1125 - 1149 Cyrville Road

Transportation Impact Assessment

TIA Report

October 13, 2021

Prepared for:

Westrich Management Ltd.

Prepared by:

Stantec Consulting Ltd.

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[1] professional in good standing, whose field of expertise is either transportation engineering or transportation planning.

Signature of individual certifier that s/he meets the above four criteria.

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

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1.0 SCREENING

1.1 SUMMARY OF DEVELOPMENT

Municipal Address	**1125 – 1149 Cyrville Road**
Description of Location	Northeast quadrant of the Cyrville Road at Michael Street North intersection
Land Use Classification	Phase 1: One mid-rise apartment building Phase 2: One high-rise apartment building
Development Size (units)	Phase 1: 208 units Phase 2: 146 units
Development Size (ft^2)	N/A
Number of Accesses and Locations	1 parking garage access from Cyrville Road 1 parking garage access from future roadway between Cyrville Road and Ogilvie Road on the west side of the development 1 existing right-in-right-out access from Ogilvie Road on the north side of the development
Phase of Development	2 phases
Buildout Year	Assumed both phases by 2023

If available, please attach a sketch of the development or site plan to this form.

1.2 TRIP GENERATION TRIGGER

Considering the development's land use type and size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size	Triggered
Single-family homes	40 units	✗
Townhomes or apartments	90 units	✓
Office	3,500 m^2	✗
Industrial	5,000 m^2	✗
Fast-food restaurant or coffee shop	100 m^2	✗
Destination retail	1,000 m^2	✗
Gas station or convenience market	75 m^2	✗

** If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

1.3 LOCATION TRIGGERS

	Yes	No
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?	✓	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone? *	✓	

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).*

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

1.4 SAFETY TRIGGERS

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

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

1.5 SUMMARY

	Yes	No
Does the development satisfy the Trip Generation Trigger?	✓	
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?	✓	

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

2.0 SCOPING

2.1 EXISTING AND PLANNED CONDITIONS

2.1.1 Proposed Development

Westrich Management Ltd. is proceeding with a Zoning By-Law Amendment and Site Plan Control Application for two proposed residential buildings (1 mid-rise and 1 high-rise) located at 1125-1149 Cyrville Road in Ottawa. The site is located at the northeast quadrant of the existing Cyrville Road and Michael Street North intersection. The site is bound by Cyrville Road to the south, Cummings Avenue to the east, Ogilvie Road to the north, and existing commercial and retail land uses to the west.

Figure 1 illustrates the location of the proposed site.

The subject site is currently zoned as a Mixed-Use Centre (MC) Zone; the purpose of the MC Zone, according to the City of Ottawa's Official Plan, is to:

- *ensure that the areas designated Mixed-Use Centres in the Official Plan, or a similar designation in a Secondary Plan, accommodate a combination of transit-supportive uses such as offices, secondary and post secondary schools, hotels, hospitals, large institutional buildings, community recreation and leisure centres, day care centres, retail uses, entertainment uses, service uses such as restaurants and personal service businesses, and high- and medium-density residential uses; (By-law 2015-293)*
- *allow the permitted uses in a compact and pedestrian-oriented built form in mixed-use buildings or side by side in separate buildings; and*
- *impose development standards that ensure medium to high profile development while minimizing its impact on surrounding residential areas.*

Figure 2 illustrates the proposed site plan. The development is located in a Transit Oiented Development (TOD) Zone within 600m of the Cyrville LRT Station and the St. Laurent LRT Station. It is noted that the proposed development is planned to be constructed over 2 phases (Phase 1 in 2022, Phase 2 in 2023). However, as the site generated auto trips are anticipated to be low given the high transit modal shares in TOD zones, and due to the short timeframe between the two phases, the Total Future conditions analysis will assume both buildings to be completed in one phase by 2023.

Table 1 outlines the land uses assumed for the analysis to forecast the trips generated by the proposed development. The *TRANS Trip Generation Manual – Summary Report (October 2020)* was used for the residential land use trip generation.

Table 1 - Proposed Land Uses / Land Use Codes

Land Use	Size	ITE Land Use Code (LUC)
Residential	354 units	221 & 222 – Multi Unit (High-Rise)

The development is planned to feature two parking garage accesses, one on the southeast side (south access) and another on the west side (west access) of the development. The west access is envisioned to connect to a new north-south roadway between Cyrville Road and Ogilvie Road, terminating at the existing right-in-right-out access servicing the existing land uses on 1043 Cyrville Road.

Figure 1 - Site Location

Figure 2 - Proposed Site Plan

2.1.2 Existing Conditions

2.1.2.1 Roads and Traffic Control

The roadways under consideration in the study area are described as follows:

Cyrville Road

In the vicinity of the proposed development, Cyrville Road is a two-lane municipal Collector roadway with a posted speed limit of 60 km/h. The roadway features an urban cross section with concrete curbs and curbside cycling lanes on both sides. The intersections with Ogilvie Road and with Labelle Street are signalized with auxiliary left turn lanes on Cyrville Road in both directions. The intersection with St. Laurent Boulevard is signalized with a right turn lane on Cyrville Road. It is noted that at the aforementioned intersection, through and left turns are prohibited at all times. The roadway is designated as a Cross-Town Bikeway and a Spine route as per the City of Ottawa's Ultimate Cycling Plan. Just north of the intersection with Ogilvie Road, Cyrville Road is not designated as a Cross-Town Bikeway. On-street parking is prohibited at all times on Cyrville Road.

Ogilvie Road

In the vicinity of the proposed development, Ogilvie Road is a four-lane municipal Arterial roadway with a posted speed limit of 60 km/h. The roadway features an urban cross section with multi-use pathways, grass boulevards, and curbside cycling lanes on both sides. The intersection with Cummings Avenue is signalized with auxiliary left turn lanes on Ogilvie Road in both directions. The intersection with Cyrville Road is signalized with an auxiliary left turn lane in the westbound direction and auxiliary right turn lanes in both directions on Ogilvie Road. It is noted that eastbound left turns at the aforementioned intersection are prohibited at all times. The intersection with St. Laurent Boulevard is signalized with dual auxiliary left turn lanes and channelized auxiliary right turn lanes in both directions on Ogilvie Road. The roadway is designated as a Cross-Town Bikeway and a Spine route as per the City of Ottawa's Ultimate Cycling Plan. It is noted that just east of the intersection with Cyrville Road, Ogilvie road is not designated as a Cross-Town Bikeway. On-street parking is prohibited at all times on Ogilvie Road.

St. Laurent Boulevard

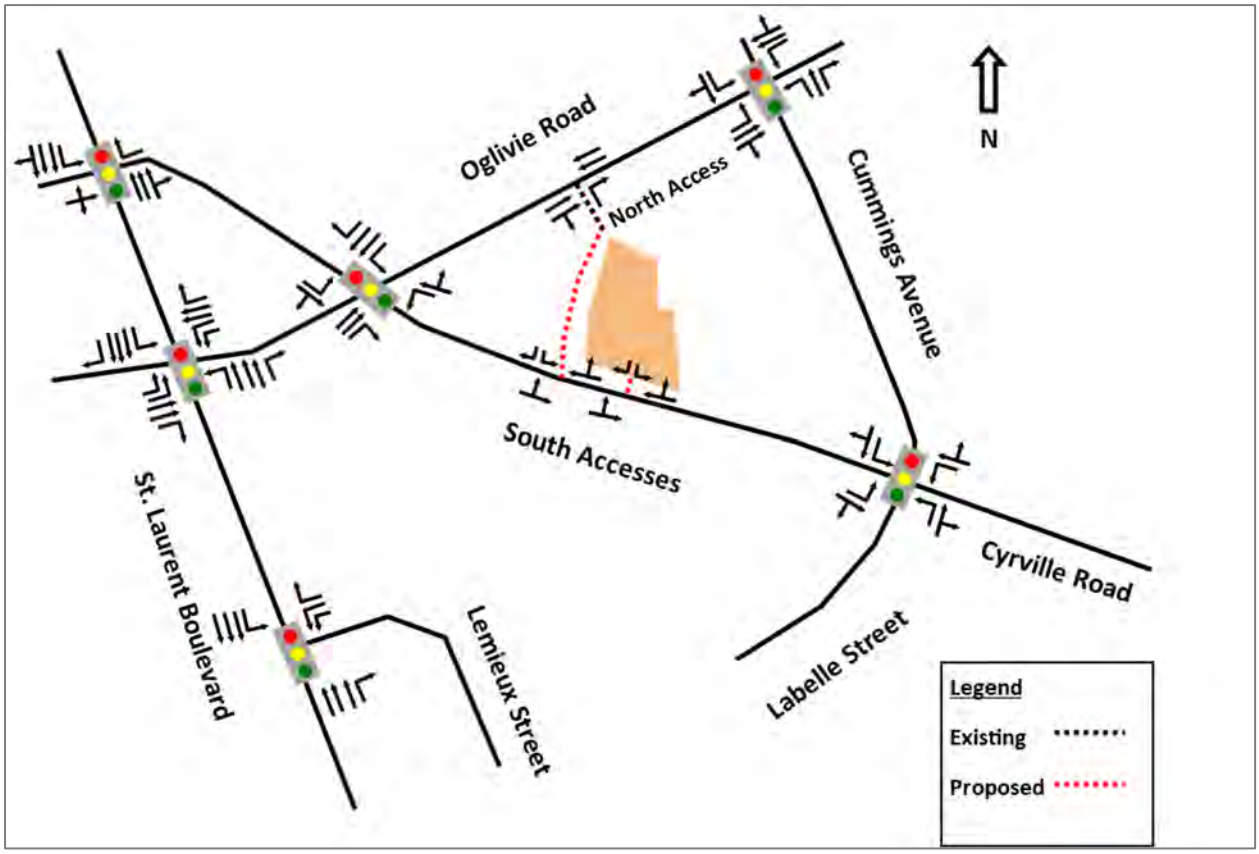
In the vicinity of the proposed development, St. Laurent Boulevard is a six-lane municipal Arterial roadway with a posted speed limit of 60 km/h and 70 km/h north and south of the intersection with Ogilvie Road, respectively. The roadway features an urban cross section with concrete sidewalks. The intersection with Ogilvie Road is signalized with auxiliary left turn lanes and channelized auxiliary right turn lanes in both directions on St. Laurent Boulevard. The intersection with Lemieux Street is signalized with an auxiliary left turn lane in the southbound direction and a channelized auxiliary right turn lane in the northbound direction on St. Laurent Boulevard. The intersection with Cyrville Road is signalized with an auxiliary left turn lane in the southbound direction on St. Laurent Boulevard. At the aforementioned intersection, northbound left turns into the existing auto dealership

	are banned between 7:00 AM and 9:00 AM and between 3:30 PM and 5:30 PM. It is noted that there are no existing cycling facilities on St. Laurent Boulevard in the vicinity of the development. The roadway is designated as a Spine route as per the City of Ottawa's Ultimate Cycling Plan. On-street parking is prohibited at all times on St. Laurent Boulevard.
Cummings Avenue	In the vicinity of the proposed development, and between the intersections with Cyrville Road and Ogilvie Road, Cummings Avenue is a two-lane municipal Arterial roadway with a default speed limit of 50 km/h (in the absence of a posted speed limit sign). North of the intersection with Ogilvie Road, Cummings Avenue is classified as a major collector roadway with an urban cross section featuring concrete sidewalks on both sides. South of the intersection with Cyrville Road, the roadway is classified as a Major Collector roadway and transitions to Labelle Street, featuring concrete multi-use pathways and grass boulevards on both sides. Along the eastern frontage of the proposed development, the roadway features a sidewalk on the east side and a paved shoulder on the west side. The intersections with Cyrville Road and with Ogilvie Road are signalized with auxiliary left turn lanes in both directions of Cummings Avenue. The intersection with Ogilvie Road also features a channelized auxiliary right turn lane in the northbound direction on Cummings Avenue. The roadway is designated as a Local Route as per the City of Ottawa's Ultimate Cycling Plan. On-street parking is prohibited at all times on Cummings Avenue.
Lemieux Street	Between the intersections with Labelle Street and St. Laurent Boulevard, Lemieux Street is a three-lane municipal Major Collector roadway with a default speed limit of 50 km/h. The roadway features an urban cross section with a concrete sidewalk on the east side. The intersection with St. Laurent Boulevard is signalized with dual westbound left turn lanes and a channelized auxiliary right turn lane on Lemieux Street. The roadway is designated as a Local Route as per the City of Ottawa's Ultimate Cycling Plan. On-street parking is prohibited at all times on Lemieux Street.

In the vicinity of the eastern frontage of the proposed development, there are two existing accesses on the east side (1 office, 1 retail) and one existing access on the west (1 office) side of Cummings Avenue. In the vicinity of the southern frontage of the proposed development, there are five existing accesses on the north side (1 office, 4 commercial / retail) and one access on the south side (1 office) of Cyrville Road. In the vicinity of the northern frontage of the proposed development, there are 6 existing accesses on the south side (6 commercial / retail) of Ogilvie Road.

Figure 3 illustrates the existing lane configuration and traffic control.

Figure 3 - Existing Lane Configuration and Traffic Control



2.1.2.2 Walking and Cycling

In close proximity to the proposed development, Cyrville Road and Ogilvie Road are well serviced by pedestrian and cycling facilities with sidewalks and curbside cycling lanes on both sides of the roadway. Moreover, both roadways are designated as Spine routes as per the City of Ottawa's Ultimate Cycling Plan, with sections of both roadways also designated as Cross-Town Bikeways. St. Laurent Boulevard is well serviced by pedestrian facilities with sidewalks on both sides, and although designated as a Spine route, the roadway does not feature dedicated cycling infrastructure in the proximity of the proposed development. Cummings Avenue features a sidewalk on the east side of the roadway and is designated as a Local cycling route. Labelle Street features sidewalks on both sides between the intersections with Cyrville Road and Michael Street N. Lemieux Street features a sidewalk on the east side of the roadway. Labelle Street and Lemieux Street are designated as Local cycling routes and do not currently feature dedicated cycling infrastructure. Overall, the roadways in the vicinity of the proposed development provide ample pedestrian and cycling connectivity and are well connected to both Cyrville Station and St. Laurent Station.

Figure 4 illustrates the existing and planned pedestrian and cycling facilities within the vicinity of the subject site.

Figure 4 - Existing and Planned Active Modes Facilities

Source: geoOttawa, accessed June 2021

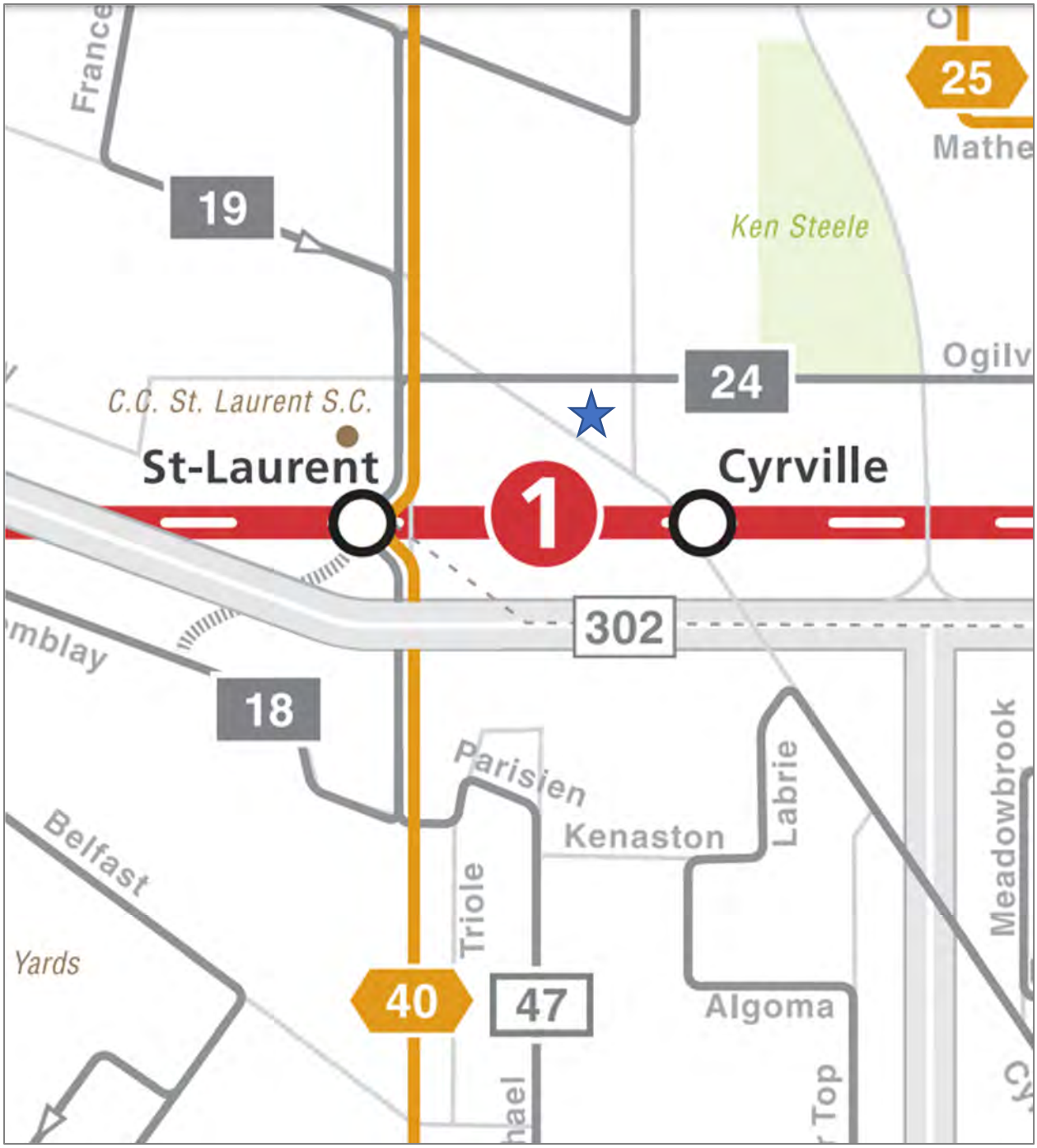
2.1.2.3 Transit

The proposed site is situated in a TOD zone and is well serviced by both local transit routes and the Confederation Line LRT service. The subject site is situated within 600m of both Cyrville Station and St. Laurent Station. In addition to the Confederation Line LRT service, there are numerous transit routes in the vicinity of the subject development including routes 7, 12, 14, 18, 19, 20, 24, 27, 39, 40, and 47.

In the City of Ottawa's 2031 affordable network, St. Laurent Boulevard is identified as a Transit Priority Corridor with isolated measures.

Figure 5 illustrates nearby transit stop locations.

Figure 5 - Nearby Transit Stops



Source: OC Transpo Trip Planner, accessed June 2021

2.1.2.4 Traffic Management Measures

There are currently no traffic measures in the vicinity of the subject development.

2.1.2.5 Traffic Volumes

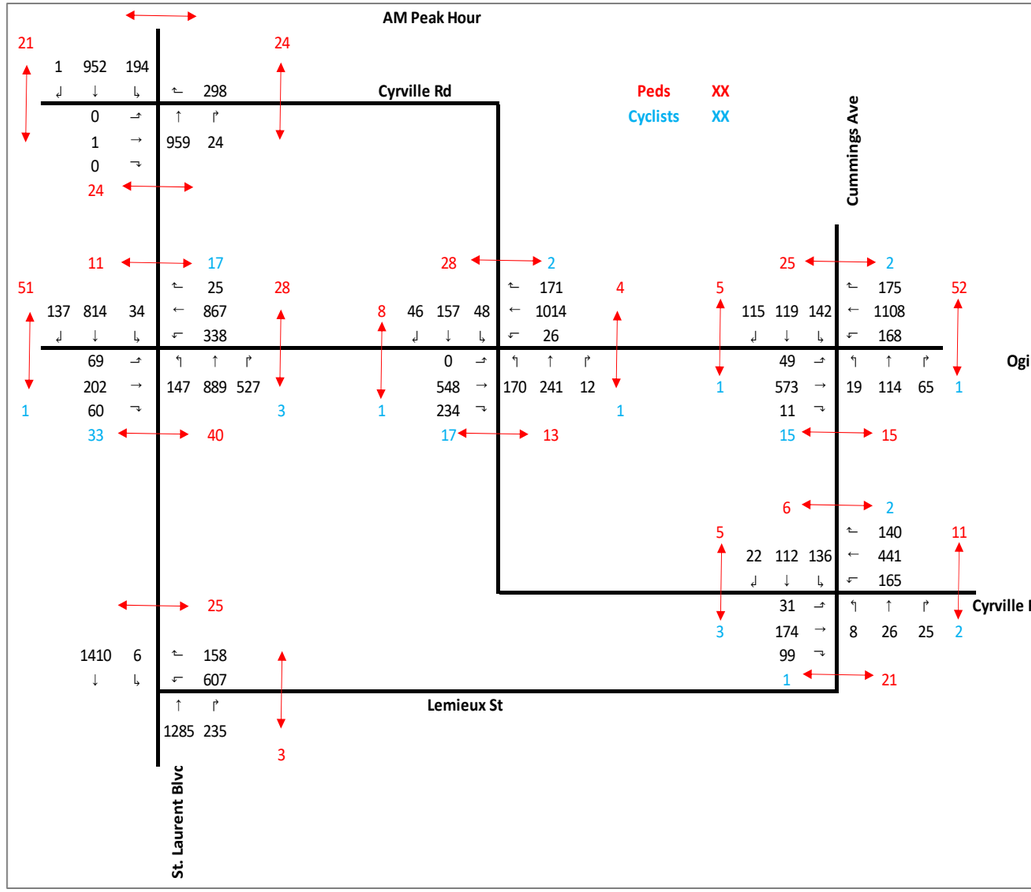
Turning movement counts at the study area intersections were provided by the City of Otawa and are illustrated in **Figure 6.** The turning movement counts include the intersections below:

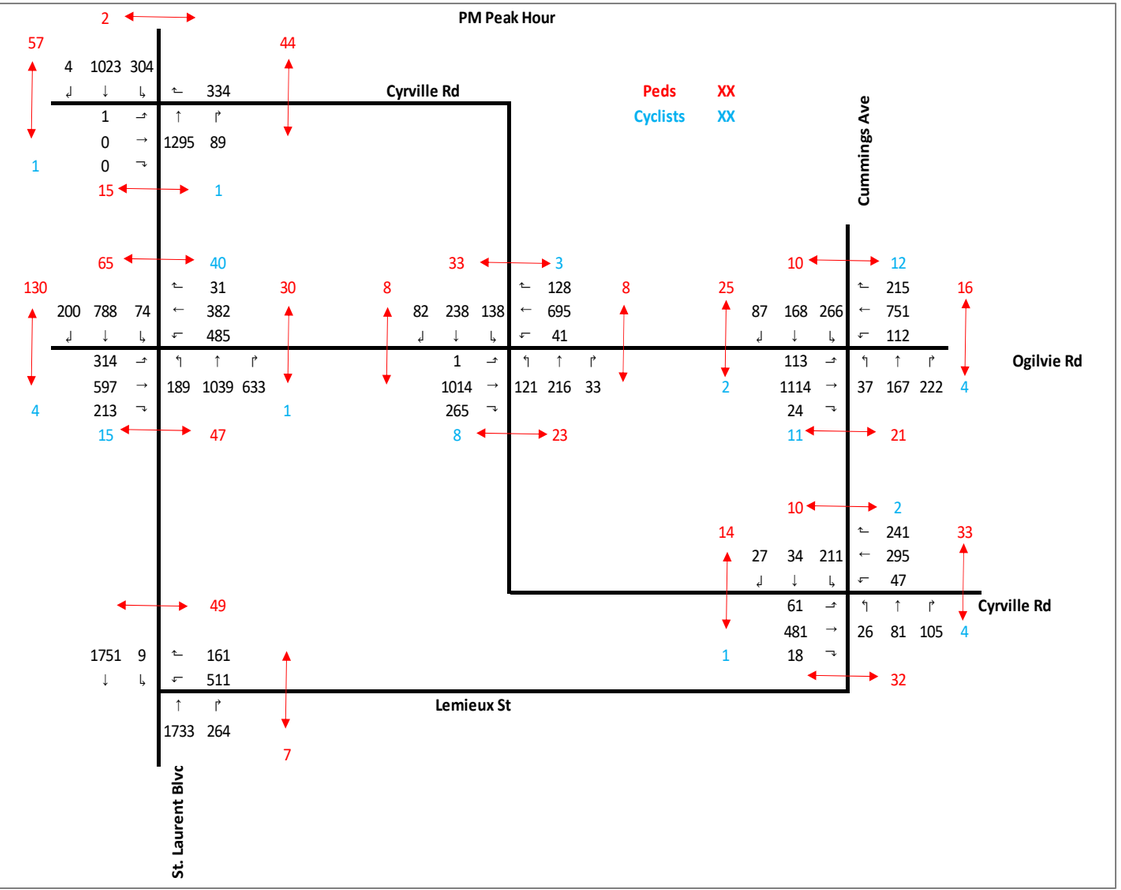
- Cyrville Road and Ogilvie Road (April 11th, 2018);
- Ogilvie Road and St. Laurent Boulevard (Jun 1st, 2017);
- Ogilvie Road and Cummings Avenue (April 11th, 2018);
- Cyrville Road and Cummings Avenue / Labelle Street (April 11th, 2018);
- St. Laurent Boulevard and Cyrville Road (December 12th, 2018); and
- St. Laurent Boulevard and Lemieux Street (March 21st, 2018).

To capture the background growth in the study area, the turning movement counts were grown at a rate of 1% per annum. The rate was derived from the long range growth model in Exhibit 2.11 of the City of Ottawa Transportation Master Plan.

To represent the increase in active transportation modes (pedestrian and cyclist) in the study area over the proposed analysis horizon years, the aforementioned annual growth rate was also applied to pedestrian and cyclist volumes.

Figure 6 - 2021 Existing Traffic Volumes





2.1.2.6 Collision History

Collision data was provided by the City of Ottawa for the period between January 2015 and December 2019 in the vicinity of the proposed development. The data was reviewed to determine if any intersections or road segments exhibited an identifiable collision pattern during the five (5) year period.

Table 2 summarizes the collision and class and impact types for each road segment and intersection in the study area.

Based on the data provided, there were a total of 421 collisions in the vicinity of the subject site, of which 342 collisions (81%) resulted in property damage only. No fatal collisions were recorded during the five year period. Of the 421 total collisions, 366 collisions (87%) occurred at the intersections specified in **Table 2.** There were a total of 14 collisions (3.3%) involving pedestrians.

Of the total collisions, 323 collisions (77%) were caused by actions attributed to driver error, including speeding / tailgating (32%), improper turns / lane changes / passing (20%), disobeying traffic control devices or failing to yield right of way (19%), and losing control (6%).

Of the total collisions, 185 collisions (44%) were rear ends, 88 collisions (21%) were sideswipes, 57 collisions (14%) were during turning movements, 52 collisions (12%) occurred at an angle, 26 collisions (6%) involved single motor vehicles, and 11 collisions (3%) were labelled as “other”. Of the 11 latter collisions, 100% involved reversing vehicles.

Of the total collisions, 334 collisions (79%) occurred under clear environmental conditions, while 21% occurred during periods of rain, snow, freezing rain, and fog.

The intersection of St. Laurent Boulevard and Ogilvie Road experienced the highest number of collisions over the 5-year period with 121 collisions (29% of the total collisions). At the intersection, 61 collisions (50%) were rear ends and 32 collisions (26%) were sideswipes. Of the rear end collisions, 22 collisions (36%) occurred in the northbound direction, 13 collisions (21%) occurred in the southbound direction, 19 collisions (31%) occurred in the westbound direction, and 7 collisions (12%) occurred in the eastbound direction. Of the total rear end collisions at the intersection, 50 collisions (82%) were attributed to driver error.

Overall, there are a number of factors that could have contributed to the high number of collisions at the study area intersections, including:

- The high density of driveways and the short spacing between them, namely along St. Laurent Boulevard
- Aggressive driving (not adhering to the posted speed limit, aggressive lane changing)
- Low gap acceptance
- The short intersection spacing in the study area
- High traffic volumes as illustrated in **Figure 6** above
- Signal coordination, including signal clearnce times

It is recommended that a detailed safety study, including a review of signal timing parameters and clearance times, be conducted at the study area intersections to better discern the collision patterns and subsequent mitigation measures.

Table 2 - Collision Summary

	St. Laurent Blvd @ Lemieux St	St. Laurent Blvd @ Ogilvie Rd	St. Laurent Blvd @ Cyrville Rd	Ogilvie Rd @ Cyrville Rd	Ogilvie Rd @ Cummings Ave	Cyrville Rd @ Cummings Ave	St. Laurent Blvd between Ogilvie Rd and Lemieux St	St. Laurent Blvd between Ogilvie Rd and Cyrville Rd	Cyrville Rd between Cummings Ave and Ogilvie Rd	Cyrville Rd between Ogilvie Rd and St. Laurent Blvd	Ogilvie Rd between St. Laurent Blvd and Cummings Ave	Total
Classification												
Fatal	0	0	0	0	0	0	0	0	0	0	0	0
Non-Fatal Injury	15	19	10	9	13	6	6	1	0	0	0	79
Property Damage Only	71	102	39	28	44	10	28	6	3	5	6	342
Impact Type												
Approaching	2	0	0	0	0	0	0	0	0	0	0	2
Angle	14	15	2	5	6	3	3	0	1	2	1	52
Rear End	41	61	27	12	23	5	13	1	1	1	0	185
Sideswipe	13	32	7	8	7	2	11	4	0	1	3	88
Turning Movement	15	9	5	5	16	1	4	0	0	1	1	57
Other / SMV Other	1	4	8	7	5	5	3	2	1	0	1	37
Driver Action												
Speeding / Tailgating	32	39	23	8	17	5	8	3	1	0	0	136
Improper Turn / Lane Change	12	30	6	9	11	2	11	2	0	1	2	86
Disobeyed Traffic Control / Failed to Yield Right of Way	22	13	6	9	11	4	4	0	1	2	2	74
Lost Control	5	9	1	2	6	1	2	0	1	0	0	27
Driving Properly	2	2	0	2	2	1	2	1	0	0	1	13
Unknown/Other	13	28	13	7	10	3	7	1	0	2	1	85
Environment												
Clear	66	93	38	30	48	16	27	6	3	2	5	334
Rain	9	16	5	4	3	0	4	0	0	1	0	42
Snow / Drifting Snow	10	11	6	3	6	0	3	1	0	2	1	43
Freezing Rain	1	0	0	0	0	0	0	0	0	0	0	1
Strong Wind / Fog	0	1	0	0	0	0	0	0	0	0	0	1

2.1.3 Planned Conditions

2.1.3.1 Road Network Modifications

Table 3 identifies City of Ottawa Transportation Master Plan (TMP) projects located in the vicinity of the subject site, as well as projects that are anticiapted to influence modal share characteristics in the future.

Table 3 - City of Ottawa Transportation Master Plan Projects

Project	Description	TMP Phase
Western Light Rail Transit	Conversion of the West Transitway to LRT between Tunney's Pasture Station and Baseline Station. Construction of new LRT right of way between existing West Transitway and Pinecrest and conversion of West Transitway to LRT from Pinecrest to Bayshore Station.	2025
Eastern Light Rail Transit	Eastern extension of LRT service following Ottawa Road 174 between Blair Station and Place d'Orléans Station Eastern extension of LRT service following Ottawa Road 174 between Blair Station and Trim Station	2024
St. Laurent Boulevard	Transit Signal Priority and Queue Jump Lanes Between Montreal Road and Innes Road Transit Signal Priority and Queue Jump Lanes Between Montreal Road and Hemlock Road	Affordable Network Network Concept
Cyrville Road	Urbanize existing two-lane rural cross section between Star Top Road and St. Laurent Boulevard Widen from two to four lanes between St. Laurent Boulevard and Innes Road.	Affordable Network Network Concept
Coventry Road	Widen from two to four lanes between Belfast Road and St. Laurent Centre	Affordable and Concept Networks

* Network Improvement Projects planned to occur beyond the ultimate study horizon are excluded from the analysis.

2.1.3.2 Future Background Developments

There are numerous developments scheduled to occur in the vicinity of the subject site as described in **Table 4** and illustrated in **Figure 7**.

Table 4 - Background Developments

Key Plan Reference	Development	Location	Description	Assumed Build-Out Year
A	1178 Cummings Ave / 1098 Ogilvie Rd	Southwest quadrant of the intersection of Ogilvie Road and Cummings Avenue	3 residential towers and a hotel, totalling 850 residential units and 175 hotel rooms.	Phase 1: 2022 Phase 2: 2024
B	1082 Cyrville Rd / 1155 Joseph Cyr Rd	Southeast quadrant of the intersection of Joseph Cyr Road and Cyrville Road	Six-storey mixed use building with 116 residential units and a 1,425 sq.ft commercial component	Inactive
C	500 Coventry Rd / 525 Coventry Rd / 535 Coventry Rd / 1200 St. Laurent Blvd	North and south sides of Coventry Rd just west of the St. Laurent Shopping Centre	Retail buildings (extension of the St. Laurent Shopping Centre) with surface parking areas	Unknown[1]
D	1298 Ogilvie Rd	Southeast quadrant of the Ogilvie Rd and Aviation Pkwy intersection	78 Dwelling units	Planned: 2019 Assumed: 2023[1]
E	530 Tremblay Rd / 2098 Avenue P / 1399 Avenue U	South side of Avenue P on the west side of St. Laurent Blvd	124 residential units	2021

Notes:
1. Occupancy is assumed to take place in 2023 (full build-out horizon of the proposed development);

Figure 7 - Background Developments Key Plan

2.2 STUDY AREA AND TIME PERIODS

2.2.1 Study Area

The proposed study area is limited to the following intersections:

1. Cyrville Road and Ogilvie Road;
2. Ogilvie Road and St. Laurent Boulevard;
3. Ogilvie Road and Cummings Avenue;
4. Cyrville Road and Cummings Avenue / Labelle Street;
5. St. Laurent Boulevard and Cyrville Road;
6. St. Laurent Boulevard and Lemieux Street;
7. Ogilvie Road and RIRO Site Access (north);
8. Cyrville Road and Site Access (south) / New Road

2.2.2 Time Periods

The proposed scope of the transportation assessment includes the following analysis time periods:

- Weekday AM peak hour of roadway; and
- Weekday PM peak hour of roadway.

2.2.3 Horizon Years

The scope of the transportation assessment proposes the following horizon years:

- 2021 Existing conditions;
- 2023 Future Background conditions;
- 2023 Total Future conditions (site build-out); and
- 2028 Total Future conditions (5 years beyond build-out).

2.3 EXEMPTIONS REVIEW

Table 5 summarizes the Exemptions Review table from the City of Ottawa's *2017 Transportation Impact Assessment Guidelines*.

Table 5 - Exemptions Review

Module	Element	Exemption Considerations	Exempted?
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	No
	4.1.3 New Street Networks	Only required for plans of subdivision	Yes
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	No
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Yes
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	No
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	Yes
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	Yes
4.9 Intersection Design	All Elements	Not required if site generation trigger is not met.	No

3.0 FORECASTING

3.1 DEVELOPMENT GENERATED TRAVEL DEMAND

3.1.1 Trip Generation and Mode Shares

Table 3 of the *TRANS Trip Generation Manual Summary Report (2020)* was used to determine the person-trips generated by the residential land use per peak period. **Table 6** outlines the assumed land use and the person-trip generation rate.

Table 6 - Proposed Development Land Use and Person-Trip Generation Rates

LUC	Land Use	Size	Weekday AM Peak Period			Weekday PM Peak Period		
			In	Out	Rate	In	Out	Rate
221 & 222	High-Rise Apartments	354 Units	31%	69%	0.80	58%	42%	0.90

The proposed development is located within 600m of the St. Laurent and Cyrville LRT stations as shown in **Figure 8** below. As such, the subject site can be classified as being in a Transit Oriented Development (TOD) zone. As outlined in the City's *Transit-Oriented Development (TOD) Plans* (January 2014), TOD zones have a transit modal share target of 65%, an active modal share target of 15%, an auto driver modal share target of 15%, and an auto passenger modal share target of 5%. These modal share targets were used in the development of the trip generation potential for the subject site.

As per the *TRANS Trip Generation Manual Summary Report (2020) Table 4*, an adjustment factor was applied for the residential person-trip generation rates in **Table 6** above to convert from peak period trips to to peak hour trips for analysis. A conversion factor of 0.50 was utilized for the AM peak, while a conversion factor of 0.44 was utilized for the PM peak.

Table 7 shows development-generated person-trips for the proposed development's land use.

Table 7 - Person Trips Generated by Land Use

Land Use	Size		AM Peak Period			PM Peak Period		
			In	Out	Total	In	Out	Total
Person-Trip Generation Rates (Peak Period)								
221 & 222 - High Rise Apartments	354	units	31%	69%	0.80	58%	42%	0.90
Conversion to Person-Trips (Peak Hour)								
221 & 222 - High Rise Apartments	Person-Trips (Peak Period)		88	195	283	185	134	319
	Person-Trips (Peak Hour) 0.50 for AM & 0.44 for PM		44	98	142	81	59	140
Modal Share Adjustments								
TOD Mode Share Targets (Peak Hour)	Auto	15%	7	15	22	12	9	21
	Passenger	5%	2	5	7	4	3	7
	Walk / Bike	15%	7	15	22	12	9	21
	Transit	65%	28	63	91	53	38	91
Total Development (Peak Hour)	**Auto Trips**		**7**	**15**	**22**	**12**	**9**	**21**
	Passenger Trips		**2**	**5**	**7**	**4**	**3**	**7**
	Walk / Bike Trips		**7**	**15**	**22**	**12**	**9**	**21**
	Transit Trips		**28**	**63**	**91**	**53**	**38**	**91**
Total Development								
Total Development (Peak Hour)	**Net New Auto Trips**		**7**	**15**	**22**	**12**	**9**	**21**

The transit and active transportation (walking and cycling) trips shown in **Table 7** were distributed across the study area intersections to capture the increased pedestrian activity resulting from the proposed development and the potential impacts on traffic operations.

Figure 8 - Proximity to Transit Stations

3.1.2 Trip Distribution

The distribution of traffic to / from the proposed development was developed using the *Trans Committee's 2011 NCR Household Origin-Destination Survey* (January 2013) and by looking at the surrounding transportation network. The subject development is located within the Ottawa East District. It is anticipated that a portion of traffic to/from the north, east, and west would utilize Highway 417 (from St. Laurent Boulevard).

Table 8 summarizes the assumed trip distribution for the proposed development.

Table 8 - Trip Distribution

Direction		Via (to / from)		
		St. Laurent Road (N / S)	Ogilvie Road (E / W)	Cyrville Road (E)
North	5%	0% / 5%	-	-
East	10%	0% / 5%	2.5% / 0%	2.5%
South	15%	0 / 15%	-	-
West	40%	0% / 40%	-	-
Internal *	30%	10% / 0%	0% / 20%	-

Total	**100%**	**10% / 65%**	**2.5% / 20%**	**2.5%**

* Refers to trip origins/destinations within the same O-D District.

3.1.3 Trip Assignment

Site generated trips were assigned to the study area road network based on the trip distribution assumptions outlined above in **Table 8** and can be seen below in **Figure 9**.

Figure 10 illustrates the site generated trips for the proposed development during the AM and PM peak hours.

Figure 9 - Site Traffic Distribution

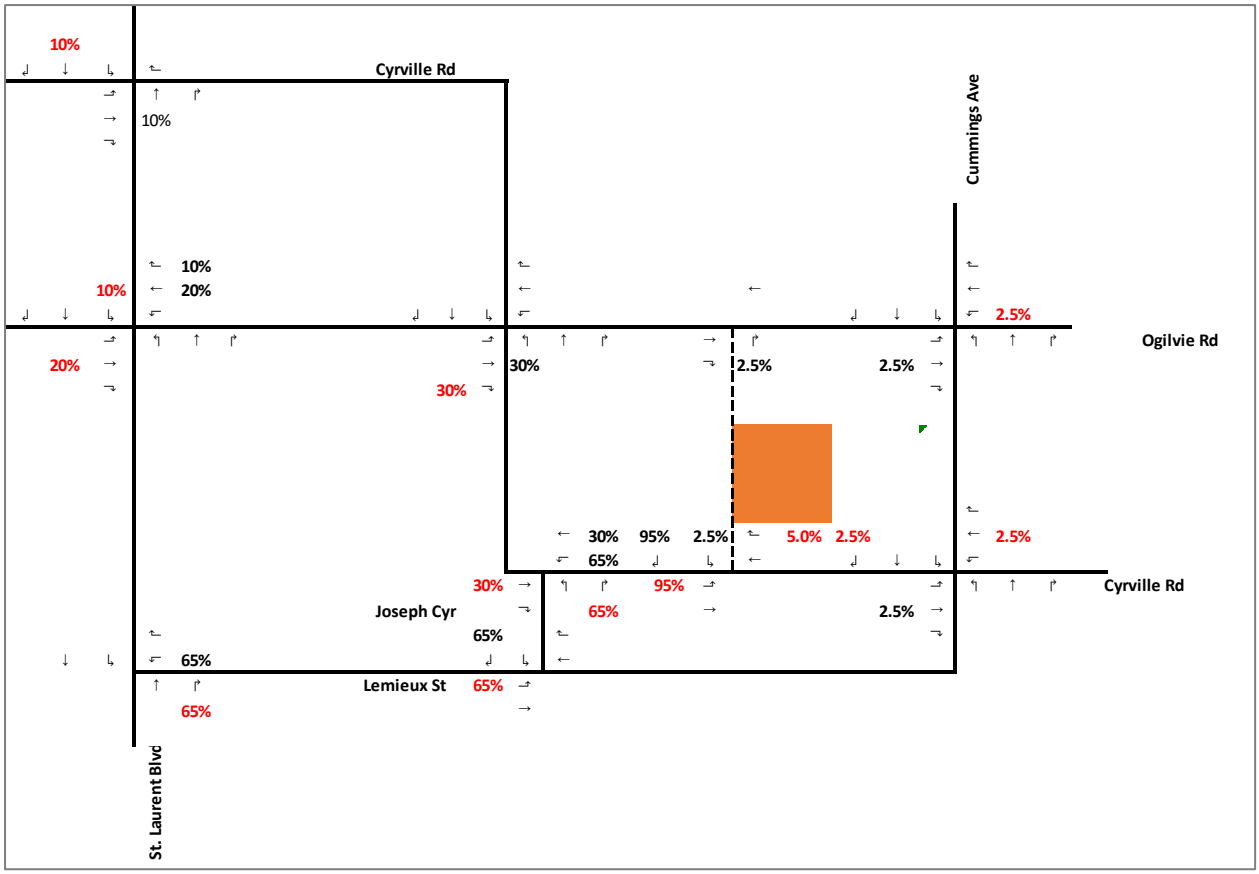
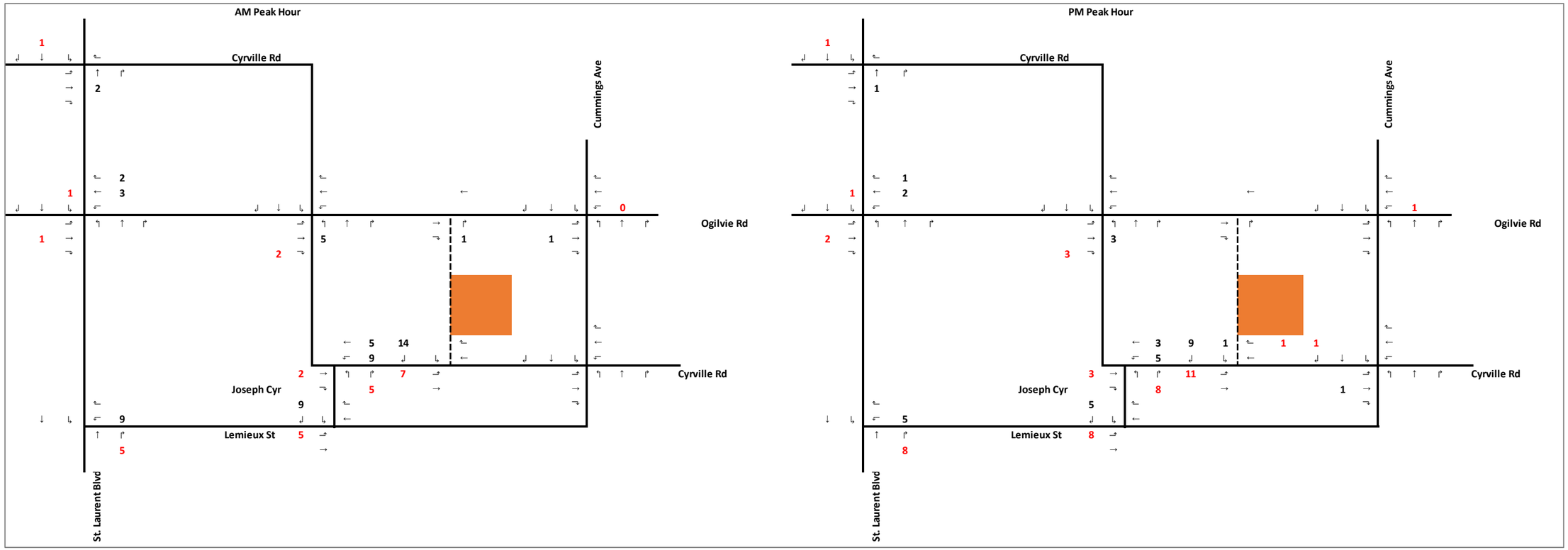


Figure 10 - Site Traffic Assignment



3.2 BACKGROUND NETWORK TRAVEL DEMAND

3.2.1 Transportation Network Plans

As outlined in **Table 3** in **Section 2.1.3.1**, the City of Ottawa TMP identifies a number of t transit projects under the Affordable Network concept that are anticiapted to improve transit service near the proposed development. These projectsinclude the East and West Confederation Line Extensions, and transit signal priority and queue jump lane improvements on St. Laurent Boulevard and Innes Road. Although the proposed development area is well serviced by the existing Confederation Line (St Laurent and Cyrville LRT Stations), the proposed transit improvement projects are conducive to achieving the 65% transit modal share target for developments situated within TOD zones.

