flow (prot)	0	3316	1469	1658	3316	1469	1580	1712	0	1642	1640	0
Flt Permitted				0.194			0.353			0.365		
Satd. Flow (perm)	0	3316	1362	337	3316	1327	585	1712	0	628	1640	0
Satd. Flow (RTOR)			295			124		6			16	
Lane Group Flow (vph)	0	1158	295	44	707	124	153	301	0	134	308	0
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases			2	6		6	4			8		
Detector Phase		2	2	6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
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)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		76.8	76.8	76.8	76.8	76.8	29.9	29.9		29.9	29.9	
Actuated g/C Ratio		0.64	0.64	0.64	0.64	0.64	0.25	0.25		0.25	0.25	
v/c Ratio		0.55	0.30	0.20	0.33	0.14	1.06	0.70		0.86	0.73	
Control Delay		6.3	0.7	15.2	11.7	2.6	131.7	47.8		84.1	48.5	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		6.6	0.7	15.2	11.7	2.6	131.7	47.8		84.1	48.5	
LOS		A	A	B	B	A	F	D		F	D	
Approach Delay		5.4			10.6			76.0			59.3	
Approach LOS		A			B			E			E	
Queue Length 50th (m)		33.4	0.0	4.0	37.0	0.0	~39.4	63.5		30.3	63.6	
Queue Length 95th (m)		m66.4	m1.5	13.7	63.3	8.7	#66.0	80.5		49.1	81.6	
Internal Link Dist (m)		123.7			139.9			44.2			76.2	
Turn Bay Length (m)				53.5		51.0	42.5			77.0		
Base Capacity (vph)		2122	977	215	2122	893	209	615		224	596	
Starvation Cap Reductn		345	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		0.65	0.30	0.20	0.33	0.14	0.73	0.49		0.60	0.52	

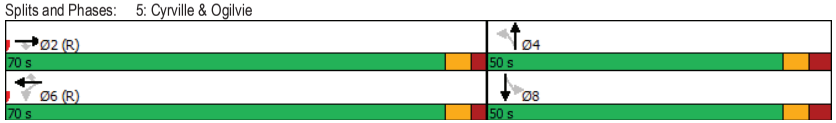
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 86.2%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cyrville & Ogilvie



Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	0	0	0	162	112	320	27	0	0	176
Future Vol, veh/h	131	0	0	0	0	162	112	320	27	0	0	176
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Yield
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	0	0	0	0	162	112	320	27	0	0	176

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	384	-	-	-	-	160	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	384	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	549	0	0	0	0	857	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	611	0	0	0	0	-	-	-	0
Platoon blocked, %								-	
Mov Cap-1 Maneuver	445	-	-	-	-	857	-	-	-
Mov Cap-2 Maneuver	445	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	496	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	16.4	10.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	445	857
HCM Lane V/C Ratio	-	-	0.294	0.189
HCM Control Delay (s)	-	-	16.4	10.2
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.7

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	159	14	2	562	38	12	4	0	17	6	101
Future Vol, veh/h	112	159	14	2	562	38	12	4	0	17	6	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	22	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	4	3	2	2	2	2	2	3
Mvmt Flow	112	159	14	2	562	38	12	4	0	17	6	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	600	0	0	173	0	0	678	994	166	977	982	300
Stage 1	-	-	-	-	-	-	390	390	-	585	585	-
Stage 2	-	-	-	-	-	-	288	604	-	392	397	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.3285
Pot Cap-1 Maneuver	975	-	-	1402	-	-	352	244	878	217	248	694
Stage 1	-	-	-	-	-	-	633	607	-	465	497	-
Stage 2	-	-	-	-	-	-	696	487	-	632	603	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	975	-	-	1402	-	-	268	215	878	195	219	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	215	-	195	219	-
Stage 1	-	-	-	-	-	-	560	537	-	412	496	-
Stage 2	-	-	-	-	-	-	586	486	-	555	534	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.6	0	20.3	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	252	975	-	-	1402	-	-	477
HCM Lane V/C Ratio	0.063	0.115	-	-	0.001	-	-	0.26
HCM Control Delay (s)	20.3	9.2	-	-	7.6	0	-	15.2
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	492	58	53	409	1	43	5	82	1	1	1
Future Vol, veh/h	0	492	58	53	409	1	43	5	82	1	1	1
Conflicting Peds, #/hr	11	0	3	3	0	11	1	0	3	3	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	4	2	2	2	2	2	2	2	2
Mvmt Flow	0	492	58	53	409	1	43	5	82	1	1	1

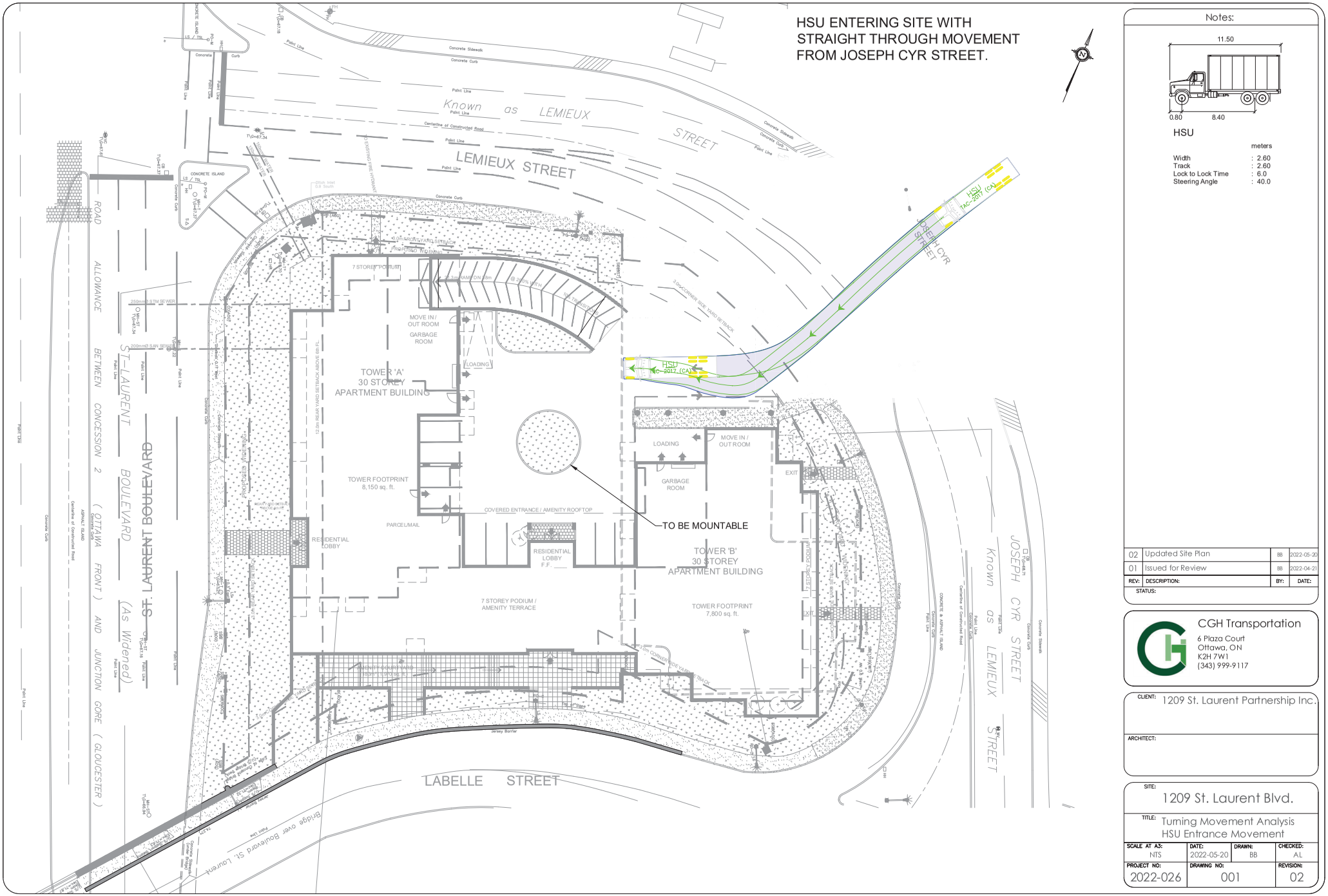
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	553	0	0	1042	1051	527	1095	1080	422
Stage 1	-	-	-	-	-	-	524	524	-	527	527	-
Stage 2	-	-	-	-	-	-	518	527	-	568	553	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1138	-	-	1007	-	-	208	227	551	191	218	632
Stage 1	-	-	-	-	-	-	537	530	-	535	528	-
Stage 2	-	-	-	-	-	-	541	528	-	508	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1128	-	-	1005	-	-	196	209	548	150	201	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	209	-	150	201	-
Stage 1	-	-	-	-	-	-	536	529	-	530	488	-
Stage 2	-	-	-	-	-	-	502	488	-	427	513	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	22.7	21.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	1128	-	-	1005	-	-	227
HCM Lane V/C Ratio	0.393	-	-	-	0.053	-	-	0.013
HCM Control Delay (s)	22.7	0	-	-	8.8	0	-	21.1
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.8	0	-	-	0.2	-	-	0