3.2.2 Background Growth

As per the City of Ottawa's Long Range Growth Model (2013 TMP – Exhibit 2.11), the annual weighted growth rate in the vicinity of the study area was calculated to be 1%. The rate was utilized to grow turning movement counts from their respective count dates to the study horizon years.

3.2.3 Other Developments

In addition to the 1% background growth calculated rate outlined in **Section 2.1.3**, there are various background developments that are planned to be constructed by the 2028 ultimate horizon year in the vicinity of the study area. As such, the site generated traffic volumes from the background developments listed in **Table 4** was incorporated into the analysis as background traffic, depending on the respective buildout year.

3.3 DEMAND RATIONALIZATION

Preliminary traffic operations analysis of the study area intersections under the 2028 ultimate future conditions indicate that the northbound right movement at the intersection of St. Laurent Boulevard and Ogilvie Road is projected to operate above theoretical capacity during the PM peak hour. The northbound right turn movement is projected to operate with a v/c ratio of 1.25 and average delay of 153s, thus equating to LOS F. This is due to the heavy turning demand that is upwards of 700 veh/h. It is anticipated that motorists under these conditions would start altering their travel behaviour and patterns as discussed later in the subsections below. Also, it is also noted that TMC data used in this study was collected prior to the completion a of the Confideration Line (O-Train Line 1), which commenced revenue service in September of 2019. It is noted that since the opening of the Confideration Line, it is anticiapted that vehicular traffic demands are expected to reduce due to the increase of the transit modal share in the area. These potential changes in traffic demands cannot be fully quantified yet due to the impacts of the COVID-19 Pandemic to general traffic demands and travel pattenrs.

3.3.1 Rerouting of Traffic

In navigating congestion, motorists may alter their regular route in order to select a route with less delays to reduce their overall commute time. Alternative routes that motorists could utilize to travel north, south, and east include Aviation Parkway, Vanier Parkway, Montreal Road, and Blair Road.

3.3.2 Change in Travel Times

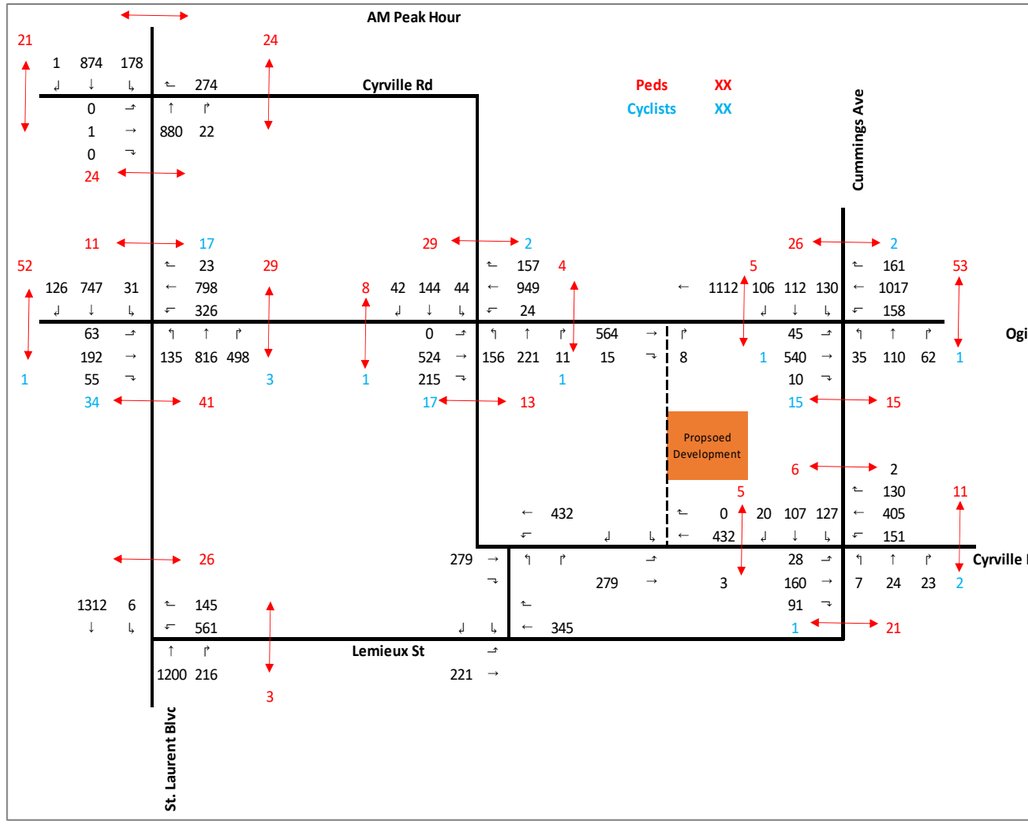
Furthermore, motorists may start to alter their travel times to travel outside of the peak hour. This would reduce the demand on the network during the peak hour and subsequently increase the demand on the network just before and just after the peak hour, which is referred to as peak spreading.

Overall, rerouting of traffic and the change in travel times is anticipated and estimated to reduce the volumes in the study area by a factor of 10%. This reduction is thought of as conservative due to the TMCs being collected prior to the in-service revenue of the Stage 1 Confederation Line LRT.

Figure 11 and Figure 12 illustrate the 2023 rationalized future background and total future traffic volumes during the AM and PM peak hours.

Figure 13 and Figure 14 illustrate the 2028 rationalized future background and total future traffic volumes during the AM and PM peak hours.

Figure 11 - 2023 Future Background Traffic Volumes - Rationalized



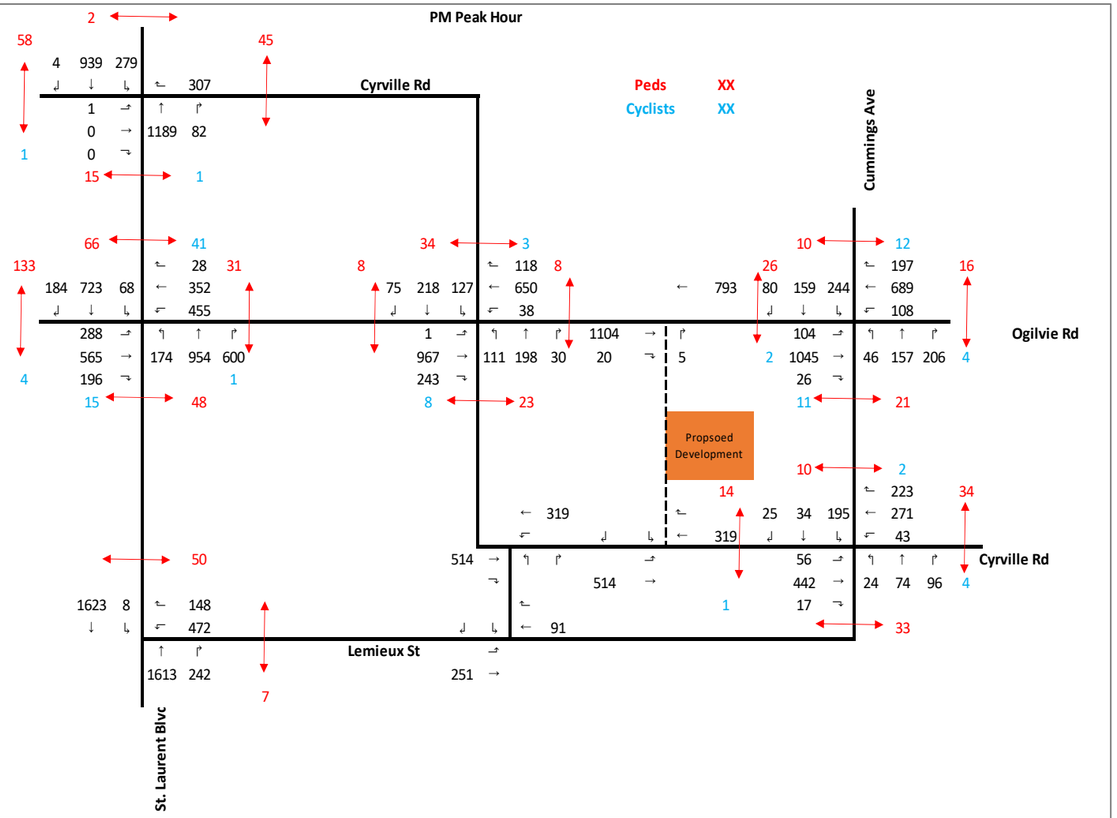
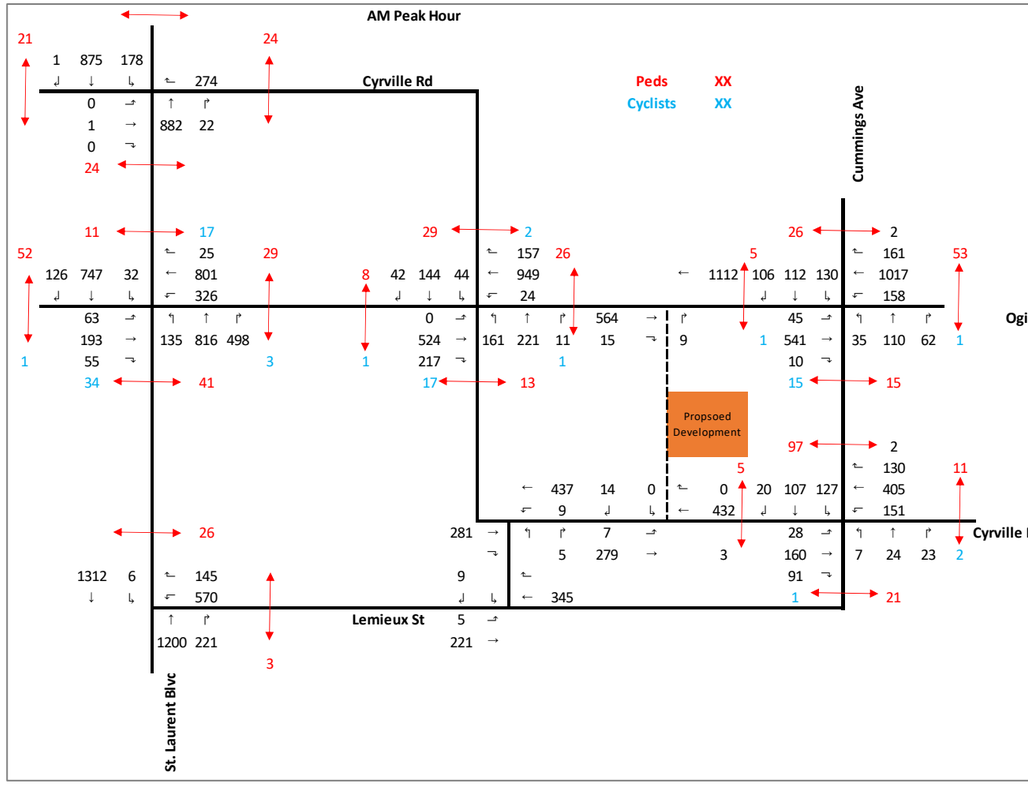


Figure 12 - 2023 Total Traffic Volumes - Rationalized



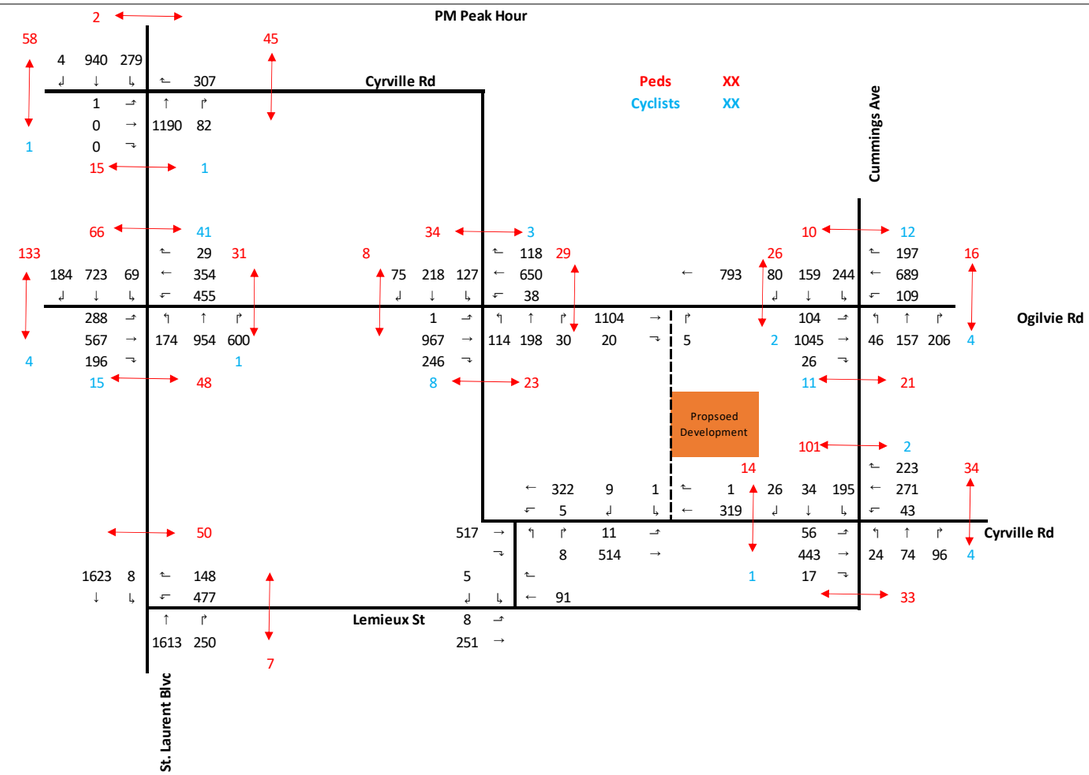


Figure 13 - 2028 Future Background Traffic Voumes - Rationalized

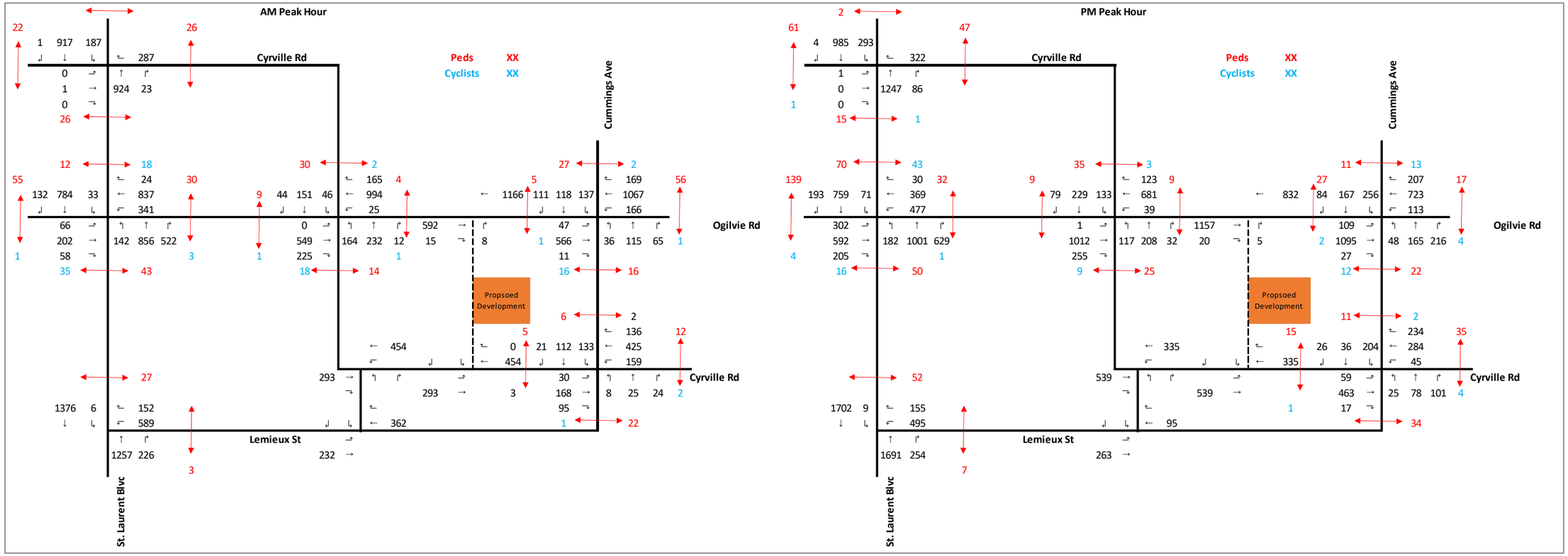
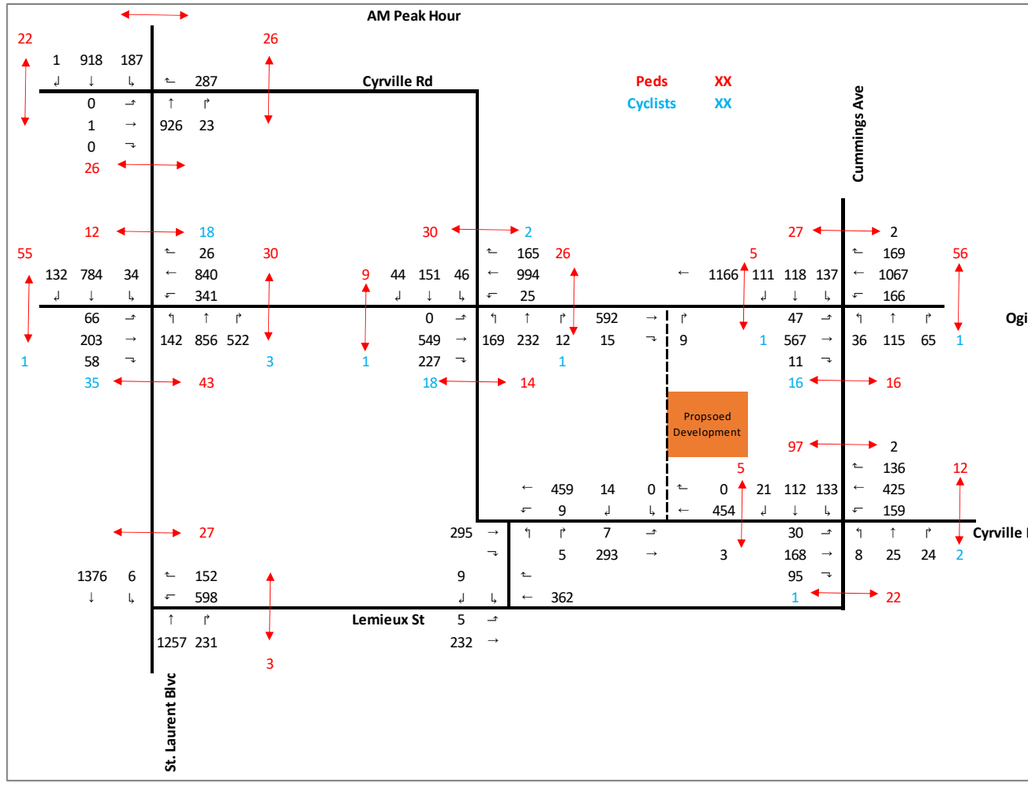
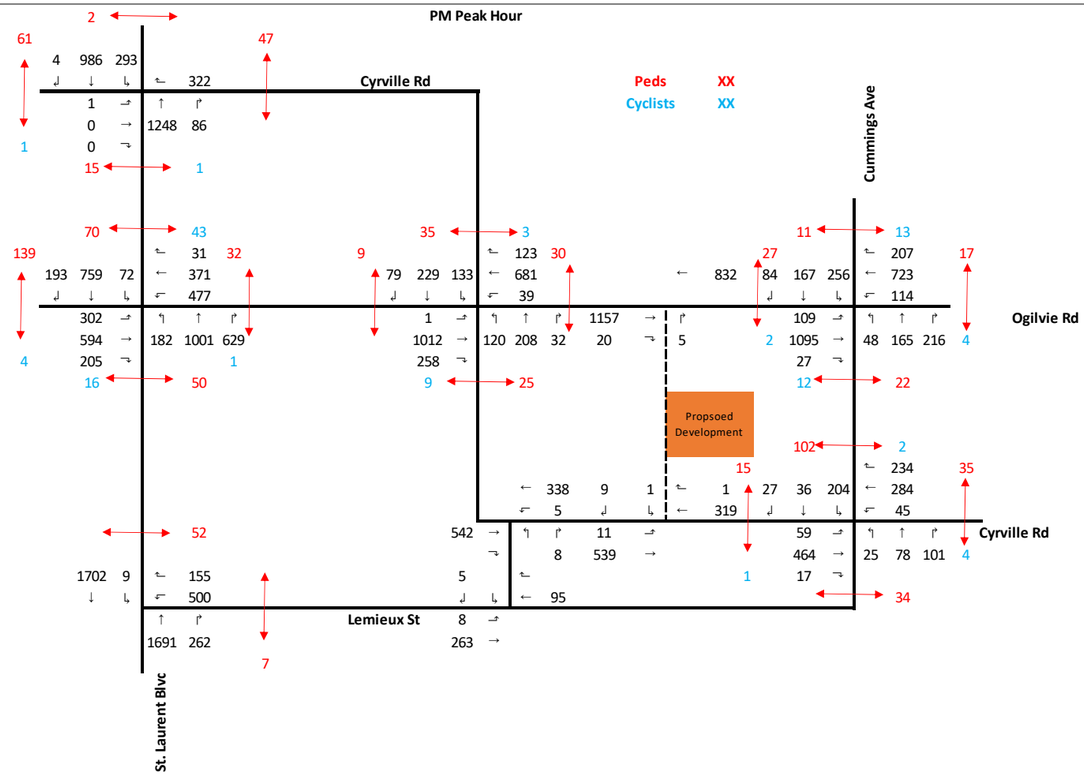


Figure 14 - 2028 Total Future Traffic Voumes – Rationalized





4.0 STRATEGY REPORT

4.1 DEVELOPMENT DESIGN

4.1.1 Design for Sustainable Modes

Vehicular access to the proposed development is planned to be from Cyrville Road (across the south frontage of the development) and from Ogilvie Road (across the north frontage of the development) via a future private driveway access on the west side of the development that is envisioned to connect between Ogilvie Road and Cyrville Road. Automobile parking is planned to be located underground for both buildings A (south, phase 1) and B (north, phase 2) that are illustrated in the site plan in **Figure 2**. For building A, underground parking is planned to be located on the southeast portion of the structure (accessed directly from Cyrville Road). For building B, underground parking is planned to be located in the southwest portion of the structure (accessed from the private driveway either from Cyrville Road or Ogilvie Road).

Pedestrian access to the proposed development is planned to be from Cyrville Road (across the south frontage of the development) and from Ogilvie Road (across the north frontage of the development), by tying in to the existing sidewalks on both roadways. For building A (south), two residential entrances are planned that are envisioned to be accessed through the facilities tied to Cyrville Road. For building B (north), the residential main entry is envisioned to be accessed through the future access driveway (from Cyrville Road or from Ogilvie Road), which is planned to feature pedestrian facilities and tie in to the pedestrian infrastructure on Cyrville Road and Ogilvie Road. Building B is also envisioned to be accessed from planned pedestrian walkways on the east frontage of the proposed development.

Bicycle parking is planned to be secured and weatherproofed as it is located inside the buildings in the P1 and P2 underground levels. The underground parking garages are planned to be located on the south sides of the proposed buildings, with one garage access from Cyrville Road and another garage access from the private driveway.

4.1.2 Circulation and Access

The proposed site is envisioned to utilize a private driveway access linking the north side of Cyrville Road and the south side of Ogilvie Road. The access is planned to be 10m wide and located on the north side of Cyrville Road just east of the intersection with Michael Street. The intersection with Cyrville Road is planned to be minor stop controlled, while the terminus intersection with Ogilvie Road is planned to be minor stop controlled and feature a right-in-right-out configuration.

4.1.3 New Street Networks

Not applicable; exempted during screening and scoping.

4.2 PARKING

4.2.1 Parking Supply

Auto Parking – As per Schedule 1A of the City of Ottawa's Official Plan, the subject site is located within Area Z – Near Major LRT Stations. Based on this designation, the City of Ottawa's Zoning By-law 2008-250 (Section 101 and 102) was consulted to determine the minimum parking space requirement for the proposed development. In reference to Section 101 of the By-law, for developments situated in area Z, No off-street motor vehicle parking is required to be provided.

As per Section 102 (2) and (3) of the By-law, for buildings within area Z, no visitor parking spaces are required for the first twelve dwelling units, and no more than thirty visitor parking spaces are required per building. As per Table 102 (By-law 2016-249), for apartment dwellings situated in area Z, 0.1 visitor spaces are required per dwelling unit. As such, for building A with 208 dwelling units and with the exclusion of the first twelve units, the number of required visitor parking spaces is 20. For building B with 146 dwelling units and with the exclusion of the first welve units, the number of required visitor parking spaces is 14.

As per Section 103 of the By-law, for lots located within 600 meters of a rapid transit station, the maximum number of parking spaces (residents and visitors combined) permitted for a Area C is 1.75 per dwelling unit. For building A with 208 dwelling units, the maximum number of parking spaces is 364 spaces. For building B with 146 dwelling units, the maximum number of parking spaces is 256 spaces. The proposed development is planned to feature 250 parking spaces in building A and 104 parking spaces in building B, thereby meeting the parking requirements stipulated in By-law 2016-249 as detailed above for residential developments within 600m of a rapid transit station.

As per Table 111A in Section 111 of the By-law, for a high rise apartment building,a minimum of 0.5 bicycle spaces must be provided for each dwelling unit. For building A with 208 dwelling units, the required number of bicycle parking spaces is 104. For building B with 146 dwelling units, the required number of bicycle parking spaces is 73. The proposed development is planned to feature 105 bicycle parking spaces in building A and 75 bicycle parking spaces in building B, thereby meeting the requirements set out in the By-law.

4.2.2 Spillover Parking

Not applicable; exempted during Screening and Scoping.

4.3 BOUNDARY STREET DESIGN

4.3.1 Multi Modal Level of Service

The proposed development is not anticipated to abut City roadways other than Cyrville Road. The segment multi-modal level of service (MMLOS) was evaluated for Cyrville Road to assist with developing a design concept that maximizes the achievement of the MMLOS objectives.

Table 9 presents the MMLOS for the roadway segments.

Cyrville Road (across the south frontage of the proposed development)

Cyrville Road is classified as a Collector roadway with a posted speed limit of 60 km/h and within 600m of a rapid transit station. As such, the roadway is subject to a Pedestrian level of Service (PLOS) target of A, a Bicycle Level of Service (BLOS) target of A (cross-town bikeway), a Transit Level of Service (TLOS) target of D, and a Truck Level of Service (TkLOS) target of D (truck route designation).

Across the frontage of the proposed development, the segment of Cyrville Road currently operates with PLOS E, and does not meet the target of A. The operation is attributed to the curb lane vehicular volumes exceeding 3,000/day, the relatively high operating speed (60 km/h), and the current sidewalk width of 1.8m coupled with a 1.8m boulevard. The PLOS target of A would require substantial measures to be met, including lowering the posted speed limit to 30 km/h while increasing the boulevard width to 2m or greater. Alternatively, the PLOS target of A along the roadway segment can be met by increasing the boulevard width to 2m or greater, reducing the daily curb lane traffic volume to below 3,000 vehicles, and lowering the posted speed limit to 50 km/h.

The roadway segment currently operates with BLOS C which does not meet the BLOS target of A. The BLOS target of A can only be met through the implementation of higher order cycling facilities such as multi-use pathways.

The segment currently operates with TLOS D, thus meeting the TLOS target of D for the roadway. The segment also currently operates with TkLOS C, thus exceeding the TkLOS target of D for the roadway.

Appendix B contains the detailed MMLOS analysis for roadway segments.

2023 Buildout and 2028 Ultimate Horizon Years

As there are no planned changes to the pedestrian or cycling infrastructure on Cyrville Road, no changes to the segment MMLOS are anticipated for the 2023 buildout year and the 2028 ultimate horizon year. Although the proposed development is envisioned to feature grass boulevards, they are not anticipated to improve the PLOS target as they do not increase the distance between the existing sidewalk and the pavement surface.

Table 9 - Multi-Modal Level of Service Assessment - Roadway Segments

Roadway Segment/ Level of Service	Cyrville Road Across Development's Frontage		
	2021 Existing	2023 Build-Out / 2028 Ultimate Horizon	Target
PLOS	E	**	A
BLOS	C	**	A
TLOS	D	**	D
TkLOS	C	**	D

4.4 ACCESS INTERSECTION DESIGN

4.4.1 Access Location

The proposed development is planned to feature one underground parking garage access for each of buildings A and B. The underground parking garage for building A is envisioned to be accessed directly from Cyrville Road, while the underground parking garage for building B is envisioned to be accessed from the proposed private access driveway connecting to Cyrville Road and Ogilvie Road on the west side of the development. The private driveway access and underground parking garage accesses are assumed to be minor stop controlled.

The private access on the west side of the proposed development is envisioned to feature internal traffic calming measures to deter background traffic from using it to circumnavigate the Ogilvie Road and Cyrville Road intersection. In the vicinity of the proposed accesses on Cyrville Road and Ogilvie Road, the roadways are also planned to feature thermoplastic marking to increase the visibility of the accesses and improve cyclist safety. It is noted that internal traffic calming measures and thermoplastic / access visibility features are planned to be considered in the detailed design stage.

4.4.2 Intersection Control

St. Laurent Boulevard and Ogilvie Road / Conventry Road

The existing signalized intersection at St. Laurent Boulevard and Ogilvie Road / Coventry Road is not anticipated to see configuration changes in the future.

Ogilvie Road and Cyrville Road

The existing signalized intersection at Ogilvie Road and Cyrville Road is not anticipated to see configuration changes in the future.

Ogilvie Road and Cummings Avenue

The existing signalized intersection at Ogilvie Road and Cummings Avenue is not anticipated to see configuration changes in the future.

St. Laurent Boulevard and Lemieux Street

The existing signalized intersection at St. Laurent Boulevard and Lemieux Street is not anticipated to see configuration changes in the future.

St. Laurent Boulevard and Cyrville Road

The existing signalized intersection at St. Laurent Boulevard and Cyrville Road is not anticipated to see configuration changes in the future.

Cyrville Road and Cummings Avenue / LaBelle Street

The existing signalized intersection at Cyrville Road and Cummings Avenue / LaBelle Street is not anticipated to see configuration changes in the future.

4.5 TRANSPORTATION DEMAND MANAGEMENT

4.5.1 Context for TDM Measures

The proposed development consists of apartment dwelling units and is expected to be built and occupied by 2023. As outlined in **Section 3.1.1**, the subject site is located within 600m of the Cyrville and St. Laurent LRT stations and is therefore considered to be in a Transit Oriented Development (TOD) Zone. As outlined in the City's *Transit-Oriented Development (TOD) Plans* (January 2014), TOD zones have a transit modal share target of 65%, an active modal share target of 15%, an auto driver modal share target of 15%, and an auto passenger modal share target of 5%.

According to the 2020 TRANS Trip Generation Manual – Summary Report, the average transit modal share for trips made to/from the Ottawa East district for high-rise apartment dwellings during the AM and PM peak hours is 33%. The auto mode share is 40%, the auto passenger mode share is 12%, and the walk and bike (active transportation) mode share is 15%. The averages are in line with the 2016 Census in Appendix B of the aforementioned TRANS Summary Report, wherein the Cyrville District (within proximity of the proposed development) featured 41%-50% transit + walk + bike mode shares.

As per the *TOD Plans*, developments within a TOD Zone have a transit modal share target of 65%, which represents a 32% increase as compared to the TRANS Summary Report modal shares for high rise dwellings in the Ottawa East district.

4.5.2 Need and Opportunity

As the development is in the vicinity of two LRT stations, there is an opportunity to provide TDM measures in an attempt to boost the transit modal shares to meet the 65% TOD zone target.

It is noted that if the transit modal share target of 65% is not met and the proposed development's modal shares remain similar to the general modal shares for the Ottawa East district, it would result in an additional 36 two-way auto trips during the AM peak hour and 35 additional two-way auto trips during the PM peak hour. In contrast to the high vehicular volumes at the study area intersections, this increase is not anticipated to result in significantly deteriorated traffic operations in the vicinity of the proposed development.

4.5.3 TDM Program

The City of Ottawa TDM checklists were utilized in the development of design supportive and additional TDM measures.

The City of Ottawa TDM checklists are included in **Appendix C**.

As part of the TDM Supportive Development Design and Infrastructure Checklist, the following features have been considered:

- Locate building close to the street and do not locate parking areas between the street and building entrances. The proposed development and the main entrance are located just north of Cyrville Road.

- Locate building entrances in order to minimize walking distances to sidewalks and transit stops / stations.
- Locate building doors and windows to ensure visibility of pedestrians from the building for their security and comfort.
- Provide convenient and direct access to stations or major stops along rapid transit routes within 600m. The development is approximately 450m away from Cyrville Station and is providing access through the existing amenities on Cyrville Road.
- Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances.
- Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas.
- Make sidewalks and open space easily accessible through features such as gradual grade transition, depressed curbs at street corners
- Include adequately spaced inter-block for street cycling and pedestrian connections to facilitate travel by active transportation.
- Provide lighting, landscaping and benches along walking and cycling routes between entrances and streets, sidewalks and trails.
- Provide bicycle parking in highly visible and lighted areas and sheltered from the weather wherever possible. The development is providing a total of 180 bicycle parking spaces in the underground levels 1 and 2.
- Provide the number of bicycle parking spaces identified for various land uses in different parts of Ottawa.
- Ensure that bicycle parking spaces and access aisles meet minimum dimensions.
- Where more than 50 bicycle parking spaces are provided for a residential building, locate at least 25% within a building. All of the development's proposed bicycle spaces are sheltered and located in the underground levels 1 and 2.
- Do not provide more parking than permitted by zoning, nor less than required by zoning.

The City of Ottawa's TDM Checklists were used to determine what TDM measures could be implemented based on the available information. Based on the checklists, the following TDM measures have been agreed upon by the developer (independent of the TDM-Supportive Development Design and Infrastructure Checklists):

- Transit:
    - Display relevant transit schedules and route maps at entrances, particularly for Cyrville LRT Station
    - Offer PRESTO cards preloaded with a one month transit pass on residence purchase/move-in to encourage residents to use transit. As the development is envisioned to be well serviced by public transit (OC Transpo buses and the LRT system) with barrier-free access, and in alignment with

similar developments in close proximity to LRT stations, a one-month transit pass is thought to be sufficient to encourage residents to utilize the public transit system.

- TDM Marketting and Communication:
    - Provide a multimodal travel option information package to new residents
- Parking:
    - Unbundle parking cost from purchase price

The combination of design supportive TDM measures and additional TDM measures provided by the developers are anticipated to significantly support the development in meeting the TOD zone mode share targets.

4.6 ADJACENT NEIGHBORHOODS

Not applicable; exempted during screening and scoping.

The proposed development does not solely rely on Cyrville Road (Collector) for access as that is also facilitated by Ogilvie Road (Arterial).

4.7 TRANSIT

4.7.1 Route Capacity

The forecasted transit trips for the proposed development is 91 and 91 total two way transit trips during the AM and PM peak hours, respectively.

In addition to the Confederation Line LRT service, there are numerous transit routes in the vicinity of the subject development including OC Transpo routes 7, 12, 14, 18, 19, 20, 24, 27, 39, 40, and 47.

As confirmed by OC Transpo staff, the peak hour capacity of the Confederation Line LRT service in February 2020 was 8,736 passengers during the AM peak hour and 7,392 passengers during the PM peak hour. Given the forecasted transit trips for the proposed development, the subject site represents 1.04% and 1.2% of current LRT passenger volumes during the AM and PM peak hours, respectively. This is under the conservative assumption that all transit trips to / from the proposed development will utilize the LRT system. It is noted that as the LRT service is expanded in the east and west directions, the capacity is anticipated to increase as more trains are added to the line. OC Transpo staff have also indicated that Confederation Line Stage 2 ridership data is subject to information management and confidentiality concerns, and they could not be shared for the purpose of this study.

It is noteworthy that the subject development is also serviced by more than 11 OC Transpo bus routes equivalent to approximately 58 trips during the peak hours. Standard buses in OC Transpo's Vehicle Fleet have seated capacities of 36 to 55 seats[2] depending on the transit bus manufacturer, which is equivalent to a two-way capacity of 2,088 passengers to 3,190 passengers per peak hour.

[2] OC Transpo. (2021, August 13). *Vehicles*. Retrieved from Our Services, Bus & O-Train Network: http://www.octranspo.com/en/our-services/bus-o-train-network/vehicles/

Based on the data above, the net transit capacity in the vicinity of the proposed development is approximately 10,824 - 11,926 passengers during the AM peak hour and 9,480 – 10,582 passengers during the PM peak hour. As such, the forecasted transit trips for the proposed development account for 0.84% - 0.76% of the overall system capacity during the AM peak hour and 0.96% - 0.86% of the overall system capacity during the PM peak hour.

Overall, the impact of the development on the transit network is thought to be minimal and can be accommodated.

4.8 REVIEW OF NETWORK CONCEPT

Not applicable; exempted during screening and scoping.

4.9 INTERSECTION DESIGN

4.9.1 Intersection Control

The intersection controls for the three study area intersections were discussed in **Section 4.4.2** and the analysis of the intersections operating conditions can be found in **Section 4.9.2**.

4.9.2 Intersection Design

An assessment of the study area intersections was undertaken to determine the operational characteristics under the various horizons years as identified in the Screening and Scoping report. Intersection operational analysis was performed using Synchro 10.0™ software package. The MMLOS analysis was completed for all modes and compared against the City of Ottawa's MMLOS targets, where applicable

4.9.2.1 2021 Existing Conditions

Intersection Capacity Analysis

Table 10 summarizes the results of the Synchro analysis for 2021 existing intersection operations.

The traffic operations analysis of the study area intersections found that the westbound left movement at the intersection of St. Laurent Boulevard and Ogilvie Road / Coventry Road operates slightly above capacity during the PM peak hour with a v/c ratio of 1.02 and a delay of approximately 96s. This is attributed to the heavy vehicular volumes (485 veh/h) performing the movement and the relatively short fully protected phasing of 24s. Similarly, the northbound left movement was found to operate with a v/c ratio of 0.93 and a delay of 90s during the PM peak hour, which is attributed to the heavy volumes (189 veh/h) utilizing one lane under fully protected operations and a phase length of 24s. The northbound right movement was found to operate with a v/c ratio of 0.92 and a delay of approximately 1 minute during the AM peak hour, and with a v/c ratio of 1.31 and a delay of approximately 198s during the PM peak hour. The deteriorated PM peak hour operation is attributed to 633 veh/h performing the movement, largely through utilizing a shared through / right turn lane. Overall, the intersection operates above theoretical capacity with a v/c ratio of 1.11 during the PM peak hour.

The northbound left movement at the intersection of Cyrville Road and Ogilvie Road was found to operate with a v/c ratio of 0.92 and a delay of 88s during the AM peak hour, and with a v/c ratio of 0.99 and a delay of 116s during the PM peak hour. The near-capacity PM peak hour operations are attributed to the relatively high conflicting traffic volumes (320 veh/h) under permissive operations.

During the PM peak hour, the southbound left movement at the intersection of Cyrville Road and LaBelle Street was found to operate with a v/c ratio of 0.92 and a delay of 68s. This is attributed to the relatively heavy traffic volumes (211 veh/h) utilizing one traffic lane under permissive control and a conflicting volume of 186 veh/h.

The analysis found that the 95th percentile queue of approximately 95m exceeds the available storage length of approximately 55m during the PM peak hour at the intersection of St. Laurent Boulevard and Ogilvie Road. The 95th percentile queue for the northbound left movement during the AM peak hour at the intersection of Ogilvie Road and Cyrville Road is approximately 71m, which exceeds the available storage length of 45m. The 95th percentile queue for the southbound left movement during the PM peak hour at the intersection of Cyrville Road and Labelle Street is approximately 83m, which exceeds the available storage length of 35m. It is noted that the baseline turning movement counts were collected in 2017 / 2018 prior to the implementation of the Confederation Line LRT system, and, as such, the vehicular volumes may be slightly overestimated. Given the heavy volumes in the study area, the traffic operations are considered acceptable. It is noted that future operations are anticipated to improve due to the application of a 10% volume reduction as a result of peak hour spreading, the selection of alternative travel routes by motorists, and the recent and planned transit improvements (Confederation Line LRT and the east and west expansions).

The remaining study area intersections currently operate satisfactorily, and as such, no improvements are required to supplement existing conditions.

Figure 3 illustrates the intersection control and lane configuration under 2021 existing conditions.

Appendix DD contains detailed intersection performance worksheets.

Table 10 - 2021 Existing Intersection Operations

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Delay (s)	Queue 95th (m)
St. Laurent Boulevard and Ogilvie Road	Signalized	EB	Left	A (A)	0.47 (0.50)	62.4 (43.0)	18 (57)
			Through	A (D)	0.44 (0.82)	51.2 (50.0)	37 (98)
			Right	A (A)	0.05 (0.22)	47.7 (37.5)	0 (25)
		WB	Left	A (F)	0.48 (1.02)	43.1 (95.9)	60 (#112)
			Through	D (B)	0.83 (0.65)	44.6 (47.4)	134 (61)
			Right	A (A)	0.02 (0.03)	28.7 (39.8)	0 (0)
		NB	Left	C (E)	0.78 (0.93)	72.8 (90.4)	#79 (#95)
			Through	B (C)	0.61 (0.76)	36.7 (40.6)	107 (107)
			Right	E (F)	0.92 (1.31)	64.7 (197.5)	#210 (#256)
		SB	Left	A (B)	0.41 (0.70)	62.6 (72.3)	21 (#43)
			Through	B (B)	0.69 (0.78)	44.8 (48.1)	#101 (87)
			Right	A (A)	0.11 (0.18)	35.5 (37.7)	8 (20)
		Overall Intersection		**D (F)**	**0.88 (1.11)**	**46.8 (71.2)**	**-- (--)**
Ogilvie Road and Cyrville Road	Signalized	EB	Through	A (A)	0.28 (0.53)	9.9 (13.5)	53 (114)
			Right	A (A)	0.19 (0.22)	9.5 (10.3)	12 (12)
		WB	Left	A (A)	0.06 (0.21)	8.4 (15.9)	8 (M10)
			Through	A (A)	0.51 (0.36)	12.6 (14.3)	114 (75)

			Right	A (A)	0.14 (0.10)	9.0 (31.2)	11 (M17)
		SB	Left	A (D)	0.34 (0.81)	41.7 (54.5)	21 (57)
			Through / Right	A (C)	0.52 (0.75)	43.4 (37.4)	65 (108)
		NB	Left	E (E)	0.92 (0.99)	87.8 (116.1)	71 (#60)
			Through / Right	B (A)	0.68 (0.60)	48.7 (41.0)	84 (74)
		Overall Intersection		**B (B)**	**0.62 (0.66)**	**22.6 (25.2)**	**-- (--)**
Ogilvie Road and Cummings Avenue	Signalized	EB	Left	A (A)	0.31 (0.51)	15.4 (31.0)	11 (29)
			Through / Right	A (D)	0.34 (0.86)	15.5 (28.1)	67 (#226)
		WB	Left	A (B)	0.41 (0.63)	10.1 (28.4)	33 (36)
			Through / Right	C (C)	0.74 (0.74)	22.0 (31.5)	199 (#173)
		NB	Left	A (A)	0.13 (0.24)	48.6 (43.5)	12 (17)
			Through	A (A)	0.48 (0.60)	52.4 (48.8)	46 (58)
			Right	A (A)	0.06 (0.44)	47.9 (45.6)	7 (41)
		SB	Left	B (C)	0.61 (0.78)	47.2 (42.4)	47 (69)
			Through / Right	A (A)	0.59 (0.47)	46.3 (31.7)	71 (64)
		Overall Intersection		**C (D)**	**0.72 (0.83)**	**25.3 (33.1)**	**-- (--)**
St. Laurent Boulevard and Lemieux Street	Signalized	WB	Left	D (D)	0.86 (0.82)	52.8 (51.2)	101 (82)
			Right	A (A)	0.35 (0.54)	36.8 (42.7)	46 (55)
		NB	Through	A (A)	0.49 (0.59)	14.2 (11.3)	91 (107)
			Right	A (A)	0.20 (0.22)	11.3 (8.0)	18 (17)
		SB	Left	A (A)	0.04 (0.11)	10.2 (9.0)	3 (4)
			Through	A (A)	0.53 (0.60)	14.8 (11.5)	103 (110)
		Overall Intersection		**B (B)**	**0.64 (0.66)**	**21.5 (17.0)**	**-- (--)**
St. Laurent Boulevard and Cyrville Road	Signalized	EB	Left / Throuh / Right	A (A)	0.06 (0.06)	65.5 (60.5)	2 (2)
		WB	Right	B (A)	0.64 (0.49)	54.9 (94.5)	64 (84)
		NB	Through / Right	A (A)	0.36 (0.56)	9.3 (16.4)	67 (122)
		SB	Left	C (C)	0.73 (0.77)	59.6 (49.1)	73 (95)
			Through / Right	A (A)	0.36 (0.35)	11.8 (7.6)	59 (65)
		Overall Intersection		**A (B)**	**0.43 (0.62)**	**19.9 (25.3)**	**-- (--)**
Cyrville Road and LaBelle Street	Signalized	EB	Left	A (A)	0.11 (0.24)	7.2 (13.7)	5 (13)
			Through / Right	A (A)	0.26 (0.57)	6.5 (16.3)	30 (106)
		WB	Left	A (A)	0.32 (0.15)	10.8 (16.7)	36 (15)
			Through / Right	B (C)	0.65 (0.78)	15.6 (30.4)	#147 (#169)
		NB	Left	A (A)	0.05 (0.08)	29.6 (25.3)	5 (10)
			Through / Right	A (A)	0.12 (0.37)	30.1 (28.0)	13 (40)
		SB	Left	C (E)	0.72 (0.92)	44.4 (68.0)	42 (#83)
			Through / Right	A (A)	0.49 (0.11)	33.2 (25.5)	37 (15)
		Overall Intersection		**B (D)**	**0.65 (0.81)**	**18.2 (29.4)**	**-- (--)**

Notes:
1. Table format: AM (PM)
2. v/c – represents the anticipated volume divided by the predicted capacity
3. # 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after two cycles.

Multi-Modal Level of Service Assessment

All study area intersections are located within 600m of a rapid transit station. As such, they are all subject to a PLOS target of A.

St. Laurent Boulevard is classified as an Arterial roadway that is designated as a spine route and a truck route. As such, it has a PLOS target of A, a BLOS target of C, a TLOS target of D, and a TkLOS target of D.

Ogilvie Road is classified as an Arterial roadway that is designated as a cross-town bikeway (except at the intersection with Cummings Avenue where it is classified as a spine route) and a truck route. As such, it has a PLOS target of A, a BLOS target of A (C in areas where it is designated as a spine route), a TLOS target of D, and a TkLOS target of D.

Cyrville Road is classified as a Collector roadway that is designated as a cross-town bikeway and a truck route. As such, it has a PLOS target of A, a BLOS target of A, a TLOS target of D, and a TkLOS target of D.

Cummings Avenue is classified as an Arterial roadway that is designated as a local cycling route. As such, it has a PLOS target of A, a BLOS target of B, and TLOS target of D. The roadway does not have a TkLOS target as it is not a designated truck route.

Lemieux Street is classified as a Collector roadway that is designated as a local cycling route and a truck route. As such, it has a PLOS target of A, a BLOS target of B, and TLOS target of D. The roadway does not have a TkLOS target as it is not a designated truck route.

St. Laurent Boulevard and Ogilvie Road

The intersection currently operates with PLOS F and does not meet the PLOS target of A. The deteriorated PLOS operations are mostly attributed to the high equivalent number of lanes crossed on all four legs (equivalent to 9 traffic lanes). The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on all four approaches as well as increasing the effective pedestrian walk times. However, reducing the roadway's capacity and increasing the effective walk times are expected to significantly deteriorate the vehicular levels of service. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met.

The intersection operates with BLOS F and does not meet the BLOS target of A. This is attributed to the mixed traffic operations and the high number of lanes cyclists have to cross to perform a left turn maneouver. The BLOS can be met through the implementation of higher order cycling facilities (multi-use pathways) with a 2-stage bike box (crossrides) to eliminate left turning conflicts as well as conflicts with vehicles utilizing dedicated right turn lanes (where present). It is noted that such improvements are subject to the availability of right-of-way.

The intersection operates with TLOS F and does not meet the TLOS target of D. This is directly attributed to the mixed traffic transit operations and the heavy traffic volumes at the intersection, thus delaying transit vehicles on all approaches. The TLOS operations can be improved through the addition of queue jump lanes, however, such a geometric improvement is predicated on the available right-of-way. The TLOS operation may also be improved through signal timing optimization. However, this measure may not net the desired operations and is an iterative process as traffic levels will continue to change into the future, and may be to the detriment of pedestrians.

The intersection operates with TkLOS A which exceeds the target of D.

Ogilvie Road and Cyrville Road

The intersection currently operates with PLOS F and does not meet the PLOS target of A. This is attributed to the number of equivalent lanes crossed by pedestrians on all four approaches in tandem with the relatively short effective pedestrian walking times, in turn resulting in high pedestrian delays. The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on all four approaches as well as increasing the effective pedestrian walk times. However, reducing the roadway's capacity and increasing the effective walk times are expected

to significantly deteriorate the vehicular levels of service. The PLOS operation may also be improved through the provision of pedestrian projected elements such as protecting conflicting left and right turns and providing lead pedestrian interval phases. However, such measures are also anticipated to negatively impact the vehicular level of service levels. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met as it requires a maximum equivalent distance of three lanes crossed on all approaches in addition to a combination of pedestrian protection elements.

The intersection currently operates with BLOS F and does not meet the BLOS target of A. This is directly attributed to the left and right turn cyclist conflicts with vehicles. The BLOS target can be met through the implementation of higher order cyclist facilities (multi-use pathways) with 2-stage bike boxes (crossrides).

The intersection operates with TLOS F and does not meet the TLOS target of D. This is directly attributed to the mixed traffic transit operations and the heavy traffic volumes at the intersection, thus delaying transit vehicles on Cyrville Road.

The TLOS operations can be improved through the addition of queue jump lanes, however, such a geometric improvement is predicated on the available right-of-way. The TLOS operation may also be improved through signal timing optimization. However, this measure may not net the desired operations and is an iterative process as traffic levels will continue to change into the future, and may be to the detriment of pedestrians. It is noted that the intersection meets the TLOS target along the east-west approaches but not along the north-south direction (Cyrville Road). It is common to experience higher delays on minor roads as the green time priority is assigned to the intersecting mainline.

The intersection meets the TkLOS target of D.

Ogilvie Road and Cummings Avenue

The intersection currently operates with PLOS F and does not meet the PLOS target of A. This is attributed to the number of equivalent lanes crossed by pedestrians, namely on the east and west crosswalks in tandem with the relatively short effective pedestrian walking times, in turn resulting in high pedestrian delays. The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on south, east, and west approaches as well as increasing the effective pedestrian walk times along the north-south direction. However, reducing the roadway's capacity and increasing the effective walk times are expected to significantly deteriorate the vehicular levels of service. The PLOS operation may also be improved through the provision of pedestrian projected elements such as protecting conflicting left and right turns and providing lead pedestrian interval phases. However, such measures are also anticipated to negatively impact the vehicular level of service levels. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met as it requires a maximum equivalent distance of three lanes crossed on all approaches in addition to a combination of pedestrian protection elements.

The intersection currently operates with BLOS F and does not meet the BLOS target of B. This is directly attributed to the left and right turn cyclist conflicts with vehicles. The BLOS target can be met through the implementation of higher order cyclist facilities (multi-use pathways) with 2-stage bike boxes (crossrides).

The intersection operates with TLOS F and does not meet the TLOS target of D. This is directly attributed to the mixed traffic transit operations and the heavy traffic volumes at the intersection, thus delaying transit vehicles on the north and south approaches (Cummings Avenue). The TLOS operations can be improved through the addition of queue jump lanes, however, such a geometric improvement is predicated on the available right-of-way. The TLOS operation may

also be improved through signal timing optimization. However, this measure may not net the desired operations and is an iterative process as traffic levels will continue to change into the future, and may be to the detriment of pedestrians. It is noted that the intersection meets the TLOS target along the east-west approaches but not along the north-south direction (Cummings Avenue). It is common to experience higher delays on minor roads as the green time priority is assigned to the intersecting mainline.

The intersection meets the TkLOS target of D.

St. Laurent Boulevard and Lemieux Street

The intersection currently operates with PLOS F and does not meet the PLOS target of A. This is attributed to the number of equivalent lanes crossed by pedestrians, namely on the north and south crosswalks in tandem with the relatively short effective pedestrian walking times along the north-south approaches, in turn resulting in high pedestrian delays. The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on south, east, and west approaches as well as increasing the effective pedestrian walk times along the north-south direction. However, reducing the roadway's capacity and increasing the effective walk times are expected to significantly deteriorate the vehicular levels of service. The PLOS operation may also be improved through the provision of pedestrian projected elements such as protecting conflicting left and right turns and providing lead pedestrian interval phases. However, such measures are also anticipated to negatively impact the vehicular level of service levels. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met as it requires a maximum equivalent distance of three lanes crossed on all approaches in addition to a combination of pedestrian protection elements.

The intersection currently operates with BLOS F and does not meet the BLOS target of B. This is directly attribured to the left and right turn cyclist conflicts with vehicles. The BLOS target can be met through the implementation of higher order cyclist facilities (multi-use pathways) with 2-stage bike boxes (crossrides).

The intersection operates with TLOS C and exceeds the TLOS target of D.

The intersection meets the TkLOS target of D.

St. Laurent Boulevard and Cyrville Road

The intersection currently operates with PLOS E and does not meet the PLOS target of A. This is attributed to the number of equivalent lanes crossed by pedestrians, namely on the south crosswalk in tandem with the relatively short effective pedestrian walking times along the east-west approaches, in turn resulting in high pedestrian delays. The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on the south leg of the intersection as well as increasing the effective pedestrian walk times along the east-west direction. However, reducing the roadway's capacity and increasing the effective walk times are expected to significantly deteriorate the vehicular levels of service. The PLOS operation may also be improved through the provision of pedestrian projected elements such as protecting conflicting left and right turns and providing lead pedestrian interval phases. However, such measures are also anticipated to negatively impact the vehicular level of service levels. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met as it requires a maximum equivalent distance of three lanes crossed on all approaches in addition to a combination of pedestrian protection elements.

The intersection currently operates with BLOS F and does not meet the BLOS target of A. This is directly attributed to the left and right turn cyclist conflicts with vehicles. The BLOS target can be met through the implementation of higher order cyclist facilities (multi-use pathways) with 2-stage bike boxes (crossrides).

The intersection operates with TLOS C which exceeds the TLOS target of D.

The intersection meets the TkLOS target of D.

Cyrville Road and Labelle Street / Cummings Avenue

The intersection currently operates with PLOS D and does not meet the PLOS target of A. This is attributed to the number of equivalent lanes crossed by pedestrians, namely on the south crosswalk in tandem with the relatively short effective pedestrian walking times along the east-west approaches, in turn resulting in high pedestrian delays. The PLOS operation can be improved by reducing the effective number of lanes crossed by pedestrians on the east and west crosswalks as well as increasing the effective pedestrian walk times on all four approaches. However, reducing the roadway's capacity and increasing the effective walk times are expected to significantly deteriorate the vehicular levels of service. The PLOS operation may also be improved through the provision of pedestrian projected elements such as protecting conflicting left and right turns and providing lead pedestrian interval phases. However, such measures are also anticipated to negatively impact the vehicular level of service levels. Given the high traffic volumes at the intersection and the lane configuration, the PLOS target of A cannot be met as it requires a maximum equivalent distance of three lanes crossed on all approaches in addition to a combination of pedestrian protection elements.

The intersection currently operates with BLOS F and does not meet the BLOS target of A. This is directly attributed to the left and right turn cyclist conflicts with vehicles. The BLOS target can be met through the implementation of higher order cyclist facilities (multi-use pathways) with 2-stage bike boxes (crossrides).

The intersection operates with TLOS C which exceeds the TLOS target of D.

The intersection meets the TkLOS target of D.

Table 11 - Existing Signalized Intersection MMLOS

Signalized Intersection	PLOS		BLOS		TLOS		TkLOS		AUTO	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
St. Laurent Boulevard and Ogilvie Road	F	A	F	A	F	D	A	D	F	E
Ogilvie Road and Cyrville Road	F	A	F	A	F	D	D	D	B	E
Ogilvie Road and Cummings Avenue	F	A	F	B	F	D	B	D	D	E
St. Laurent Boulevard and Lemieux Street	F	A	F	B	C	D	A	D	B	E
St. Laurent Boulevard and Cyrville Road	E	A	F	A	C	D	C	D	B	E

Cyrville Road and Labelle Street	D	A	E	A	E	D	E	D	D	E

4.9.2.2 2023 Future Background Conditions

Intersection Capacity Analysis

The 2023 Future Background conditions were analyzed using the same lane configuration / geometry and signal timing plans from the analysis of the 2021 Existing conditions. The peak hour factor was normalized to 1.0 and the traffic volumes in the general area were reduced by 10% (rationalization due to peak hour spreading and alternative route selections by motorists).

Table 12 summarizes the results of the Synchro analysis under 2023 Future Background conditions.

The analysis found that with the demand rationalization that was considered for the 2023 future background traffic volumes as outlined in **Section 3.3**, the majority of the critical movements identified under the 2021 existing conditions scenario are projected to operate satisfactorily.

The northbound right movement at the intersection of St. Laurent Boulevard and Ogilvie Road is projected to operate slightly above capacity during the PM peak period with a v/c ratio of 1.02 and average travel time delays of approximately 85s. The projected level of operation and delays are considered acceptable for 600 veh/h utilizing a relatively short (<10m) storage lane to perform the maneuover. Overall, the intersection is projected to operate with an acceptable v/c ratio of 0.93 and a delay of 50s during the PM peak hour.

Similar to the 2021 existing conditions, the 95th percentile queues for the northbound left movements at the intersections of Ogilvie Road with St. Laurent Boulevard and with Cyrville Road and for the southbound left movement at the intersection of Cyrville Road and Labelle Street are projected to slightly exceed their respective capacities. However, the traffic operations are considered acceptable for the heavy traffic volumes in the area.

All remaining study area intersections are anticipated to operate acceptably under 2023 Future Background conditions.

Appendix DD contains detailed intersection performance worksheets.

Table 12 - 2023 Future Background Intersection Operations

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Delay (s)	Queue 95th (m)
St. Laurent Boulevard and Ogilvie Road	Signalized	EB	Left	A (A)	0.37 (0.42)	61.2 (42.3)	15 (48)
			Through	A (C)	0.39 (0.75)	51.0 (48.0)	32 (82)
			Right	A (A)	0.04 (0.14)	48.1 (38.1)	0 (16)
		WB	Left	A (D)	0.51 (0.85)	47.2 (60.7)	54 (#89)
			Through	C (A)	0.79 (0.57)	47.0 (46.6)	113 (51)
			Right	A (A)	0.02 (0.052)	32.8 (40.8)	0 (0)
		NB	Left	B (D)	0.69 (0.82)	64.7 (73.2)	54 (#73)
			Through	A (A)	0.43 (0.58)	28.3 (34.2)	81 (86)
			Right	B (F)	0.66 (1.02)	36.7 (85.1)	#149 (#202)
		SB	Left	A (B)	0.44 (0.70)	65.6 (76.4)	18 (#33)
			Through	A (A)	0.48 (0.58)	35.7 (40.8)	81 (71)

			Right	A (A)	0.09 (0.15)	30.4 (35.0)	1 (13)
		Overall Intersection		**C (E)**	**0.74 (0.93)**	**40.1 (50.0)**	**-- (--)**
Ogilvie Road and Cyrville Road	Signalized	EB	Through	A (A)	0.23 (0.44)	8.2 (10.9)	42 (88)
			Right	A (A)	0.16 (0.18)	7.9 (8.7)	10 (11)
		WB	Left	A (A)	0.04 (0.13)	7.1 (12.3)	6 (m10)
			Through	A (A)	0.41 (0.29)	9.9 (11.7)	85 (63)
			Right	A (A)	0.12 (0.08)	7.6 (22.8)	9 (17)
		SB	Left	A (B)	0.27 (0.65)	43.0 (38.7)	18 (47)
			Through / Right	A (B)	0.47 (0.68)	45.0 (35.3)	55 (88)
		NB	Left	C (C)	0.76 (0.73)	62.8 (58.6)	57 (41)
			Through / Right	B (A)	0.62 (0.55)	49.0 (41.5)	72 (62)
		Overall Intersection		**A (A)**	**0.50 (0.52)**	**19.4 (19.7)**	**-- (--)**
Ogilvie Road and Cummings Avenue	Signalized	EB	Left	A (A)	0.19 (0.34)	12.0 (13.1)	10 (12)
			Through / Right	A (B)	0.29 (0.70)	14.4 (22.5)	56 (#174)
		WB	Left	A (A)	0.31 (0.44)	9.4 (18.5)	28 (24)
			Through / Right	A (A)	0.60 (0.58)	18.2 (25.9)	145 (121)
		NB	Left	A (A)	0.21 (0.27)	49.9 (44.6)	17 (19)
			Through	A (A)	0.43 (0.53)	52.0 (47.5)	40 (50)
			Right	A (A)	0.05 (0.29)	48.1 (44.6)	4 (29)
		SB	Left	A (B)	0.48 (0.64)	43.0 (35.3)	40 (57)
			Through / Right	A (A)	0.49 (0.40)	44.0 (31.8)	58 (53)
		Overall Intersection		**A (B)**	**0.59 (0.67)**	**22.9 (27.9)**	**-- (--)**
St. Laurent Boulevard and Lemieux Street	Signalized	WB	Left	D (C)	0.82 (0.75)	53.7 (49.9)	84 (68)
			Right	A (A)	0.26 (0.44)	38.1 (42.7)	32 (42)
		NB	Through	A (A)	0.39 (0.48)	10.7 (8.7)	68 (78)
			Right	A (A)	0.15 (0.17)	8.8 (6.6)	11 (11)
		SB	Left	A (A)	0.03 (0.05)	8.0 (6.3)	3 (3)
			Through	A (A)	0.42 (0.49)	11.0 (8.8)	76 (79)
		Overall Intersection		**A (A)**	**0.53 (0.55)**	**18.9 (14.6)**	**-- (--)**
St. Laurent Boulevard and Cyrville Road	Signalized	EB	Left / Throuh / Right	A (A)	0.06 (0.06)	65.5 (60.5)	3 (2)
		WB	Right	A (A)	0.43 (0.36)	51.4 (119.5)	43 (70)
		NB	Through / Right	A (A)	0.28 (0.43)	7.4 (12.2)	47 (86)
		SB	Left	C (C)	0.71 (0.75)	61.3 (52.2)	64 (82)
			Through / Right	A (A)	0.30 (0.29)	11.2 (7.2)	47 (52)
		Overall Intersection		**A (A)**	**0.36 (0.51)**	**18.6 (26)**	**-- (--)**
Cyrville Road and LaBelle Street	Signalized	EB	Left	A (A)	0.07 (0.14)	5.7 (9.0)	5 (11)
			Through / Right	A (A)	0.21 (0.44)	5.7 (11.2)	24 (82)
		WB	Left	A (A)	0.25 (0.10)	9.3 (12.2)	28 (13)
			Through / Right	A (A)	0.53 (0.57)	12.4 (18.5)	97 (114)
		NB	Left	A (A)	0.04 (0.08)	30.2 (27.2)	4 (9)
			Through / Right	A (A)	0.11 (0.33)	30.6 (29.4)	12 (31)
		SB	Left	B (D)	0.64 (0.85)	40.3 (57.3)	35 (57)
			Through / Right	A (A)	0.45 (0.11)	33.4 (27.5)	32 (14)
		Overall Intersection		**A (B)**	**0.54 (0.64)**	**16.2 (22.5)**	**-- (--)**

Notes:
1. Table format: AM (PM)
2. v/c – represents the anticipated volume divided by the predicted capacity
3. # 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after two cycles.

Multi-Modal Level of Service Assessment

No notable changes from the 2021 existing conditions. **Appendix B** contains the detailed MMLOS analysis for subject intersections.

4.9.2.3 2023 Total Future Conditions

Intersection Capacity Analysis

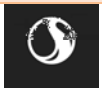
No significant changes in Total Future operating conditions are expected as compared to the 2023 Future Background Traffic conditions. **Table 17** summarizes the results of the Synchro analysis for 2023 Total Future intersection operations.

Appendix DD contains detailed intersection performance worksheets.

Based on the analysis findings, the proposed development's site traffic is not anticipated to have a notable impact on the traffic operations at the study area intersections.

Table 13 - 2023 Total Future Intersection Operations

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Delay (s)	Queue 95th (m)
St. Laurent Boulevard and Ogilvie Road	Signalized	EB	Left	A (A)	0.37 (0.42)	61.2 (42.3)	15 (48)
			Through	A (C)	0.39 (0.75)	51.0 (48.0)	32 (82)
			Right	A (A)	0.04 (0.14)	48.1 (38.1)	0 (16)
		WB	Left	A (D)	0.50 (0.85)	47.1 (60.7)	54 (#89)
			Through	C (A)	0.80 (0.57)	47.0 (46.6)	113 (51)
			Right	A (A)	0.02 (0.052)	32.8 (40.8)	0 (0)
		NB	Left	B (D)	0.69 (0.82)	65.0 (73.2)	54 (#73)
			Through	A (A)	0.43 (0.58)	28.4 (34.2)	81 (86)
			Right	B (F)	0.66 (1.02)	37.0 (85.1)	#150 (#202)
		SB	Left	A (B)	0.45 (0.70)	65.6 (76.4)	18 (#33)
			Through	A (A)	0.48 (0.58)	35.7 (40.8)	81 (71)
			Right	A (A)	0.09 (0.15)	30.4 (35.0)	1 (13)
		Overall Intersection		**C (E)**	**0.74 (0.93)**	**40.1 (50.0)**	**-- (--)**
Ogilvie Road and Cyrville Road	Signalized	EB	Through	A (A)	0.23 (0.44)	8.2 (10.9)	42 (88)
			Right	A (A)	0.16 (0.18)	7.9 (8.7)	10 (11)
		WB	Left	A (A)	0.04 (0.13)	7.1 (12.1)	6 (m10)
			Through	A (A)	0.41 (0.29)	9.9 (11.5)	85 (61)
			Right	A (A)	0.12 (0.09)	7.6 (22.1)	9 (16)
		SB	Left	A (B)	0.27 (0.66)	43.0 (39.5)	18 (47)
			Through / Right	A (B)	0.47 (0.68)	45.1 (35.3)	55 (88)
		NB	Left	C (C)	0.76 (0.73)	66.0 (58.6)	59 (41)
			Through / Right	B (A)	0.62 (0.55)	49.2 (41.5)	72 (62)
		Overall Intersection		**A (A)**	**0.50 (0.52)**	**19.7 (19.6)**	**-- (--)**
Ogilvie Road and Cummings Avenue	Signalized	EB	Left	A (A)	0.19 (0.34)	12.0 (13.1)	10 (12)
			Through / Right	A (B)	0.29 (0.70)	14.4 (22.5)	56 (#174)
		WB	Left	A (A)	0.31 (0.44)	9.4 (18.5)	28 (24)
			Through / Right	A (A)	0.60 (0.58)	18.2 (25.9)	145 (121)
		NB	Left	A (A)	0.21 (0.27)	49.9 (44.6)	17 (19)
			Through	A (A)	0.43 (0.53)	52.0 (47.5)	40 (50)
			Right	A (A)	0.05 (0.29)	48.1 (44.6)	4 (29)
		SB	Left	A (B)	0.48 (0.64)	43.0 (35.3)	40 (57)
			Through / Right	A (A)	0.49 (0.40)	44.0 (31.8)	58 (53)
		Overall Intersection		**A (B)**	**0.59 (0.67)**	**22.9 (27.9)**	**-- (--)**
St. Laurent Boulevard	Signalized	WB	Left	D (C)	0.83 (0.76)	53.6 (50.0)	85 (69)
			Right	A (A)	0.26 (0.43)	38.8 (42.6)	32 (42)
		NB	Through	A (A)	0.39 (0.48)	10.8 (8.8)	69 (79)



and Lemieux Street			Right	A (A)	0.15 (0.17)	9.0 (6.6)	11 (11)
		SB	Left	A (A)	0.03 (0.05)	8.1 (6.4)	3 (3)
			Through	A (A)	0.42 (0.49)	11.2 (8.9)	76 (80)
		Overall Intersection		**A (A)**	**0.53 (0.55)**	**19.1 (14.7)**	**-- (--)**
St. Laurent Boulevard and Cyrville Road	Signalized	EB	Left / Throuh / Right	A (A)	0.06 (0.06)	65.5 (60.5)	3 (2)
		WB	Right	A (A)	0.43 (0.36)	51.4 (119.0)	43 (69)
		NB	Through / Right	A (A)	0.28 (0.43)	7.4 (12.2)	47 (86)
		SB	Left	C (C)	0.71 (0.75)	61.3 (52.2)	64 (82)
			Through / Right	A (A)	0.30 (0.29)	11.2 (7.2)	47 (52)
		Overall Intersection		**A (A)**	**0.36 (0.51)**	**18.6 (26.2)**	**-- (--)**
Cyrville Road and LaBelle Street	Signalized	EB	Left	A (A)	0.08 (0.15)	5.4 (9.1)	5 (11)
			Through / Right	A (A)	0.21 (0.44)	5.3 (11.2)	24 (82)
		WB	Left	A (A)	0.25 (0.10)	9.6 (12.2)	29 (13)
			Through / Right	A (B)	0.55 (0.61)	13.2 (19.7)	101 (#130)
		NB	Left	A (A)	0.04 (0.08)	30.4 (27.3)	4 (9)
			Through / Right	A (A)	0.11 (0.33)	30.9 (29.4)	12 (31)
		SB	Left	B (D)	0.64 (0.85)	40.4 (57.3)	35 (57)
			Through / Right	A (A)	0.45 (0.11)	33.6 (27.5)	32 (14)
		Overall Intersection		**A (B)**	**0.55 (0.67)**	**16.4 (22.9)**	**-- (--)**
Ogilvie Road and North Site Access	Minor Stop	EB	Through / Right	A (A)	0.25 (0.43)	0.0 (0.0)	0 (0)
		NB	Right	A (A)	0.01 (0.01)	9.6 (10.0)	1 (1)
		Overall Intersection		**A (A)**	**0.36 (0.43)**	**0.0 (0.0)**	**-- (--)**
Cyrville Road and South Site Access	Minor Stop	EB	Left / Through	A (A)	0.01 (0.01)	0.3 (0.3)	0 (0)
		WB	Through / Right	A (A)	0.25 (0.19)	0.0 (0.0)	0 (0)
		SB	Left / Right	B (A)	0.02 (0.02)	10.5 (10.7)	1 (1)
		Overall Intersection		**A (A)**	**0.34 (0.48)**	**0.3 (0.3)**	**-- (--)**

Notes:
1. Table format: AM (PM)
2. v/c – represents the anticipated volume divided by the predicted capacity
3. # 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after two cycles.
4. LOS for signalized intersections is based on volume to capacity rations. LOS for unsignalized intersections is based on delays.

Multi-Modal Level of Service Assessment

No notable changes from 2023 Future Background Traffic conditions.

Appendix B contains the detailed MMLOS analysis for subject intersections.

4.9.2.4 2028 Total Future Conditions

Intersection Capacity Analysis

Analysis of the study area intersections under the 2028 Total Future conditions found no significant changes from the 2023 Future Background and Total Future conditions. Overall, traffic operations at the study area intersections are projected to slightly deteriorate as a result of background traffic growth.

Table 14 summarizes the results of the Synchro analysis under 2028 Ultimate Future conditions.

During the PM peak hour, the northbound left movement at the intersection of St. Laurent Boulevard and Ogilvie Road is projected to operate at or above theoretical capacity with a v/c ratio of 1.10 and a delay of 112s. This is primarily attributed to the heavy vehicular volumes (628 veh/h) performing the movement with a relatively short storage lane (<10m). Given the overall traffic volumes, however, the operation is anticipated to be acceptable. Overall, the

intersection is projected to operate with LOS E (v/c ratio of 0.97) during the PM peak hour which meets the LOS target for the area.

Similar to the 2023 future background conditions, the 95th percentile queues for the northbound left movements at the intersections of Ogilvie Road with St. Laurent Boulevard and with Cyrville Road and for the southbound left movement at the intersection of Cyrville Road and Labelle Street are projected to slightly exceed their respective capacities. However, the traffic operations are considered acceptable for the heavy traffic volumes in the area. It is also noted that the baseline turning movement counts were collected in 2017 / 2018 prior to the implementation of the Confederation Line LRT service, and as such, the vehicular volumes may be slightly overestimated.

All remaining study area intersections are anticipated to operate acceptably under 2028 Total Future conditions.

Appendix DD contains detailed intersection performance worksheets.

Table 14 - 2028 Total Future Intersection Operations

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Delay (s)	Queue 95th (m)
St. Laurent Boulevard and Ogilvie Road	Signalized	EB	Left	A (A)	0.39 (0.43)	61.5 (41.8)	16 (50)
			Through	A (C)	0.40 (0.77)	51.0 (48.3)	33 (87)
			Right	A (A)	0.05 (0.15)	47.9 (37.7)	0 (18)
		WB	Left	A (D)	0.51 (0.87)	46.5 (62.7)	56 (#95)
			Through	D (A)	0.81 (0.59)	46.7 (46.8)	118 (53)
			Right	A (A)	0.02 (0.02)	31.9 (40.6)	0 (0)
		NB	Left	C (D)	0.71 (0.85)	66.3 (76.1)	58 (#78)
			Through	A (B)	0.47 (0.62)	29.8 (35.8)	88 (91)
			Right	C (F)	0.71 (1.10)	40.5 (112.8)	#167 (#218)
		SB	Left	A (C)	0.47 (0.74)	65.8 (82.1)	19 (#36)
			Through	A (B)	0.52 (0.64)	37.5 (43.0)	85 (75)
			Right	A (A)	0.10 (0.16)	31.5 (36.3)	3 (15)
		Overall Intersection		**C (E)**	**0.77 (0.97)**	**41.2 (54.8)**	**-- (--)**
Ogilvie Road and Cyrville Road	Signalized	EB	Through	A (A)	0.24 (0.46)	8.7 (11.6)	45 (94)
			Right	A (A)	0.17 (0.19)	8.4 (9.1)	10 (11)
		WB	Left	A (A)	0.05 (0.14)	7.5 (13.2)	7 (M10)
			Through	A (A)	0.44 (0.31)	10.6 (12.4)	90 (66)
			Right	A (A)	0.12 (0.09)	8.0 (25.0)	9 (M17)
		SB	Left	A (B)	0.27 (0.67)	42.2 (39.1)	19 (49)
			Through / Right	A (C)	0.50 (0.72)	44.8 (36.8)	58 (94)
		NB	Left	D (D)	0.85 (0.83)	76.3 (74.8)	64 (#47)
			Through / Right	B (A)	0.61 (0.54)	47.6 (40.8)	75 (65)
		Overall Intersection		**A (A)**	**0.54 (0.56)**	**20.6 (21.1)**	**-- (--)**
Ogilvie Road and Cummings Avenue	Signalized	EB	Left	A (A)	0.21 (0.37)	12.6 (14.1)	10 (13)
			Through / Right	A (C)	0.30 (0.73)	14.7 (23.6)	59 (#187)
		WB	Left	A (A)	0.34 (0.48)	9.6 (19.9)	29 (25)
			Through / Right	B (B)	0.63 (0.62)	18.9 (27.3)	156 (129)
		NB	Left	A (A)	0.22 (0.27)	49.9 (44.3)	17 (19)
			Through	A (A)	0.45 (0.56)	52.1 (48.0)	42 (53)
			Right	A (A)	0.05 (0.35)	48.1 (44.9)	5 (32)
		SB	Left	A (B)	0.52 (0.68)	43.7 (36.9)	41 (60)
			Through / Right	A (A)	0.52 (0.43)	44.4 (31.7)	62 (56)
		Overall Intersection		**B (C)**	**0.62 (0.71)**	**23.4 (28.9)**	**-- (--)**
	Signalized	WB	Left	D (C)	0.83 (0.77)	53.1 (50.2)	89 (71)

St. Laurent Boulevard and Lemieux Street			Right	A (A)	0.28 (0.47)	38.1 (42.5)	35 (44)
		NB	Through	A (A)	0.42 (0.51)	11.7 (9.4)	75 (87)
			Right	A (A)	0.17 (0.19)	9.6 (7.0)	13 (12)
		SB	Left	A (A)	0.03 (0.07)	8.7 (6.9)	3 (3)
			Through	A (A)	0.45 (0.52)	12.1 (9.5)	84 (88)
		Overall Intersection		**A (A)**	**0.56 (0.58)**	**19.7 (15.2)**	**-- (--)**
St. Laurent Boulevard and Cyrville Road	Signalized	EB	Left / Throuh / Right	A (A)	0.06 (0.14)	65.5 (68.1)	2 (2)
		WB	Right	A (A)	0.50 (0.39)	51.8 (110.8)	49 (73)
		NB	Through / Right	A (A)	0.30 (0.46)	7.8 (13.1)	51 (94)
		SB	Left	C (C)	0.72 (0.76)	61.3 (51.4)	67 (85)
			Through / Right	A (A)	0.31 (0.30)	11.3 (7.3)	50 (55)
		Overall Intersection		**A (A)**	**0.37 (0.54)**	**18.9 (25.7)**	**-- (--)**
Cyrville Road and LaBelle Street	Signalized	EB	Left	A (A)	0.08 (0.15)	6.0 (9.8)	5 (11)
			Through / Right	A (A)	0.23 (0.46)	5.9 (11.9)	25 (86)
		WB	Left	A (A)	0.26 (0.11)	9.7 (13.6)	30 (13)
			Through / Right	A (B)	0.58 (0.63)	13.5 (21.6)	109 (#133)
		NB	Left	A (A)	0.05 (0.08)	30.1 (26.4)	5 (9)
			Through / Right	A (A)	0.11 (0.34)	30.5 (28.7)	12 (33)
		SB	Left	B (D)	0.67 (0.85)	41.4 (57.0)	37 (#62)
			Through / Right	A (A)	0.46 (0.11)	33.4 (26.6)	33 (14)
		Overall Intersection		**A (B)**	**0.58 (0.69)**	**16.9 (23.6)**	**-- (--)**
Ogilvie Road and North Site Access	Minor Stop	EB	Through / Right	A (A)	0.23 (0.45)	0.0 (0.0)	0 (0)
		NB	Right	A (A)	0.01 (0.01)	9.4 (9.9)	1 (1)
		Overall Intersection		**A (A)**	**0.37 (0.44)**	**0.0 (0.0)**	**-- (--)**
Cyrville Road and South Site Access	Minor Stop	EB	Left / Through	A (A)	0.01 (0.01)	0.3 (0.3)	0 (0)
		WB	Through / Right	A (A)	0.27 (0.19)	0.0 (0.0)	0 (0)
		SB	Left / Right	B (B)	0.02 (0.02)	10.6 (10.7)	1 (1)
		Overall Intersection		**A (A)**	**0.35 (0.49)**	**0.3 (0.3)**	**-- (--)**

Notes:
1. Table format: AM (PM)
2. v/c – represents the anticipated volume divided by the predicted capacity
3. # 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after two cycles.
4. LOS for signalized intersections is based on volume to capacity rations. LOS for unsignalized intersections is based on delays.

Multi-Modal Level of Service Assessment

No notable changes from the 2023 Total Future Traffic scenario are anticiapted. It is noted that St. Laurent Boulevard in the vicinity of the proposed development is the subject of a transit improvement project on the City's Affordable Network that would see the addition of queue jump lanes and transit priority signaling between Montreal Road and Innes Road.

As the TLOS along St. Laurent Boulevard is projected to meet / exceed the TLOS target of D at the intersections with Cyrville Road and Lemieux Street, the addition of queue jump lanes at the intersection with Ogilvie Road is still anticipated to result in TLOS E operation, which does not meet the TLOS target of D. While the transit delays on St. Laurent Boulevard are anticipated to be minimized, the transit delays on Ogilvie Road are projected to exceed 30s, and would therefore govern the intersection TLOS.

Appendix B contains the detailed MMLOS analysis for subject intersections.

5.0 SUMMARY AND CONCLUSIONS

This Transportation Impact Assessment (TIA) was prepared in support of a Zoning By-Law Amendment and Site Plan Control Application for two proposed residential buildings (1 mid-rise and 1 high-rise) located at 1125-1149 Cyrville Road in Ottawa. The site is located in the northeast quadrant of the existing Cyrville Road and Michael Street North intersection. The site is bound by Cyrville Road to the south, Cummings Avenue to the east, Ogilvie Road to the north, and existing commercial / retail land uses to the west.

The proposed development is anticipated to generate 22 and 21 two-way auto trips during the AM and PM peak hours, respectively. The AM and PM peak hour traffic volumes were assessed for the existing year (2021), the buildout year (2023), and the ultimate horizon year (2028) and the following can be concluded about the intersection performance:

2021 Existing Conditions critical movements include:

- At the intersection of St. Laurent Boulevard and Ogilvie Road:
    - The westbound left movement operates slightly above capacity with a v/c ratio of 1.02 and a delay of approximately 96s during the PM peak hour;
    - The northbound left movement operates with a v/c ratio of 0.93 and a delay of approximately 90s during the PM peak hour;
    - The northbound right movement operates above capacity with a v/c ratio of 1.31 and a delay of approximately 198s during the PM peak hour;
- At the intersection of Ogilvie Road and Cyrville Road,
    - The northbound left movement operates with a v/c ratio of 0.99 and a delay of approximately 116s during the PM peak hour
- At the intersection of Cyrville Road and Labelle Street,
    - The southbound left movement operates with a v/c ratio of 0.92 and a delay of 68s during the PM peak hour

Improvements are not recommended due to the restricted right of way and the future traffic operations improvements associated with the potential for demand rationalization through peak spreading and alternative travel route selections by motorists, the recent transit improvements and the likelihood of reduced traffic demands with the current Confederation Line service (as well as the planned expansions to the west and east), and the utilization of turning movement count data collected prior to revenue service of the Confederation Line. As such, the operations are considered acceptable given the high traffic volumes in the area.

2023 Future Background Conditions

- Due to the application of demand rationalization, the analysis found that the traffic operations at the study area intersections are projected to improve. The only critical movement at the study area intersections is the northbound right movement at the intersection of St. Laurent Boulevard and Ogilvie Road, which is projected to operate slightly above capacity with a v/c ratio of 1.02 and a delay of approximately 85s. The operation and delays are considered acceptable given the high traffic volumes performing the movement (600 veh/h) during the peak hour.

- The remaining study area intersections operate satisfactorily.

2023 Total Future Conditions

- Due to the TOD zone auto auto mode share (15%) target, the site generated traffic was found to have a negligible impact on the study area intersections. As such, operations are very similar to the 2023 Future Background conditions scenario, with no new critical movements.

2028 Total Future Conditions

- During the PM peak hour, the northbound right movement at the intersection of St. Laurent Boulevard and Ogilvie Road is projected to operate above capacity with a v/c ratio of 1.10 and a delay of approximately 113s. This operation is considered acceptable given the high northbound right traffic volumes (629 veh/h) during the peak hour.

- The remaining study area intersections operate satisfactorily.

The anticipated level of operations is deemed acceptable given the need to balance vechicular levels of service with other mdoes of transportation at the study area intersections.

The Multi-Modal Level of Service (MMLOS) assessment for roadway segments found that the following improvements would allow the MMLOS targets to be met along Cyrville Road:

- Lowering the posted speed limit to 30 km/h while increasing the existing boulevard width to 2m or greater;

- Increasing the boulevard width to 2m or greater, reducing the average daily curb lane traffic volume to below 3,000 vehicles, and lowering the posted speed limit to 50 km/h.

- The BLOS target along Cyrville Road would be met with the implementation of a physically separated cycling facility such as a multi-use pathway.

However, it should be noted that implementing mitigation measures to improve PLOS are not feasible due to the traffic and transit operational impacts. Implementing a sperate cycling facility may not be feasible due to Right of Way (ROW) constrains.

The Multi-Modal Level of Service (MMLOS) assessment for roadway intersections found the following:

- At the study area intersections, the PLOS target of A can only be met with a maximum equivalent distance of three traffic lanes crossed by pedestrians on each approach in addition to pedestrian protection elements including protected conflicting left and right turns, lead pedestrian intervals, and right turn channels. As the

projected traffic volumes at the study area intersections are significant, achieving the PLOS target of A through the aforementioned improvement measures would likely result in a substantial deterioration of vehicular level of service levels.

- The BLOS target of B or better can be met through the implementation of higher order cycling facilities (multi-use pathways) and 2-stage left turn bike boxes in order to eliminate cyclist conflicts with vehicles when performing left and/or right turns at intersections. It is noted that the provision of multi-use pathways is predicated on the available right-of-way.

- Despite the majority of the study area intersections not meeting the TLOS target, the TLOS operations are considered satisfactory as the approach with the highest delays governs the overall intersection TLOS operation. It is common for transit vehicles to experience delays on minor roads as the green time priority is assigned to the intersecting mainline. The overall delays are considered acceptable given the high traffic volumes in the area and the mixed traffic operation with transit vehicles. It is noted that St. Laurent Boulevard is planned to feature transit priority signaling and queue jump lanes between Montreal Road and Innes Road by the year 2031 (City of Otatwa affordable network).

<u>TDM Measures</u>

- A list of TDM measures has been summarized for the development's openning year, which include aspects from the City's TDM-Supportive Development Design and Infrastructure Checklists and TDM checklists.

- TDM measures include
    - Transit:
        - Display relevant transit schedules and route maps at entrances, particularly for Cyrville LRT Station
        - Offer PRESTO cards preloaded with a one month transit pass on residence purchase/move-in, to encourage residents to use transit.
    - TDM Marketting and Communication:
        - Provide a multimodal travel option information package to new residents
- Parking:
    - Unbundle parking cost from purchase price

Based on the anticipated future operating conditions in the study area, the development can be supported from a transportation prespective.