Appendix K

Turning Templates



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

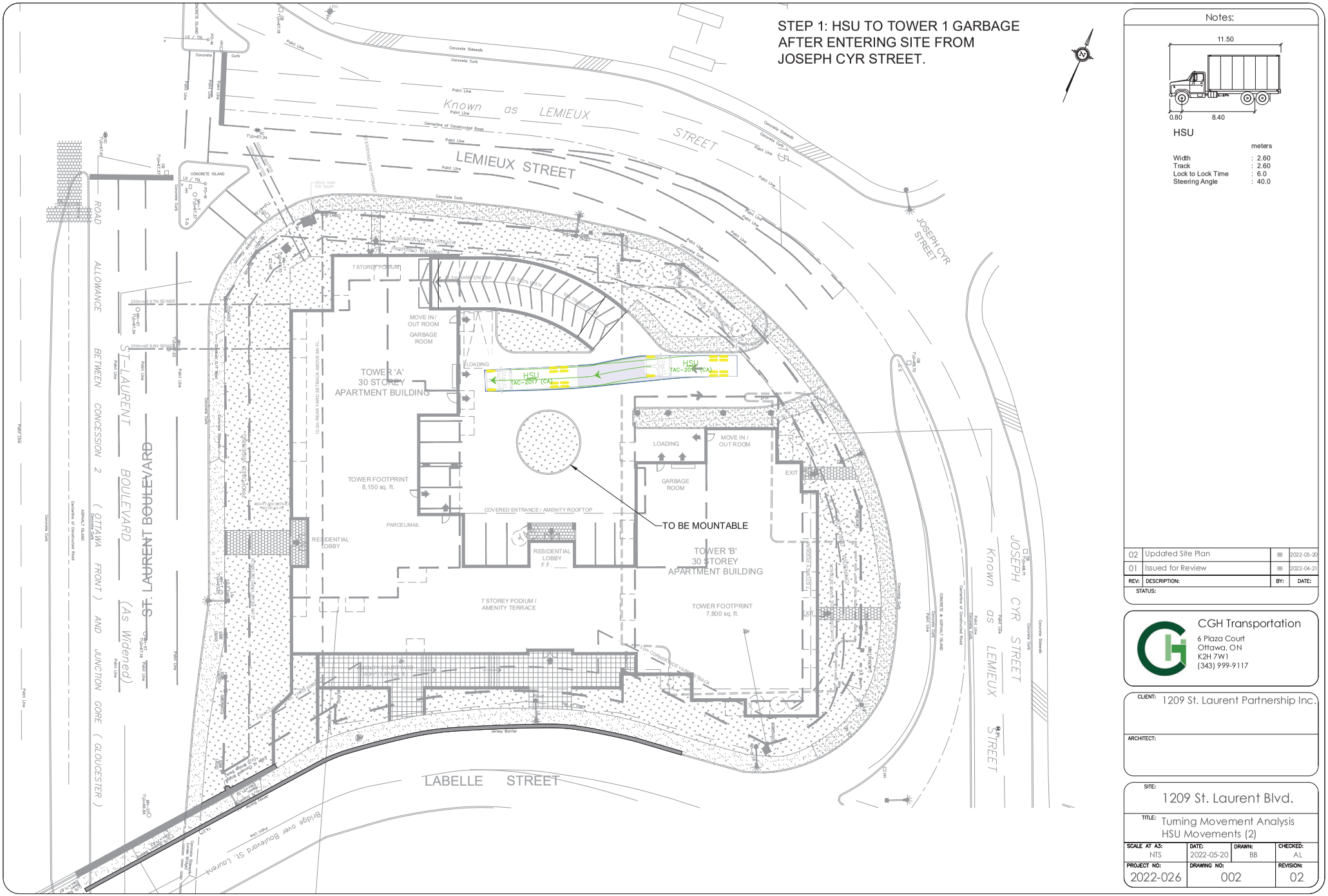
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Entrance Movement

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	001	02



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

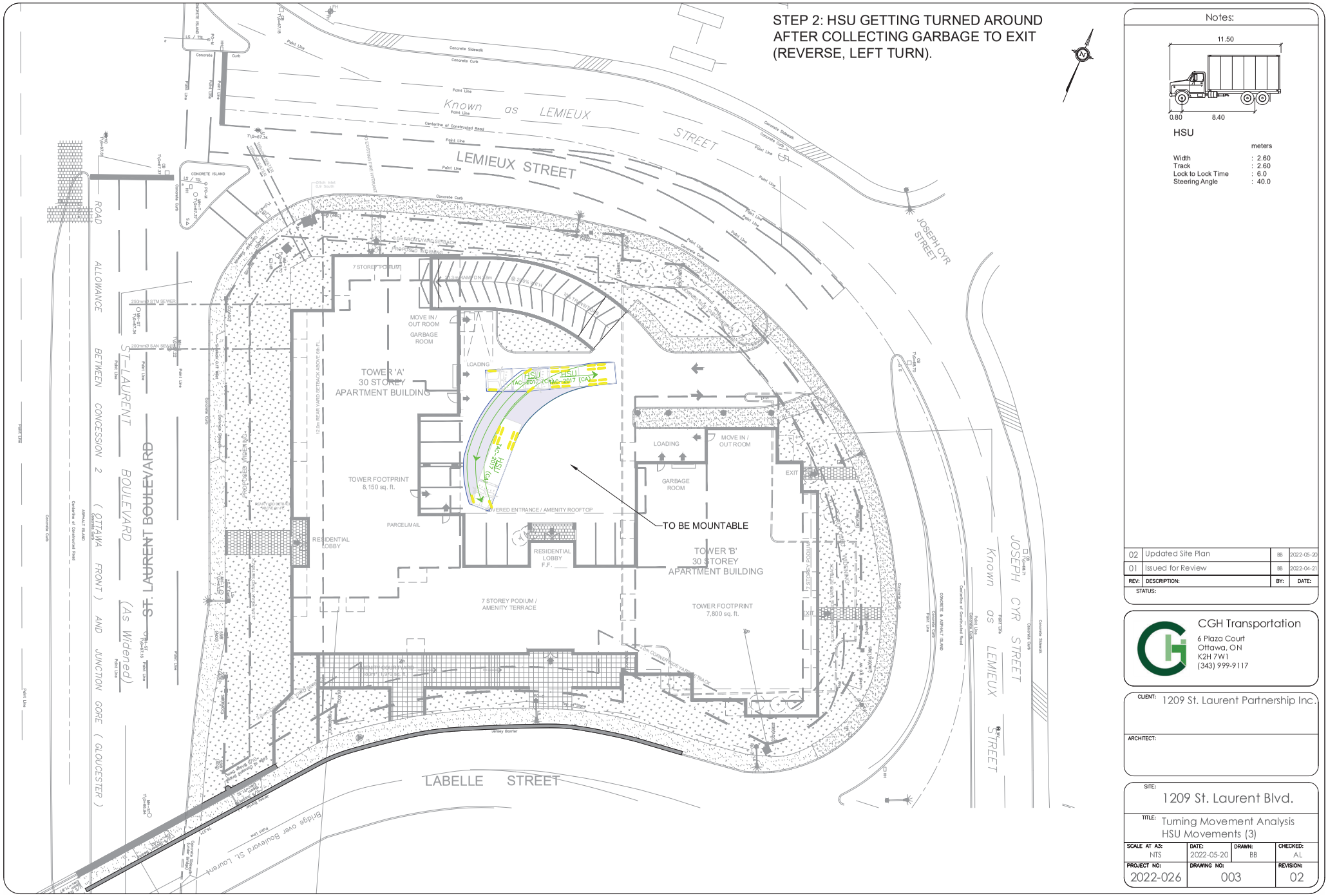
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	002	02