Appendix A TRAFFIC DATA

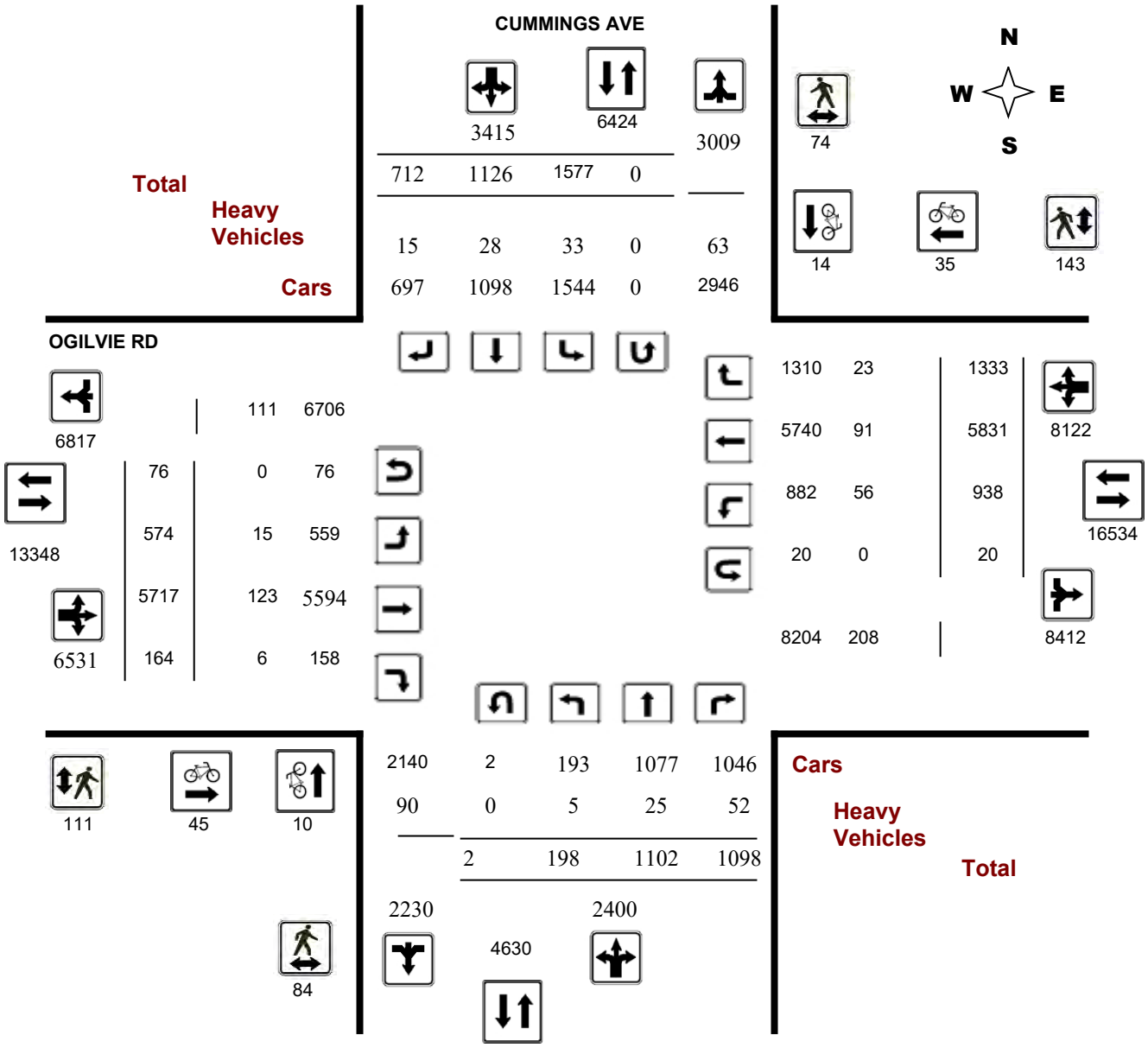
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018
Start Time: 07:00
WO No: 37738
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

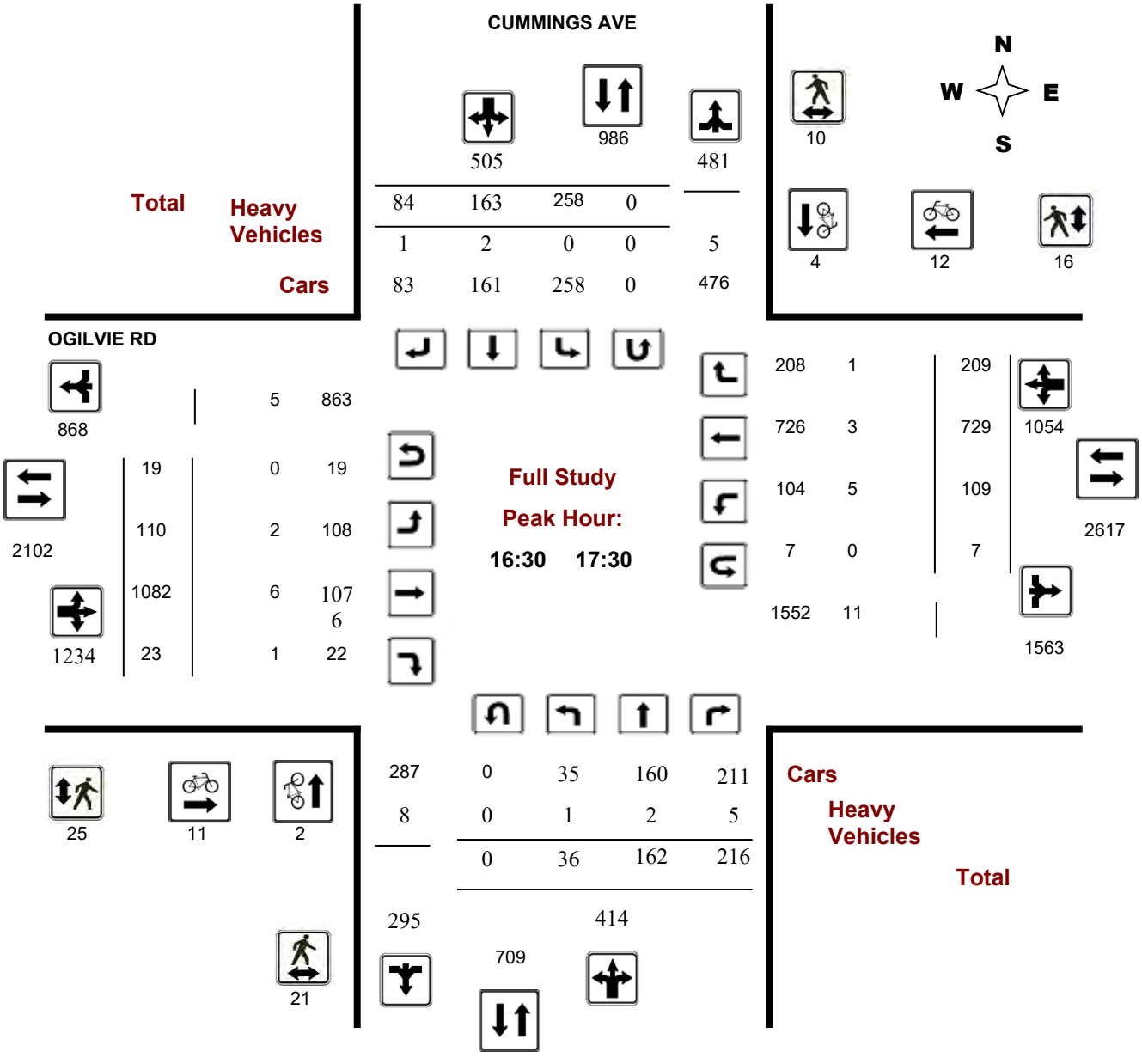
Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study Peak Hour Diagram



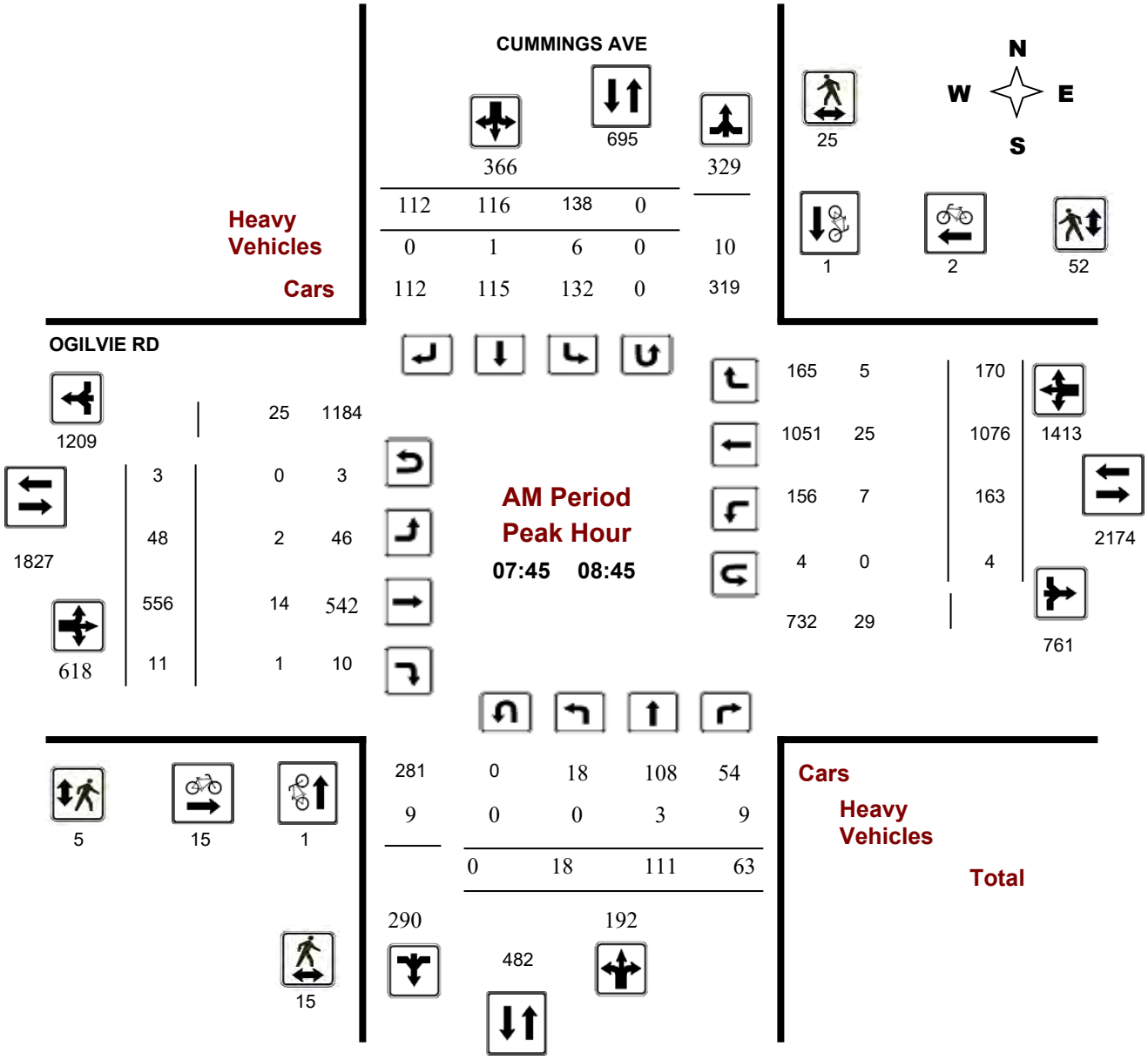
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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



Comments

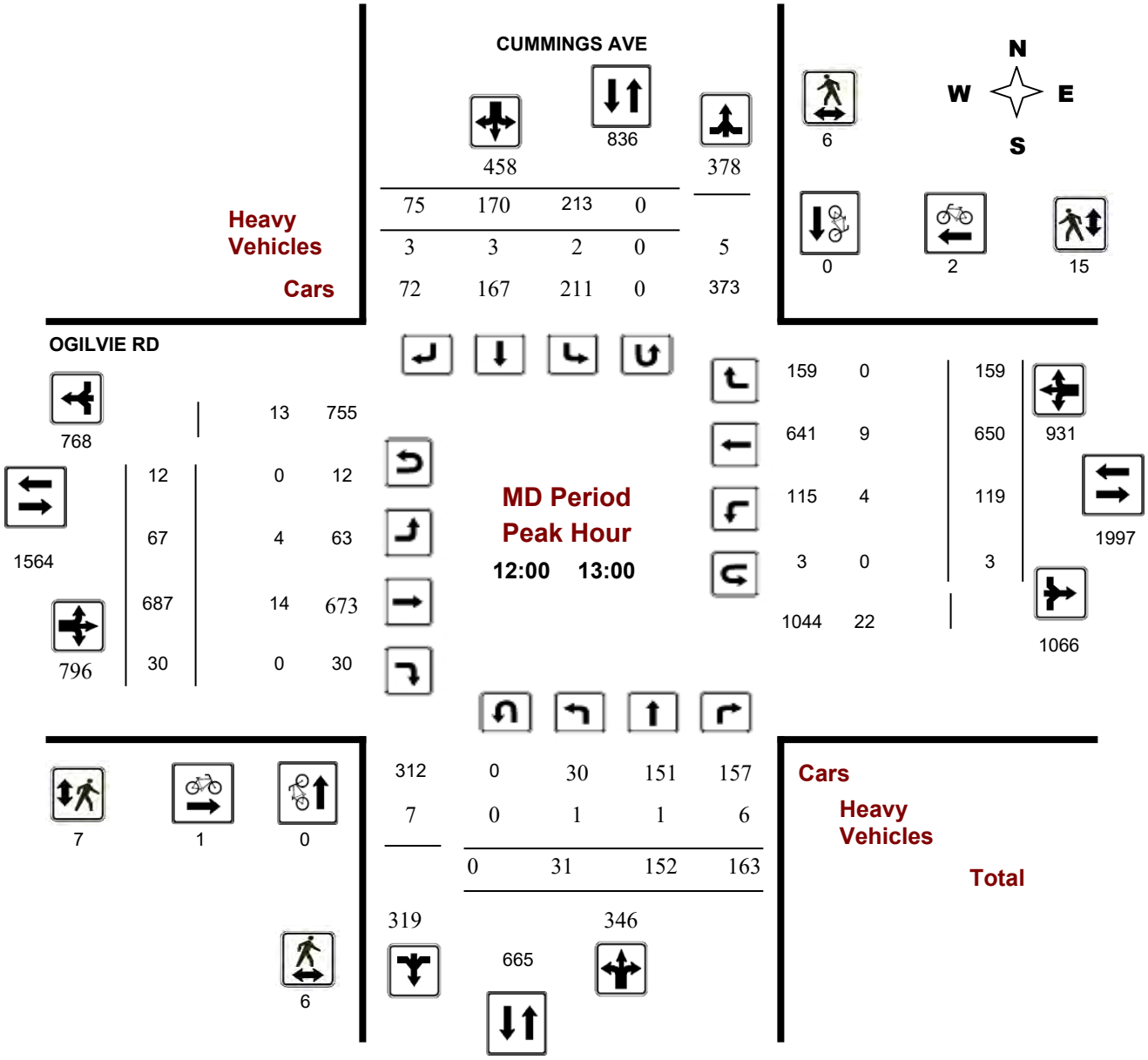
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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



Comments

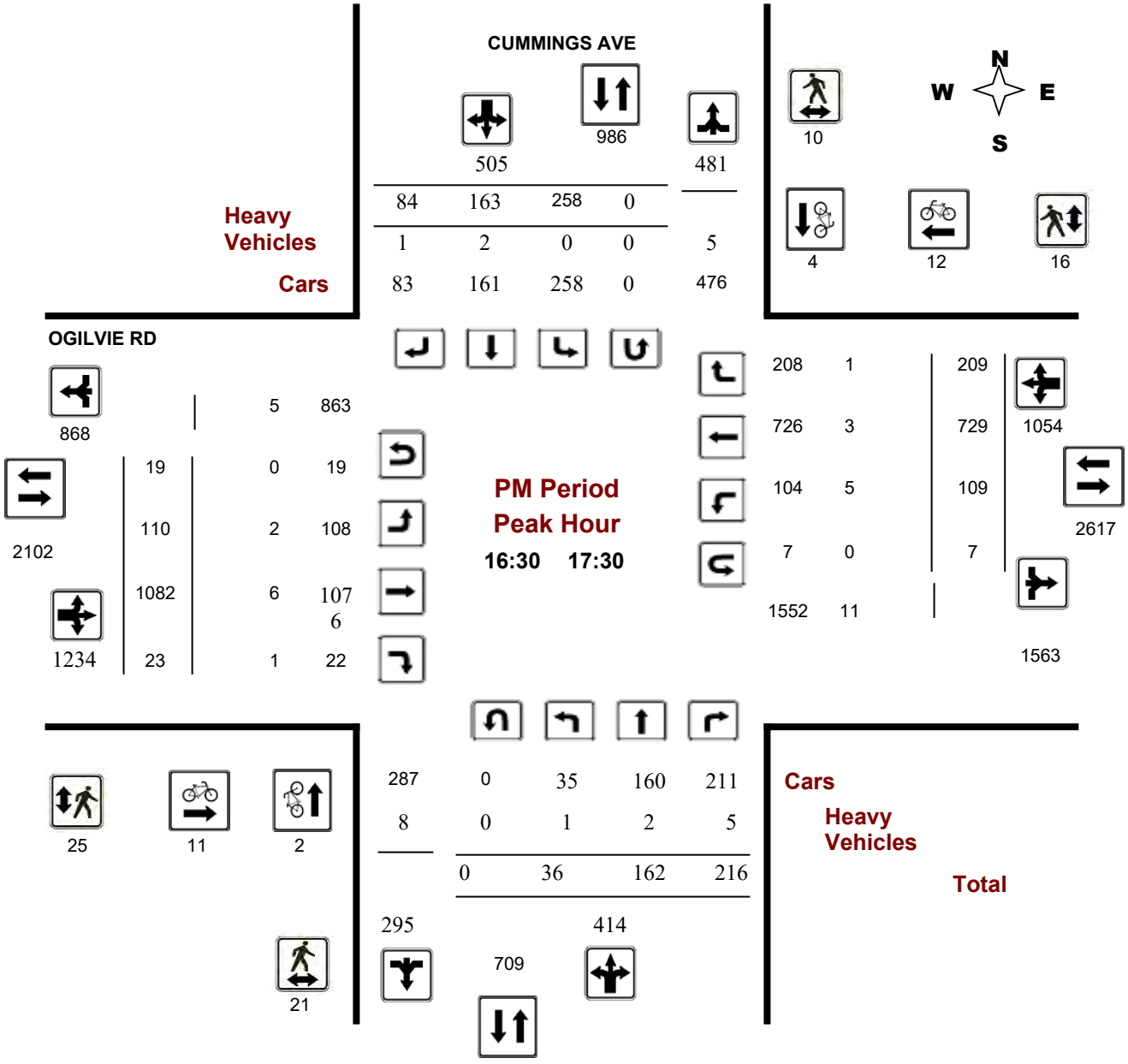
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, April 11, 2018

Total Observed U-Turns

Northbound: 2 Southbound: 0

Eastbound: 76 Westbound: 20

AADT Factor

.90

	CUMMINGS AVE									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	12	93	55	**160**	119	109	104	**332**	**492**	46	530	6	**582**	134	865	126	**1125**	**1707**	**2199**
08:00 09:00	22	106	67	**195**	147	107	112	**366**	**561**	43	572	14	**629**	158	1021	171	**1350**	**1979**	**2540**
09:00 10:00	17	131	90	**238**	156	118	95	**369**	**607**	45	515	17	**577**	96	626	130	**852**	**1429**	**2036**
11:30 12:30	27	140	171	**338**	194	155	72	**421**	**759**	75	639	32	**746**	129	657	172	**958**	**1704**	**2463**
12:30 13:30	33	148	138	**319**	211	172	74	**457**	**776**	66	660	31	**757**	128	603	143	**874**	**1631**	**2407**
15:00 16:00	27	163	196	**386**	240	168	81	**489**	**875**	95	772	21	**888**	107	666	221	**994**	**1882**	**2757**
16:00 17:00	21	176	217	**414**	270	167	88	**525**	**939**	93	1088	18	**1199**	92	693	174	**959**	**2158**	**3097**
17:00 18:00	39	145	164	**348**	240	130	86	**456**	**804**	111	941	25	**1077**	94	700	196	**990**	**2067**	**2871**
Sub Total	198	1102	1098	**2398**	1577	1126	712	**3415**	**5813**	574	5717	164	**6455**	938	5831	1333	**8102**	**14557**	**20370**
U Turns				**2**				**0**	**2**				**76**				**20**	**96**	**98**
Total	198	1102	1098	**2400**	1577	1126	712	**3415**	**5815**	574	5717	164	**6531**	938	5831	1333	**8122**	**14653**	**20468**
EQ 12Hr	275	1532	1526	**3336**	2192	1565	990	**4747**	**8083**	798	7947	228	**9078**	1304	8105	1853	**11290**	**20368**	**28451**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	233	1299	1295	**2830**	1859	1328	839	**4026**	**7275**	677	6740	193	**7700**	1106	6875	1572	**9576**	**18331**	**25606**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	306	1702	1696	**3707**	2436	1739	1100	**5274**	**8981**	887	8830	253	**10087**	1449	9006	2059	**12544**	**22631**	**31612**
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

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study 15 Minute Increments

		CUMMINGS AVE									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	24	9	34	19	23	22	64	3	7	105	3	115	22	165	30	217	3	430
07:15	07:30	5	21	17	43	25	23	23	71	6	11	138	1	151	45	194	26	265	6	530
07:30	07:45	4	23	16	43	43	30	36	109	11	14	142	0	158	25	226	30	281	11	591
07:45	08:00	2	25	13	40	32	33	23	88	2	14	145	2	161	42	280	40	363	2	652
08:00	08:15	4	33	11	48	41	33	35	109	6	15	122	2	139	38	289	35	363	6	659
08:15	08:30	6	25	21	52	34	23	29	86	3	11	142	3	156	47	256	54	358	3	652
08:30	08:45	6	28	18	52	31	27	25	83	8	8	147	4	162	36	251	41	329	8	626
08:45	09:00	6	20	17	43	41	24	23	88	10	9	161	5	177	37	225	41	303	10	611
09:00	09:15	4	40	14	58	57	31	18	106	12	9	119	5	133	21	182	27	230	12	527
09:15	09:30	6	27	21	54	38	26	22	86	5	13	147	7	168	24	168	42	235	5	543
09:30	09:45	5	32	29	66	36	28	22	86	8	9	132	3	144	24	161	26	211	8	507
09:45	10:00	2	32	26	60	25	33	33	91	4	14	117	2	135	27	115	35	177	4	463
11:30	11:45	5	28	33	66	40	40	21	101	1	17	158	8	184	31	152	37	220	1	571
11:45	12:00	7	41	42	90	44	36	18	98	4	21	156	10	190	35	164	37	236	4	614
12:00	12:15	5	38	46	89	56	37	17	110	6	15	157	5	180	32	173	51	258	6	637
12:15	12:30	10	33	50	93	54	42	16	112	4	22	168	9	201	31	168	47	246	4	652
12:30	12:45	7	42	31	80	48	46	26	120	2	13	185	8	209	26	157	25	208	2	617
12:45	13:00	9	39	36	84	55	45	16	116	4	17	177	8	206	30	152	36	219	4	625
13:00	13:15	10	32	32	74	48	59	11	118	6	22	163	5	193	35	146	37	218	6	603
13:15	13:30	7	35	39	81	60	22	21	103	4	14	135	10	168	37	148	45	230	4	582
15:00	15:15	7	35	53	95	52	30	13	95	7	24	173	6	208	24	163	54	242	7	640
15:15	15:30	10	43	46	99	48	43	17	108	5	25	199	7	233	23	144	46	213	5	653
15:30	15:45	5	40	49	94	77	51	27	155	11	21	207	5	235	28	199	68	296	11	780
15:45	16:00	5	45	48	98	63	44	24	131	4	25	193	3	223	32	160	53	246	4	698
16:00	16:15	3	47	59	110	62	40	29	131	5	23	292	9	327	21	173	50	244	5	812
16:15	16:30	6	45	40	92	76	44	17	137	3	21	267	0	289	20	163	39	224	3	742
16:30	16:45	8	35	73	116	61	39	22	122	6	21	283	5	313	24	196	43	264	6	815
16:45	17:00	4	49	45	98	71	44	20	135	1	28	246	4	279	27	161	42	233	1	745
17:00	17:15	13	36	48	97	61	28	23	112	2	33	300	6	343	32	182	69	283	2	835
17:15	17:30	11	42	50	103	65	52	19	136	2	28	253	8	299	26	190	55	274	2	812
17:30	17:45	9	37	31	77	58	27	15	100	2	25	220	7	254	18	174	33	225	2	656
17:45	18:00	6	30	35	71	56	23	29	108	1	25	168	4	198	18	154	39	211	1	588
Total:		198	1102	1098	2400	1577	1126	712	3415	158	574	5717	164	6531	938	5831	1333	8122	158	20,468

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study Cyclist Volume

Time Period		CUMMINGS AVE			OGILVIE RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	2	1	3	3
07:15	07:30	0	0	0	1	0	1	1
07:30	07:45	0	1	1	2	3	5	6
07:45	08:00	0	0	0	3	2	5	5
08:00	08:15	0	0	0	5	0	5	5
08:15	08:30	0	0	0	4	0	4	4
08:30	08:45	1	1	2	3	0	3	5
08:45	09:00	2	0	2	1	1	2	4
09:00	09:15	0	0	0	1	0	1	1
09:15	09:30	0	0	0	2	0	2	2
09:30	09:45	0	0	0	2	1	3	3
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	1	1	0	1	1	2
11:45	12:00	0	0	0	0	1	1	1
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	1	1	1
12:45	13:00	0	0	0	1	1	2	2
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	1	1	2	2	4	6	8
15:15	15:30	0	0	0	0	1	1	1
15:30	15:45	0	1	1	1	1	2	3
15:45	16:00	2	2	4	2	2	4	8
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	1	2	3	1	1	2	5
16:30	16:45	0	1	1	2	2	4	5
16:45	17:00	0	2	2	3	4	7	9
17:00	17:15	0	1	1	3	4	7	8
17:15	17:30	2	0	2	3	2	5	7
17:30	17:45	0	1	1	0	2	2	3
17:45	18:00	1	0	1	1	0	1	2
Total		10	14	**24**	45	35	80	104

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study Pedestrian Volume

	CUMMINGS AVE			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	1	0	**1**	2	1	**3**	**4**
07:15 07:30	3	4	**7**	0	7	**7**	**14**
07:30 07:45	2	3	**5**	3	2	**5**	**10**
07:45 08:00	2	3	**5**	0	9	**9**	**14**
08:00 08:15	4	6	**10**	2	12	**14**	**24**
08:15 08:30	4	5	**9**	1	17	**18**	**27**
08:30 08:45	5	11	**16**	2	14	**16**	**32**
08:45 09:00	5	2	**7**	4	17	**21**	**28**
09:00 09:15	4	1	**5**	0	5	**5**	**10**
09:15 09:30	1	1	**2**	0	0	**0**	**2**
09:30 09:45	0	2	**2**	0	1	**1**	**3**
09:45 10:00	0	1	**1**	0	4	**4**	**5**
11:30 11:45	4	1	**5**	1	2	**3**	**8**
11:45 12:00	1	1	**2**	1	0	**1**	**3**
12:00 12:15	3	3	**6**	1	6	**7**	**13**
12:15 12:30	0	1	**1**	2	5	**7**	**8**
12:30 12:45	1	1	**2**	2	1	**3**	**5**
12:45 13:00	2	1	**3**	2	3	**5**	**8**
13:00 13:15	3	4	**7**	1	7	**8**	**15**
13:15 13:30	0	2	**2**	1	0	**1**	**3**
15:00 15:15	3	1	**4**	0	6	**6**	**10**
15:15 15:30	5	1	**6**	20	2	**22**	**28**
15:30 15:45	0	2	**2**	5	2	**7**	**9**
15:45 16:00	1	2	**3**	28	0	**28**	**31**
16:00 16:15	5	2	**7**	5	1	**6**	**13**
16:15 16:30	1	1	**2**	1	0	**1**	**3**
16:30 16:45	7	1	**8**	5	4	**9**	**17**
16:45 17:00	3	5	**8**	8	2	**10**	**18**
17:00 17:15	8	3	**11**	7	1	**8**	**19**
17:15 17:30	3	1	**4**	5	9	**14**	**18**
17:30 17:45	2	0	**2**	0	0	**0**	**2**
17:45 18:00	1	2	**3**	2	3	**5**	**8**
Total	84	74	**158**	111	143	**254**	**412**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study Heavy Vehicles

		CUMMINGS AVE									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	0	1	1	**2**	0	1	0	**1**	**3**	0	7	0	**7**	1	5	1	**7**	**14**	**17**
07:15	07:30	1	4	0	**5**	1	0	0	**1**	**6**	0	7	0	**7**	1	1	0	**2**	**9**	**15**
07:30	07:45	1	2	4	**7**	3	1	0	**4**	**11**	1	4	0	**5**	2	3	0	**5**	**10**	**21**
07:45	08:00	0	0	1	**1**	1	0	0	**1**	**2**	0	7	0	**7**	1	5	3	**9**	**16**	**18**
08:00	08:15	0	1	2	**3**	3	0	0	**3**	**6**	2	2	1	**5**	3	8	0	**11**	**16**	**22**
08:15	08:30	0	0	1	**1**	2	0	0	**2**	**3**	0	3	0	**3**	1	3	2	**6**	**9**	**12**
08:30	08:45	0	2	5	**7**	0	1	0	**1**	**8**	0	2	0	**2**	2	9	0	**11**	**13**	**21**
08:45	09:00	0	2	4	**6**	4	0	0	**4**	**10**	1	4	0	**5**	3	6	3	**12**	**17**	**27**
09:00	09:15	0	2	1	**3**	5	3	1	**9**	**12**	0	4	0	**4**	1	1	1	**3**	**7**	**19**
09:15	09:30	0	1	1	**2**	1	1	1	**3**	**5**	1	4	1	**6**	3	2	0	**5**	**11**	**16**
09:30	09:45	0	2	2	**4**	1	2	1	**4**	**8**	0	4	0	**4**	2	7	0	**9**	**13**	**21**
09:45	10:00	0	1	2	**3**	0	1	0	**1**	**4**	1	2	0	**3**	4	2	0	**6**	**9**	**13**
11:30	11:45	0	0	1	**1**	0	0	0	**0**	**1**	2	5	0	**7**	2	2	0	**4**	**11**	**12**
11:45	12:00	0	1	2	**3**	0	0	1	**1**	**4**	0	2	1	**3**	4	4	0	**8**	**11**	**15**
12:00	12:15	0	1	2	**3**	1	0	2	**3**	**6**	1	1	0	**2**	1	1	0	**2**	**4**	**10**
12:15	12:30	0	0	3	**3**	0	1	0	**1**	**4**	2	3	0	**5**	1	2	0	**3**	**8**	**12**
12:30	12:45	0	0	1	**1**	1	0	0	**1**	**2**	1	4	0	**5**	1	5	0	**6**	**11**	**13**
12:45	13:00	1	0	0	**1**	0	2	1	**3**	**4**	0	6	0	**6**	1	1	0	**2**	**8**	**12**
13:00	13:15	0	1	3	**4**	0	0	2	**2**	**6**	0	4	0	**4**	1	5	2	**8**	**12**	**18**
13:15	13:30	0	0	1	**1**	2	1	0	**3**	**4**	0	3	0	**3**	1	4	1	**6**	**9**	**13**
15:00	15:15	0	0	1	**1**	1	3	2	**6**	**7**	0	11	0	**11**	1	1	1	**3**	**14**	**21**
15:15	15:30	0	0	1	**1**	1	2	1	**4**	**5**	0	7	0	**7**	1	3	3	**7**	**14**	**19**
15:30	15:45	0	1	5	**6**	3	2	0	**5**	**11**	0	6	0	**6**	2	1	0	**3**	**9**	**20**
15:45	16:00	0	1	1	**2**	0	1	1	**2**	**4**	0	1	0	**1**	6	3	2	**11**	**12**	**16**
16:00	16:15	0	0	0	**0**	3	2	0	**5**	**5**	1	6	2	**9**	1	3	3	**7**	**16**	**21**
16:15	16:30	1	0	1	**2**	0	1	0	**1**	**3**	0	4	0	**4**	2	0	0	**2**	**6**	**9**
16:30	16:45	0	2	2	**4**	0	2	0	**2**	**6**	1	2	0	**3**	2	1	0	**3**	**6**	**12**
16:45	17:00	0	0	0	**0**	0	0	1	**1**	**1**	0	1	1	**2**	1	0	0	**1**	**3**	**4**
17:00	17:15	1	0	1	**2**	0	0	0	**0**	**2**	1	2	0	**3**	1	1	0	**2**	**5**	**7**
17:15	17:30	0	0	2	**2**	0	0	0	**0**	**2**	0	1	0	**1**	1	1	1	**3**	**4**	**6**
17:30	17:45	0	0	0	**0**	0	1	1	**2**	**2**	0	1	0	**1**	1	1	0	**2**	**3**	**5**
17:45	18:00	0	0	1	**1**	0	0	0	**0**	**1**	0	3	0	**3**	1	0	0	**1**	**4**	**5**
Total:	None	5	25	52	**82**	33	28	15	**76**	**158**	15	123	6	**144**	56	91	23	**170**	**314**	**472**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 37738

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

Full Study 15 Minute U-Turn Total

		CUMMINGS AVE		OGILVIE RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	1	0	1
07:30	07:45	0	0	2	0	2
07:45	08:00	0	0	0	1	1
08:00	08:15	0	0	0	1	1
08:15	08:30	0	0	0	1	1
08:30	08:45	0	0	3	1	4
08:45	09:00	0	0	2	0	2
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	1	1	2
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	2	0	2
11:30	11:45	0	0	1	0	1
11:45	12:00	0	0	3	0	3
12:00	12:15	0	0	3	2	5
12:15	12:30	0	0	2	0	2
12:30	12:45	0	0	3	0	3
12:45	13:00	0	0	4	1	5
13:00	13:15	0	0	3	0	3
13:15	13:30	0	0	9	0	9
15:00	15:15	0	0	5	1	6
15:15	15:30	0	0	2	0	2
15:30	15:45	0	0	2	1	3
15:45	16:00	0	0	2	1	3
16:00	16:15	1	0	3	0	4
16:15	16:30	1	0	1	2	4
16:30	16:45	0	0	4	1	5
16:45	17:00	0	0	1	3	4
17:00	17:15	0	0	4	0	4
17:15	17:30	0	0	10	3	13
17:30	17:45	0	0	2	0	2
17:45	18:00	0	0	1	0	1
Total		2	0	76	20	98

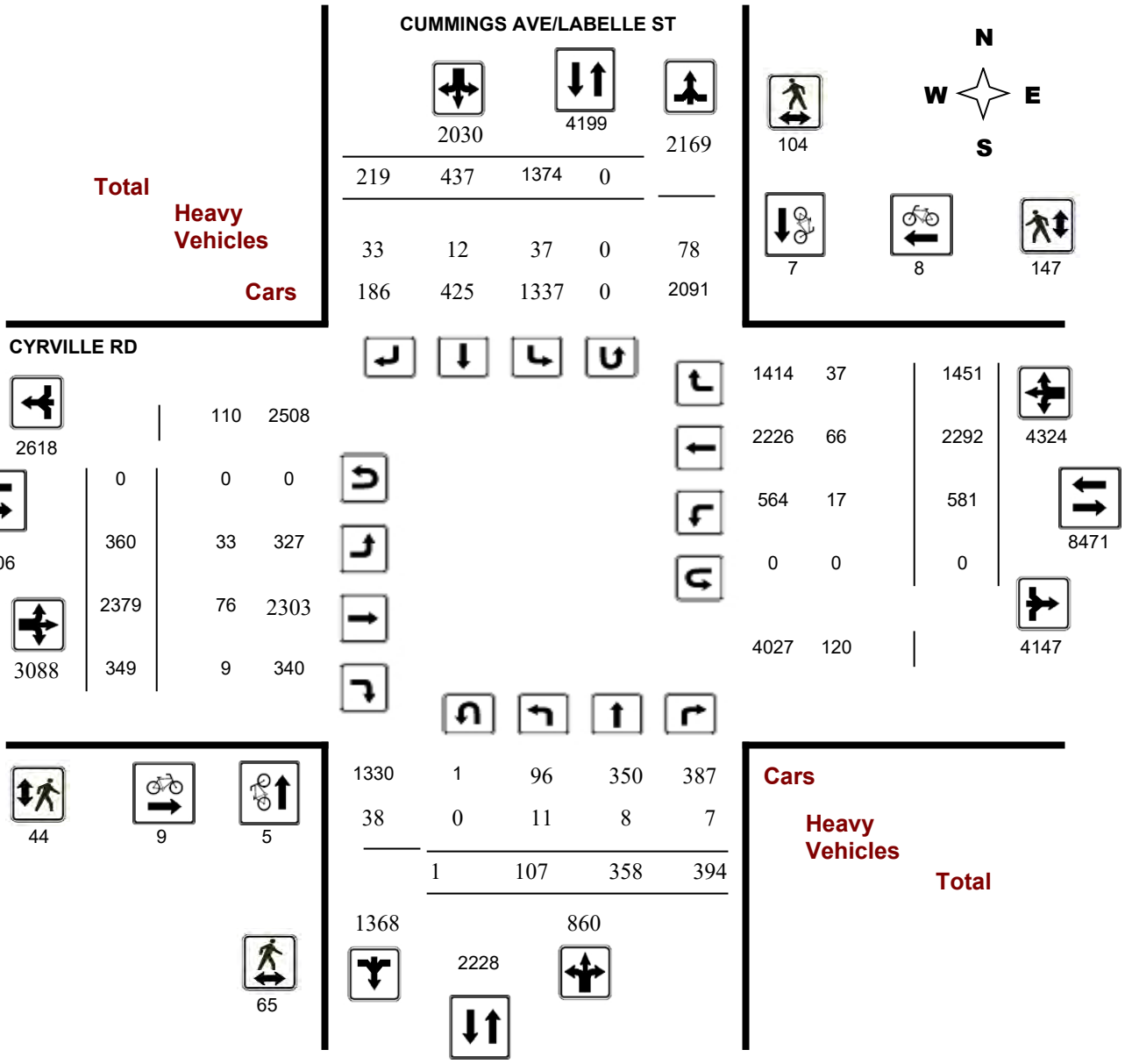
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018
Start Time: 07:00
WO No: 39828
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

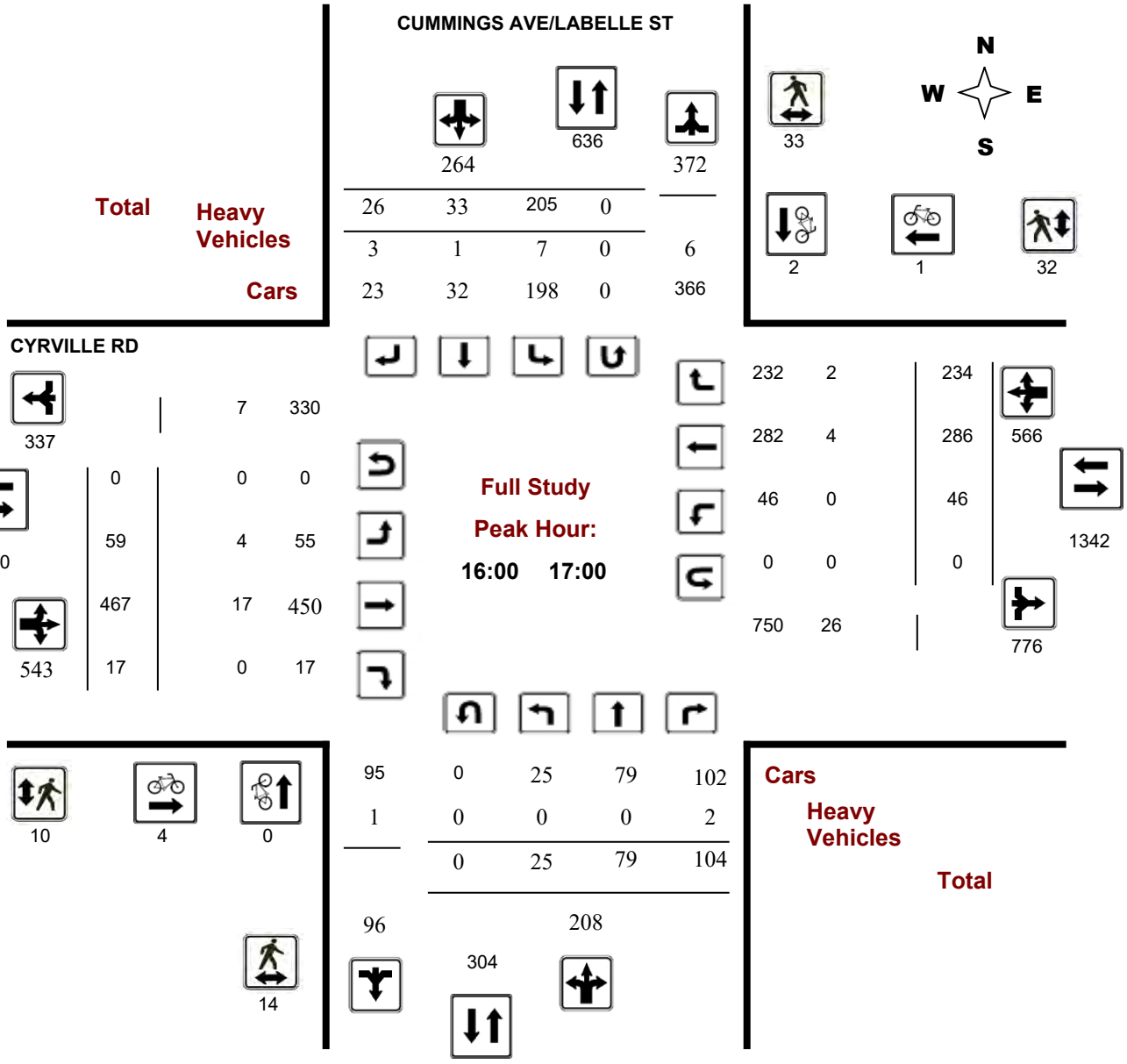
Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study Peak Hour Diagram



Total	26	33	205	0
Heavy Vehicles	3	1	7	0
Cars	23	32	198	0

Total	7	330		
Heavy Vehicles	0	0	0	0
Cars	4	55	59	0
	17	450	467	0
	0	17	17	0

Total	232	2		
Heavy Vehicles	282	4		
Cars	46	0		
	0	0		
	750	26		

Total	234			
Heavy Vehicles	286			
Cars	46			
	0			

Total	95	0	25	79	102
Heavy Vehicles	1	0	0	0	2
Cars		0	25	79	104

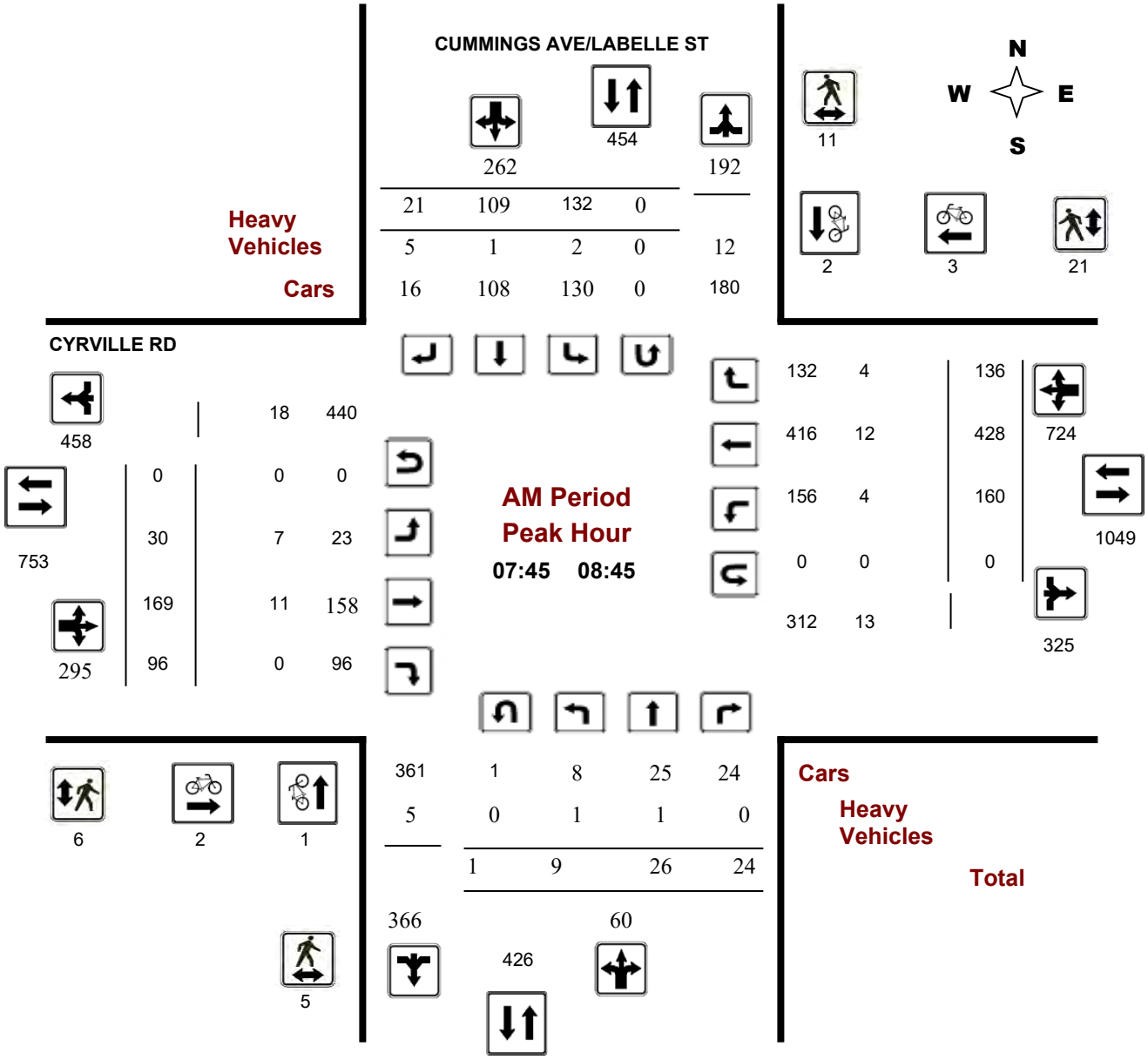
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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