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

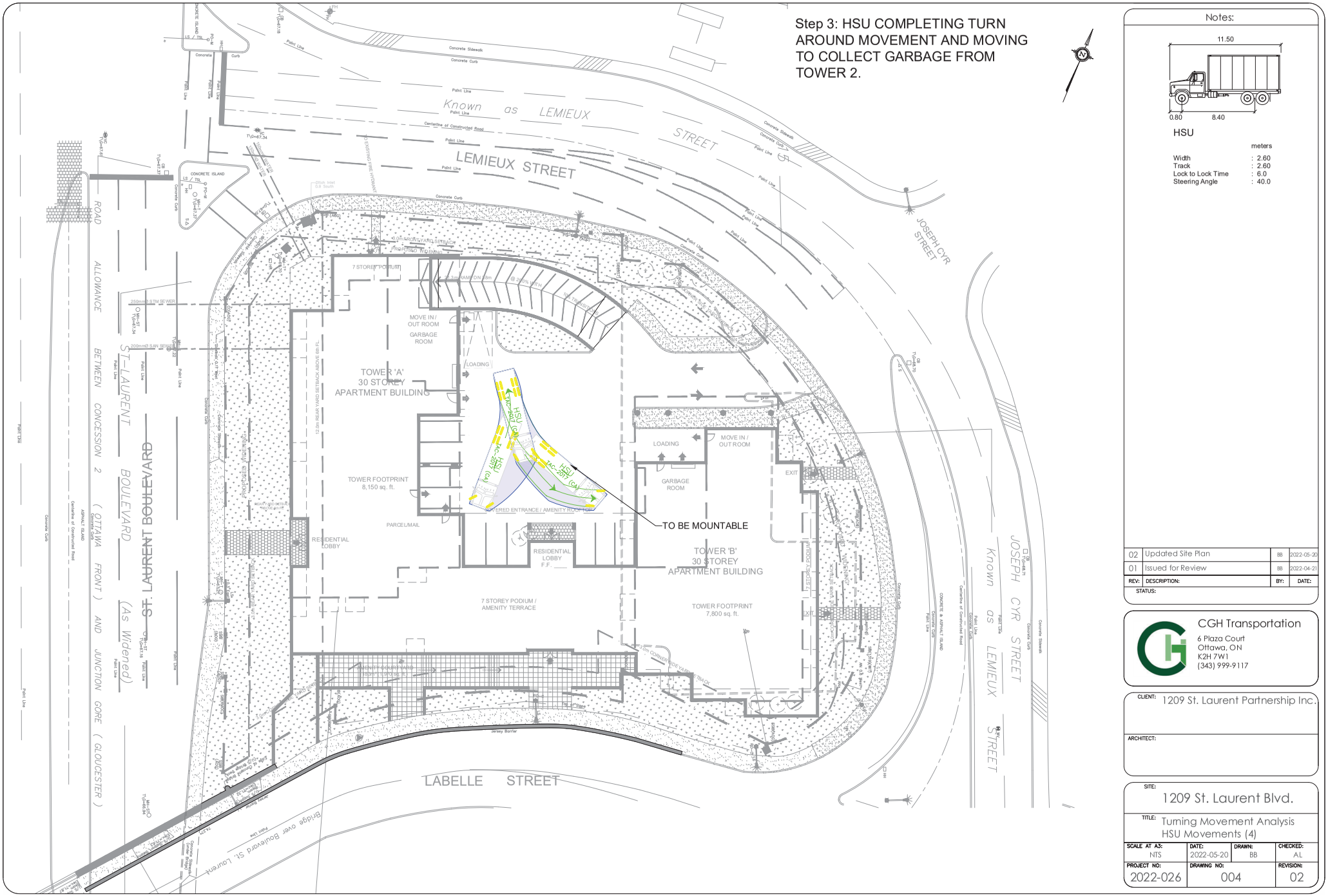
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Movements (3)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	003	02



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

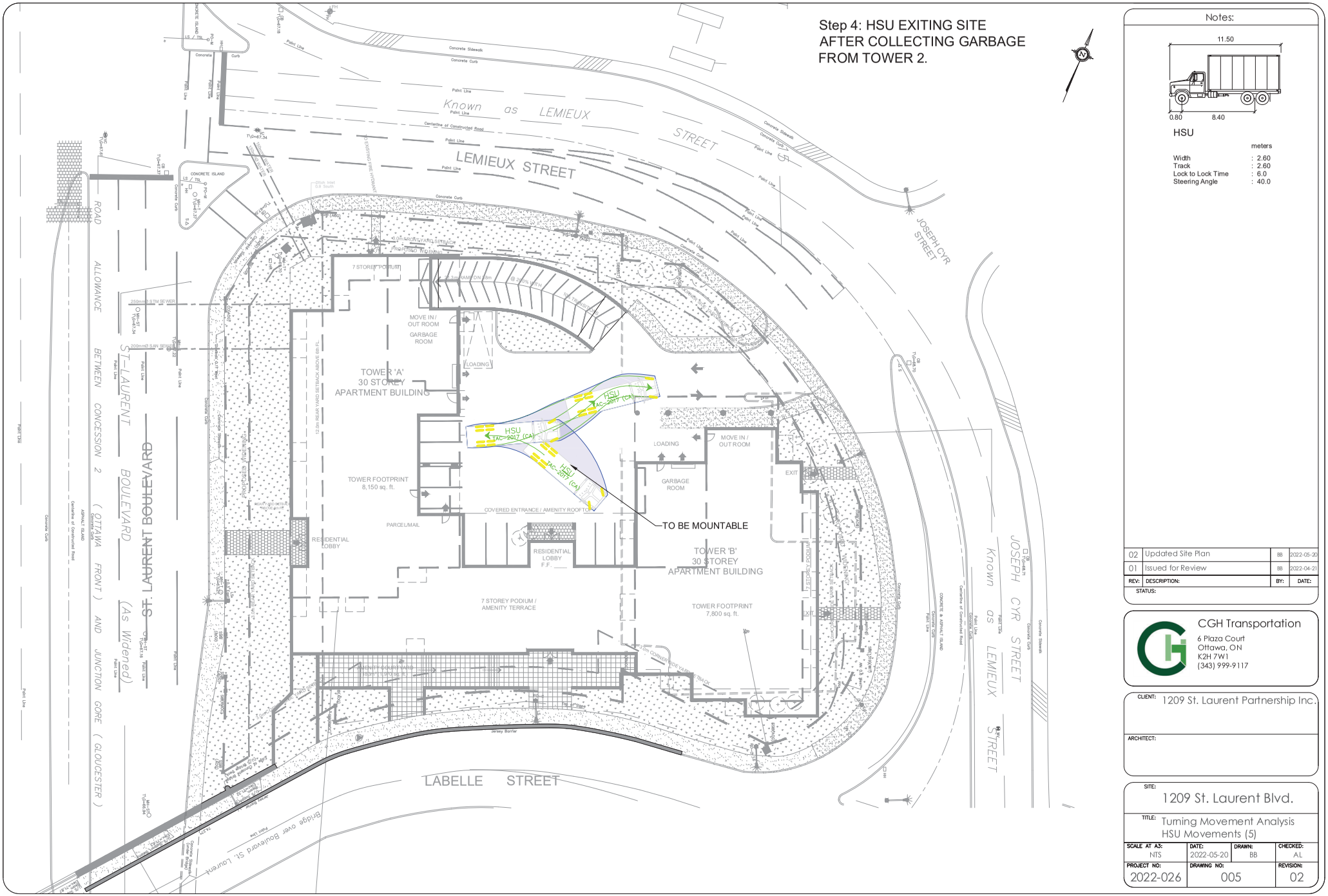
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Movements (4)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	004	02



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

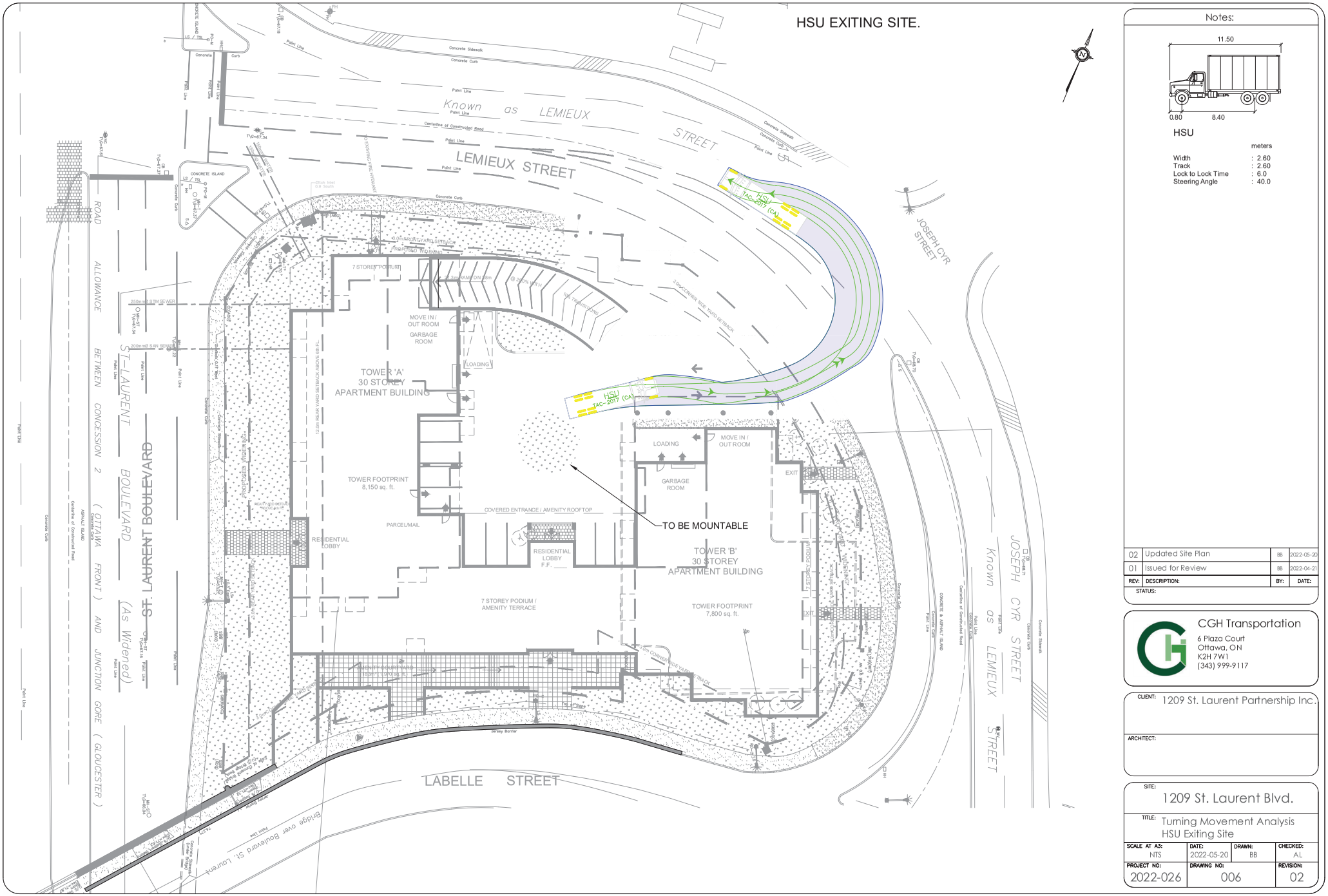
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Movements (5)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	005	02