Comments

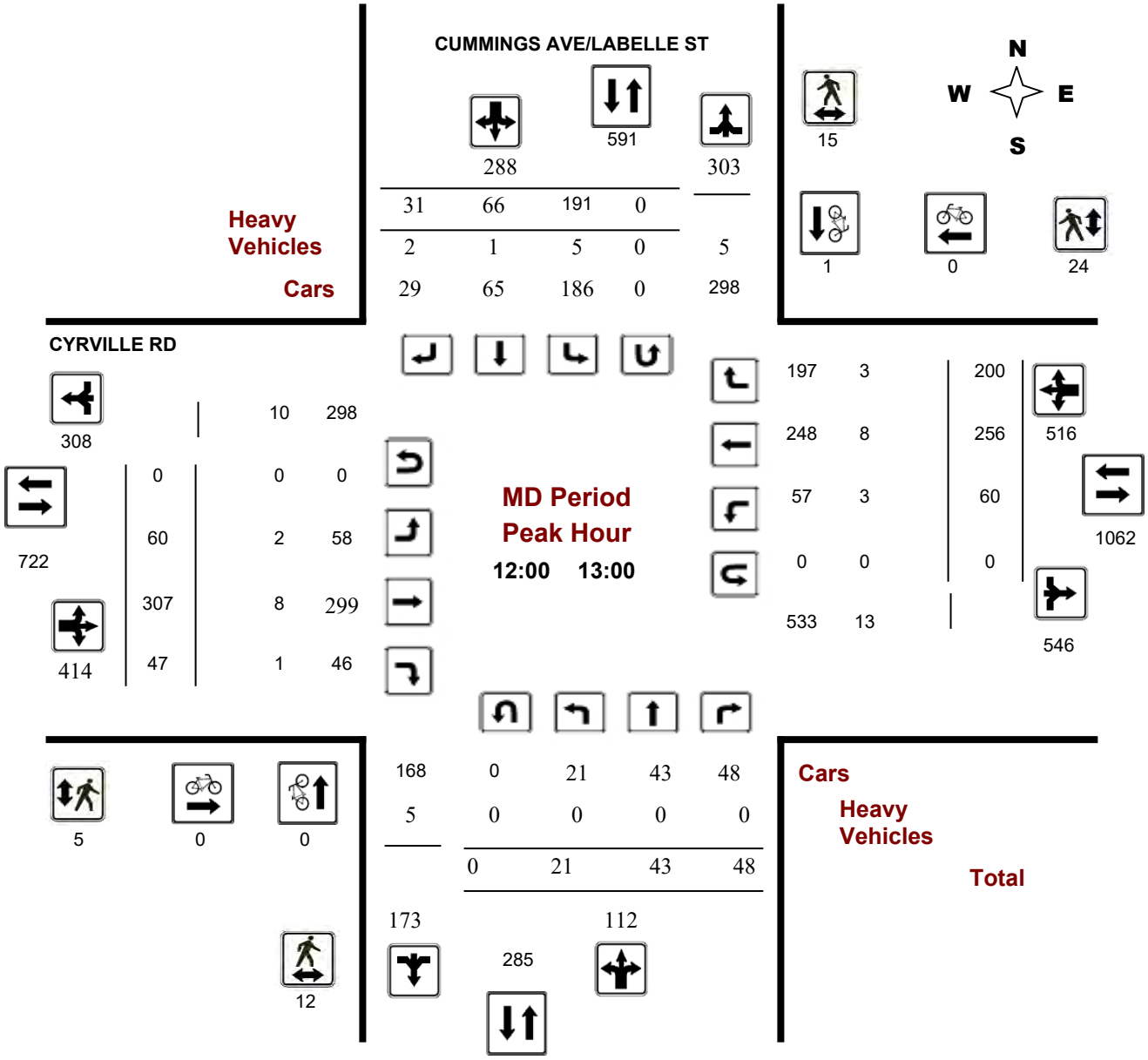
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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



Comments

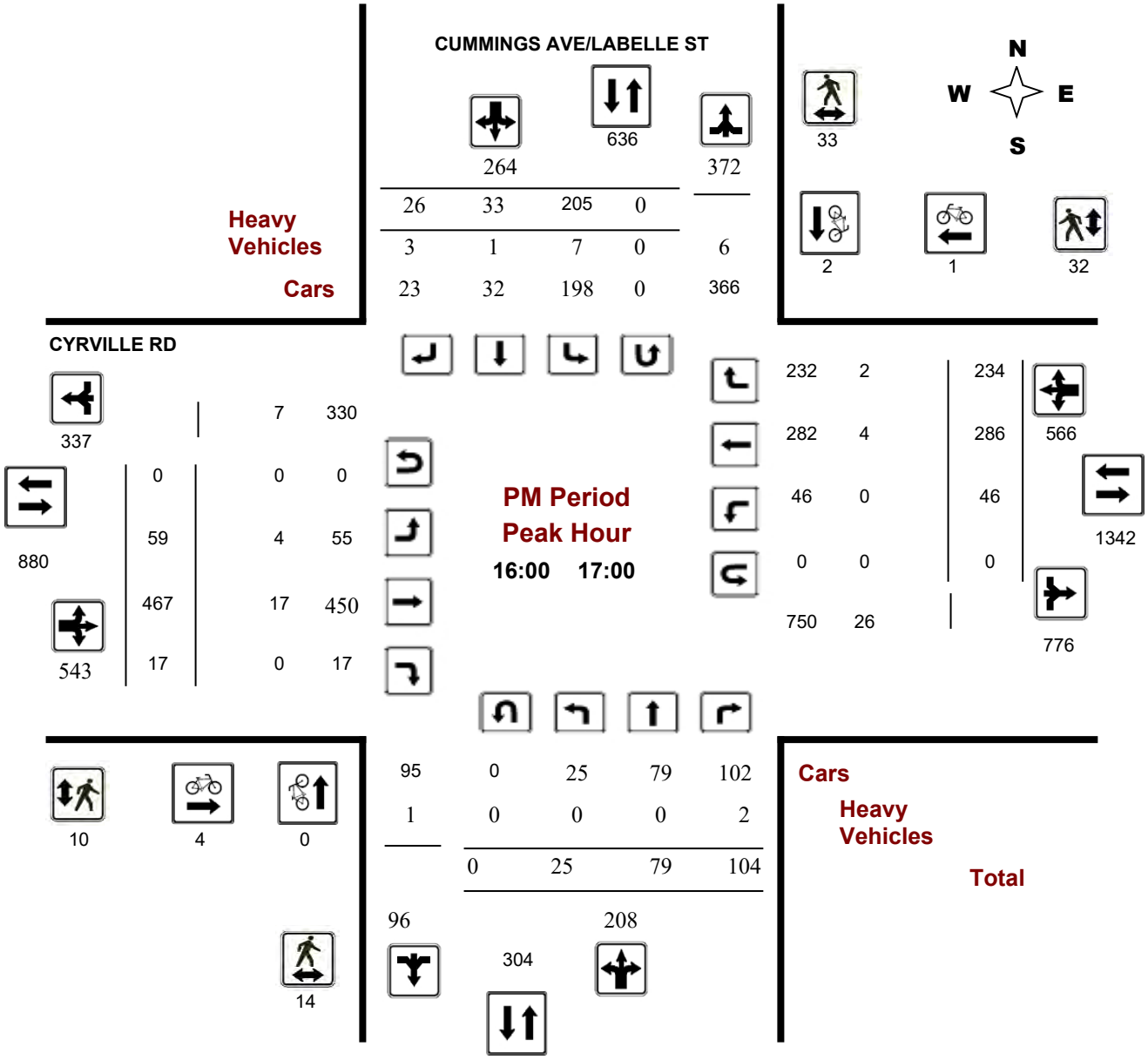
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, April 11, 2018

Total Observed U-Turns

Northbound: 1 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

.90

	CUMMINGS AVE/LABELLE ST									CYRVILLE 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	4	13	31	**48**	133	86	16	**235**	**283**	20	168	94	**282**	146	347	127	**620**	**902**	**1185**
08:00 09:00	12	26	23	**61**	120	95	26	**241**	**302**	28	194	77	**299**	137	414	146	**697**	**996**	**1298**
09:00 10:00	4	16	23	**43**	148	34	18	**200**	**243**	32	222	33	**287**	58	229	164	**451**	**738**	**981**
11:30 12:30	15	55	47	**117**	212	38	36	**286**	**403**	53	290	41	**384**	43	250	191	**484**	**868**	**1271**
12:30 13:30	19	33	29	**81**	176	80	37	**293**	**374**	58	304	54	**416**	66	248	195	**509**	**925**	**1299**
15:00 16:00	21	90	87	**198**	204	37	29	**270**	**468**	52	399	19	**470**	48	238	205	**491**	**961**	**1429**
16:00 17:00	25	79	104	**208**	205	33	26	**264**	**472**	59	467	17	**543**	46	286	234	**566**	**1109**	**1581**
17:00 18:00	7	46	50	**103**	176	34	31	**241**	**344**	58	335	14	**407**	37	280	189	**506**	**913**	**1257**
Sub Total	107	358	394	**859**	1374	437	219	**2030**	**2889**	360	2379	349	**3088**	581	2292	1451	**4324**	**7412**	**10301**
U Turns	1			**1**	0			**0**	**1**	**0**			**0**	0			**0**	**0**	**1**
Total	108	358	394	**860**	1374	437	219	**2030**	**2890**	360	2379	349	**3088**	581	2292	1451	**4324**	**7412**	**10302**
EQ 12Hr	150	498	548	**1196**	1910	607	304	**2821**	**4017**	500	3307	485	**4292**	808	3186	2017	**6011**	**10303**	**14320**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	135	448	493	**1076**	1719	546	274	**2539**	**3615**	450	2976	436	**3862**	727	2867	1815	**5409**	**9271**	**12886**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	177	587	646	**1410**	2252	715	359	**3326**	**4736**	590	3899	571	**5060**	952	3756	2378	**7086**	**12146**	**16882**
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

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study 15 Minute Increments

		CUMMINGS AVE/LABELLE ST									CYRVILLE 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	4	6	11	25	9	3	37	**48**	3	43	18	64	33	67	29	129	**193**	**241**
07:15	07:30	0	2	10	12	32	25	6	63	**75**	5	33	21	59	30	98	38	166	**225**	**300**
07:30	07:45	1	4	6	11	33	24	4	61	**72**	5	53	25	83	33	82	29	144	**227**	**299**
07:45	08:00	2	3	9	14	43	28	3	74	**88**	7	39	30	76	50	100	31	181	**257**	**345**
08:00	08:15	1	5	3	9	34	25	4	63	**72**	6	40	20	66	48	93	37	178	**244**	**316**
08:15	08:30	4	5	8	17	30	25	6	61	**78**	12	39	29	80	39	122	38	199	**279**	**357**
08:30	08:45	3	13	4	20	25	31	8	64	**84**	5	51	17	73	23	113	30	166	**239**	**323**
08:45	09:00	5	3	8	16	31	14	8	53	**69**	5	64	11	80	27	86	41	154	**234**	**303**
09:00	09:15	1	1	5	7	31	9	8	48	**55**	12	57	12	81	19	68	35	122	**203**	**258**
09:15	09:30	1	2	7	10	33	6	4	43	**53**	6	48	8	62	12	59	53	124	**186**	**239**
09:30	09:45	1	7	3	11	46	7	3	56	**67**	7	66	8	81	12	46	36	94	**175**	**242**
09:45	10:00	1	6	8	15	38	12	3	53	**68**	7	51	5	63	15	56	40	111	**174**	**242**
11:30	11:45	1	10	8	19	54	11	12	77	**96**	14	66	10	90	9	71	40	120	**210**	**306**
11:45	12:00	5	18	7	30	55	7	9	71	**101**	10	75	14	99	9	62	50	121	**220**	**321**
12:00	12:15	4	18	20	42	52	12	8	72	**114**	14	76	10	100	10	52	46	108	**208**	**322**
12:15	12:30	5	9	12	26	51	8	7	66	**92**	15	73	7	95	15	65	55	135	**230**	**322**
12:30	12:45	6	6	8	20	48	16	9	73	**93**	14	65	13	92	21	58	47	126	**218**	**311**
12:45	13:00	6	10	8	24	40	30	7	77	**101**	17	93	17	127	14	81	52	147	**274**	**375**
13:00	13:15	5	7	5	17	54	19	8	81	**98**	12	69	15	96	22	55	46	123	**219**	**317**
13:15	13:30	2	10	8	20	34	15	13	62	**82**	15	77	9	101	9	54	50	113	**214**	**296**
15:00	15:15	6	26	18	50	40	13	2	55	**105**	13	114	6	133	17	70	48	135	**268**	**373**
15:15	15:30	3	18	22	43	52	5	10	67	**110**	14	85	2	101	9	61	58	128	**229**	**339**
15:30	15:45	7	24	28	59	59	9	3	71	**130**	12	97	3	112	10	45	52	107	**219**	**349**
15:45	16:00	5	22	19	46	53	10	14	77	**123**	13	103	8	124	12	62	47	121	**245**	**368**
16:00	16:15	8	22	40	70	46	10	7	63	**133**	19	112	4	135	18	78	52	148	**283**	**416**
16:15	16:30	4	20	25	49	53	3	4	60	**109**	13	121	3	137	7	68	55	130	**267**	**376**
16:30	16:45	7	19	24	50	52	11	9	72	**122**	16	124	9	149	7	59	67	133	**282**	**404**
16:45	17:00	6	18	15	39	54	9	6	69	**108**	11	110	1	122	14	81	60	155	**277**	**385**
17:00	17:15	2	10	17	29	47	13	10	70	**99**	17	107	3	127	12	82	53	147	**274**	**373**
17:15	17:30	1	17	9	27	62	12	8	82	**109**	16	97	3	116	6	58	52	116	**232**	**341**
17:30	17:45	3	14	11	28	33	5	5	43	**71**	11	68	6	85	13	83	42	138	**223**	**294**
17:45	18:00	1	5	13	19	34	4	8	46	**65**	14	63	2	79	6	57	42	105	**184**	**249**
Total:		108	358	394	860	1374	437	219	2030	**2890**	360	2379	349	3088	581	2292	1451	4324	**2890**	**10,302**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study Cyclist Volume

Time Period		CUMMINGS AVE/LABELLE ST			CYRVILLE RD			
		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	1	**1**	**1**
07:30	07:45	0	1	**1**	0	1	**1**	**2**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	1	2	**3**	**3**
08:15	08:30	0	1	**1**	1	0	**1**	**2**
08:30	08:45	1	1	**2**	0	1	**1**	**3**
08:45	09:00	2	0	**2**	0	0	**0**	**2**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	1	**1**	0	0	**0**	**1**
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	1	**1**	0	0	**0**	**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	1	0	**1**	0	0	**0**	**1**
15:15	15:30	0	0	**0**	0	1	**1**	**1**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	1	**1**	**1**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	1	**1**	1	0	**1**	**2**
16:30	16:45	0	0	**0**	1	1	**2**	**2**
16:45	17:00	0	1	**1**	2	0	**2**	**3**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	1	0	**1**	1	0	**1**	**2**
17:30	17:45	0	0	**0**	2	0	**2**	**2**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		5	7	**12**	9	8	**17**	**29**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study Pedestrian Volume

	CUMMINGS AVE/LABELLE ST			CYRVILLE 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	0	**2**	2	4	**6**	**8**
07:15 07:30	1	4	**5**	1	1	**2**	**7**
07:30 07:45	4	3	**7**	1	4	**5**	**12**
07:45 08:00	1	3	**4**	1	4	**5**	**9**
08:00 08:15	0	7	**7**	1	8	**9**	**16**
08:15 08:30	4	1	**5**	4	4	**8**	**13**
08:30 08:45	0	0	**0**	0	5	**5**	**5**
08:45 09:00	2	1	**3**	0	2	**2**	**5**
09:00 09:15	0	2	**2**	0	2	**2**	**4**
09:15 09:30	1	2	**3**	3	3	**6**	**9**
09:30 09:45	1	0	**1**	0	0	**0**	**1**
09:45 10:00	0	2	**2**	0	0	**0**	**2**
11:30 11:45	2	2	**4**	1	2	**3**	**7**
11:45 12:00	1	1	**2**	0	2	**2**	**4**
12:00 12:15	5	3	**8**	0	9	**9**	**17**
12:15 12:30	2	1	**3**	1	6	**7**	**10**
12:30 12:45	3	3	**6**	2	4	**6**	**12**
12:45 13:00	2	8	**10**	2	5	**7**	**17**
13:00 13:15	4	1	**5**	2	10	**12**	**17**
13:15 13:30	1	3	**4**	1	5	**6**	**10**
15:00 15:15	3	1	**4**	2	3	**5**	**9**
15:15 15:30	0	3	**3**	0	2	**2**	**5**
15:30 15:45	2	2	**4**	2	7	**9**	**13**
15:45 16:00	2	5	**7**	2	2	**4**	**11**
16:00 16:15	7	12	**19**	4	9	**13**	**32**
16:15 16:30	1	5	**6**	2	2	**4**	**10**
16:30 16:45	2	6	**8**	4	13	**17**	**25**
16:45 17:00	4	10	**14**	0	8	**8**	**22**
17:00 17:15	2	8	**10**	4	4	**8**	**18**
17:15 17:30	4	0	**4**	0	8	**8**	**12**
17:30 17:45	2	4	**6**	2	6	**8**	**14**
17:45 18:00	0	1	**1**	0	3	**3**	**4**
Total	65	104	**169**	44	147	**191**	**360**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study Heavy Vehicles

		CUMMINGS AVE/LABELLE ST									CYRVILLE 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	0	0	0	**0**	1	0	1	**2**	**2**	1	2	1	**4**	3	3	4	**10**	**14**	**16**
07:15	07:30	0	0	0	**0**	0	0	1	**1**	**1**	1	1	0	**2**	0	6	3	**9**	**11**	**12**
07:30	07:45	0	1	1	**2**	0	1	1	**2**	**4**	2	0	0	**2**	1	6	2	**9**	**11**	**15**
07:45	08:00	1	0	0	**1**	0	0	1	**1**	**2**	1	0	0	**1**	2	3	1	**6**	**7**	**9**
08:00	08:15	0	0	0	**0**	1	0	2	**3**	**3**	2	3	0	**5**	1	5	0	**6**	**11**	**14**
08:15	08:30	0	0	0	**0**	0	0	1	**1**	**1**	1	3	0	**4**	1	2	1	**4**	**8**	**9**
08:30	08:45	0	1	0	**1**	1	1	1	**3**	**4**	3	5	0	**8**	0	2	2	**4**	**12**	**16**
08:45	09:00	2	0	1	**3**	0	0	2	**2**	**5**	2	3	0	**5**	0	1	2	**3**	**8**	**13**
09:00	09:15	0	0	0	**0**	2	2	0	**4**	**4**	2	6	0	**8**	1	3	1	**5**	**13**	**17**
09:15	09:30	0	0	0	**0**	4	0	1	**5**	**5**	0	3	1	**4**	1	3	3	**7**	**11**	**16**
09:30	09:45	1	1	0	**2**	2	1	1	**4**	**6**	2	3	0	**5**	0	2	2	**4**	**9**	**15**
09:45	10:00	1	0	0	**1**	2	0	2	**4**	**5**	0	4	0	**4**	1	6	2	**9**	**13**	**18**
11:30	11:45	0	0	0	**0**	2	1	0	**3**	**3**	1	0	0	**1**	1	2	0	**3**	**4**	**7**
11:45	12:00	2	1	0	**3**	2	0	1	**3**	**6**	0	1	2	**3**	1	2	2	**5**	**8**	**14**
12:00	12:15	0	0	0	**0**	1	0	0	**1**	**1**	1	0	0	**1**	2	2	0	**4**	**5**	**6**
12:15	12:30	0	0	0	**0**	1	0	1	**2**	**2**	0	2	0	**2**	0	2	3	**5**	**7**	**9**
12:30	12:45	0	0	0	**0**	1	1	0	**2**	**2**	1	3	1	**5**	0	1	0	**1**	**6**	**8**
12:45	13:00	0	0	0	**0**	2	0	1	**3**	**3**	0	3	0	**3**	1	3	0	**4**	**7**	**10**
13:00	13:15	1	0	1	**2**	0	1	0	**1**	**3**	1	1	1	**3**	0	4	3	**7**	**10**	**13**
13:15	13:30	1	1	0	**2**	0	0	1	**1**	**3**	0	1	0	**1**	0	2	0	**2**	**3**	**6**
15:00	15:15	0	1	0	**1**	3	1	0	**4**	**5**	2	1	1	**4**	1	1	0	**2**	**6**	**11**
15:15	15:30	1	0	1	**2**	1	1	1	**3**	**5**	0	4	0	**4**	0	0	1	**1**	**5**	**10**
15:30	15:45	0	2	0	**2**	3	0	1	**4**	**6**	1	2	0	**3**	0	0	3	**3**	**6**	**12**
15:45	16:00	0	0	0	**0**	1	0	6	**7**	**7**	1	2	1	**4**	0	1	0	**1**	**5**	**12**
16:00	16:15	0	0	1	**1**	1	1	1	**3**	**4**	1	1	0	**2**	0	3	0	**3**	**5**	**9**
16:15	16:30	0	0	1	**1**	4	0	0	**4**	**5**	1	5	0	**6**	0	0	0	**0**	**6**	**11**
16:30	16:45	0	0	0	**0**	1	0	1	**2**	**2**	1	5	0	**6**	0	1	2	**3**	**9**	**11**
16:45	17:00	0	0	0	**0**	1	0	1	**2**	**2**	1	6	0	**7**	0	0	0	**0**	**7**	**9**
17:00	17:15	0	0	0	**0**	0	0	1	**1**	**1**	2	5	0	**7**	0	0	0	**0**	**7**	**8**
17:15	17:30	0	0	0	**0**	0	0	1	**1**	**1**	1	0	0	**1**	0	0	0	**0**	**1**	**2**
17:30	17:45	1	0	1	**2**	0	1	1	**2**	**4**	0	0	1	**1**	0	0	0	**0**	**1**	**5**
17:45	18:00	0	0	0	**0**	0	0	1	**1**	**1**	1	1	0	**2**	0	0	0	**0**	**2**	**3**
Total:	None	11	8	7	**26**	37	12	33	**82**	**108**	33	76	9	**118**	17	66	37	**120**	**238**	**346**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018 **WO No:** 39828

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

Full Study 15 Minute U-Turn Total

CUMMINGS AVE/LABELLE ST **CYRVILLE RD**

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	1	0	0	0	**1**
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	0	0	0	0	**0**
17:00	17:15	0	0	0	0	**0**
17:15	17:30	0	0	0	0	**0**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		1	0	0	0	**1**

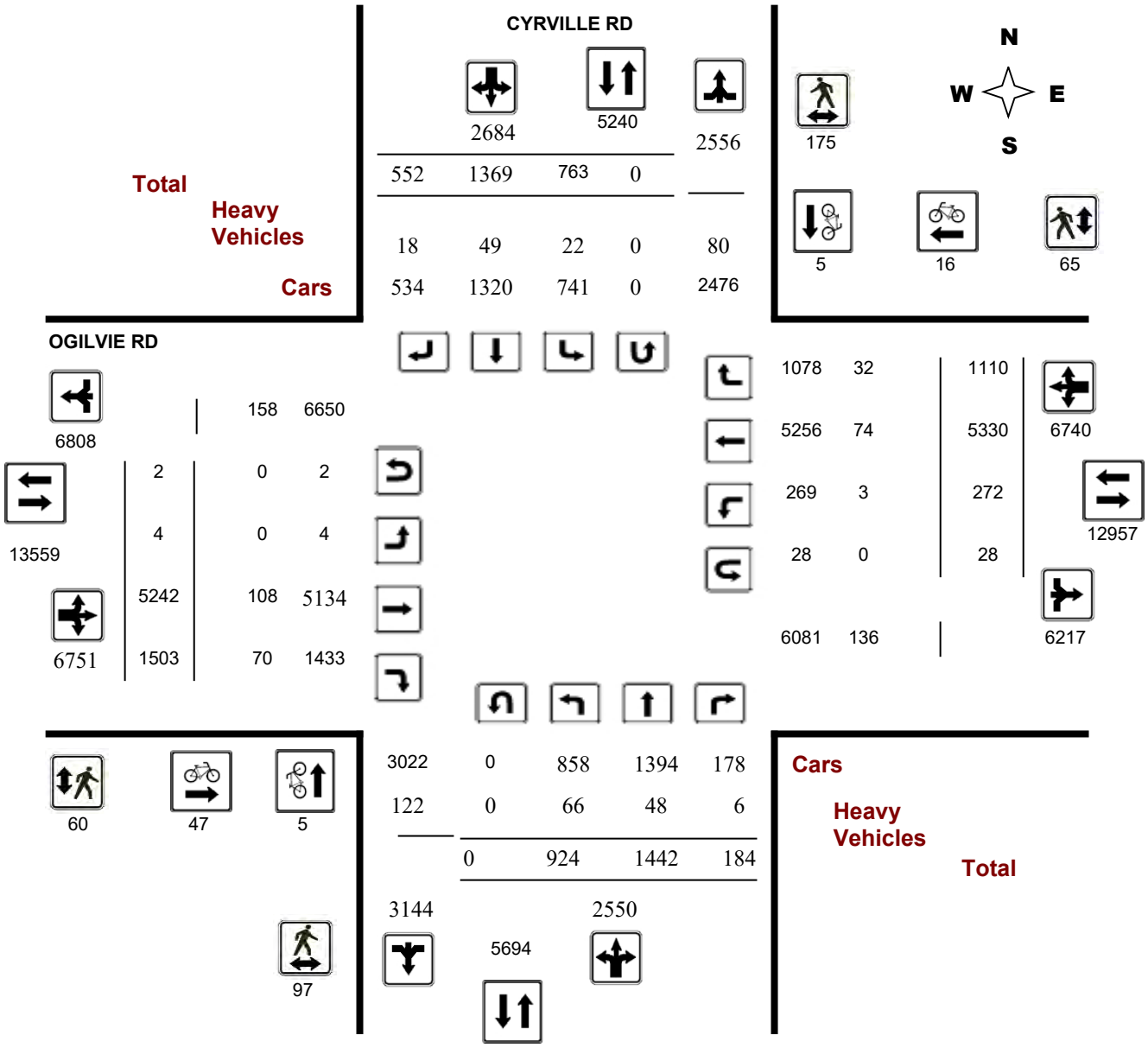
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018
Start Time: 07:00
WO No: 37723
Device: Miovision

Full Study Diagram



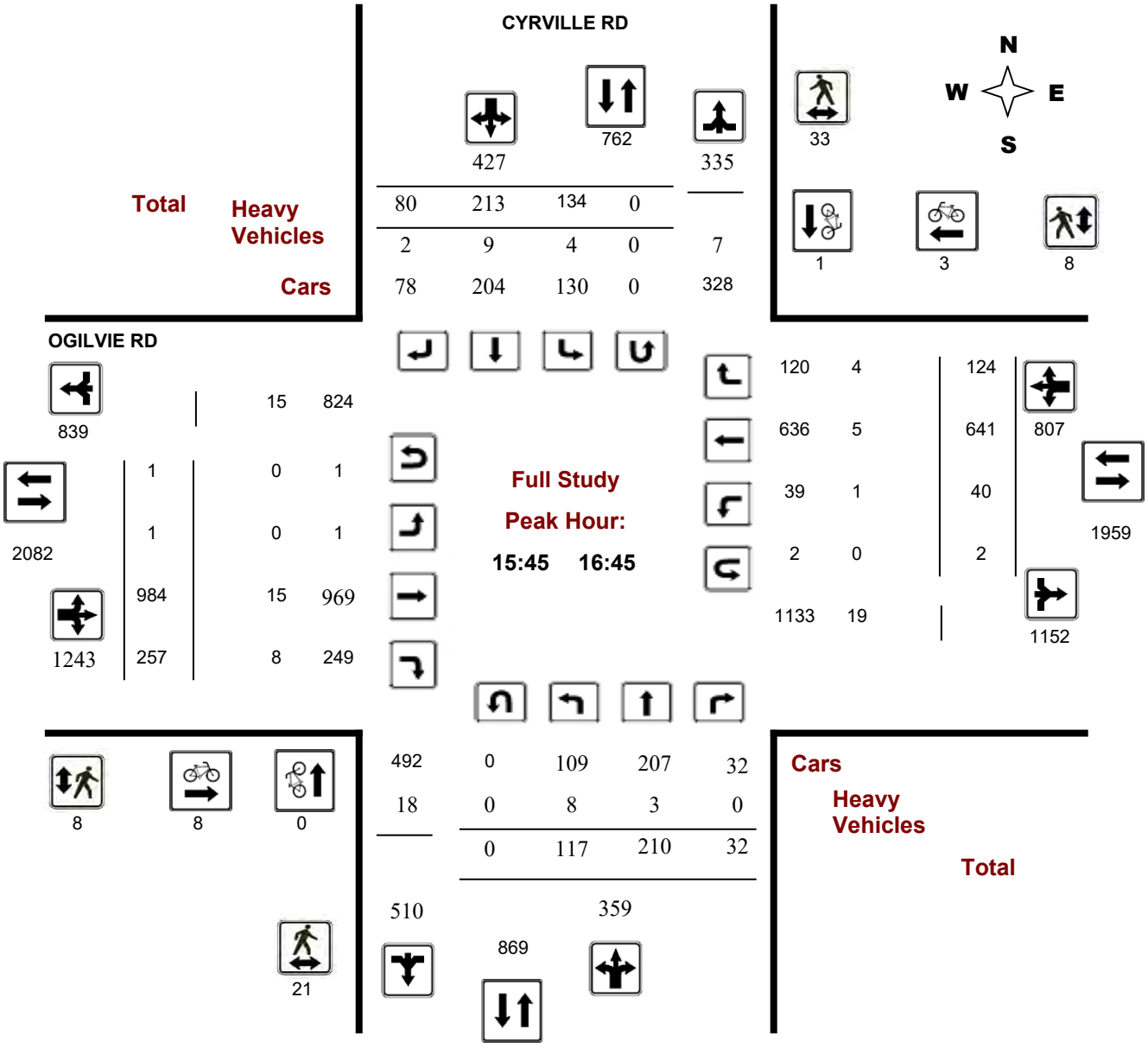
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018
Start Time: 07:00
WO No: 37723
Device: Miovision

Full Study Peak Hour Diagram



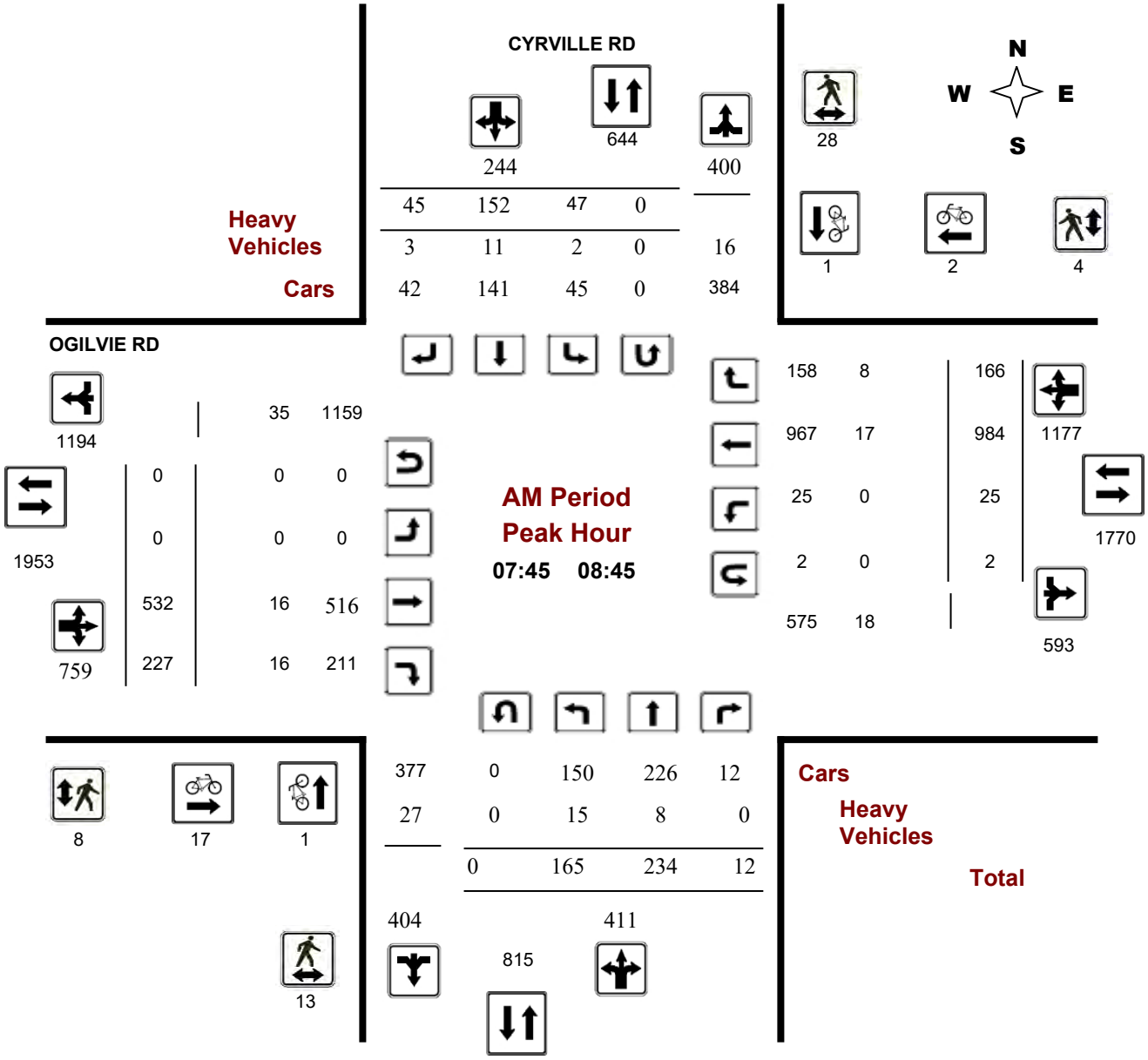
Transportation Services - Traffic Services

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



Comments

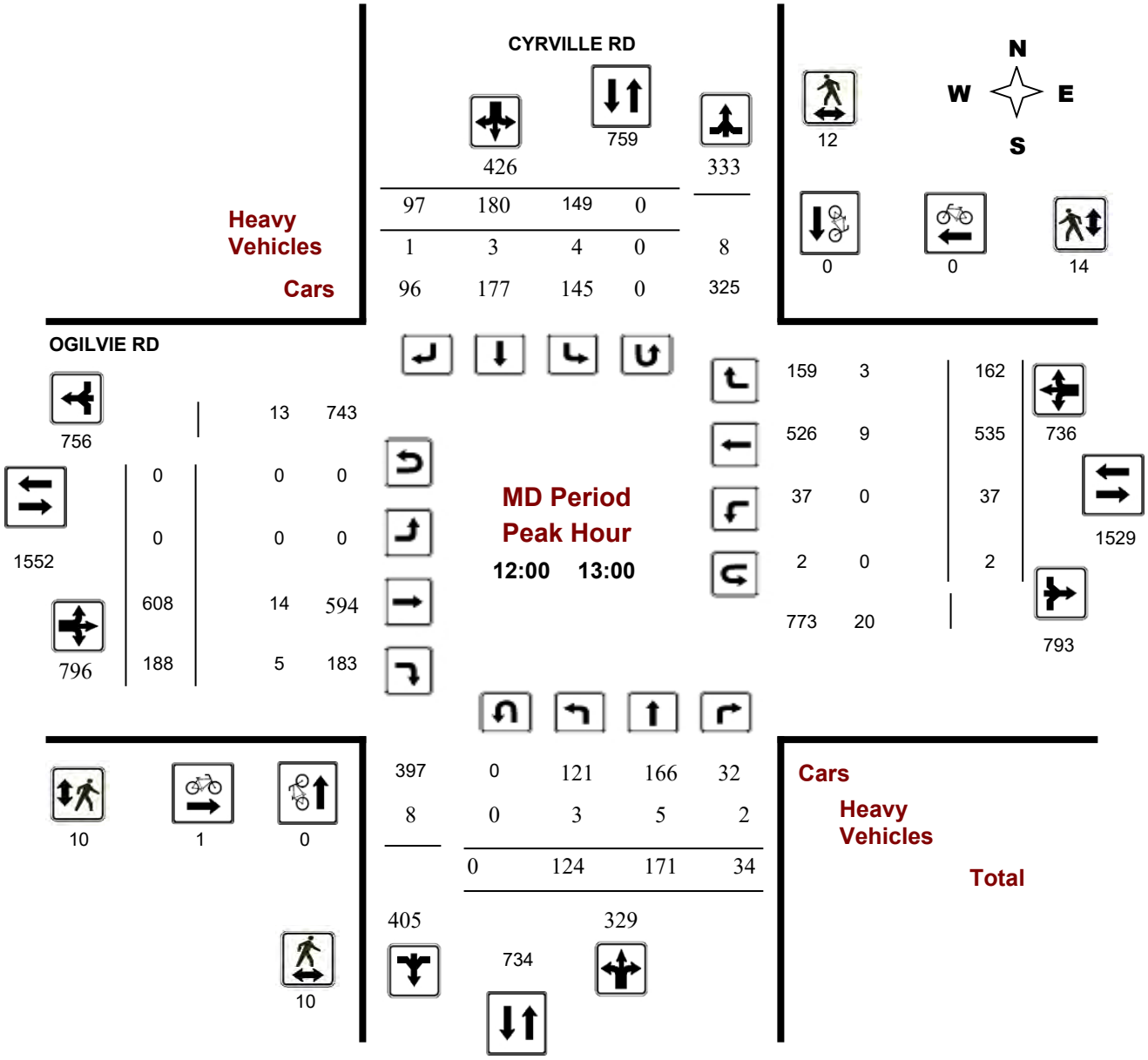
Transportation Services - Traffic Services

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

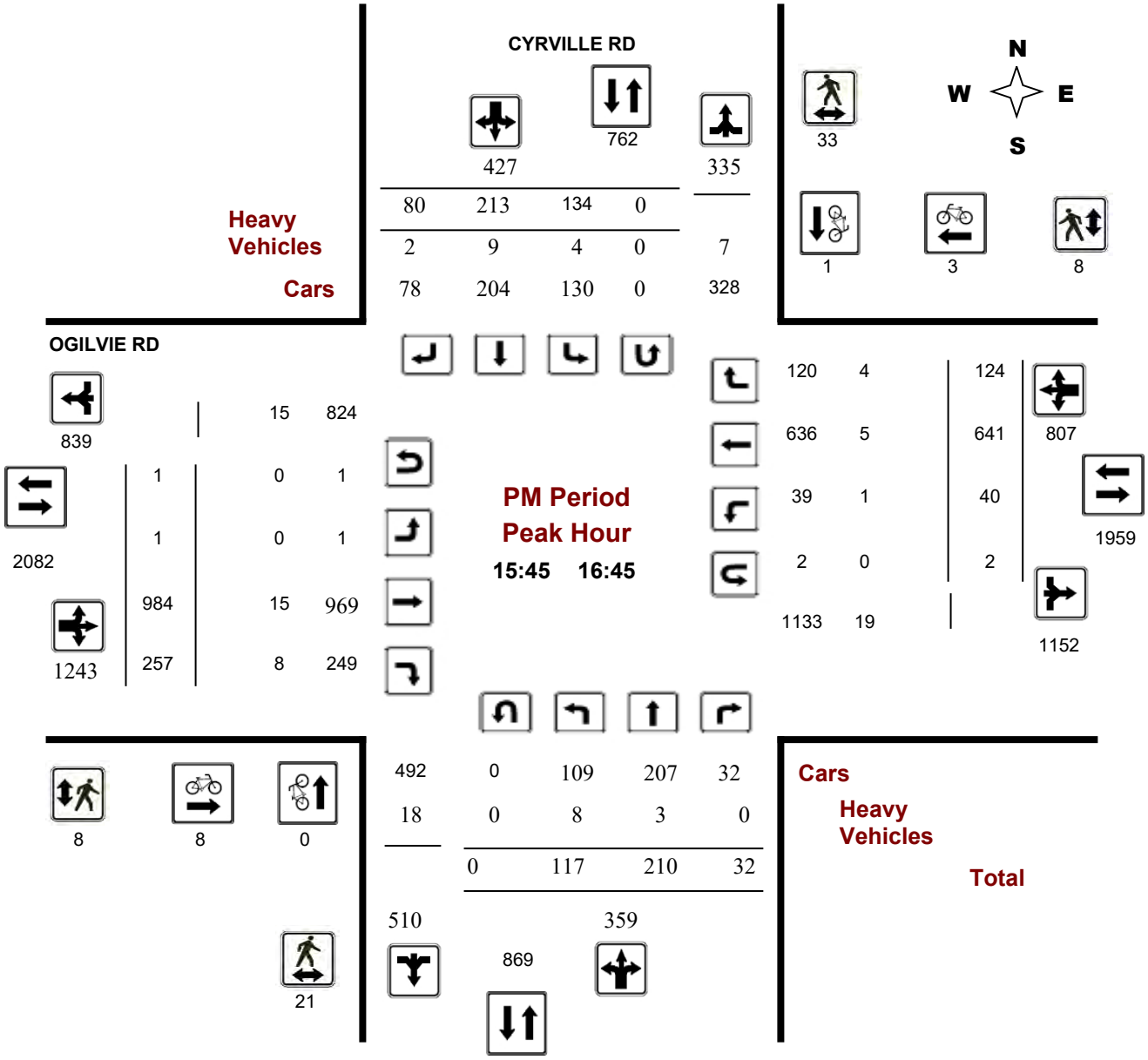
Transportation Services - Traffic Services

Turning Movement Count - 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

Time Period		CYRVILLE RD			OGILVIE RD			
		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

		CYRVILLE RD	CYRVILLE RD	OGILVIE RD	OGILVIE RD	
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	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

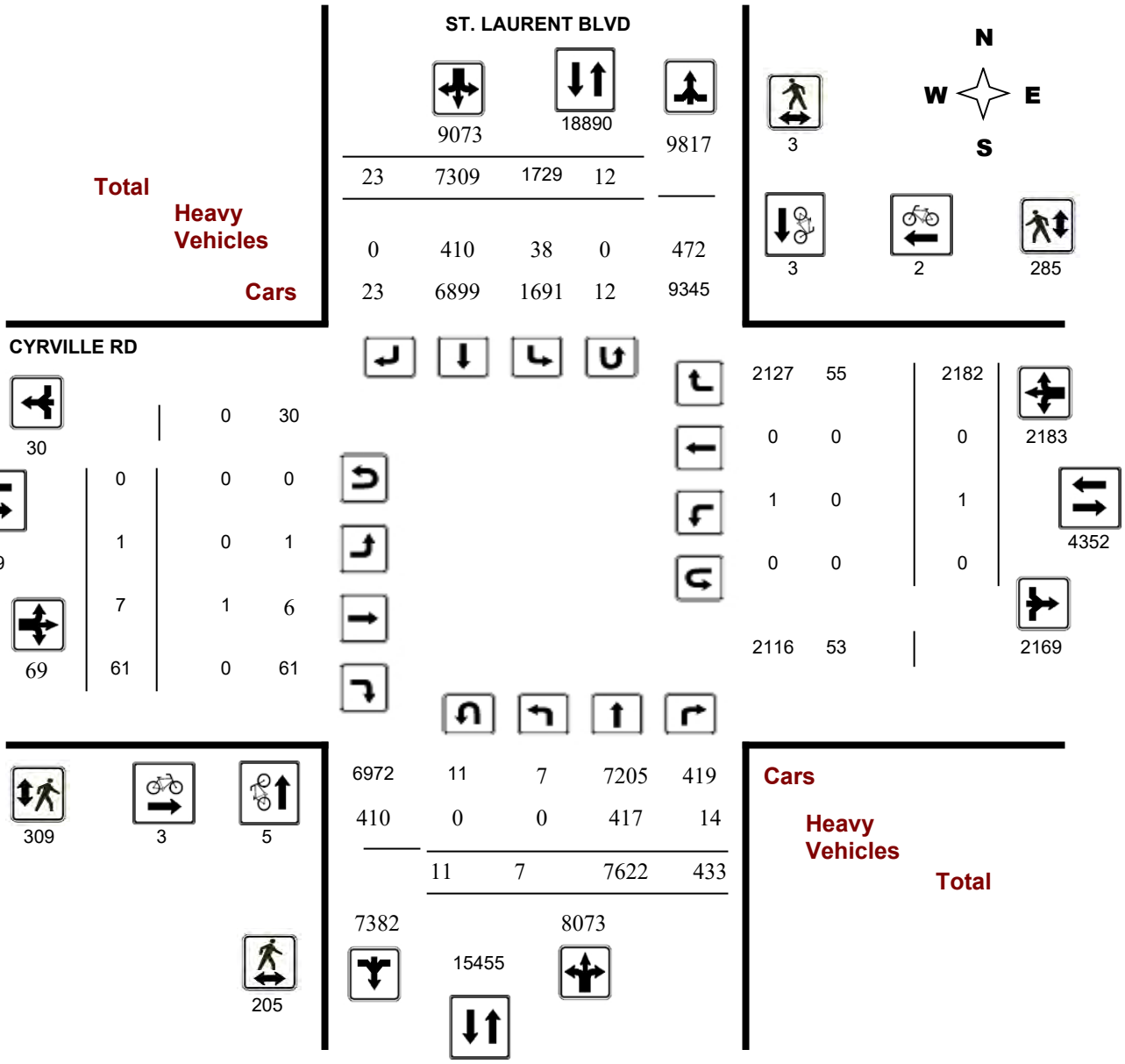
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018
Start Time: 07:00
WO No: 38201
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