Notes:

HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

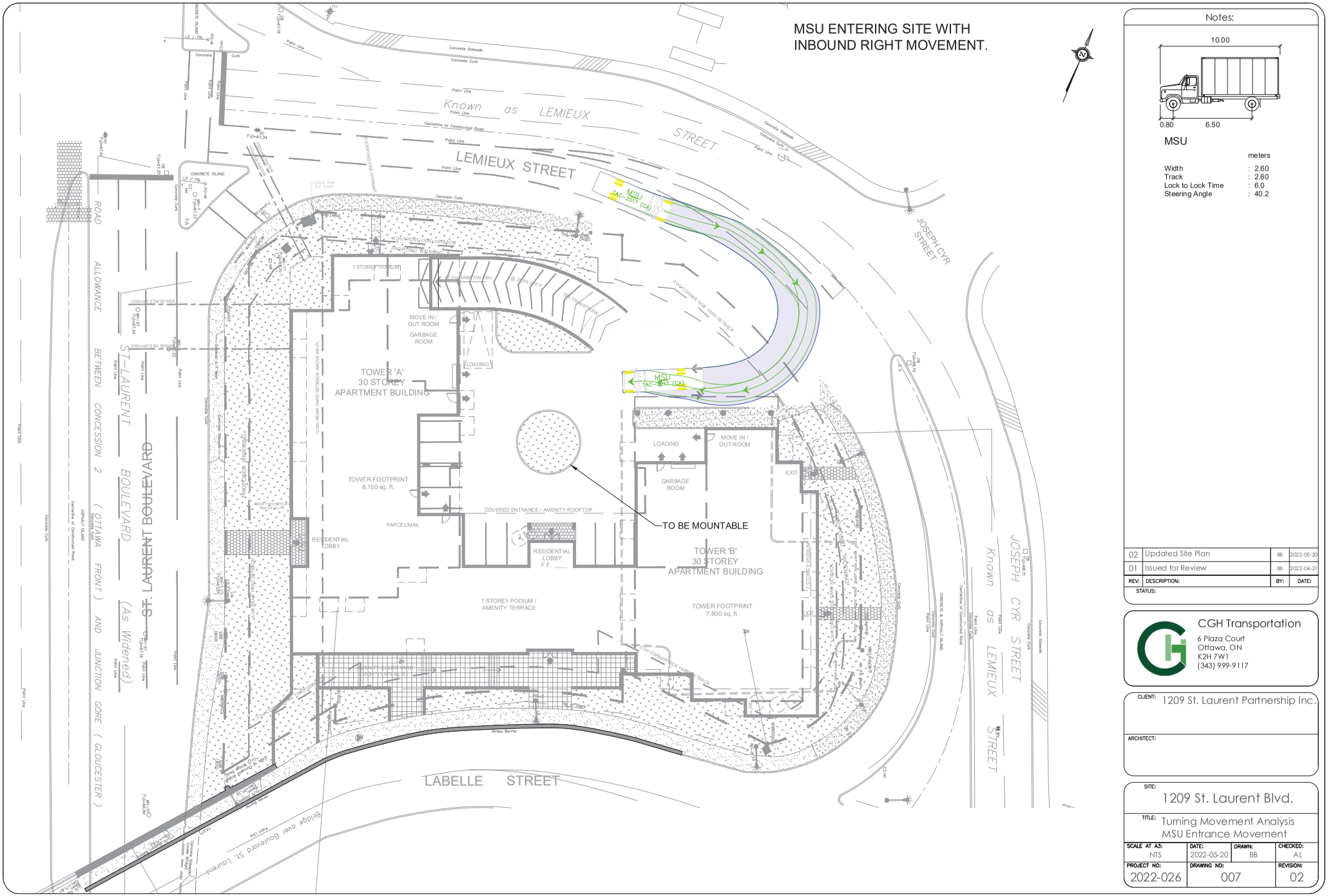
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
HSU Exiting Site

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	006	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

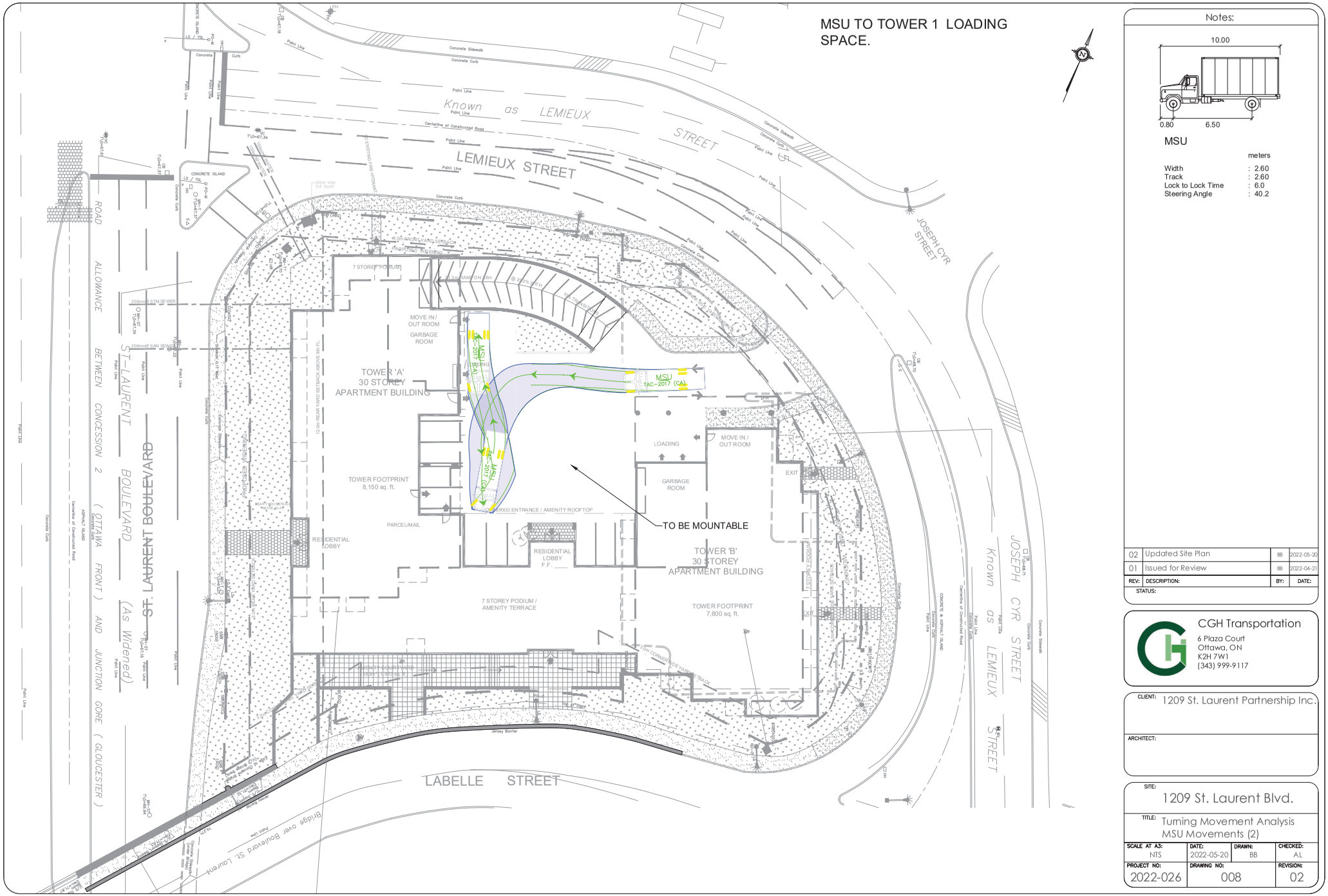
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Entrance Movement

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	007	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

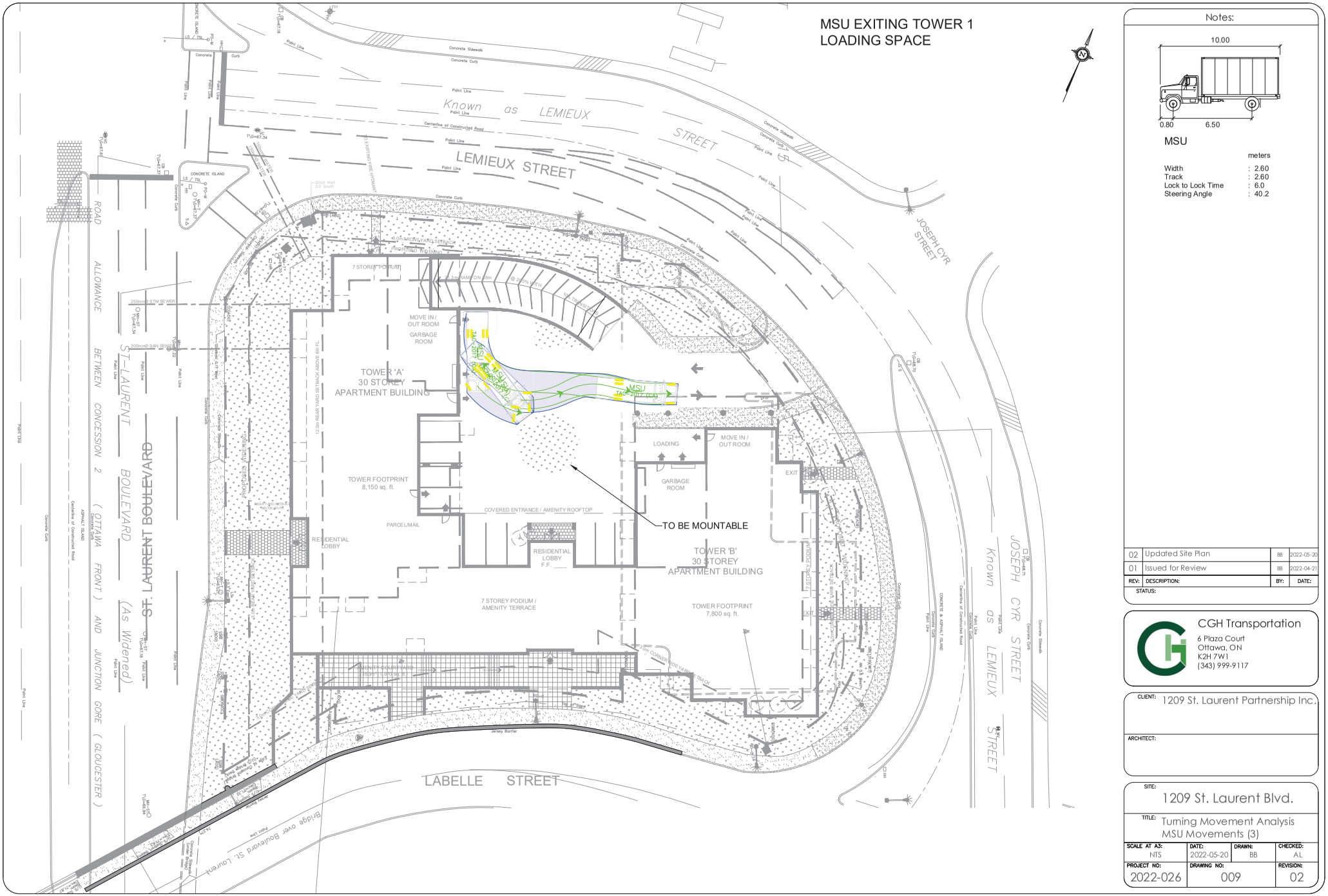
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	008	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

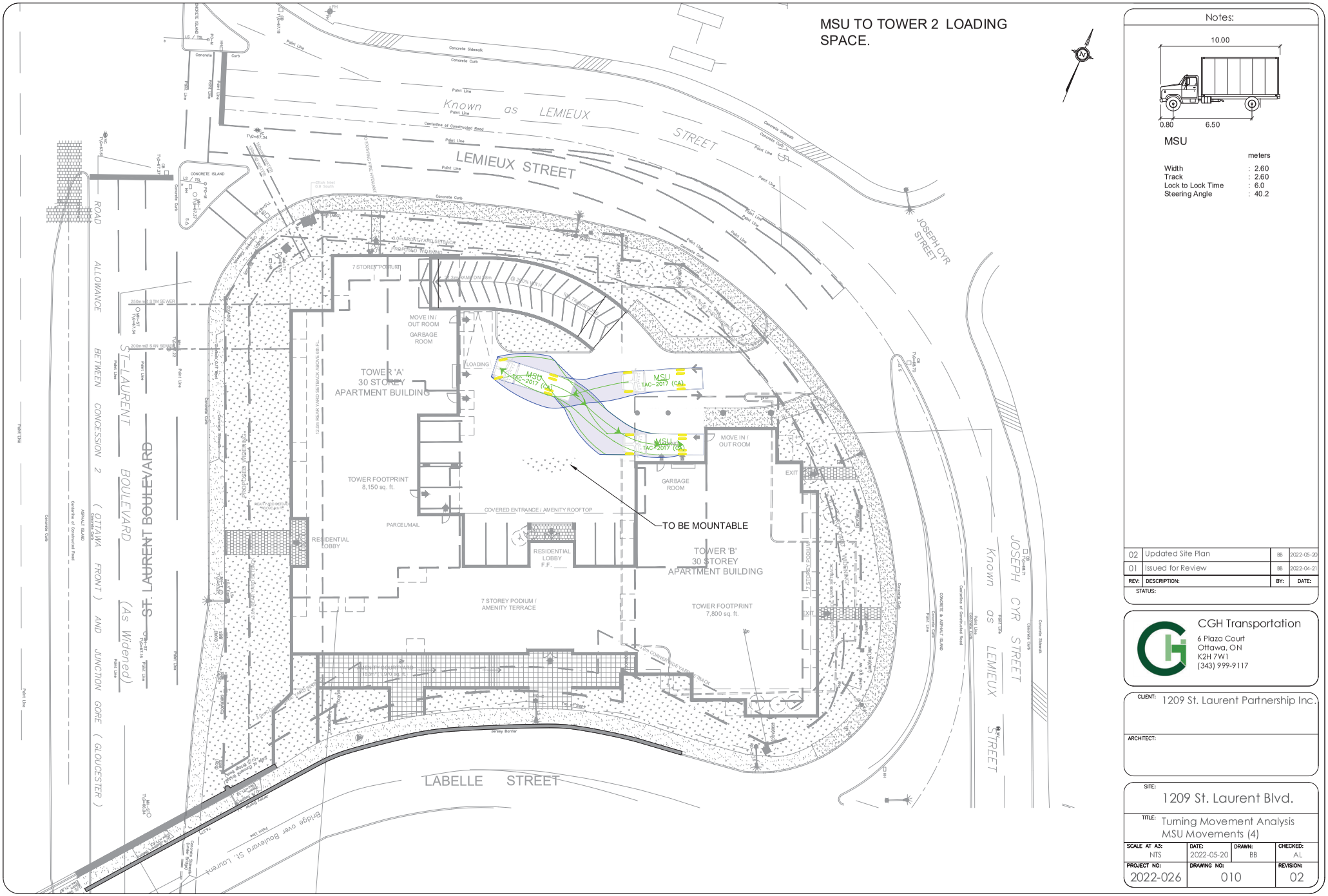
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Movements (3)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	009	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