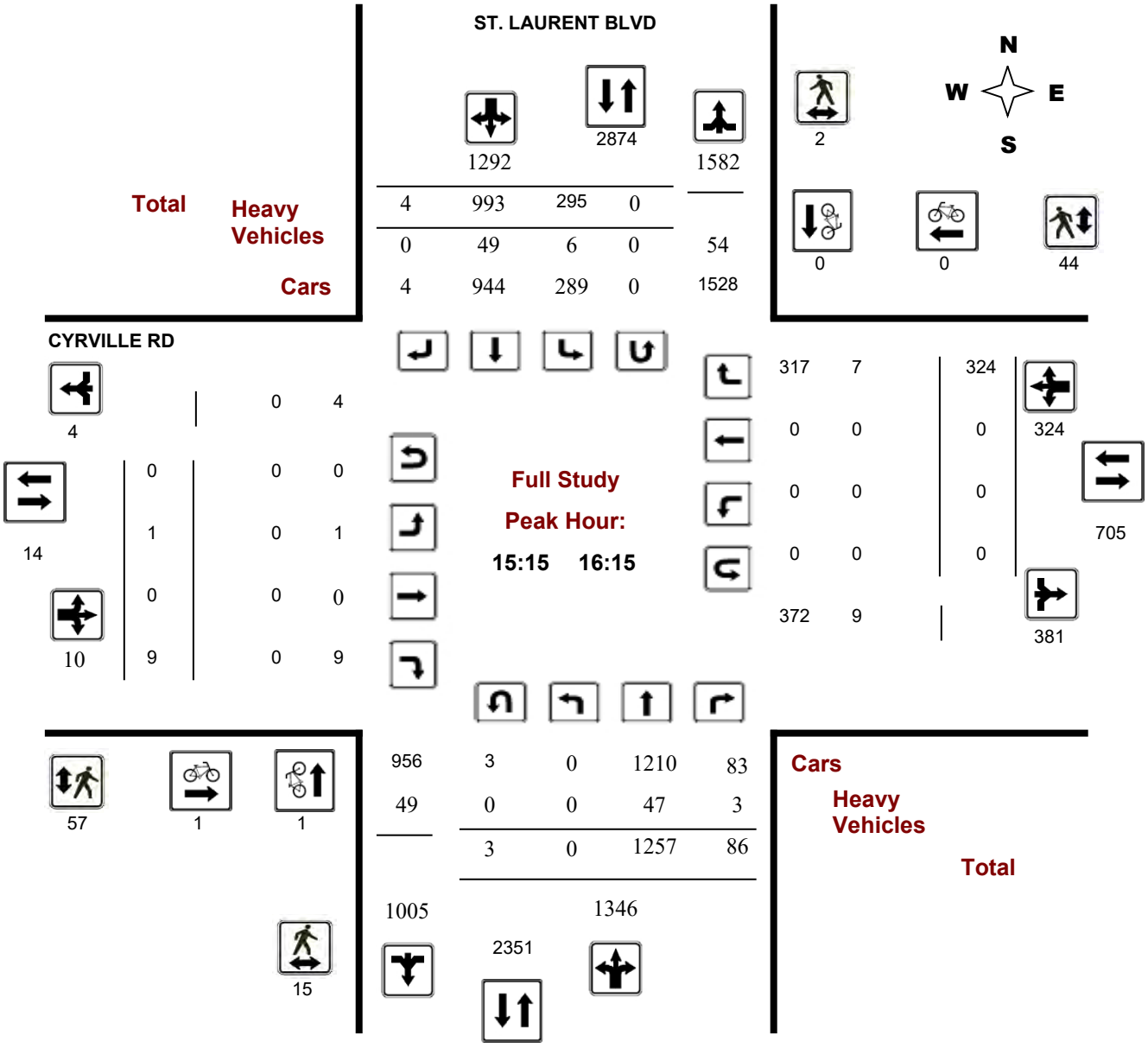
Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study Peak Hour Diagram



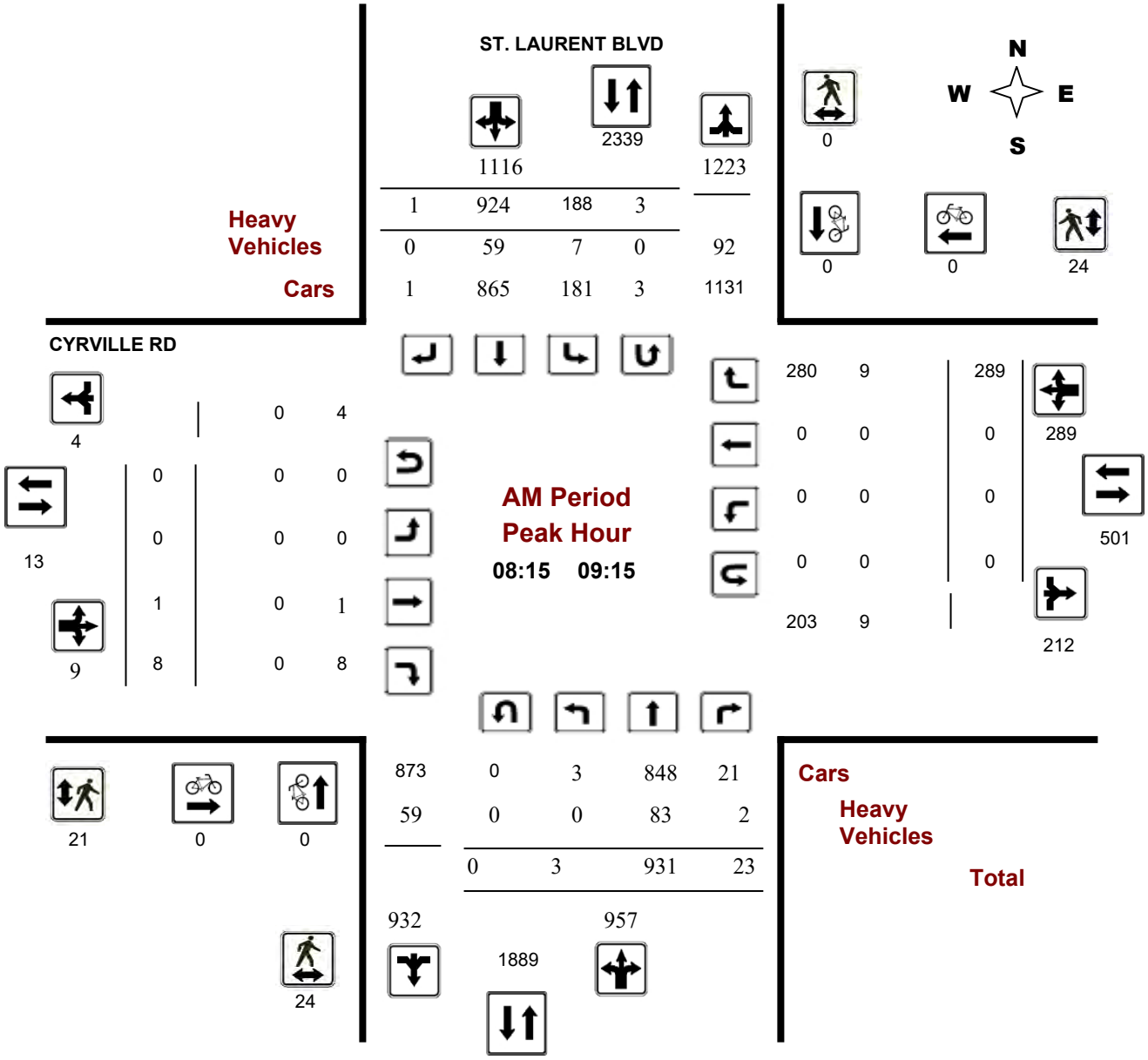
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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



Comments

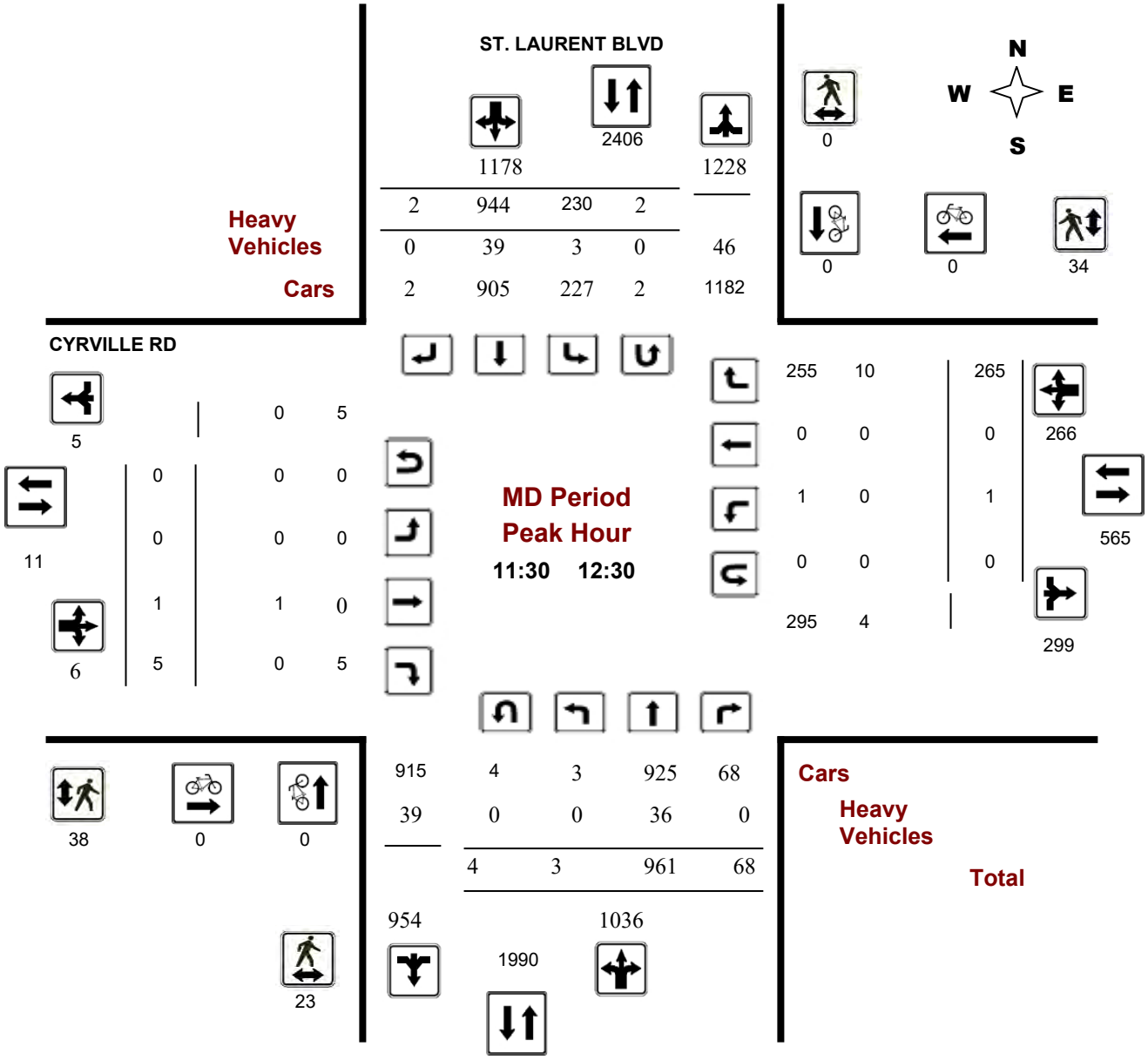
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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



Comments

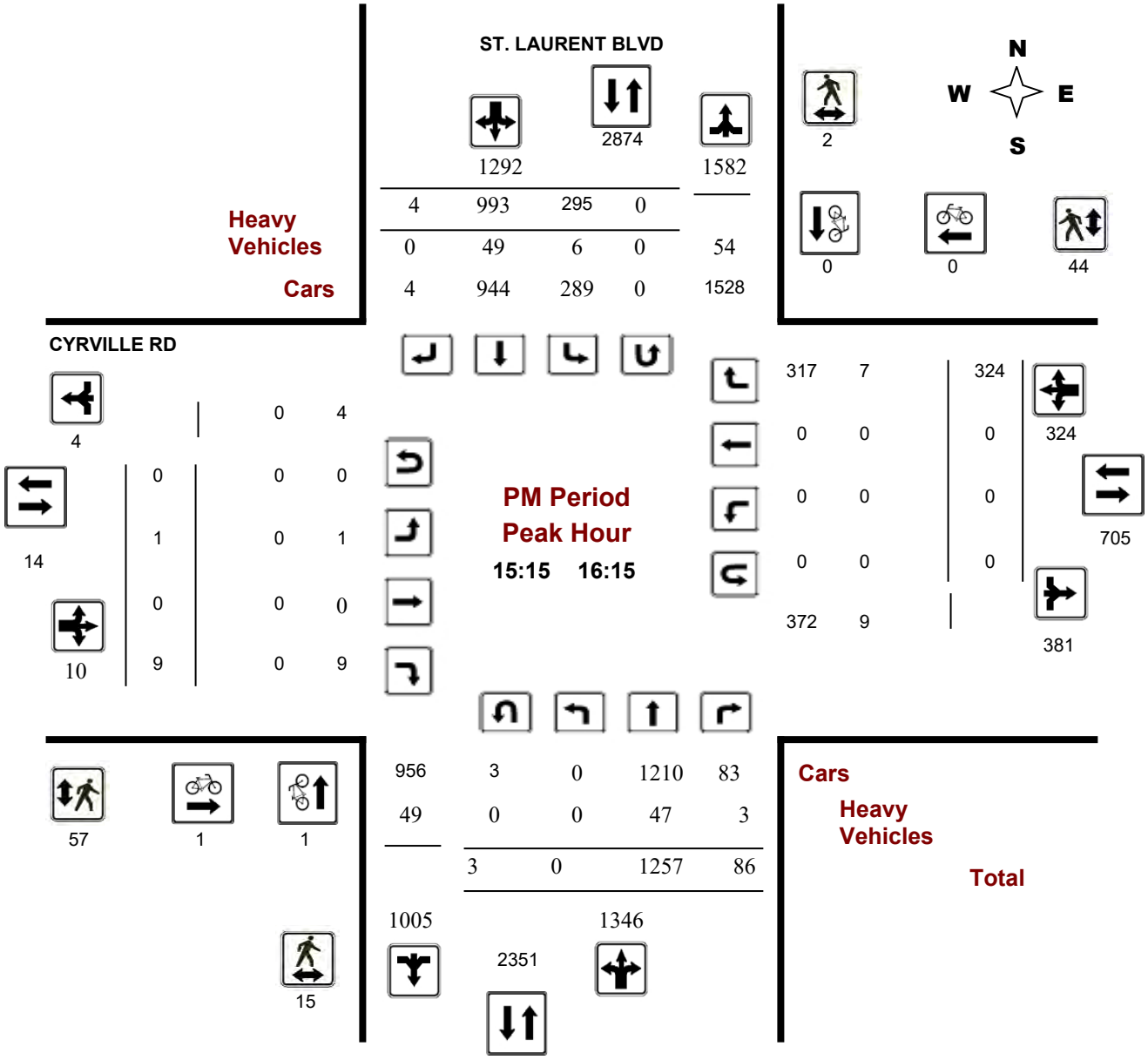
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, December 12, 2018

Total Observed U-Turns

Northbound: 11 Southbound: 12

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	ST. LAURENT BLVD								CYRVILLE 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	0	631	14	**645**	149	786	3	**938**	**1583**	0	2	10	**12**	0	0	269	**269**	**281**	**1864**
08:00 09:00	2	921	21	**944**	183	912	1	**1096**	**2040**	0	1	1	**2**	0	0	305	**305**	**307**	**2347**
09:00 10:00	1	736	24	**761**	157	828	4	**989**	**1750**	0	0	17	**17**	0	0	215	**215**	**232**	**1982**
11:30 12:30	3	961	68	**1032**	230	944	2	**1176**	**2208**	0	1	5	**6**	1	0	265	**266**	**272**	**2480**
12:30 13:30	1	859	60	**920**	205	979	4	**1188**	**2108**	0	1	7	**8**	0	0	241	**241**	**249**	**2357**
15:00 16:00	0	1222	86	**1308**	278	989	5	**1272**	**2580**	1	1	9	**11**	0	0	312	**312**	**323**	**2903**
16:00 17:00	0	1160	94	**1254**	301	964	2	**1267**	**2521**	0	0	6	**6**	0	0	310	**310**	**316**	**2837**
17:00 18:00	0	1132	66	**1198**	226	907	2	**1135**	**2333**	0	1	6	**7**	0	0	265	**265**	**272**	**2605**
Sub Total	7	7622	433	**8062**	1729	7309	23	**9061**	**17123**	1	7	61	**69**	1	0	2182	**2183**	**2252**	**19375**
U Turns				**11**				**12**	**23**				**0**				**0**	**0**	**23**
Total	7	7622	433	**8073**	1729	7309	23	**9073**	**17146**	1	7	61	**69**	1	0	2182	**2183**	**2252**	**19398**
EQ 12Hr	10	10595	602	**11221**	2403	10160	32	**12611**	**23833**	1	10	85	**96**	1	0	3033	**3034**	**3130**	**26963**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	9	9985	567	**10576**	2265	9575	30	**11886**	**23833**	1	9	80	**90**	1	0	2858	**2860**	**3130**	**26963**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	12	13080	743	**13854**	2967	12543	39	**15570**	**29424**	2	12	105	**118**	2	0	3745	**3746**	**3864**	**33288**
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 @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study 15 Minute Increments

		ST. LAURENT BLVD									CYRVILLE 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	0	125	3	128	30	169	1	200	29	0	0	1	1	0	0	61	61	29	390
07:15	07:30	0	150	5	155	36	160	0	196	36	0	2	1	3	0	0	66	66	36	420
07:30	07:45	0	173	2	175	42	211	2	255	32	0	0	4	4	0	0	62	62	32	496
07:45	08:00	0	183	4	187	41	246	0	287	30	0	0	4	4	0	0	80	80	30	558
08:00	08:15	0	216	4	220	38	233	0	271	31	0	0	0	0	0	0	77	77	31	568
08:15	08:30	1	255	2	258	47	199	0	247	29	0	1	0	1	0	0	72	72	29	578
08:30	08:45	0	218	10	228	48	250	0	298	37	0	0	1	1	0	0	84	84	37	611
08:45	09:00	1	232	5	238	50	230	1	281	38	0	0	0	0	0	0	72	72	38	591
09:00	09:15	1	226	6	233	43	245	0	290	47	0	0	7	7	0	0	61	61	47	591
09:15	09:30	0	153	7	161	35	190	3	229	39	0	0	4	4	0	0	54	54	39	448
09:30	09:45	0	182	7	189	36	203	1	242	41	0	0	5	5	0	0	49	49	41	485
09:45	10:00	0	175	4	179	43	190	0	236	32	0	0	1	1	0	0	51	51	32	467
11:30	11:45	0	261	12	275	50	243	1	295	24	0	0	1	1	0	0	57	57	24	628
11:45	12:00	1	231	15	248	59	237	0	297	19	0	0	1	1	0	0	69	69	19	615
12:00	12:15	1	243	29	274	57	221	1	279	19	0	0	0	0	0	0	68	68	19	621
12:15	12:30	1	226	12	239	64	243	0	307	16	0	1	3	4	1	0	71	72	16	622
12:30	12:45	0	224	12	238	48	269	1	318	31	0	1	2	3	0	0	62	62	31	621
12:45	13:00	0	196	16	212	60	229	0	289	26	0	0	2	2	0	0	63	63	26	566
13:00	13:15	0	235	20	255	56	237	2	295	29	0	0	2	2	0	0	51	51	29	603
13:15	13:30	1	204	12	218	41	244	1	287	22	0	0	1	1	0	0	65	65	22	571
15:00	15:15	0	286	24	310	57	257	2	316	29	0	1	3	4	0	0	67	67	29	697
15:15	15:30	0	313	23	337	65	266	1	332	32	0	0	2	2	0	0	87	87	32	758
15:30	15:45	0	321	22	343	75	220	1	296	21	0	0	2	2	0	0	72	72	21	713
15:45	16:00	0	302	17	321	81	246	1	328	29	1	0	2	3	0	0	86	86	29	738
16:00	16:15	0	321	24	345	74	261	1	336	23	0	0	3	3	0	0	79	79	23	763
16:15	16:30	0	291	21	312	79	241	1	321	23	0	0	2	2	0	0	91	91	23	726
16:30	16:45	0	284	32	316	72	224	0	296	26	0	0	0	0	0	0	47	47	26	659
16:45	17:00	0	264	17	281	76	238	0	314	16	0	0	1	1	0	0	93	93	16	689
17:00	17:15	0	288	15	303	58	226	0	284	14	0	1	0	1	0	0	81	81	14	669
17:15	17:30	0	288	7	295	68	227	0	295	28	0	0	0	0	0	0	67	67	28	657
17:30	17:45	0	273	25	298	44	226	2	272	17	0	0	4	4	0	0	51	51	17	625
17:45	18:00	0	283	19	302	56	228	0	284	14	0	0	2	2	0	0	66	66	14	654
Total:		7	7622	433	8073	1729	7309	23	9073	879	1	7	61	69	1	0	2182	2183	879	19,398

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study Cyclist Volume

Time Period		ST. LAURENT BLVD			CYRVILLE RD			
		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	1	2	2
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	1	0	1	0	0	0	1
13:15	13:30	1	0	1	0	0	0	1
15:00	15:15	2	0	2	0	1	1	3
15:15	15:30	1	0	1	0	0	0	1
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	0	1	1
16:15	16:30	0	1	1	0	0	0	1
16:30	16:45	0	1	1	1	0	1	2
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		5	3	**8**	3	2	5	13

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study Pedestrian Volume

	ST. LAURENT BLVD			CYRVILLE 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	5	0	**5**	5	1	**6**	**11**
07:15 07:30	5	0	**5**	5	5	**10**	**15**
07:30 07:45	4	0	**4**	8	1	**9**	**13**
07:45 08:00	7	0	**7**	9	8	**17**	**24**
08:00 08:15	8	0	**8**	13	3	**16**	**24**
08:15 08:30	6	0	**6**	8	1	**9**	**15**
08:30 08:45	3	0	**3**	6	8	**14**	**17**
08:45 09:00	9	0	**9**	7	10	**17**	**26**
09:00 09:15	6	0	**6**	0	5	**5**	**11**
09:15 09:30	9	0	**9**	6	4	**10**	**19**
09:30 09:45	5	0	**5**	11	11	**22**	**27**
09:45 10:00	4	0	**4**	8	4	**12**	**16**
11:30 11:45	6	0	**6**	10	6	**16**	**22**
11:45 12:00	2	0	**2**	8	7	**15**	**17**
12:00 12:15	7	0	**7**	10	11	**21**	**28**
12:15 12:30	8	0	**8**	10	10	**20**	**28**
12:30 12:45	7	0	**7**	7	15	**22**	**29**
12:45 13:00	17	0	**17**	7	14	**21**	**38**
13:00 13:15	6	0	**6**	12	15	**27**	**33**
13:15 13:30	2	0	**2**	14	8	**22**	**24**
15:00 15:15	4	0	**4**	10	15	**25**	**29**
15:15 15:30	3	2	**5**	12	6	**18**	**23**
15:30 15:45	2	0	**2**	13	15	**28**	**30**
15:45 16:00	7	0	**7**	9	11	**20**	**27**
16:00 16:15	3	0	**3**	23	12	**35**	**38**
16:15 16:30	9	0	**9**	15	15	**30**	**39**
16:30 16:45	6	0	**6**	13	9	**22**	**28**
16:45 17:00	10	1	**11**	8	11	**19**	**30**
17:00 17:15	8	0	**8**	11	15	**26**	**34**
17:15 17:30	11	0	**11**	12	13	**25**	**36**
17:30 17:45	12	0	**12**	9	13	**22**	**34**
17:45 18:00	4	0	**4**	10	3	**13**	**17**
Total	205	3	**208**	309	285	**594**	**802**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study Heavy Vehicles

		ST. LAURENT BLVD									CYRVILLE 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	0	20	1	**21**	2	6	0	**8**	**29**	0	0	0	**0**	0	0	4	**4**	**4**	**33**
07:15	07:30	0	23	1	**24**	0	12	0	**12**	**36**	0	0	0	**0**	0	0	1	**1**	**1**	**37**
07:30	07:45	0	22	1	**23**	1	8	0	**9**	**32**	0	0	0	**0**	0	0	2	**2**	**2**	**34**
07:45	08:00	0	16	1	**17**	0	13	0	**13**	**30**	0	0	0	**0**	0	0	1	**1**	**1**	**31**
08:00	08:15	0	16	1	**17**	0	14	0	**14**	**31**	0	0	0	**0**	0	0	3	**3**	**3**	**34**
08:15	08:30	0	15	1	**16**	2	11	0	**13**	**29**	0	0	0	**0**	0	0	2	**2**	**2**	**31**
08:30	08:45	0	24	1	**25**	2	10	0	**12**	**37**	0	0	0	**0**	0	0	1	**1**	**1**	**38**
08:45	09:00	0	23	0	**23**	0	15	0	**15**	**38**	0	0	0	**0**	0	0	3	**3**	**3**	**41**
09:00	09:15	0	21	0	**21**	3	23	0	**26**	**47**	0	0	0	**0**	0	0	3	**3**	**3**	**50**
09:15	09:30	0	17	0	**17**	3	19	0	**22**	**39**	0	0	0	**0**	0	0	0	**0**	**0**	**39**
09:30	09:45	0	22	1	**23**	3	15	0	**18**	**41**	0	0	0	**0**	0	0	1	**1**	**1**	**42**
09:45	10:00	0	16	0	**16**	1	15	0	**16**	**32**	0	0	0	**0**	0	0	3	**3**	**3**	**35**
11:30	11:45	0	15	0	**15**	1	8	0	**9**	**24**	0	0	0	**0**	0	0	1	**1**	**1**	**25**
11:45	12:00	0	6	0	**6**	0	13	0	**13**	**19**	0	0	0	**0**	0	0	1	**1**	**1**	**20**
12:00	12:15	0	6	0	**6**	1	12	0	**13**	**19**	0	0	0	**0**	0	0	5	**5**	**5**	**24**
12:15	12:30	0	9	0	**9**	1	6	0	**7**	**16**	0	1	0	**1**	0	0	3	**3**	**4**	**20**
12:30	12:45	0	13	0	**13**	1	17	0	**18**	**31**	0	0	0	**0**	0	0	4	**4**	**4**	**35**
12:45	13:00	0	9	1	**10**	0	16	0	**16**	**26**	0	0	0	**0**	0	0	1	**1**	**1**	**27**
13:00	13:15	0	11	0	**11**	2	16	0	**18**	**29**	0	0	0	**0**	0	0	2	**2**	**2**	**31**
13:15	13:30	0	10	0	**10**	1	11	0	**12**	**22**	0	0	0	**0**	0	0	1	**1**	**1**	**23**
15:00	15:15	0	6	2	**8**	1	20	0	**21**	**29**	0	0	0	**0**	0	0	2	**2**	**2**	**31**
15:15	15:30	0	16	1	**17**	3	12	0	**15**	**32**	0	0	0	**0**	0	0	2	**2**	**2**	**34**
15:30	15:45	0	8	1	**9**	1	11	0	**12**	**21**	0	0	0	**0**	0	0	1	**1**	**1**	**22**
15:45	16:00	0	13	0	**13**	1	15	0	**16**	**29**	0	0	0	**0**	0	0	4	**4**	**4**	**33**
16:00	16:15	0	10	1	**11**	1	11	0	**12**	**23**	0	0	0	**0**	0	0	0	**0**	**0**	**23**
16:15	16:30	0	9	0	**9**	2	12	0	**14**	**23**	0	0	0	**0**	0	0	0	**0**	**0**	**23**
16:30	16:45	0	5	0	**5**	1	20	0	**21**	**26**	0	0	0	**0**	0	0	2	**2**	**2**	**28**
16:45	17:00	0	6	0	**6**	1	9	0	**10**	**16**	0	0	0	**0**	0	0	2	**2**	**2**	**18**
17:00	17:15	0	5	0	**5**	1	8	0	**9**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
17:15	17:30	0	12	0	**12**	2	14	0	**16**	**28**	0	0	0	**0**	0	0	0	**0**	**0**	**28**
17:30	17:45	0	5	0	**5**	0	12	0	**12**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
17:45	18:00	0	8	0	**8**	0	6	0	**6**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
Total:	None	0	417	14	**431**	38	410	0	**448**	**879**	0	1	0	**1**	0	0	55	**55**	**56**	**935**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CYRVILLE RD @ ST. LAURENT BLVD

Survey Date: Wednesday, December 12, 2018 **WO No:** 38201

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

Full Study 15 Minute U-Turn Total

		ST. LAURENT BLVD		CYRVILLE RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	1	0	0	1
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	2	0	0	2
09:15	09:30	1	1	0	0	2
09:30	09:45	0	2	0	0	2
09:45	10:00	0	3	0	0	3
11:30	11:45	2	1	0	0	3
11:45	12:00	1	1	0	0	2
12:00	12:15	1	0	0	0	1
12:15	12:30	0	0	0	0	0
12:30	12:45	2	0	0	0	2
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	1	1	0	0	2
15:00	15:15	0	0	0	0	0
15:15	15:30	1	0	0	0	1
15:30	15:45	0	0	0	0	0
15:45	16:00	2	0	0	0	2
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	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		11	12	0	0	23

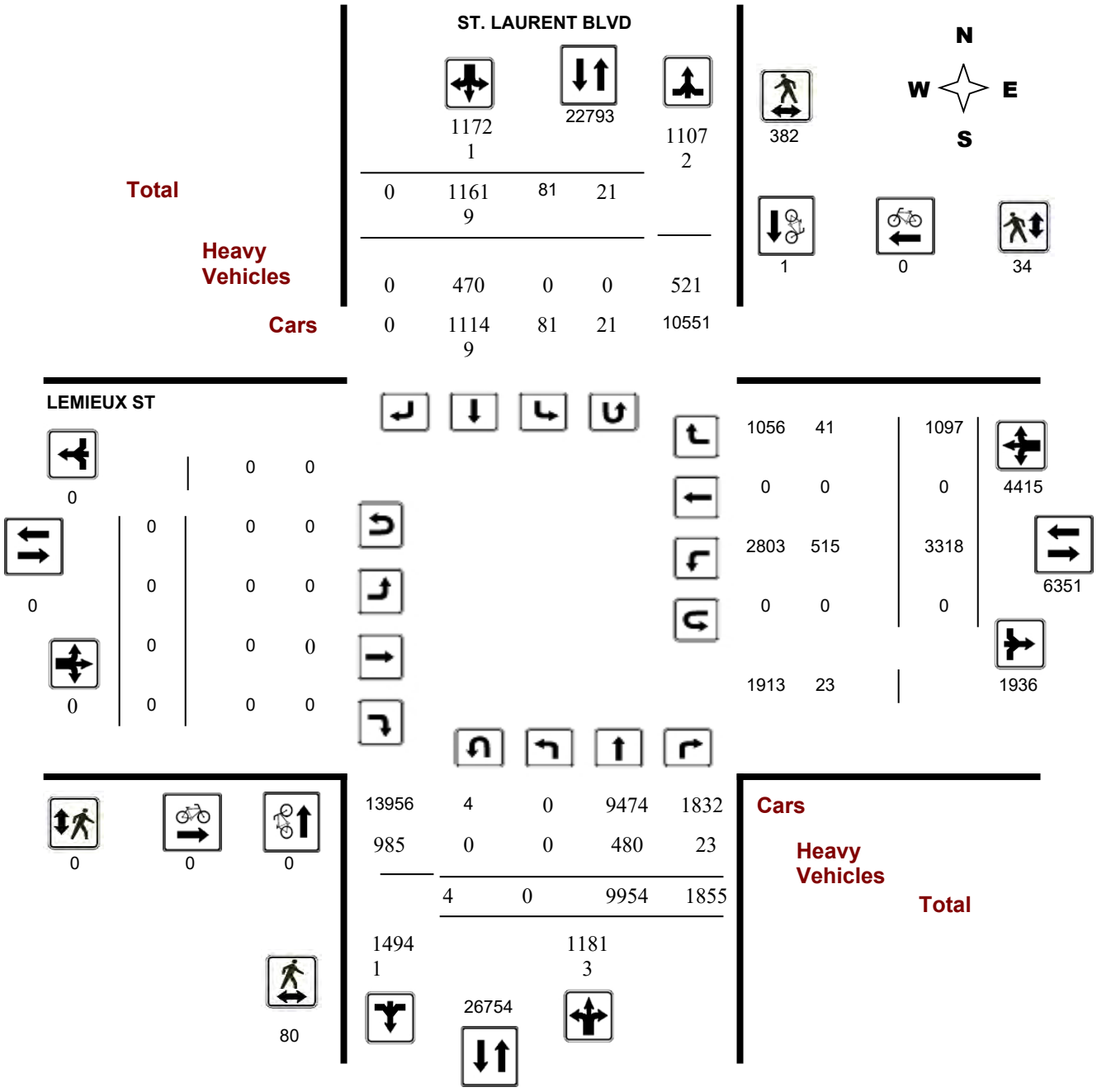
Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018
Start Time: 07:00
WO No: 37620
Device: Miovision

Full Study Diagram



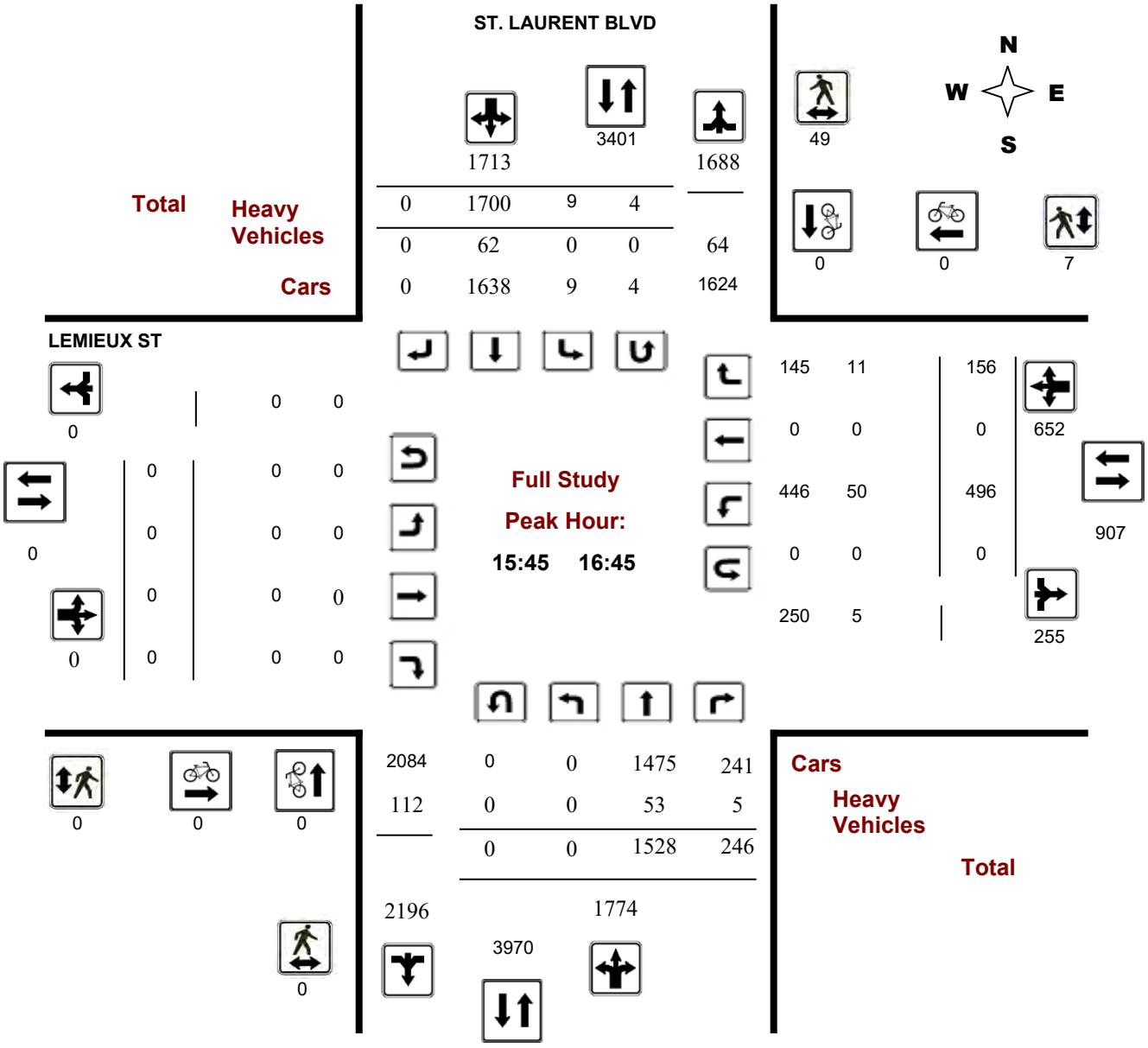
Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018
Start Time: 07:00
WO No: 37620
Device: Miovision

Full Study Peak Hour Diagram



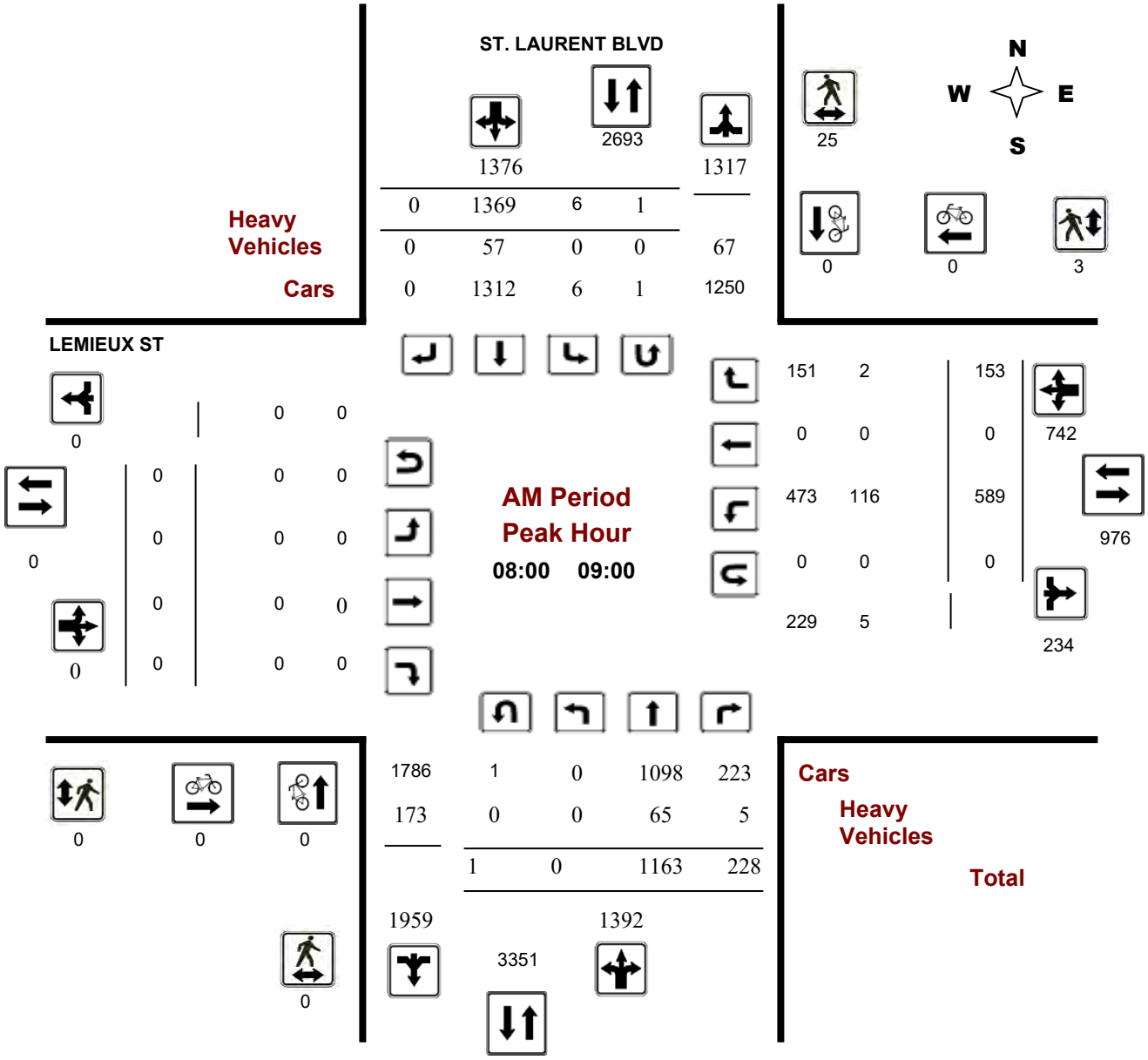
Transportation Services - Traffic Services

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

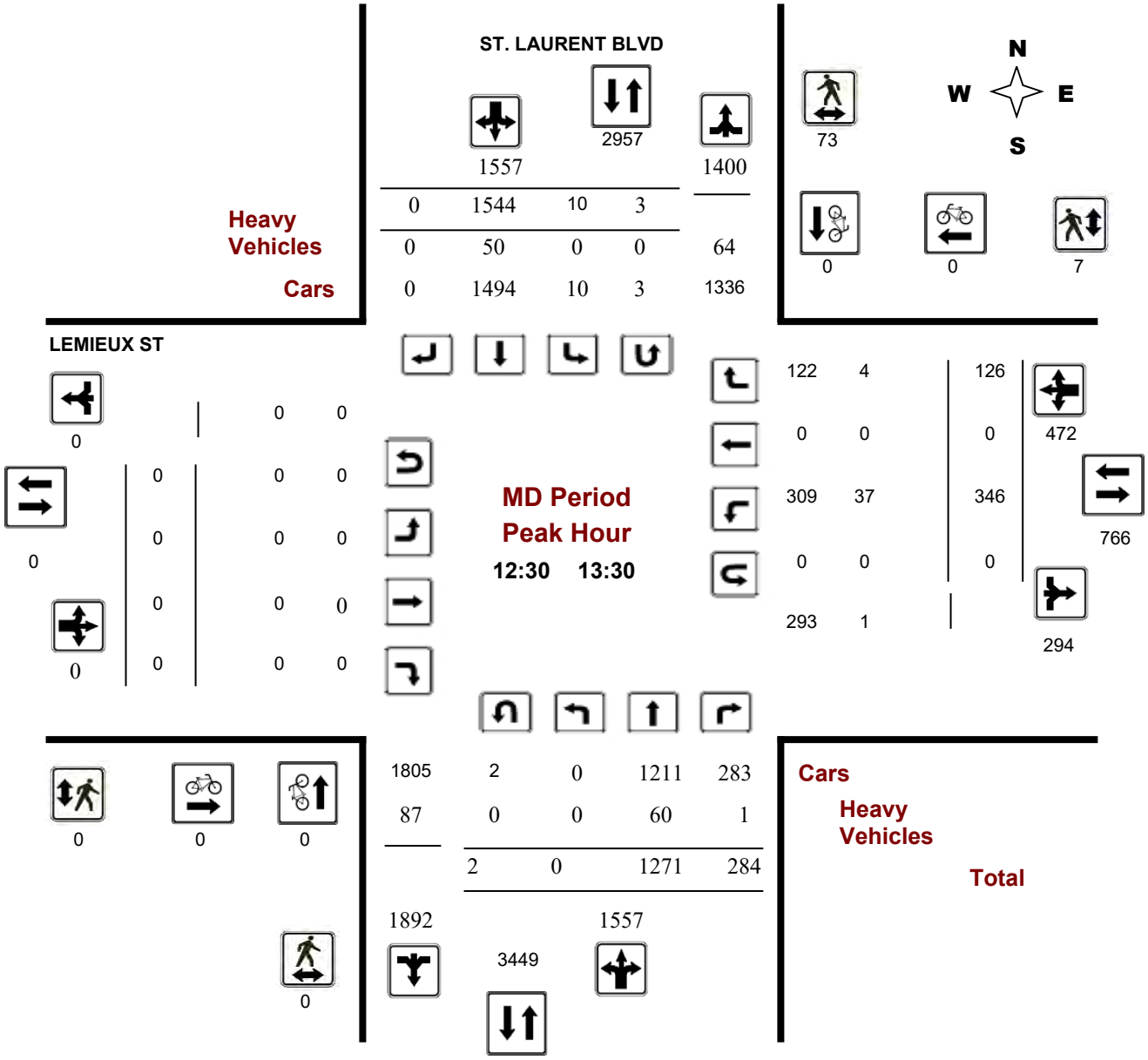
Transportation Services - Traffic Services