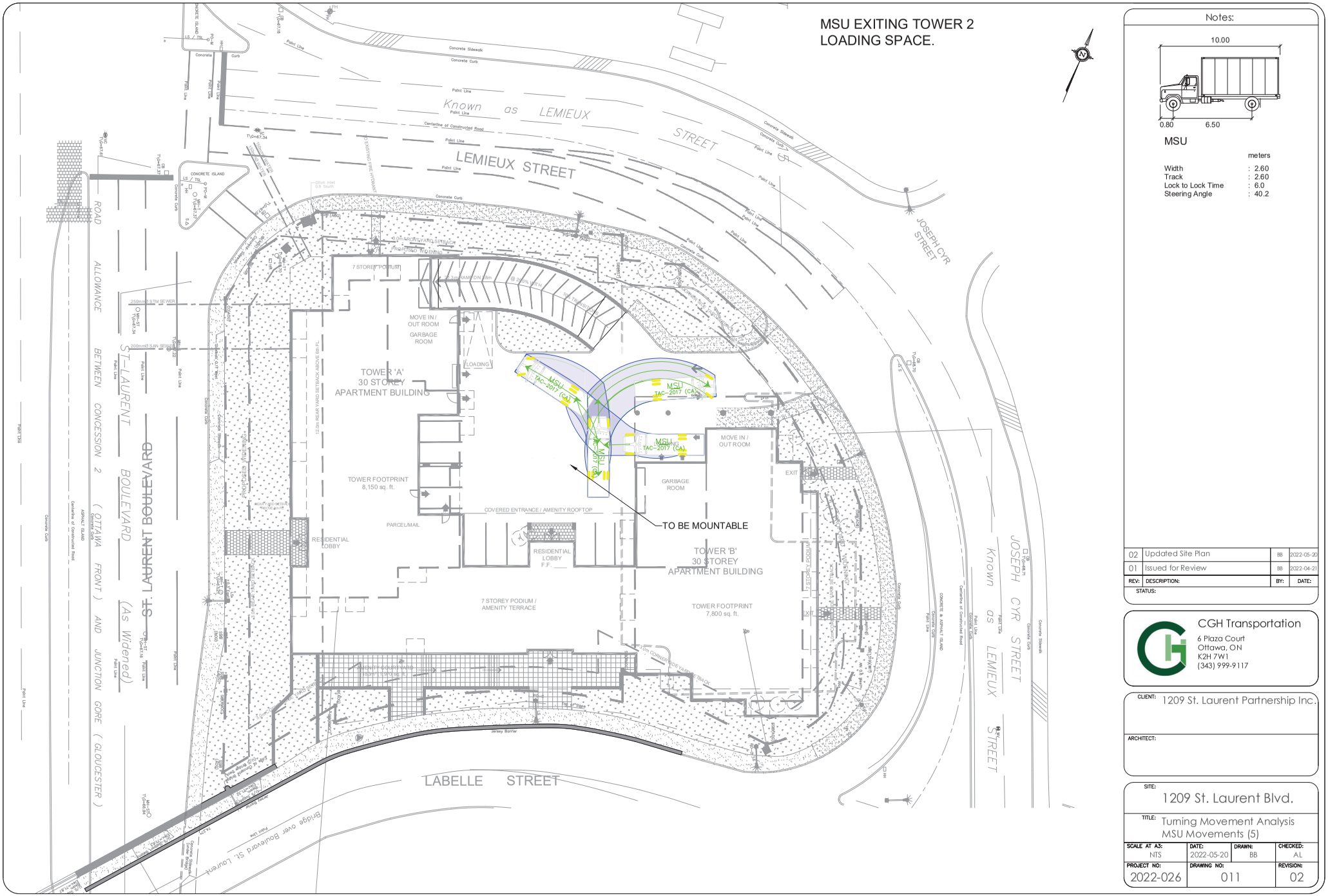
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Movements (4)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	010	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

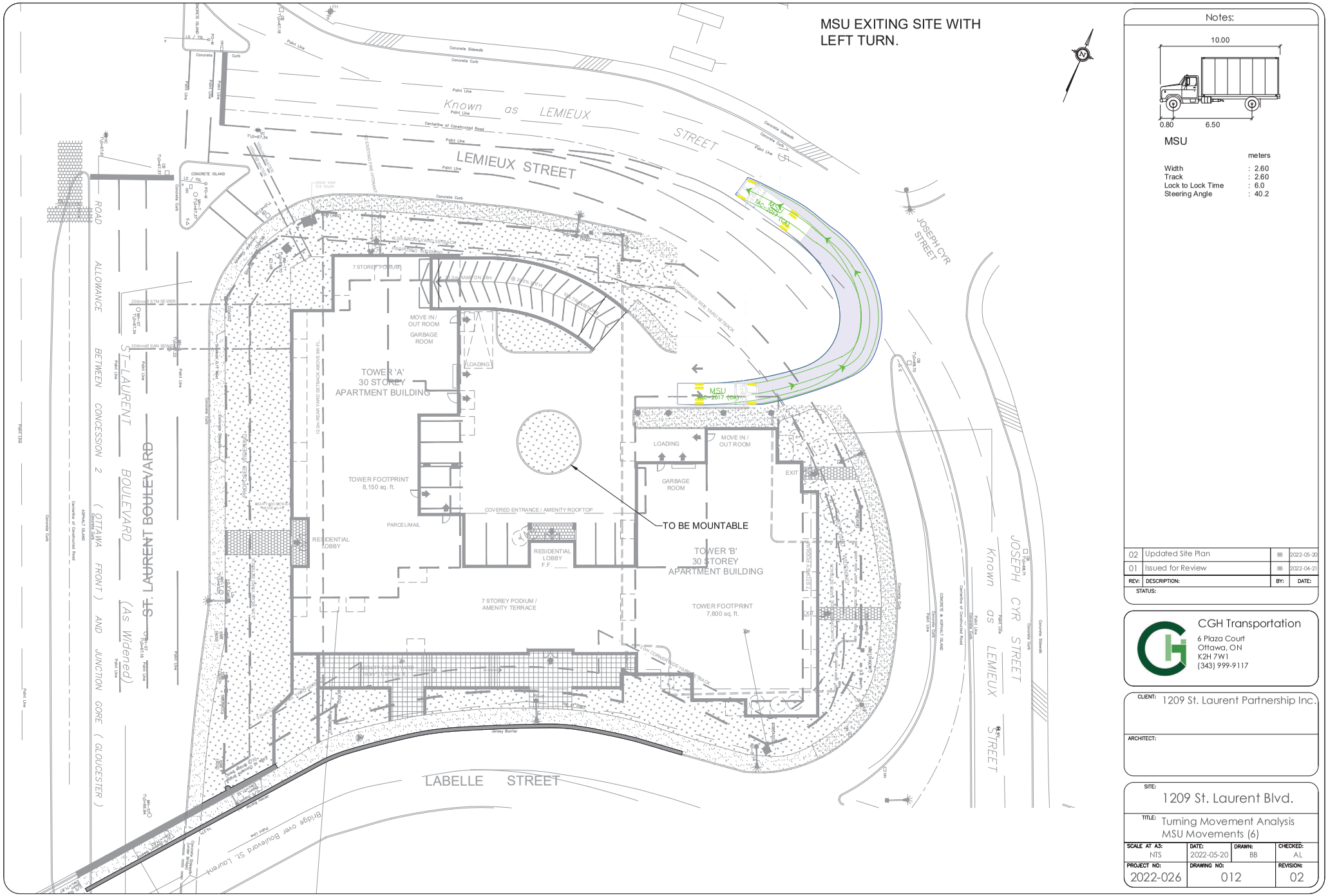
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Movements (5)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	011	02



Notes:

MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
02	Updated Site Plan	BB	2022-05-20
01	Issued for Review	BB	2022-04-21

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Turning Movement Analysis
MSU Movements (6)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	012	02

Appendix L

MMLOS Analysis

CGH TRANSPORTATION

Multi-Modal Level of Service - Intersections Form

Consultant	CGH Transportation Inc.	**Project**	1209 St Laurent
Scenario	Existing/Future	**Date**	5/20/2022
Comments			