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



Comments

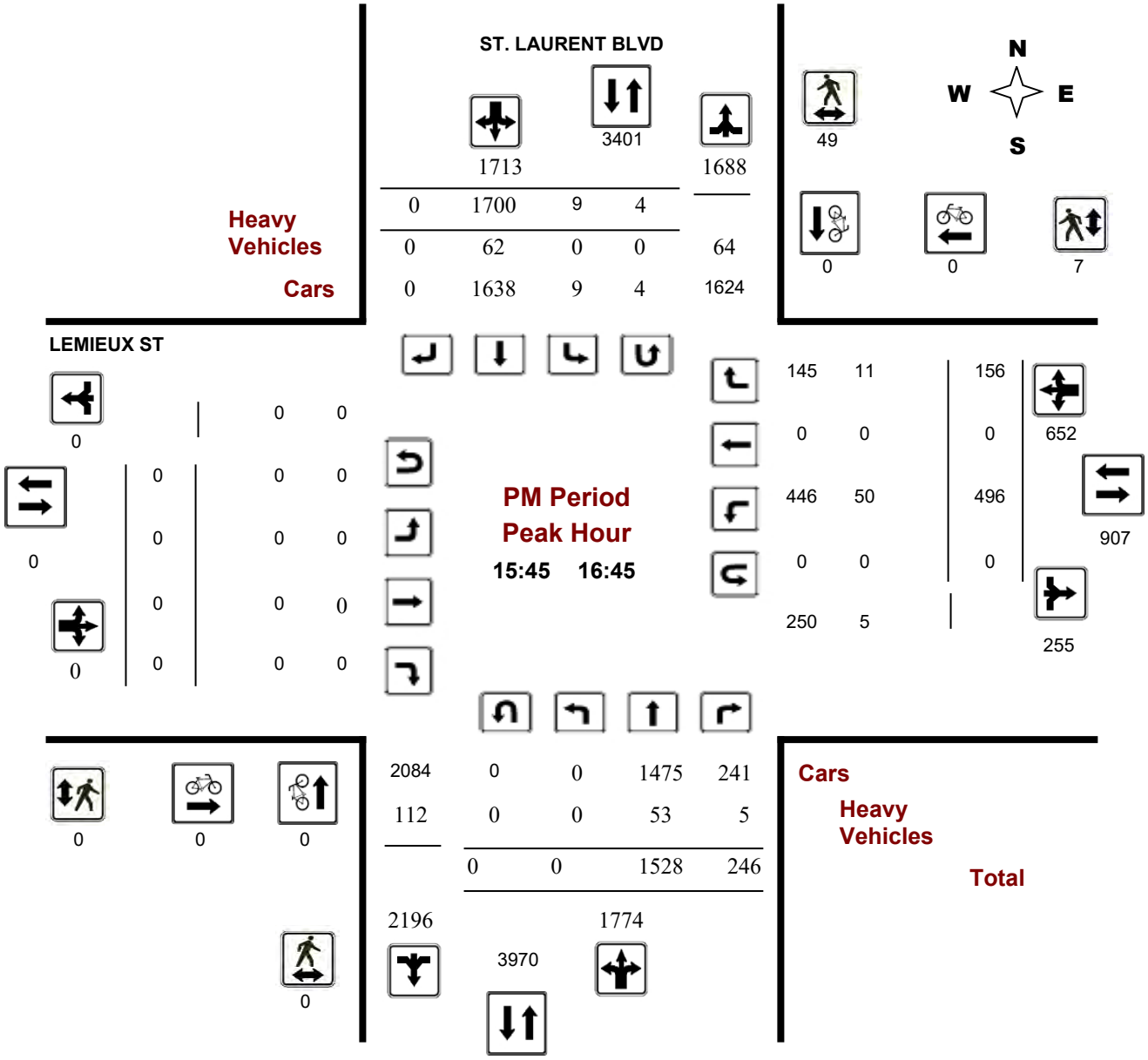
Transportation Services - Traffic Services

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



Comments

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

	ST. LAURENT BLVD			LEMIEUX ST			
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	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

Time Period		ST. LAURENT BLVD Northbound U-Turn Total	ST. LAURENT BLVD Southbound U-Turn Total	LEMIEUX ST Eastbound U-Turn Total	LEMIEUX ST 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

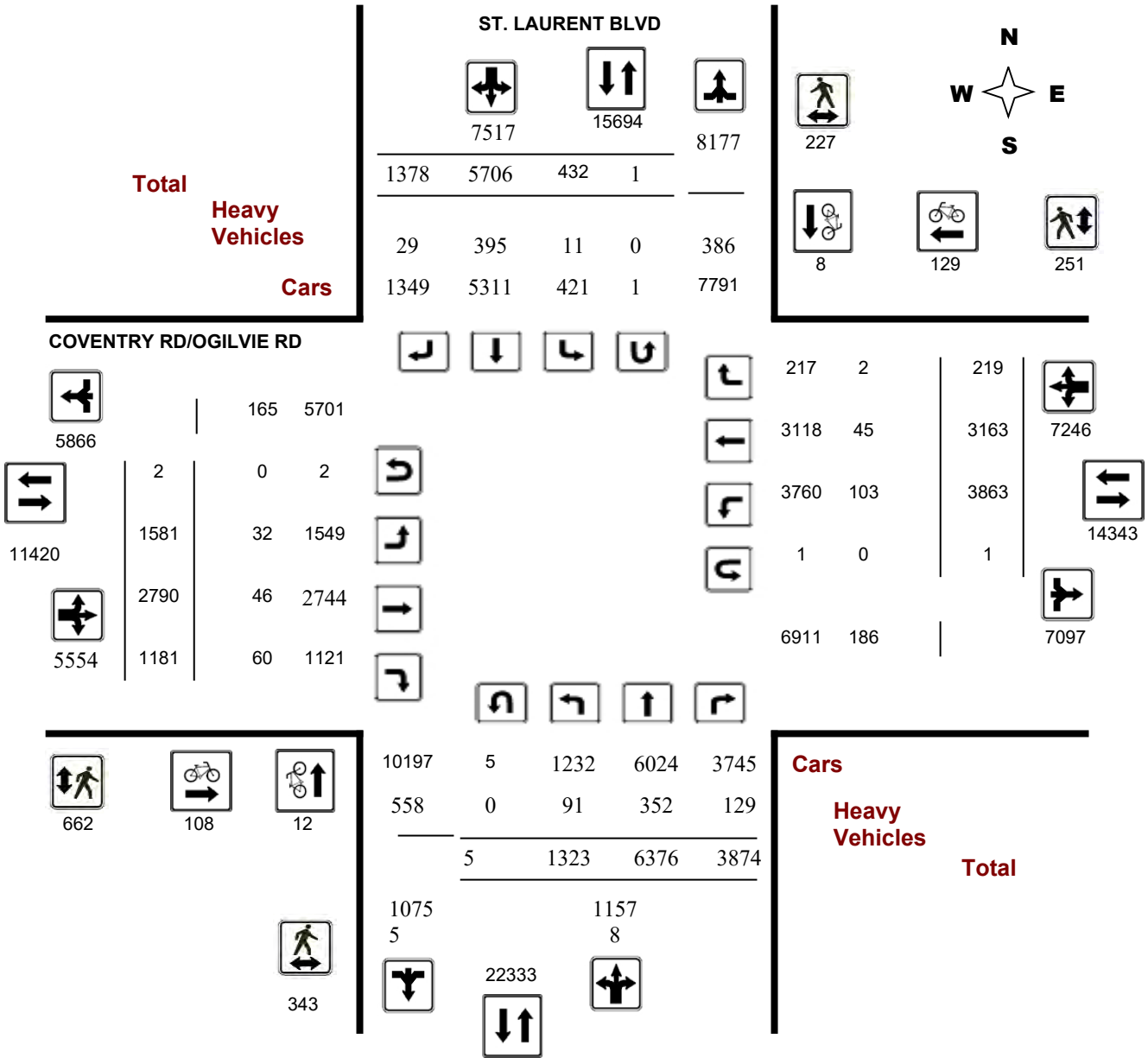
Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017
Start Time: 07:00
WO No: 37069
Device: Miovision

Full Study Diagram



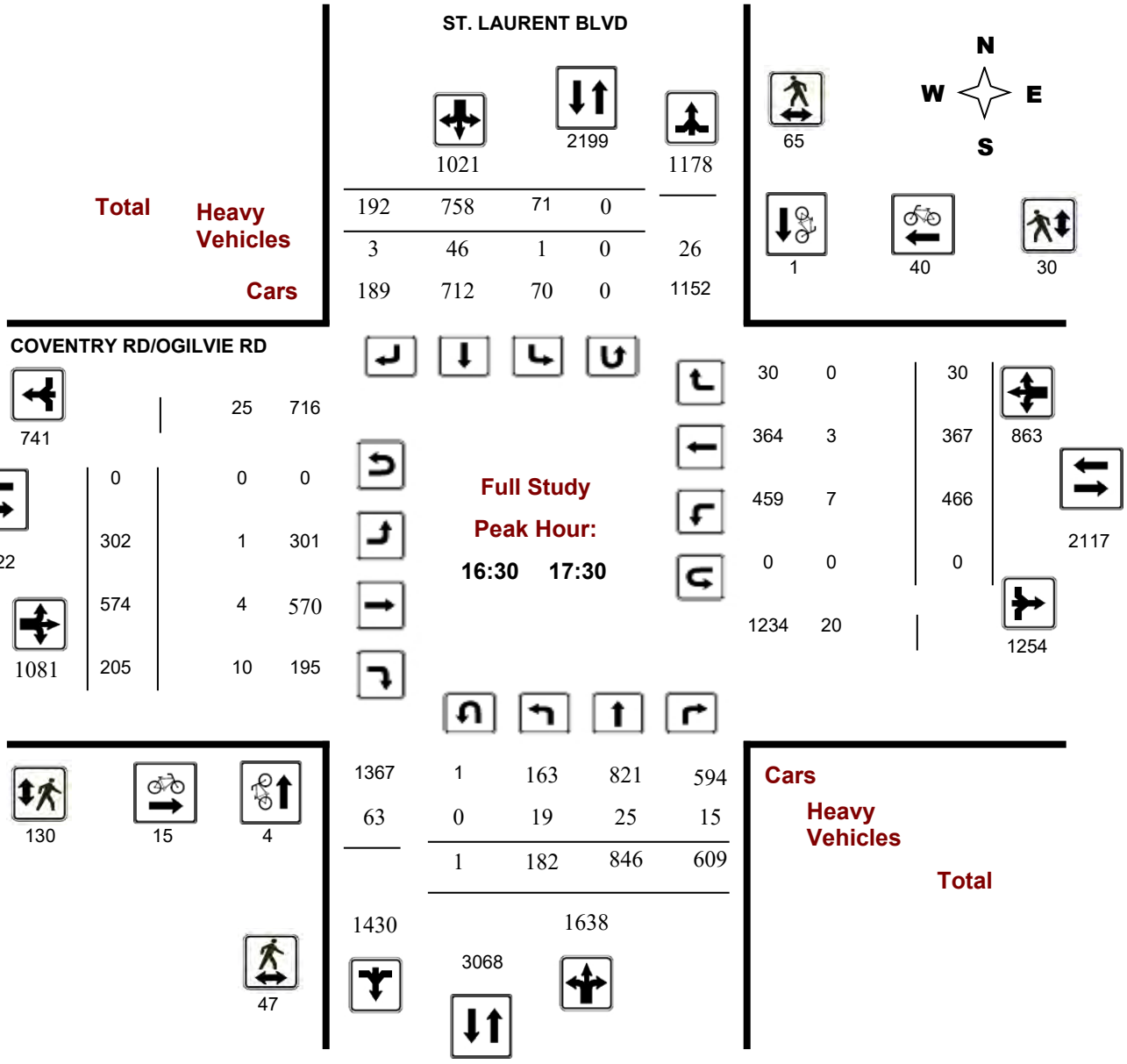
Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017
Start Time: 07:00
WO No: 37069
Device: Miovision

Full Study Peak Hour Diagram



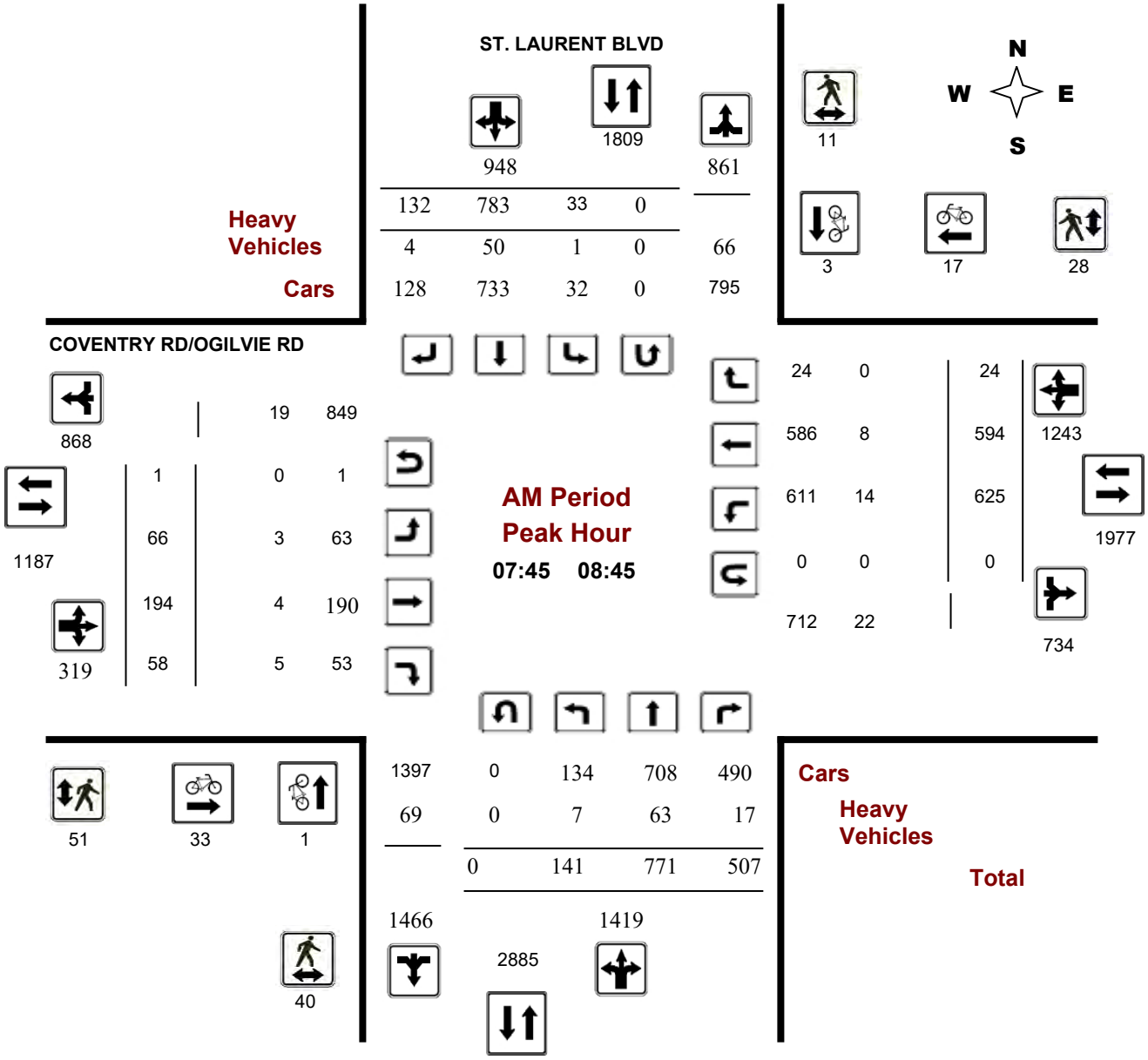
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017 **WO No:** 37069

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



Comments

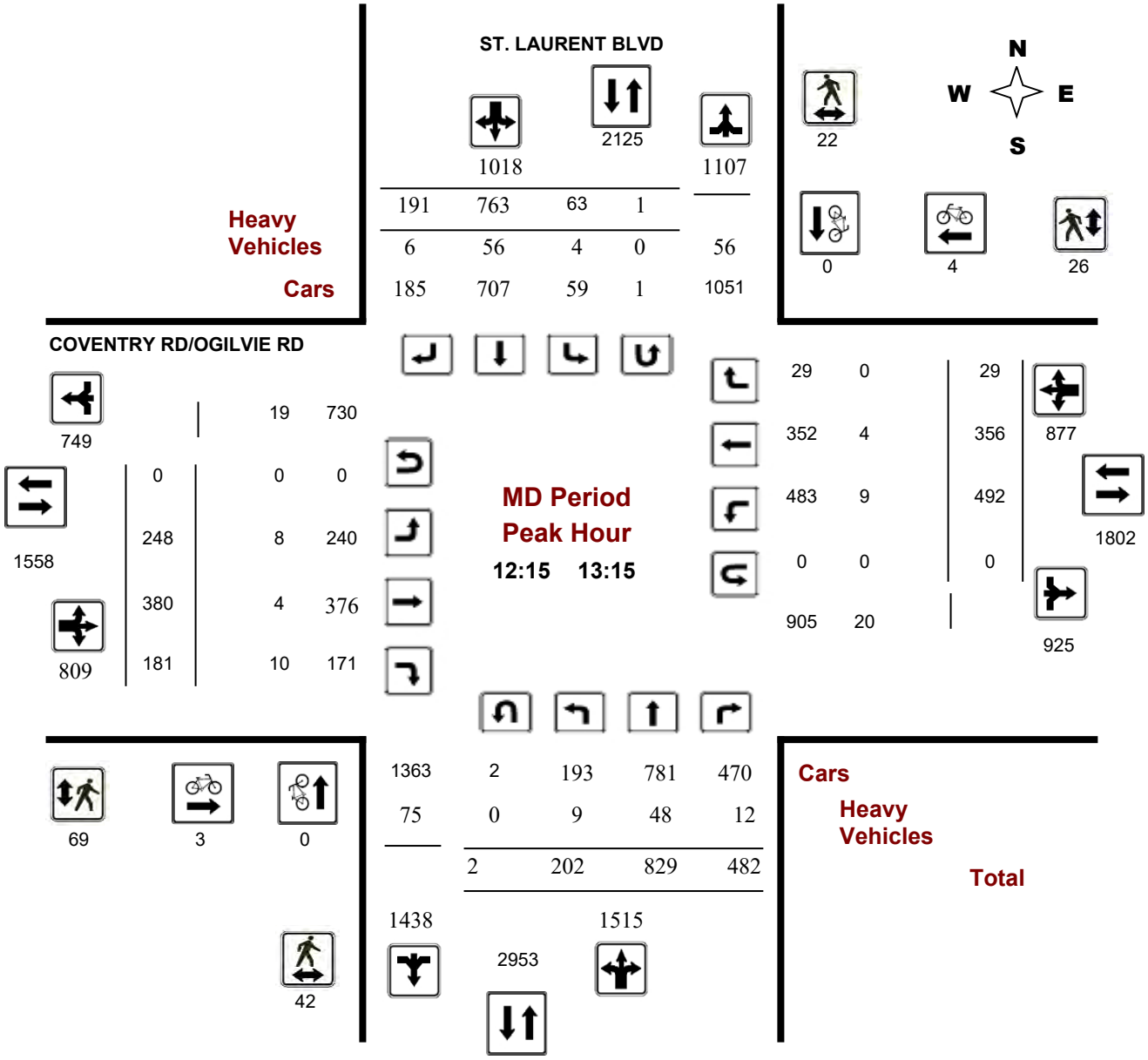
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017
Start Time: 07:00

WO No: 37069
Device: Miovision



Comments

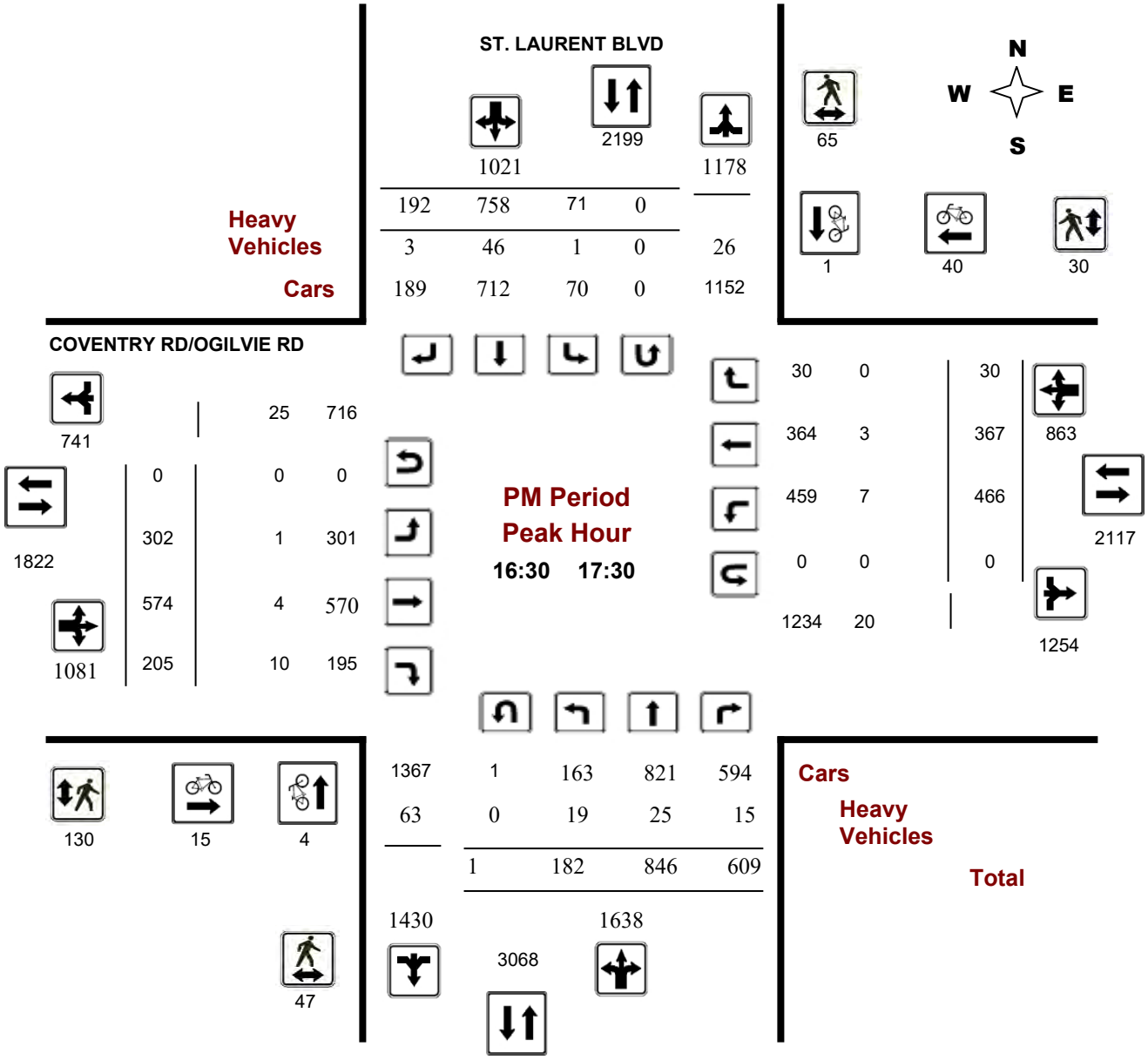
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017
Start Time: 07:00

WO No: 37069
Device: Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017 **WO No:** 37069

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, June 01, 2017

Total Observed U-Turns

Northbound: 5 Southbound: 1

Eastbound: 2 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	78	574	474	**1126**	47	702	104	**853**	**1979**	46	146	41	**233**	503	494	23	**1020**	**1253**	**3232**
08:00 09:00	136	813	493	**1442**	28	748	133	**909**	**2351**	89	198	67	**354**	592	593	21	**1206**	**1560**	**3911**
09:00 10:00	139	693	372	**1204**	43	647	177	**867**	**2071**	124	178	68	**370**	410	291	17	**718**	**1088**	**3159**
11:30 12:30	236	802	362	**1400**	46	625	201	**872**	**2272**	226	380	196	**802**	477	377	45	**899**	**1701**	**3973**
12:30 13:30	179	816	478	**1473**	65	766	187	**1018**	**2491**	270	365	182	**817**	484	360	26	**870**	**1687**	**4178**
15:00 16:00	178	929	508	**1615**	70	804	179	**1053**	**2668**	231	471	220	**922**	497	337	38	**872**	**1794**	**4462**
16:00 17:00	171	858	596	**1625**	73	729	192	**994**	**2619**	277	574	185	**1036**	435	390	36	**861**	**1897**	**4516**
17:00 18:00	206	891	591	**1688**	60	685	205	**950**	**2638**	318	478	222	**1018**	465	321	13	**799**	**1817**	**4455**
Sub Total	1323	6376	3874	**11573**	432	5706	1378	**7516**	**19089**	1581	2790	1181	**5552**	3863	3163	219	**7245**	**12797**	**31886**
U Turns				**5**				**1**	**6**				**2**				**1**	**3**	**9**
Total	1323	6376	3874	**11578**	432	5706	1378	**7517**	**19095**	1581	2790	1181	**5554**	3863	3163	219	**7246**	**12800**	**31895**
EQ 12Hr	1839	8863	5385	**16093**	600	7931	1915	**10449**	**26542**	2198	3878	1642	**7720**	5370	4397	304	**10072**	**17792**	**44334**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1560	7517	4567	**13650**	509	6727	1625	**8863**	**23888**	1864	3289	1392	**6548**	4554	3729	258	**8543**	**16013**	**39901**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**0.9**					
AVG 24Hr	2043	9848	5983	**17882**	667	8813	2128	**11610**	**29492**	2442	4309	1824	**8578**	5966	4885	338	**11191**	**19769**	**49261**
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, June 01, 2017 **WO No:** 37069

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	11	110	108	229	12	135	19	166	768	10	17	4	31	111	103	3	217	768	643
07:15	07:30	19	163	124	306	14	157	21	192	947	7	30	16	53	101	118	5	224	947	775
07:30	07:45	18	149	104	271	11	204	32	247	1041	16	45	12	73	135	142	7	284	1041	875
07:45	08:00	30	152	138	320	10	206	32	248	1112	13	54	9	77	156	131	8	295	1112	940
08:00	08:15	32	183	119	334	9	179	31	219	1120	18	40	14	72	167	164	6	337	1120	962
08:15	08:30	39	217	119	375	7	206	30	243	1248	14	59	17	90	170	155	6	331	1248	1039
08:30	08:45	40	219	131	390	7	192	39	238	1214	21	41	18	80	132	144	4	280	1214	988
08:45	09:00	25	194	124	343	5	171	33	209	1099	36	58	18	112	123	130	5	258	1099	922
09:00	09:15	33	177	114	324	16	148	46	210	982	26	42	7	75	89	79	1	169	982	778
09:15	09:30	32	171	106	309	13	163	37	213	1008	29	41	15	85	103	64	5	172	1008	779
09:30	09:45	35	180	86	301	4	167	56	227	1037	29	44	18	91	108	82	7	197	1037	816
09:45	10:00	39	165	66	270	10	169	38	217	1003	40	51	28	119	110	66	4	180	1003	786
11:30	11:45	50	203	94	347	10	159	43	212	1136	52	89	50	191	102	96	11	209	1136	959
11:45	12:00	61	171	85	317	13	143	54	210	1125	68	94	59	221	144	104	13	261	1125	1009
12:00	12:15	56	229	86	371	10	174	54	238	1213	48	94	41	183	98	105	14	217	1213	1009
12:15	12:30	69	199	97	365	13	149	50	212	1169	58	103	46	207	133	72	7	212	1169	996
12:30	12:45	50	210	129	390	15	207	45	267	1300	62	102	40	204	113	116	10	239	1300	1100
12:45	13:00	47	197	125	369	17	183	51	252	1261	74	88	50	212	129	70	6	205	1261	1038
13:00	13:15	36	223	131	391	18	224	45	287	1348	54	87	45	186	117	98	6	221	1348	1085
13:15	13:30	46	186	93	325	15	152	46	213	1132	80	88	47	216	125	76	4	205	1132	959
15:00	15:15	50	252	131	433	15	208	54	277	1391	48	117	45	210	119	87	9	216	1391	1136
15:15	15:30	46	221	114	382	15	198	47	260	1303	56	101	50	207	125	66	10	201	1303	1050
15:30	15:45	39	249	133	422	12	207	38	257	1379	50	133	72	255	111	91	10	212	1379	1146
15:45	16:00	43	207	130	380	28	191	40	259	1318	77	120	53	250	142	93	9	244	1318	1133
16:00	16:15	43	237	156	436	19	174	46	239	1306	57	124	61	242	97	99	5	201	1306	1118
16:15	16:30	47	205	150	402	19	164	51	234	1261	83	144	48	275	117	91	8	216	1261	1127
16:30	16:45	37	240	174	451	14	197	40	251	1361	62	166	46	274	101	110	13	224	1361	1200
16:45	17:00	44	176	116	336	21	194	55	270	1211	75	140	30	245	120	90	10	220	1211	1071
17:00	17:15	45	224	154	424	15	193	50	258	1360	71	145	73	289	115	89	1	205	1360	1176
17:15	17:30	56	206	165	427	21	174	47	242	1335	94	123	56	273	130	78	6	214	1335	1156
17:30	17:45	53	226	157	436	11	164	47	222	1306	93	123	48	264	115	83	2	200	1306	1122
17:45	18:00	52	235	115	402	13	154	61	228	1233	60	87	45	192	105	71	4	180	1233	1002
Total:		1323	6376	3874	1157	432	5706	1378	7517	38027	1581	2790	1181	5554	3863	3163	219	7246	38027	31,895

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, June 01, 2017 **WO No:** 37069

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

Full Study Cyclist Volume

Time Period		ST. LAURENT BLVD			COVENTRY RD/OGILVIE RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	6	2	8	8
07:15	07:30	0	0	0	7	3	10	10
07:30	07:45	0	1	1	9	7	16	17
07:45	08:00	0	0	0	7	5	12	12
08:00	08:15	1	2	3	12	4	16	19
08:15	08:30	0	0	0	9	8	17	17
08:30	08:45	0	1	1	5	0	5	6
08:45	09:00	0	0	0	6	2	8	8
09:00	09:15	0	0	0	4	3	7	7
09:15	09:30	0	0	0	2	1	3	3
09:30	09:45	1	0	1	5	2	7	8
09:45	10:00	1	0	1	1	1	2	3
11:30	11:45	0	0	0	1	0	1	1
11:45	12:00	0	0	0	0	2	2	2
12:00	12:15	0	0	0	1	2	3	3
12:15	12:30	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	2	2	2
12:45	13:00	0	0	0	2	0	2	2
13:00	13:15	0	0	0	1	2	3	3
13:15	13:30	0	1	1	0	2	2	3
15:00	15:15	4	0	4	0	5	5	9
15:15	15:30	1	1	2	2	4	6	8
15:30	15:45	0	1	1	1	3	4	5
15:45	16:00	0	0	0	2	2	4	4
16:00	16:15	0	0	0	1	7	8	8
16:15	16:30	0	0	0	4	11	15	15
16:30	16:45	1	0	1	5	7	12	13
16:45	17:00	2	0	2	5	14	19	21
17:00	17:15	1	0	1	1	8	9	10
17:15	17:30	0	1	1	4	11	15	16
17:30	17:45	0	0	0	3	6	9	9
17:45	18:00	0	0	0	2	3	5	5
Total		12	8	**20**	108	129	237	257

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017 **WO No:** 37069

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	8	3	**11**	12	3	**15**	**26**
07:15 07:30	4	3	**7**	16	0	**16**	**23**
07:30 07:45	13	3	**16**	14	13	**27**	**43**
07:45 08:00	10	3	**13**	16	12	**28**	**41**
08:00 08:15	7	2	**9**	14	4	**18**	**27**
08:15 08:30	11	3	**14**	13	10	**23**	**37**
08:30 08:45	12	3	**15**	8	2	**10**	**25**
08:45 09:00	7	9	**16**	23	4	**27**	**43**
09:00 09:15	10	4	**14**	14	4	**18**	**32**
09:15 09:30	9	1	**10**	21	7	**28**	**38**
09:30 09:45	13	1	**14**	9	7	**16**	**30**
09:45 10:00	16	1	**17**	6	10	**16**	**33**
11:30 11:45	7	4	**11**	26	6	**32**	**43**
11:45 12:00	12	6	**18**	22	10	**32**	**50**
12:00 12:15	14	5	**19**	18	13	**31**	**50**
12:15 12:30	7	7	**14**	22	4	**26**	**40**
12:30 12:45	10	2	**12**	15	8	**23**	**35**
12:45 13:00	10	9	**19**	17	7	**24**	**43**
13:00 13:15	15	4	**19**	15	7	**22**	**41**
13:15 13:30	8	7	**15**	24	7	**31**	**46**
15:00 15:15	8	8	**16**	22	7	**29**	**45**
15:15 15:30	10	13	**23**	23	9	**32**	**55**
15:30 15:45	13	7	**20**	21	12	**33**	**53**
15:45 16:00	17	5	**22**	16	8	**24**	**46**
16:00 16:15	5	17	**22**	33	11	**44**	**66**
16:15 16:30	20	13	**33**	28	20	**48**	**81**
16:30 16:45	10	21	**31**	38	6	**44**	**75**
16:45 17:00	15	15	**30**	35	9	**44**	**74**
17:00 17:15	15	19	**34**	25	9	**34**	**68**
17:15 17:30	7	10	**17**	32	6	**38**	**55**
17:30 17:45	14	13	**27**	44	11	**55**	**82**
17:45 18:00	6	6	**12**	20	5	**25**	**37**
Total	343	227	**570**	662	251	**913**	**1483**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017 **WO No:** 37069

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	1	10	6	**37**	1	9	1	**21**	**58**	0	0	1	**4**	10	1	0	**18**	**22**	**40**
07:15	07:30	3	12	9	**34**	1	7	1	**22**	**56**	1	1	1	**10**	2	3	0	**16**	**26**	**41**
07:30	07:45	2	18	4	**33**	0	4	0	**23**	**56**	1	3	0	**8**	5	2	0	**14**	**22**	**39**
07:45	08:00	2	12	2	**32**	0	11	0	**24**	**56**	1	0	1	**7**	4	3	0	**9**	**16**	**36**
08:00	08:15	2	13	4	**36**	0	13	1	**27**	**63**	0	1	1	**7**	3	2	0	**10**	**17**	**40**
08:15	08:30	1	15	4	**36**	1	11	1	**29**	**65**	1	2	1	**6**	4	0	0	**11**	**17**	**41**
08:30	08:45	2	23	7	**52**	0	15	2	**41**	**93**	1	1	2	**11**	3	3	0	**14**	**25**	**59**
08:45	09:00	2	14	7	**44**	0	9	1	**26**	**70**	2	2	3	**13**	9	3	0	**21**	**34**	**52**
09:00	09:15	3	23	6	**47**	0	15	1	**41**	**88**	1	2	0	**7**	0	0	1	**9**	**16**	**52**
09:15	09:30	4	10	6	**42**	0	15	1	**28**	**70**	2	3	3	**13**	4	0	0	**13**	**26**	**48**
09:30	09:45	3	18	8	**46**	0	10	1	**31**	**77**	1	1	3	**10**	4	1	1	**15**	**25**	**51**
09:45	10:00	4	10	3	**38**	1	14	2	**27**	**65**	0	1	2	**11**	5	2	0	**12**	**23**	**44**
11:30	11:45	2	11	5	**37**	0	12	1	**26**	**63**	2	3	4	**12**	3	0	0	**11**	**23**	**43**
11:45	12:00	2	7	4	**34**	0	14	1	**25**	**59**	3	3	3	**14**	4	2	0	**13**	**27**	**43**
12:00	12:15	0	13	5	**40**	0	15	1	**30**	**70**	1	0	0	**3**	7	1	0	**13**	**16**	**43**
12:15	12:30	4	11	3	**35**	2	11	1	**27**	**62**	2	2	4	**13**	2	0	0	**9**	**22**	**42**
12:30	12:45	2	11	4	**37**	0	16	2	**32**	**69**	3	0	1	**11**	3	3	0	**10**	**21**	**45**
12:45	13:00	3	11	2	**35**	1	13	2	**27**	**62**	0	1	3	**9**	3	0	0	**7**	**16**	**39**
13:00	13:15	0	15	3	**37**	1	16	1	**36**	**73**	3	1	2	**8**	1	1	0	**7**	**15**	**44**
13:15	13:30	3	10	3	**45**	0	18	2	**31**	**76**	1	1	4	**12**	7	1	0	**12**	**24**	**50**
15:00	15:15	5	6	8	**37**	0	16	0	**22**	**59**	0	3	0	**9**	2	1	0	**14**	**23**	**41**
15:15	15:30	5	9	3	**35**	0	12	1	**24**	**59**	2	2	5	**21**	1	6	0	**12**	**33**	**46**
15:30	15:45	3	9	1	**24**	0	9	0	**19**	**43**	1	2	1	**9**	1	2	0	**6**	**15**	**29**
15:45	16:00	2	9	0	**31**	1	16	0	**26**	**57**	0	2	2	**7**	2	1	0	**6**	**13**	**35**
16:00	16:15	2	9	2	**37**	0	19	0	**28**	**65**	0	1	2	**6**	3	1	0	**7**	**13**	**39**
16:15	16:30	8	7	3	**34**	1	15	0	**23**	**57**	0	2	0	**12**	1	2	0	**9**	**21**	**39**
16:30	16:45	4	10	5	**40**	0	15	0	**25**	**65**	0	2	4	**12**	2	2	0	**11**	**23**	**44**
16:45	17:00	6	5	2	**27**	0	11	1	**18**	**45**	1	0	2	**11**	1	1	0	**4**	**15**	**30**
17:00	17:15	4	6	7	**31**	1	11	0	**18**	**49**	0	1	2	**7**	1	0	0	**10**	**17**	**33**
17:15	17:30	5	4	1	**24**	0	9	2	**15**	**39**	0	1	2	**10**	3	0	0	**5**	**15**	**27**
17:30	17:45	0	8	0	**17**	0	7	1	**18**	**35**	2	2	1	**6**	1	0	0	**3**	**9**	**22**
17:45	18:00	2	3	2	**16**	0	7	1	**11**	**27**	0	0	0	**4**	2	1	0	**5**	**9**	**18**
Total:	None	91	352	129	**1130**	11	395	29	**821**	**1951**	32	46	60	**303**	103	45	2	**336**	**639**	**1,295**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017 **WO No:** 37069

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

Full Study 15 Minute U-Turn Total

		ST. LAURENT BLVD		COVENTRY RD/OGILVIE RD		
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	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	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	1	0	0	0	1
12:45	13:00	0	1	0	0	1
13:00	13:15	1	0	0	0	1
13:15	13:30	0	0	1	0	1
15:00	15:15	0	0	0	1	1
15:15	15:30	1	0	0	0	1
15:30	15:45	1	0	0	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	1	0	0	0	1
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		5	1	2	1	9

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

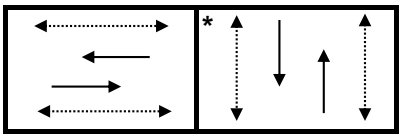
Intersection:	**Main:** Ogilvie	**Side:**	Cyrville
Controller:	**ATC-3**	**TSD:**	**5210**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

	Plan							Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Heavy** 11	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	120	120	95	120	130	120			
Offset	7	21	20	X	21	10	21			
EB Thru	73	73	70	48	73	80	73	9	17	3.7+2.5
WB Thru	73	73	70	48	73	80	73	9	17	3.7+2.5
NB Thru	47	47	50	47	47	50	47	7	33	3.7+3.4
SB Thru	47	47	50	47	47	50	47	7	33	3.7+3.4

Phasing Sequence‡

Plan: All



Notes: 1) The Westbound left turn movement is prohibited

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:30	11
9:00	1
9:30	2
15:00	3
18:30	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

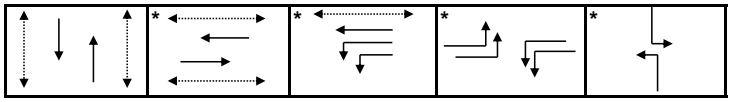
Intersection:	***Main:*** St. Laurent	***Side:***	Coventry / Ogilvie
Controller:	**ATC 3**	**TSD:**	**5344**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

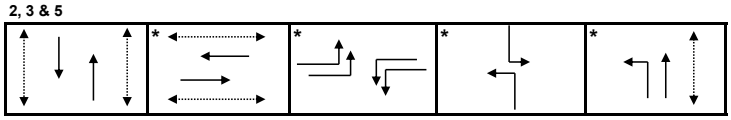
	Plan							Ped Minimum Time		
	AM Peak	Off Peak	PM Peak	Night	Weekend	AM Rush	Evening	*Walk*	*DW*	*A+R*
	1	2	3	4	5	11	12			
Cycle	120	120	120	100	120	130	120			
Offset	104	0	0	X	0	0	0			
NB Thru	35	44	44	35	50	35	35	7	22	3.7+2.7
SB Thru	35	35	35	35	35	35	35	7	22	3.7+2.7
EB Thru	37	37	37	37	37	37	37	7	24	3.7+2.8
WB Thru	52	37	37	37	37	58	37	7	24	3.7+2.8
WB Left (fp)	30	24	24	14	20	36	22	-	-	3.7+3.2
EB Left (fp)	15	24	24	14	20	15	22	-	-	3.7+3.2
NB Left (fp)	18	24	24	14	28	22	26	-	-	3.7+2.7
SB Left (fp)	18	15	15	14	13	22	26	-	-	3.7+2.7

Phasing Sequence‡

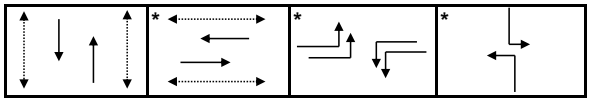
Plan: **1 & 11**



Plan: **2, 3 & 5**



Plan: **12 & 4**



Notes: 1) In plans 1 & 11, if the EW pedestrian phase is not actuated; the EB phase will force off 16 seconds early
2) In plans 2 & 3, if the EW pedestrian phase is not actuated; the EW phases will force off 9 seconds early
3) U-turn movements are prohibited in all directions

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:30	11
9:00	1
9:30	2
15:00	3
18:30	12
19:45	5
22:00	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
10:00	5
19:00	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals
‡: Start of first phase should be used as reference point for offset
Asterisk (*) Indicates actuated phase
(fp): Fully Protected Left Turn
◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

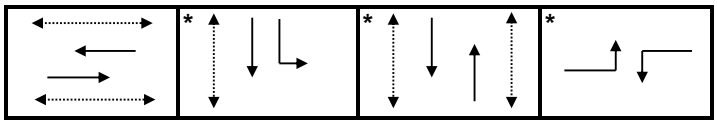
Intersection:	**Main:** Ogilvie	**Side:**	Cummings
Controller:	**ATC 3**	**TSD:**	**5416**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

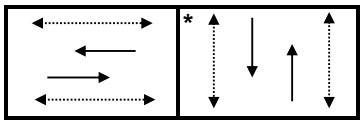
	Plan							Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Heavy** 11	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	90	120	70	90	130	90			
Offset	112	56	46	X	56	110	56			
EB Thru	61	32	45	34	32	71	32	7	12	3.7+2.0
WB Thru	61	32	45	34	32	71	32	7	12	3.7+2.0
SB Left	12	11	20	-	11	12	11	-	-	3.3+1.0
NB Thru	36	36	40	36	36	36	36	7	23	3.3+3.3
SB Thru	48	47	60	36	47	48	47	7	23	3.3+3.3
EB Left	11	11	15	-	11	11	11	-	-	3.7+1.0
WB Left	11	11	15	-	11	11	11	-	-	3.7+1.0

Phasing Sequence‡

Plan: 1,2,3,5,11,12



Plan: 4



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:30	11
9:00	1
9:30	2
15:00	3
18:30	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

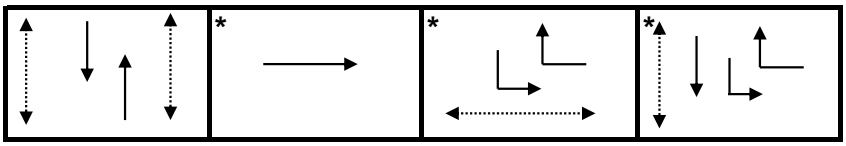
Intersection:	**Main:** St. Laurent	**Side:**	Cyrville
Controller:	**MS-3200**	**TSD:**	**5552**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

	Plan							Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Rush** 11	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	120	120	95	120	130	120			
Offset	115	10	5	10	10	10	10			
NB Thru	43	43	38	38	43	53	43	10	16	3.7+2.2
SB Thru	70	70	68	49	70	80	70	10	16	3.7+2.2
EB Thru	15	15	15	11	15	15	15	-	-	3.0+2.9
EW Ped	35	35	37	35	35	36	35	21	8	3.7+2.4
SB Left (fp)	62	62	67	46	62	62	62	-	-	3.7+2.4
WB Right (fp)	62	62	67	46	62	62	62	-	-	3.7+2.4

Phasing Sequence‡

Plans: All



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:30	11
9:00	1
9:30	2
15:00	3
18:30	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