	INTERSECTIONS	St Laurent Boulevard at Coventry Road/Ogilvie Road				St Laurent Boulevard at Lemieux Street				St Laurent Boulevard at Transitway Access				St Laurent Boulevard at Hwy 417 EB Off-Ramp				Cyrville Road at Ogilvie Road			
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	8	8	7	7	8		4			8	7			8		4	5	6	10+	10+
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m			No Median - 2.4 m	No Median - 2.4 m			No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Protected	Protected	Protected	Protected	No left turn / Prohib.		Permissive			Protected	Permissive			No left turn / Prohib.		No left turn / Prohib.	No left turn / Prohib.	Permissive	Permissive	Permissive
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control		Permissive or yield control			No right turn	Permissive or yield control			Permissive or yield control		No right turn	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed		RTOR allowed			RTOR prohibited	RTOR allowed			RTOR allowed		RTOR prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No	No		No			No	No			No		No	No	No	No	No
	Right Turn Channel	Conv'tl without Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conv'tl without Receiving Lane	Conventional with Receiving Lane		Conventional with Receiving Lane			No Right Turn	Conv'tl without Receiving Lane			Conv'tl without Receiving Lane		No Right Turn	No Channel	No Channel	No Channel	Conventional with Receiving Lane
	Corner Radius	15-25m	15-25m	15-25m	15-25m	15-25m		15-25m			No Right Turn	>25m			>25m		No Right Turn	15-25m	>25m	5-10m	5-10m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings		Std transverse markings			Std transverse markings	Std transverse markings			Std transverse markings		Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
	PETSI Score	-2	-5	11	14	-5		52			14	5			-3		79	43	17	-44	-43
	Ped. Exposure to Traffic LoS	F	F	F	F	F	-	D	-	-	F	F	-	-	F	-	B	E	F	#N/A	#N/A
	Cycle Length	120	120	120	120	130		130			65	65			130		130	130	130	130	130
	Effective Walk Time	7	7	7	7	66		21			12	7			60		3	10	10	57	57
	Average Pedestrian Delay	53	53	53	53	16		46			22	26			19		62	55	55	20	20
	Pedestrian Delay LoS	E	E	E	E	B	-	E	-	-	C	C	-	-	B	-	F	E	E	C	C
	Level of Service	F	F	F	F	F	-	E	-	-	F	F	-	-	F	-	F	E	F	#N/A	#N/A
		F				F				F				F				#N/A			
	Approach From	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Mixed Traffic		Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic		Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	Right Turn Lane Configuration	≤ 50 m		Not Applicable	Not Applicable		> 50 m	≤ 50 m											Not Applicable	Not Applicable	Not Applicable
	Right Turning Speed	>25 km/h		Not Applicable	Not Applicable		>25 km/h	>25 km/h											Not Applicable	Not Applicable	Not Applicable
	Cyclist relative to RT motorists	E	#N/A	Not Applicable	Not Applicable	#N/A	F	E	-	#N/A	#N/A	-	-	#N/A	#N/A	-	#N/A	#N/A	Not Applicable	Not Applicable	Not Applicable
	Separated or Mixed Traffic	Mixed Traffic	Mixed Traffic	Separated	Separated	Mixed Traffic	Mixed Traffic	Mixed Traffic	-	Mixed Traffic	Mixed Traffic	-	-	Mixed Traffic	Mixed Traffic	-	Mixed Traffic	Mixed Traffic	Separated	Separated	Separated
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed		≥ 2 lanes crossed		≥ 2 lanes crossed								One lane crossed	1 lane crossed		≥ 2 lanes crossed
	Operating Speed	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h		> 50 to < 60 km/h		≥ 60 km/h								≥ 60 km/h	≥ 60 km/h		≥ 60 km/h
	Left Turning Cyclist	F	F	F	F	F	-	F	-	F	-	-	-	-	-	-	-	F	E	-	F
	Level of Service	F	#N/A	F	F	#N/A	-	F	-	#N/A	#N/A	-	-	#N/A	#N/A	-	#N/A	#N/A	E	-	F
		#N/A				#N/A				#N/A				#N/A				#N/A			
Transit	Average Signal Delay	> 40 sec	> 40 sec		> 40 sec	≤ 20 sec	≤ 20 sec			≤ 10 sec	≤ 20 sec			≤ 20 sec	≤ 30 sec					≤ 20 sec	≤ 10 sec
	Level of Service	F	F	-	F	C	C	-	-	B	C	-	-	C	D	-	-	-	-	C	B
		F				C				C				D				C			
Truck	Effective Corner Radius	10 - 15 m	> 15 m	> 15 m	> 15 m		> 15 m	> 15 m			> 15 m	10 - 15 m					> 15 m	10 - 15 m	10 - 15 m	> 15 m	> 15 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2		≥ 2	≥ 2			1	≥ 2					≥ 2	≥ 2	≥ 2	≥ 2	≥ 2
	Level of Service	B	A	A	A	-	A	A	-	-	C	B	-	-	-	-	A	B	B	A	A
		B				A				C				A				B			
Auto	Volume to Capacity Ratio	0.91 - 1.00				0.61 - 0.70				0.61 - 0.70				0.61 - 0.70				0.61 - 0.70			
	Level of Service	E				B				B				B				B			

Multi-Modal Level of Service - Segments Form

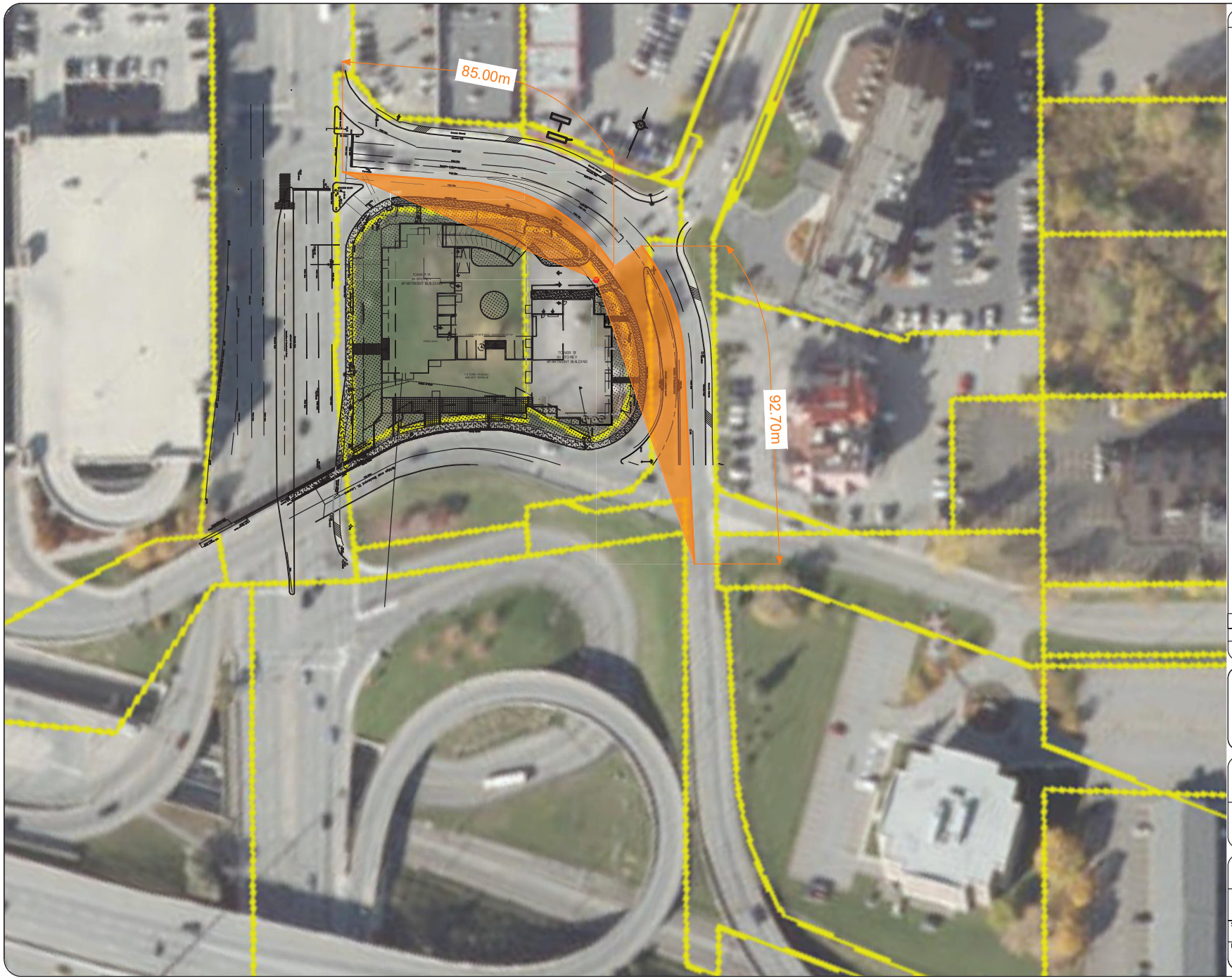
Consultant	**CGH Transportation Inc.**	**Project**	**1209 St Laurent**
Scenario	**Existing/Future**	**Date**	**5/20/2022**
Comments			

SEGMENTS			Lemieux Existing	Lemieux Future	St Laurent Existing/Future
Pedestrian	Sidewalk Width Boulevard Width	-	no sidewalk n/a	≥ 2 m < 0.5	≥ 2 m < 0.5
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000	> 3000
	Operating Speed On-Street Parking		> 50 to 60 km/h no	> 50 to 60 km/h no	> 60 km/h no
	Exposure to Traffic PLoS		**F**	**C**	**F**
	Effective Sidewalk Width				
	Pedestrian Volume				
	Crowding PLoS		-	-	-
	Level of Service		**-**	**-**	**-**
Bicycle	Type of Cycling Facility	F	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Number of Travel Lanes		4-5 lanes total	4-5 lanes total	≥ 6 lanes total
	Operating Speed		≥ 60 km/h	≥ 60 km/h	≥ 60 km/h
	# of Lanes & Operating Speed LoS		**F**	**F**	**F**
	Bike Lane (+ Parking Lane) Width				
	Bike Lane Width LoS		-	-	-
	Bike Lane Blockages				
	Blockage LoS		-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	≤ 3 lanes	≤ 3 lanes
	Sidestreet Operating Speed		≤ 40 km/h	≤ 40 km/h	≤ 40 km/h
	Unsignalized Crossing - Lowest LoS		**A**	**A**	**A**
	Level of Service		**F**	**F**	**F**
Transit	Facility Type	D			Mixed Traffic
	Friction or Ratio Transit:Posted Speed				Vt/Vp ≥ 0.8
	Level of Service		**-**	**-**	**D**
Truck	Truck Lane Width	B	> 3.7 m	> 3.7 m	> 3.7 m
	Travel Lanes per Direction		1	1	> 1
	Level of Service		**B**	**B**	**A**

Appendix M

Sight Line Review

CGH TRANSPORTATION



Notes:

LEGEND

- AVAILABLE SIGHT DISTANCE
- CONFLICTS
- DECISION POINT

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	by	2022-05-20

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

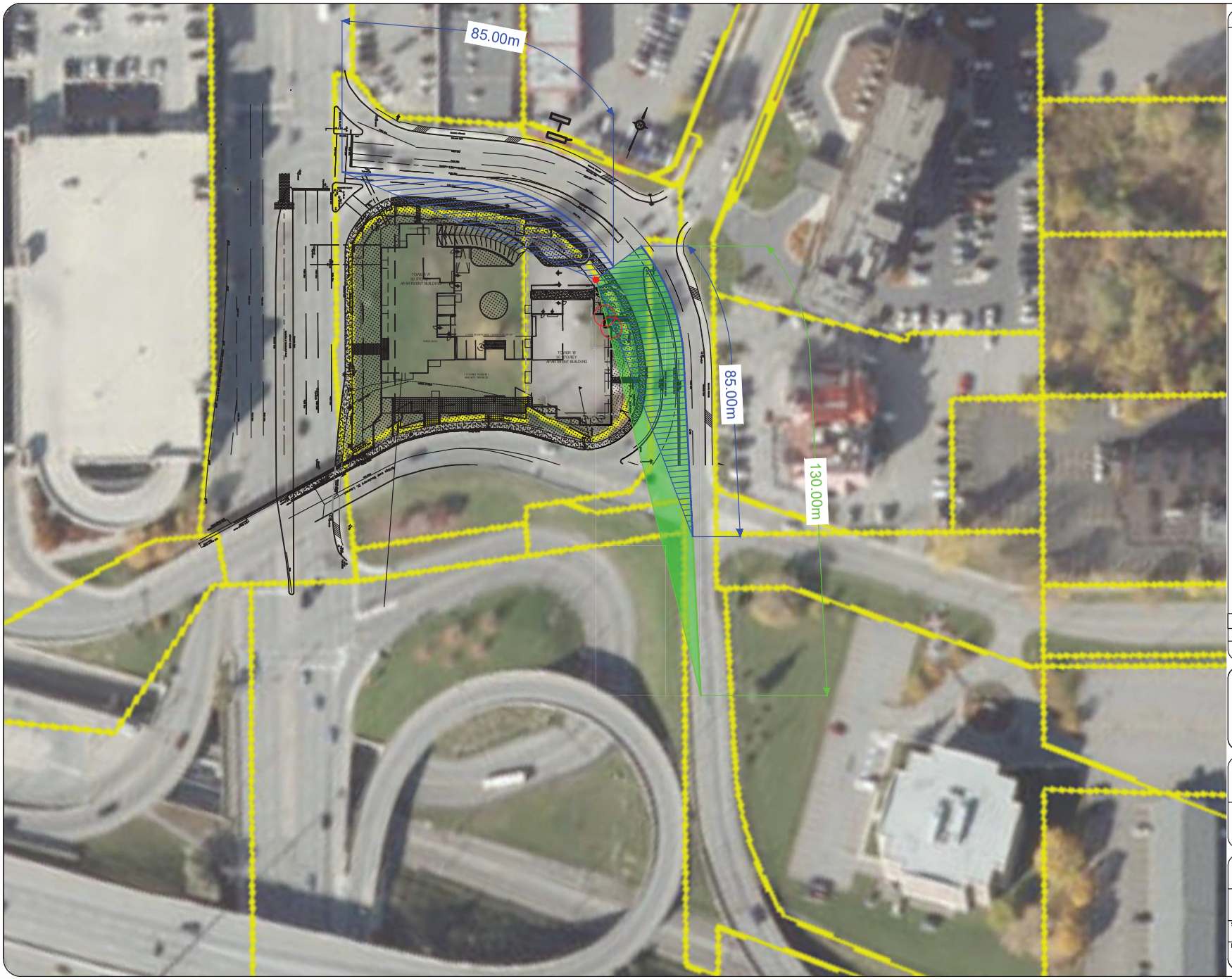
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Horizontal Sightline Analysis
Available Sight Distance

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	001	01



Notes:

LEGEND

- STOPPING SIGHT DISTANCE
- DEPARTURE SIGHT DISTANCE
- CONFLICTS
- DECISION POINT

DESIGN SPEED = 60km/hr

STOPPING SIGHT DISTANCE = 85m

DEPARTURE SIGHT DISTANCE = 130m

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	by	2022-05-20

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

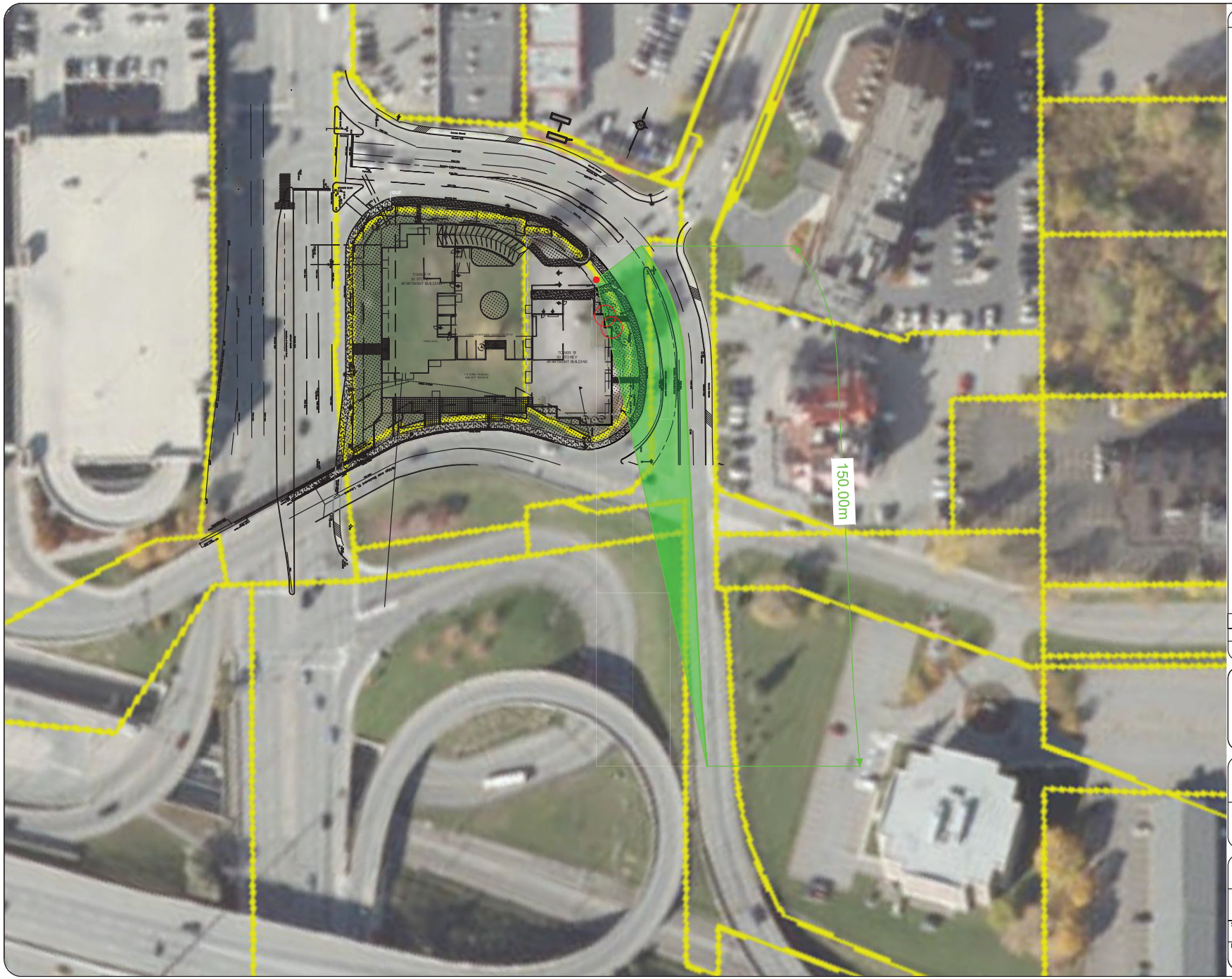
ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Horizontal Sightline Analysis
60km/hr Design Speed

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	002	01



Notes:

LEGEND

- DEPARTURE SIGHT DISTANCE
- CONFLICTS
- DECISION POINT

DESIGN SPEED = 70km/hr

DEPARTURE SIGHT DISTANCE = 150m

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	by	2022-05-20

STATUS:

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

CLIENT: 1209 St. Laurent Partnership Inc.

ARCHITECT:

SITE: 1209 St. Laurent Blvd.

TITLE: Horizontal Sightline Analysis
70km/hr Design Speed

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-05-20	BB	AL

PROJECT NO:	DRAWING NO:	REVISION:
2022-026	003	01

Appendix N

TDM Checklist

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

Legend

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

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

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

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

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

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

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

Legend

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

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

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

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

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