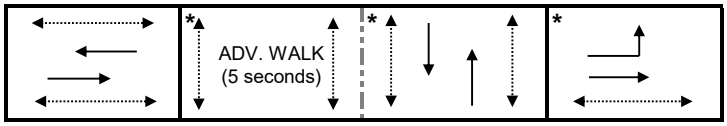
Intersection:	***Main:*** Cyrville	***Side:***	Cummings / Labelle
Controller:	**MS 3200**	**TSD:**	**5659**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

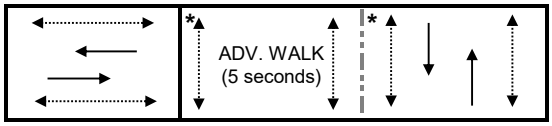
	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	85	85	100	65	100	80			
Offset	X	X	X	X	X	X			
EB Thru	42	42	43	37	43	37	7	21	3.7+2.6
WB Thru	42	42	43	37	43	37	7	21	3.7+2.6
NB Thru	28	28	42	28	42	28	7	15	3.3+2.2
SB Thru	28	28	42	28	42	28	7	15	3.3+2.2
EB Left	15	15	15	-	15	15	-	-	3.7+1.0

Phasing Sequence‡

Plan: 1,2,3,5,12



Plan: 4



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

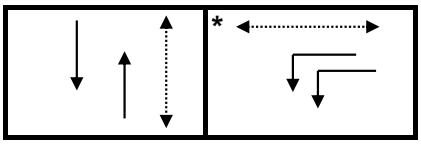
Intersection:	**Main:** St. Laurent	**Side:**	Lemieux
Controller:	**ATC 3**	**TSD:**	**5820**
Author:	Matthew Anderson	**Date:**	11-Jun-2021

Existing Timing Plans†

	Plan							Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**AM Heavy** 11	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	120	120	75	120	130	120			
Offset	79	82	99	X	82	124	82			
NB Thru	70	82	82	39	75	80	82	21	9	3.7+1.8
SB Thru	70	82	82	39	75	80	82	-	-	3.7+1.8
WB Left	50	38	38	36	45	50	38	7	23	3.3+2.8

Phasing Sequence‡

Plan: All



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
7:30	11
9:00	1
9:30	2
15:00	3
18:30	12
22:30	4

Saturday

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	4

Sunday

Time	Plan
0:15	4
8:30	2
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $59.96 ($53.06 + HST)

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-21, Wed,18:00	Clear	SMV other	Non-fatal injury	Wet	North	Unknown	Unknown	Pedestrian	1
2015-Feb-27, Fri,18:48	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Mar-05, Thu,18:05	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2015-May-21, Thu,08:00	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Cyclist	
2015-May-22, Fri,17:08	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-26, Tue,18:35	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2015-May-28, Thu,14:44	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-13, Sat,11:03	Clear	SMV other	P.D. only	Dry	South	Turning left	Pick-up truck	Pole (utility, power)	0
2015-Jul-24, Fri,16:48	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jan-07, Thu,11:45	Clear	Other	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Reversing	Police vehicle	Other motor vehicle	
2016-Feb-17, Wed,20:50	Clear	Turning movement	P.D. only	Ice	East	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Feb-17, Wed,21:02	Drifting Snow	Rear end	P.D. only	Ice	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Feb-17, Wed,22:17	Clear	Rear end	Non-fatal injury	Ice	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-18, Thu,07:55	Snow	Rear end	P.D. only	Ice	East	Turning left	Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Mar-05, Sat,16:30	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Pedestrian	1
2016-Jul-15, Fri,16:14	Rain	Rear end	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Pick-up truck	Other motor vehicle	
2016-Sep-06, Tue,11:08	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-19, Mon,17:50	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Sep-21, Wed,12:18	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-30, Mon,19:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-08, Wed,16:20	Clear	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Feb-15, Wed,08:17	Snow	Turning movement	P.D. only	Loose snow	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Mar-02, Thu,15:28	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-08, Wed,10:45	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Aug-02, Wed,12:40	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Aug-03, Thu,07:50	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2017-Aug-27, Sun,00:11	Clear	Angle	P.D. only	Dry	South	Going ahead	Police vehicle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-08, Fri,08:37	Rain	Rear end	P.D. only	Wet	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-12, Tue,12:30	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Delivery van	Other motor vehicle	
2017-Sep-20, Wed,14:47	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Motorcycle	Other motor vehicle	
2017-Oct-27, Fri,11:30	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2018-Mar-24, Sat,18:25	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Passenger van	Other motor vehicle	
2018-Apr-12, Thu,11:01	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Unknown	Other motor vehicle	
2018-May-05, Sat,18:14	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-25, Fri,15:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jun-11, Mon,18:00	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jul-23, Mon,09:30	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-20, Mon,17:00	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2018-Sep-19, Wed,17:07	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2018-Oct-10, Wed,15:15	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-21, Wed,16:10	Clear	Turning movement	P.D. only	Packed snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-08, Sat,18:00	Snow	Sideswipe	P.D. only	Loose snow	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-11, Fri,16:08	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-23, Wed,12:30	Snow	Sideswipe	P.D. only	Packed snow	East	Changing lanes	Delivery van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-28, Mon,09:30	Clear	Other	P.D. only	Wet	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2019-Feb-09, Sat,16:15	Clear	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Mar-06, Wed,09:59	Clear	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-13, Wed,18:40	Snow	Angle	P.D. only	Packed snow	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-25, Mon,11:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-12, Sun,13:19	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-27, Thu,12:51	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-20, Sat,13:47	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-30, Tue,12:30	Rain	Angle	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-01, Thu,18:04	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-11, Sun,15:12	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-16, Sat,21:55	Clear	Rear end	P.D. only	Ice	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 57

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-25, Mon,09:53	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-02, Fri,08:36	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2015-Feb-17, Tue,11:47	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Jun-17, Wed,14:12	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Pedestrian	2
2015-Sep-03, Thu,12:08	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-02, Fri,18:41	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-07, Wed,09:35	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Delivery van	Other motor vehicle	
2015-Nov-02, Mon,19:02	Clear	Other	P.D. only	Dry	North	Reversing	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Apr-21, Thu,15:17	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-28, Wed,18:42	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Nov-10, Fri,08:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-27, Fri,12:06	Clear	Angle	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-23, Tue,16:32	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2018-Nov-10, Sat,17:29	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Pedestrian	1
2019-Jan-26, Sat,22:15	Clear	SMV other	Non-fatal injury	Loose snow	East	Turning left	Pick-up truck	Ran off road	0
2019-Jun-12, Wed,07:31	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Oct-23, Wed,13:04	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Passenger van	Other motor vehicle	

Location: CYRVILLE RD @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Mar-14, Sat,01:04	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-08, Fri,15:25	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jul-25, Sat,21:44	Clear	Turning movement	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Jul-29, Wed,09:55	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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Traffic Control: Traffic signal **Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Oct-02, Fri,19:19	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Dec-19, Sat,08:51	Clear	Angle	P.D. only	Ice	West	Going ahead	Delivery van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-18, Thu,09:07	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Mar-26, Sat,10:20	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jun-03, Fri,18:59	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Jul-25, Mon,09:28	Rain	Other	P.D. only	Wet	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-22, Mon,19:34	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1
2016-Oct-24, Mon,16:10	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Dec-13, Tue,16:40	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-09, Thu,16:58	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-03, Fri,19:15	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Pedestrian	1
2017-Mar-14, Tue,13:30	Snow	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-25, Sat,12:48	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-28, Wed,08:43	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-21, Thu,17:22	Clear	Turning movement	P.D. only	Dry	East	Turning right	Delivery van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-28, Wed,08:56	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-20, Tue,13:37	Clear	Rear end	Non-fatal injury	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2018-Mar-24, Sat,05:51	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-29, Thu,15:59	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Truck - dump	Other motor vehicle	
2018-Apr-25, Wed,21:35	Rain	SMV other	Non-fatal injury	Wet	East	Turning right	Automobile, station wagon	Pedestrian	1
2018-Aug-20, Mon,18:01	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-04, Thu,21:21	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-16, Tue,04:16	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other	0
2018-Nov-03, Sat,16:53	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-13, Tue,14:42	Snow	Other	P.D. only	Wet	South	Reversing	Truck - closed	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-22, Sat,13:54	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-23, Wed,07:32	Snow	Rear end	P.D. only	Packed snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-27, Mon,10:45	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-28, Fri,06:05	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-30, Sun,18:43	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-12, Thu,08:24	Clear	SMV other	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Pedestrian	1
2019-Sep-18, Wed,17:30	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-27, Fri,08:06	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-28, Fri,08:27	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Truck-other	Other motor vehicle	0
					North	Stopped	Truck and trailer	Other motor vehicle	
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-Sep-04, Fri,15:11	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-04, Sun,10:50	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2015-Oct-15, Thu,16:48	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-17, Sat,12:55	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2015-Dec-12, Sat,13:09	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-12, Sat,15:57	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2016-Jan-13, Wed,16:41	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-19, Sat,11:56	Clear	SMV other	Non-fatal injury	Dry	East	Slowing or stopping	Pick-up truck	Pedestrian	1
2016-Jun-17, Fri,15:47	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Jul-06, Wed,18:11	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-01, Mon,09:21	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-21, Fri,16:15	Rain	Rear end	P.D. only	Wet	South	Turning left	Passenger van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-21, Fri,16:42	Rain	Sideswipe	Non-fatal injury	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Nov-23, Wed,09:40	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-Dec-04, Sun,11:54	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-22, Thu,19:39	Clear	Rear end	Non-fatal injury	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-06, Mon,14:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Unknown	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2017-May-17, Wed,15:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Jun-15, Thu,10:30	Clear	Other	P.D. only	Dry	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-02, Wed,07:40	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-29, Sun,18:19	Rain	Other	P.D. only	Wet	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-11, Sat,14:05	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-26, Sun,19:26	Snow	Turning movement	P.D. only	Slush	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-06, Wed,17:05	Clear	Sideswipe	P.D. only	Dry	South	Stopped	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-09, Sat,11:08	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Dec-18, Mon,08:02	Snow	SMV other	P.D. only	Loose snow	North	Turning right	Truck - tractor	Ran off road	0
2017-Dec-31, Sun,15:47	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-27, Tue,07:08	Clear	Rear end	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	0
					East	Merging	Automobile, station wagon	Other motor vehicle	
2018-Mar-09, Fri,11:15	Clear	Rear end	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Mar-23, Fri,08:30	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-04, Wed,14:04	Clear	Rear end	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Apr-28, Sat,15:29	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-31, Thu,02:31	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2018-Jun-20, Wed,08:48	Clear	Other	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-21, Fri,22:22	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Curb	0

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-10, Sat,17:10	Strong wind	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	1
2018-Dec-21, Fri,23:06	Rain	Other	P.D. only	Wet	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-11, Fri,14:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-01, Fri,15:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Unknown	Passenger van	Other motor vehicle	
2019-Feb-03, Sun,14:50	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-14, Thu,08:45	Snow	Rear end	Non-fatal injury	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Mar-28, Thu,11:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Truck - dump	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Apr-06, Sat,13:11	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-12, Sun,15:50	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-29, Wed,16:49	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-10, Mon,15:30	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-26, Fri,16:07	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-11, Mon,17:33	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CYRVILLE RD btwn CYRVILLE RD & OGILVIE RD

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-17, Wed,20:29	Clear	Angle	P.D. only	Ice	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Mar-03, Sat,09:43	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	School bus	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-10, Sat,13:30	Snow	Angle	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: CYRVILLE RD btwn JOSEPH CYR ST & MICHAEL ST

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-15, Sat,12:51	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	

Location: CYRVILLE RD btwn MICHAEL ST & LABELLE ST

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-06, Wed,08:00	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: CYRVILLE RD btwn OGILVIE RD & JOSEPH CYR ST

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-06, Fri,10:15	Clear	SMV other	P.D. only	Slush	North	Slowing or stopping	Pick-up truck	Pole (utility, power)	0

Location: CYRVILLE RD btwn ST. LAURENT BLVD & CYRVILLE RD

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

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-16, Tue,19:23	Snow	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2019-Apr-08, Mon,13:30	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: JOSEPH CYR ST @ CYRVILLE RD

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Apr-11, Thu,15:25	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Unknown	Other motor vehicle	

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-21, Wed,09:15	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-31, Sat,13:38	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-31, Sat,14:32	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-17, Tue,07:20	Clear	Other	P.D. only	Dry	South	Reversing	Truck and trailer	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-24, Tue,07:31	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-01, Sun,19:41	Snow	Sideswipe	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2015-Mar-11, Wed,07:50	Clear	Sideswipe	P.D. only	Dry	North	Overtaking	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Apr-06, Mon,06:23	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-10, Wed,12:50	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-25, Thu,08:30	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Turning left	Passenger van	Other motor vehicle	
2015-Jul-15, Wed,17:35	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-17, Fri,15:43	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-29, Wed,11:10	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-13, Thu,23:48	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-08, Tue,21:27	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2015-Sep-17, Thu,17:04	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Sep-30, Wed,20:15	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Delivery van	Other motor vehicle	
2015-Oct-21, Wed,18:32	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,17:40	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-19, Sat,17:17	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-14, Sun,14:31	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Feb-16, Tue,19:18	Snow	Angle	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Turning left	Municipal transit bus	Other motor vehicle	
2016-Feb-25, Thu,14:29	Snow	Angle	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Bus (other)	Other motor vehicle	
2016-Mar-17, Thu,12:05	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-18, Fri,15:45	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-02, Sat,12:46	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-16, Sat,09:45	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-16, Sat,13:03	Clear	Rear end	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Jun-13, Mon,20:43	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jun-28, Tue,00:11	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jul-24, Sun,16:45	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-11, Sun,13:18	Clear	Turning movement	P.D. only	Dry	North	Making "U" turn	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-06, Thu,10:18	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Passenger van	Other motor vehicle	
2016-Oct-11, Tue,15:35	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-21, Fri,21:55	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Nov-09, Wed,18:23	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-10, Thu,17:35	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-23, Wed,11:53	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-23, Wed,16:43	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-01, Thu,18:05	Snow	Rear end	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Unknown	Unknown	Other motor vehicle	
2016-Dec-09, Fri,17:49	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-14, Wed,09:29	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Municipal transit bus	Other motor vehicle	
2017-Jan-31, Tue,11:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Passenger van	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Feb-15, Wed,08:17	Snow	Angle	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Apr-10, Mon,18:32	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Motorcycle	Other motor vehicle	
2017-May-05, Fri,08:30	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2017-May-09, Tue,20:47	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-May-26, Fri,13:22	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Delivery van	Other motor vehicle	
2017-Aug-14, Mon,17:42	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-05, Tue,16:40	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-28, Sat,18:45	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Nov-04, Sat,17:15	Snow	Sideswipe	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2017-Dec-15, Fri,17:00	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-18, Mon,12:10	Snow	Turning movement	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-05, Fri,19:13	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2018-Jan-06, Sat,18:56	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-06, Sat,19:06	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-08, Mon,08:27	Snow	Approaching	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-01, Thu,23:06	Snow	Sideswipe	P.D. only	Wet	West	Turning left	Municipal transit bus	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Mar-28, Wed,15:44	Clear	Turning movement	Non-fatal injury	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-09, Mon,09:28	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Apr-25, Wed,10:17	Rain	Rear end	P.D. only	Wet	South	Going ahead	Delivery van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-17, Thu,07:47	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-01, Fri,14:57	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-26, Tue,20:29	Clear	Rear end	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-28, Sat,17:58	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-22, Wed,16:45	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-01, Mon,12:00	Clear	Rear end	P.D. only	Unknown	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-07, Wed,14:14	Clear	Angle	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-07, Wed,14:15	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Municipal transit bus	Other motor vehicle	
2018-Nov-23, Fri,15:01	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-14, Fri,21:20	Freezing Rain	Rear end	Non-fatal injury	Ice	West	Turning right	Passenger van	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-18, Tue,00:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Unknown	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-25, Tue,21:43	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-29, Tue,09:07	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-13, Sat,14:17	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-20, Sat,17:47	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-08, Sat,20:05	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: LEMIEUX ST @ ST. LAURENT BLVD

Traffic Control: Traffic signal **Total Collisions:** 86

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Aug-05, Mon,15:45	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Aug-26, Mon,20:25	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Motorcycle	Other motor vehicle	
2019-Sep-03, Tue,09:11	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Sep-04, Wed,18:31	Clear	Approaching	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-11, Fri,16:45	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-22, Tue,15:40	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-08, Fri,10:30	Clear	Sideswipe	Non-fatal injury	Dry	South	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Unknown	Pick-up truck	Other motor vehicle	
2019-Nov-27, Wed,09:45	Rain	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	

Location: OGILVIE RD btwn COVENTRY RD & OGILVIE RD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-16, Fri,11:56	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Unknown	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: OGILVIE RD btwn MURDOCK GT & CUMMINGS AVE

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jul-09, Thu,13:57	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-14, Mon,08:30	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Ran off road	0
2017-Feb-14, Tue,12:09	Snow	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-20, Mon,15:38	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

Location: OGILVIE RD btwn OGILVIE RD & CYRVILLE RD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-09, Mon,07:43	Clear	Sideswipe	P.D. only	Slush	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Truck - dump	Other motor vehicle	

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-02, Fri,19:42	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-07, Wed,21:59	Clear	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-17, Sat,16:55	Clear	Rear end	P.D. only	Ice	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-26, Mon,11:23	Clear	Rear end	P.D. only	Ice	East	Turning left	Pick-up truck	Other motor vehicle	0
					East	Turning left	Passenger van	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-28, Wed,12:10	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jan-28, Wed,21:01	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Jan-29, Thu,09:20	Clear	Rear end	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Pick-up truck	Other motor vehicle	
2015-Jan-30, Fri,12:00	Clear	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Unknown	Other motor vehicle	
2015-Feb-02, Mon,18:00	Clear	Angle	P.D. only	Slush	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Feb-06, Fri,10:15	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2015-Feb-06, Fri,12:55	Clear	Rear end	P.D. only	Loose snow	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Feb-23, Mon,18:10	Clear	Rear end	P.D. only	Ice	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Apr-10, Fri,21:26	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-May-01, Fri,14:10	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-12, Tue,19:00	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jun-10, Wed,11:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2015-Jun-19, Fri,15:26	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Truck - tank	Other motor vehicle	
2015-Jun-22, Mon,16:57	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jul-09, Thu,12:51	Clear	Rear end	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jul-27, Mon,07:49	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Overtaking	Ambulance	Other motor vehicle	
2015-Jul-28, Tue,15:54	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
					West	Turning left	Bicycle	Other motor vehicle	
2015-Aug-29, Sat,20:25	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-12, Sat,12:30	Rain	Rear end	P.D. only	Wet	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Sep-18, Fri,14:18	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Sep-18, Fri,17:10	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Sep-19, Sat,14:57	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-22, Tue,18:13	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-03, Sat,21:20	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Oct-17, Sat,13:09	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Changing lanes	Passenger van	Other motor vehicle	
2015-Oct-17, Sat,18:11	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Oct-18, Sun,16:40	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-21, Wed,12:46	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-29, Thu,10:20	Rain	SMV other	P.D. only	Wet	North	Turning left	Unknown	Pole (sign, parking meter)	0
2015-Nov-15, Sun,23:40	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-25, Wed,01:48	Fog, mist, smoke, dust	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,20:00	Rain	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2015-Dec-05, Sat,22:53	Clear	Rear end	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Dec-16, Wed,09:45	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2016-Jan-11, Mon,09:53	Clear	Sideswipe	P.D. only	Wet	North	Turning left	Passenger van	Other motor vehicle	0
					North	Stopped	Truck - open	Other motor vehicle	
2016-Jan-23, Sat,22:35	Clear	Angle	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-29, Mon,19:45	Clear	Rear end	Non-fatal injury	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-26, Sat,11:19	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Apr-02, Sat,16:44	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Passenger van	Other motor vehicle	
2016-Apr-07, Thu,15:39	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jul-03, Sun,18:00	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Cyclist	
2016-Jul-04, Mon,17:17	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Jul-27, Wed,17:16	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Tow truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-18, Thu,12:43	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-29, Sat,18:55	Rain	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-20, Sun,18:16	Snow	Sideswipe	P.D. only	Loose snow	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-24, Thu,09:22	Snow	Rear end	P.D. only	Loose snow	West	Stopped	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-11, Wed,00:20	Rain	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2017-Jan-16, Mon,21:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-01, Wed,18:16	Clear	Angle	P.D. only	Wet	North	Going ahead	Other emergency vehicle	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-08, Wed,15:48	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Other school vehicle/bus	Other motor vehicle	
2017-Feb-09, Thu,08:54	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-10, Fri,14:18	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-19, Sun,18:10	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-28, Tue,12:47	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-10, Fri,13:12	Clear	Rear end	Non-fatal injury	Dry	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Passenger van	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Apr-13, Thu,13:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	0
					West	Changing lanes	Pick-up truck	Other motor vehicle	
2017-May-01, Mon,07:51	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-05, Fri,22:55	Rain	Turning movement	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-May-25, Thu,13:02	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-16, Wed,12:24	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Making "U" turn	Delivery van	Other motor vehicle	
2017-Sep-01, Fri,08:15	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-08, Fri,15:58	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-12, Tue,09:46	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-27, Fri,18:09	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-28, Sat,09:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-29, Sun,08:50	Rain	Sideswipe	Non-reportable	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-31, Tue,14:32	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Truck and trailer	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-12, Sun,14:45	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Nov-26, Sun,19:45	Snow	Rear end	P.D. only	Loose snow	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-05, Tue,08:50	Rain	Turning movement	P.D. only	Wet	North	Turning left	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-17, Sun,10:25	Clear	Sideswipe	P.D. only	Packed snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2018-Jan-03, Wed,08:50	Snow	Rear end	P.D. only	Wet	South	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-03, Wed,15:51	Snow	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-30, Tue,17:13	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-07, Wed,12:17	Snow	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Feb-13, Tue,11:50	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Mar-28, Wed,13:12	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-28, Wed,18:15	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2018-Apr-23, Mon,18:24	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Pedestrian	1

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-28, Sat,14:35	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-30, Mon,14:36	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Passenger van	Other motor vehicle	
2018-May-09, Wed,23:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-18, Fri,14:00	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-10, Tue,10:46	Clear	Angle	P.D. only	Dry	South	Unknown	Bicycle	Other motor vehicle	0
					East	Going ahead	Passenger van	Cyclist	
2018-Jul-16, Mon,09:58	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jul-23, Mon,08:40	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-07, Tue,23:25	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-25, Tue,17:48	Rain	Rear end	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2018-Sep-27, Thu,16:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Unknown	Unknown	Other motor vehicle	
2018-Nov-08, Thu,19:22	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	School bus	Cyclist	0
					East	Going ahead	Bicycle	Ran off road	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-11, Sun,14:34	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-16, Fri,06:49	Snow	Angle	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-24, Sat,20:01	Rain	Sideswipe	P.D. only	Wet	South	Going ahead	Tow truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-08, Sat,17:00	Clear	Sideswipe	P.D. only	Wet	North	Unknown	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-10, Mon,13:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Unknown	Other motor vehicle	
2018-Dec-21, Fri,11:55	Clear	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jan-04, Fri,18:30	Clear	Rear end	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-24, Thu,05:45	Snow	Rear end	P.D. only	Ice	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-23, Sat,14:30	Clear	Sideswipe	P.D. only	Wet	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2019-Mar-03, Sun,17:00	Clear	Rear end	Non-fatal injury	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Mar-11, Mon,21:30	Snow	Rear end	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-May-01, Wed,20:00	Rain	Rear end	P.D. only	Wet	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-03, Mon,12:00	Clear	Rear end	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-16, Sun,18:56	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jul-22, Mon,03:26	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-22, Tue,15:51	Rain	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Oct-22, Tue,19:15	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-24, Thu,15:44	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Ambulance	Other motor vehicle	
2019-Oct-28, Mon,12:59	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-05, Tue,12:24	Clear	Other	P.D. only	Wet	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-12, Tue,05:40	Rain	Angle	P.D. only	Slush	West	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,17:50	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-14, Sat,17:33	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Traffic Control: Traffic signal **Total Collisions:** 121

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Dec-19, Thu,07:47	Clear	Rear end	Non-fatal injury	Ice	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2019-Dec-20, Fri,09:50	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Dec-24, Tue,12:18	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: ST. LAURENT BLVD btwn COVENTRY RD & LEMIEUX ST

Traffic Control: No control **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-12, Mon,14:35	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	1
2015-Feb-02, Mon,10:19	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Feb-02, Mon,13:50	Snow	Rear end	P.D. only	Ice	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-23, Mon,20:25	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Passenger van	Other motor vehicle	
2015-Apr-24, Fri,12:14	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Delivery van	Other motor vehicle	
2015-Apr-29, Wed,11:45	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-15, Sat,10:23	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD btwn COVENTRY RD & LEMIEUX ST

Traffic Control: No control **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-20, Thu,15:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,12:50	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Dec-21, Mon,19:29	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-27, Sat,15:39	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Passenger van	Other motor vehicle	
2016-Apr-22, Fri,17:07	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-May-27, Fri,12:57	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-29, Sun,03:59	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Curb	0
2016-Jun-16, Thu,16:38	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jun-25, Sat,13:15	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Pole (sign, parking meter)	0
2016-Sep-08, Thu,10:39	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-04, Fri,12:51	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Passenger van	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD btwn COVENTRY RD & LEMIEUX ST

Traffic Control: No control **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Dec-03, Sat,14:30	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-08, Thu,19:38	Clear	Turning movement	P.D. only	Dry	North	Making "U" turn	Unknown	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Oct-24, Tue,20:18	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-28, Sat,20:09	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2018-Feb-07, Wed,17:07	Snow	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-10, Sat,14:43	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-29, Thu,16:37	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-01, Fri,16:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-05, Fri,08:50	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-14, Sun,17:15	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-31, Thu,17:12	Clear	Sideswipe	Non-fatal injury	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-04, Mon,10:26	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: ST. LAURENT BLVD btwn COVENTRY RD & LEMIEUX ST

Traffic Control: No control **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Mar-08, Fri,09:05	Clear	Rear end	P.D. only	Dry	South	Stopped	Truck - closed	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Mar-24, Sun,08:35	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-09, Thu,17:49	Rain	Angle	Non-fatal injury	Wet	East	Turning right	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2019-Oct-12, Sat,18:55	Rain	Sideswipe	P.D. only	Wet	South	Unknown	Passenger van	Other motor vehicle	0
					South	Unknown	Automobile, station wagon	Other motor vehicle	

Location: ST. LAURENT BLVD btwn CYRVILLE RD & COVENTRY RD

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-08, Fri,09:09	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-23, Tue,11:30	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Aug-24, Wed,12:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-01, Tue,01:38	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Ran off road	0
2016-Dec-05, Mon,09:29	Snow	Sideswipe	P.D. only	Loose snow	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-21, Fri,14:18	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	1
2018-Dec-17, Mon,09:00	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix B MULTI-MODAL LEVEL OF SERVICE ASSESSMENT

Multi-Modal Level of Service - Segments Form

Consultant	**Stantec**	**Project**	**1125 Cyrville Rd**
Scenario	**2021 - 2028**	**Date**	
Comments			

SEGMENTS		Street A	Cyrville Road (south frontage)	Section	Section	Section	Section	Section	Section	Section	Section
			1	2	3	4	5	6	7	8	9
Pedestrian	Sidewalk Width Boulevard Width	**E**	1.8 m 0.5 - 2 m								
	Avg Daily Curb Lane Traffic Volume		> 3000								
	Operating Speed On-Street Parking		> 60 km/h no								
	Exposure to Traffic PLoS		**E**	-	-	-	-	-	-	-	-
	Level of Service		**E**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**C**	Curbside Bike Lane								
	Number of Travel Lanes		≤ 1 each direction								
	Operating Speed		>50 to 70 km/h								
	# of Lanes & Operating Speed LoS		**C**	-	-	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width		≥1.5 to <1.8 m								
	Bike Lane Width LoS		**B**	-	-	-	-	-	-	-	-
	Bike Lane Blockages		Rare								
	Blockage LoS		**A**	-	-	-	-	-	-	-	-
	Level of Service		**C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Transit	Facility Type	**D**	Mixed Traffic								
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8								
	Level of Service		**D**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Truck	Truck Lane Width	**C**	≤ 3.5 m								
	Travel Lanes per Direction		1								
	Level of Service		**C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Multi-Modal Level of Service - Intersections Form

Consultant	**Stantec**	**Project**	**1125 Cyrville Road**
Scenario	**2021 Intersections**	**Date**	
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		St. Laurent Boulevard and Ogilvie Road				Ogilvie Road and Cyrville Road				Ogilvie Road and Cummings Avenue			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	9	9	9	9	4	4	7	6	3	4	7	6
	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
	Conflicting Left Turns	Protected	Protected	Protected	Protected	No left turn / Prohib.	Permissive	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ 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	Permissive or yield control	Permissive or yield control	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 prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	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	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel	No Channel
	Corner Radius	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	5-10m	15-25m	10-15m	10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Raised crosswalk	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
	PETSI Score	**-17**	**-20**	**-20**	**-20**	**70**	**51**	**5**	**18**	**70**	**57**	**4**	**20**
	Ped. Exposure to Traffic LoS	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
	Cycle Length	130	130	130	103	130	130	130	130	130	130	130	130
	Effective Walk Time	28	7	7	7	57	57	10	10	53	53	7	7
	Average Pedestrian Delay	**40**	**58**	**58**	**45**	**20**	**20**	**55**	**55**	**23**	**23**	**58**	**58**
	Pedestrian Delay LoS	**E**	**E**	**E**	**E**	**C**	**C**	**E**	**E**	**C**	**C**	**E**	**E**
	Level of Service	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
		#N/A				**F**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>	> 50 m	≤ 50 m	> 50 m Introduced right turn lane	> 50 m Introduced right turn lane			> 50 m Introduced right turn lane	> 50 m Introduced right turn lane		≤ 50 m		
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h			≤ 25 km/h	≤ 25 km/h		≤ 25 km/h		
	Cyclist Through Movement	**F**	**D**	**D**	**D**		**Not Applicable**	**D**	**D**		**D**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	1 lane crossed	≥ 2 lanes crossed	No lane crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 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	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**C**	**E**	**E**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**D**	**E**	**E**	**F**	**F**
		F				**F**				**F**			
Transit	Average Signal Delay	> 40 sec	> 40 sec	> 40 sec	> 40 sec		> 40 sec	≤ 20 sec	≤ 10 sec	> 40 sec	≤ 40 sec	≤ 30 sec	≤ 20 sec
	Level of Service	**F**	**F**	**F**	**F**	**-**	**F**	**C**	**B**	**F**	**E**	**D**	**C**
		F				**F**				**F**			
Truck	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	< 10 m			10 - 15 m	10 - 15 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2	1	1	≥ 2	≥ 2			≥ 2	≥ 2
	Level of Service	**A**	**A**	**A**	**A**	**C**	**C**	**A**	**D**	**-**	**-**	**B**	**B**
		A				**D**				**B**			
Auto	Volume to Capacity Ratio	> 1.00				0.61 - 0.70				0.81 - 0.90			
	Level of Service	**F**				**B**				**D**			

Multi-Modal Level of Service - Intersections Form

Consultant	**Stantec**	**Project**	**1125 Cyrville Road**
Scenario	**2023 FBG - Intersections**	**Date**	
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		St. Laurent Boulevard and Ogilvie Road				Ogilvie Road and Cyrville Road				Ogilvie Road and Cummings Avenue			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	9	9	9	9	4	4	7	6	3	4	7	6
	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
	Conflicting Left Turns	Protected	Protected	Protected	Protected	No left turn / Prohib.	Permissive	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ 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	Permissive or yield control	Permissive or yield control	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 prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	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	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel	No Channel
	Corner Radius	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	5-10m	15-25m	10-15m	10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Raised crosswalk	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
	PETSI Score	**-17**	**-20**	**-20**	**-20**	**70**	**51**	**5**	**18**	**70**	**57**	**4**	**20**
	Ped. Exposure to Traffic LoS	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
	Cycle Length	130	130	130	103	130	130	130	130	130	130	130	130
	Effective Walk Time	28	7	7	7	57	57	10	10	53	53	7	7
	Average Pedestrian Delay	**40**	**58**	**58**	**45**	**20**	**20**	**55**	**55**	**23**	**23**	**58**	**58**
	Pedestrian Delay LoS	**E**	**E**	**E**	**E**	**C**	**C**	**E**	**E**	**C**	**C**	**E**	**E**
	Level of Service	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
		#N/A				**F**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>	> 50 m	≤ 50 m	> 50 m Introduced right turn lane	> 50 m Introduced right turn lane			> 50 m Introduced right turn lane	> 50 m Introduced right turn lane		≤ 50 m		
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h			≤ 25 km/h	≤ 25 km/h		≤ 25 km/h		
	Cyclist Through Movement	**F**	**D**	**D**	**D**		**Not Applicable**	**D**	**D**		**D**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	1 lane crossed	≥ 2 lanes crossed	No lane crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 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	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**C**	**E**	**E**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**D**	**E**	**E**	**F**	**F**
		F				**F**				**F**			
Transit	Average Signal Delay	≤ 40 sec	> 40 sec	> 40 sec	> 40 sec		> 40 sec	≤ 20 sec	≤ 10 sec	> 40 sec	≤ 40 sec	≤ 20 sec	≤ 20 sec
	Level of Service	**E**	**F**	**F**	**F**	**-**	**F**	**C**	**B**	**F**	**E**	**C**	**C**
		F				**F**				**F**			
Truck	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	< 10 m			10 - 15 m	10 - 15 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2	1	1	≥ 2	≥ 2			≥ 2	≥ 2
	Level of Service	**A**	**A**	**A**	**A**	**C**	**C**	**A**	**D**	**-**	**-**	**B**	**B**
		A				**D**				**B**			
Auto	Volume to Capacity Ratio	0.91 - 1.00				0.0 - 0.60				0.61 - 0.70			
	Level of Service	**E**				**A**				**B**			

Multi-Modal Level of Service - Intersections Form

Consultant	**Stantec**	**Project**	**1125 Cyrville Road**
Scenario	**2023 TF Intersections**	**Date**	
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		St. Laurent Boulevard and Ogilvie Road				Ogilvie Road and Cyrville Road				Ogilvie Road and Cummings Avenue			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	9	9	9	9	4	4	7	6	3	4	7	6
	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
	Conflicting Left Turns	Protected	Protected	Protected	Protected	No left turn / Prohib.	Permissive	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ 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	Permissive or yield control	Permissive or yield control	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 prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	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	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel	No Channel
	Corner Radius	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	5-10m	15-25m	10-15m	10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Raised crosswalk	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
	PETSI Score	**-17**	**-20**	**-20**	**-20**	**70**	**51**	**5**	**18**	**70**	**57**	**4**	**20**
	Ped. Exposure to Traffic LoS	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
	Cycle Length	130	130	130	103	130	130	130	130	130	130	130	130
	Effective Walk Time	28	7	7	7	57	57	10	10	53	53	7	7
	Average Pedestrian Delay	**40**	**58**	**58**	**45**	**20**	**20**	**55**	**55**	**23**	**23**	**58**	**58**
	Pedestrian Delay LoS	**E**	**E**	**E**	**E**	**C**	**C**	**E**	**E**	**C**	**C**	**E**	**E**
	Level of Service	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
		#N/A				**F**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>	> 50 m	≤ 50 m	> 50 m Introduced right turn lane	> 50 m Introduced right turn lane			> 50 m Introduced right turn lane	> 50 m Introduced right turn lane		≤ 50 m		
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h			≤ 25 km/h	≤ 25 km/h		≤ 25 km/h		
	Cyclist Through Movement	**F**	**D**	**D**	**D**		**Not Applicable**	**D**	**D**		**D**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	1 lane crossed	≥ 2 lanes crossed	No lane crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 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	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**C**	**E**	**E**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**D**	**E**	**E**	**F**	**F**
		F				**F**				**F**			
Transit	Average Signal Delay	≤ 40 sec	≤ 40 sec	> 40 sec	> 40 sec		> 40 sec	≤ 20 sec	≤ 10 sec	> 40 sec	≤ 40 sec	≤ 20 sec	≤ 20 sec
	Level of Service	**E**	**E**	**F**	**F**	**-**	**F**	**C**	**B**	**F**	**E**	**C**	**C**
		F				**F**				**F**			
Truck	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	< 10 m			10 - 15 m	10 - 15 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2	1	1	≥ 2	≥ 2			≥ 2	≥ 2
	Level of Service	**A**	**A**	**A**	**A**	**C**	**C**	**A**	**D**	**-**	**-**	**B**	**B**
		A				**D**				**B**			
Auto	Volume to Capacity Ratio	0.91 - 1.00				0.0 - 0.60				0.61 - 0.70			
	Level of Service	**E**				**A**				**B**			

Multi-Modal Level of Service - Intersections Form

Consultant	**Stantec**	**Project**	**1125 Cyrville Road**
Scenario	**2028 TF Intersections**	**Date**	
Comments			

To add intersections
Select columns LMNO, right-click and *Copy;*
Then select column P, right-click and *Insert Copied Cells*

INTERSECTIONS		St. Laurent Boulevard and Ogilvie Road				Ogilvie Road and Cyrville Road				Ogilvie Road and Cummings Avenue			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	9	9	9	9	4	4	7	6	3	4	7	6
	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
	Conflicting Left Turns	Protected	Protected	Protected	Protected	No left turn / Prohib.	Permissive	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ 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	Permissive or yield control	Permissive or yield control	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 prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	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	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	No Channel	No Channel
	Corner Radius	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	5-10m	15-25m	10-15m	10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Raised crosswalk	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings
	PETSI Score	**-17**	**-20**	**-20**	**-20**	**70**	**51**	**5**	**18**	**70**	**57**	**4**	**20**
	Ped. Exposure to Traffic LoS	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
	Cycle Length	130	130	130	103	130	130	130	130	130	130	130	130
	Effective Walk Time	28	7	7	7	57	57	10	10	53	53	7	7
	Average Pedestrian Delay	**40**	**58**	**58**	**45**	**20**	**20**	**55**	**55**	**23**	**23**	**58**	**58**
	Pedestrian Delay LoS	**E**	**E**	**E**	**E**	**C**	**C**	**E**	**E**	**C**	**C**	**E**	**E**
	Level of Service	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**C**	**D**	**F**	**F**	**C**	**D**	**F**	**F**
		#N/A				**F**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Pocket Bike Lane	Pocket Bike Lane	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	IF Dedicated Right Turn Lane, THEN Right Turn Configuration, ELSE <blank>	> 50 m	≤ 50 m	> 50 m Introduced right turn lane	> 50 m Introduced right turn lane			> 50 m Introduced right turn lane	> 50 m Introduced right turn lane		≤ 50 m		
	Dedicated Right Turning Speed	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h			≤ 25 km/h	≤ 25 km/h		≤ 25 km/h		
	Cyclist Through Movement	**F**	**D**	**D**	**D**		**Not Applicable**	**D**	**D**		**D**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	1 lane crossed	≥ 2 lanes crossed	No lane crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 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	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**C**	**E**	**E**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**E**	**E**	**F**	**D**	**E**	**E**	**F**	**F**
		F				**F**				**F**			
Transit	Average Signal Delay	≤ 40 sec	≤ 40 sec	≤ 40 sec	≤ 40 sec		> 40 sec	≤ 20 sec	≤ 10 sec	> 40 sec	≤ 40 sec	≤ 20 sec	≤ 20 sec
	Level of Service	**E**	**E**	**E**	**E**	**-**	**F**	**C**	**B**	**F**	**E**	**C**	**C**
		E				**F**				**F**			
Truck	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	< 10 m			10 - 15 m	10 - 15 m
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2	1	1	≥ 2	≥ 2			≥ 2	≥ 2
	Level of Service	**A**	**A**	**A**	**A**	**C**	**C**	**A**	**D**	**-**	**-**	**B**	**B**
		A				**D**				**B**			
Auto	Volume to Capacity Ratio	0.91 - 1.00				0.0 - 0.60				0.71 - 0.80			
	Level of Service	**E**				**A**				**C**			

Appendix C TRANSPORTATION DEMAND MANAGEMENT CHECKLISTS

Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.1—Development Design) requires proponents of qualifying developments to use the City's **TDM-Supportive Development Design and Infrastructure Checklist** to assess the opportunity to implement design elements that are supportive of sustainable modes. The goal of this assessment is to ensure that the development provides safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments
- TDM-Supportive Development Design and Infrastructure Checklist: Residential Developments

Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.

Using the Checklist

This **TDM-Supportive Development Design and Infrastructure Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family or condominium only; subdivisions are exempt). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the design and infrastructure measures being proposed and provides additional detail on them.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- 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.

Glossary

This glossary defines and describes the following measures that are identified in the **TDM-Supportive Development Design and Infrastructure Checklist**:

Walking & cycling: Routes
- Building location & access points
- Facilities for walking & cycling
- Amenities for walking & cycling

Walking & cycling: End-of-trip facilities
- Bicycle parking
- Secure bicycle parking
- Shower & change facilities
- Bicycle repair station

Transit
- Walking routes to transit
- Customer amenities

Ridesharing
- Pick-up & drop-off facilities
- Carpool parking

Carsharing & bikesharing
- Carshare parking spaces
- Bikeshare station location

Parking
- Number of parking spaces
- Separate long-term & short-term parking areas

Other
- On-site amenities to minimize off-site trips

In addition to specific references made in this glossary, readers should consult the City of Ottawa's design and planning guidelines for a variety of different land uses and contexts, available on the City's website at www.ottawa.ca. Readers may also find the following resources to be helpful:

- *Promoting Sustainable Transportation through Site Design*, Institute of Transportation Engineers, 2004 (www.cite7.org/wpdm-package/iterp-promoting-sustainable-transportation)
- *Bicycle End-of-Trip Facilities: A Guide for Canadian Municipalities and Employers*, Transport Canada, 2010 (www.fcm.ca/Documents/tools/GMF/Transport_Canada/BikeEndofTrip_EN.pdf)

▶ *Walking & cycling: Routes*

Building location & access points. Correctly positioning buildings and their entrances can help make walking convenient, comfortable and safe. Minimizing travel distances and maximizing visibility are key.

Facilities for walking & cycling. The Official Plan gives clear direction on the provision and design of walking and cycling facilities for both access and circulation. On larger, busier sites (e.g. multi-building campuses) the inclusion of sidewalks, pathways, marked crossings, stop signs and traffic calming features can create a safer and more supportive environment for active transportation.

Amenities for walking & cycling. Lighting, landscaping, benches and wayfinding can make walking and cycling safer and more secure, comfortable and accessible.

▶ *Walking & cycling: End-of-trip facilities*

Bicycle parking. The Official Plan and Zoning By-law both address the need for adequate bicycle parking at developments. Weather protection and theft prevention are major concerns for commuters who spend hundreds or thousands of dollars on a quality bicycle. Bicycle racks should have a design that enables secure locking while preventing damage to wheels. They should be located within sight of busy areas such as main building entrances or staffed parking kiosks.

Secure bicycle parking. Ottawa's Zoning By-law requires a secure area for bicycles at office or residential developments having more than 50 bicycle parking spaces. Lockable outdoor bike cages or indoor storage rooms that limit access to registered users are ideal.

Shower & change facilities. Longer-distance cyclists, joggers and even pedestrians can need a place to shower and change at work; the lack of such facilities is a major barrier to active commuting. Lockers and drying racks provide a place to store gear away from workspaces, and showers and grooming stations allow commuters to make themselves presentable for the office.

Bicycle repair station. Cycling commuters can experience maintenance issues that make the homeward trip difficult or impossible. A small supply of tools (e.g. air pump, Allen keys, wrenches) and supplies (e.g. inner tube patches, chain lubricant) in the workplace can help.

▶ *Transit*

Customer amenities. Larger developments that feature an on-site transit stop can make transit use more attractive by providing shelters, lighting and benches. Even better, they could integrate the passenger waiting area into a building entrance.

▶ *Ridesharing*

Pick-up & drop-off facilities. Having a safe place to load or unload passengers (for carpools as well as taxis and ride-hailing services) without obstructing pedestrians, cyclists or other vehicles can help make carpooling work.

Carpool parking. At destinations with large parking lots (or lots that regularly fill to capacity), signed priority carpool parking spaces can be an effective ridesharing incentive. Priority spaces are frequently abused by non-carpoolers, so a system to provide registered users with vehicle identification tags is recommended.

▶ *Carsharing & bikesharing*

Carshare parking spaces. For developments where carsharing could be an attractive option for employees, visitors or residents, ensuring an attractive location for future carshare parking spaces can avoid challenges associated with future retrofits.

Bikeshare station location. For developments where bikesharing could be an attractive option for employees, visitor or residents, ensuring an attractive location for a future bikeshare station can avoid challenges associated with future retrofits.

▶ *Parking*

Number of parking spaces. Parking capacity is an important variable in development design, as it can either support or subvert the mode share targets set during the transportation impact analysis (TIA). While the Zoning By-law establishes any minimum and/or maximum requirements for parking capacity, it also allows a reduction in any minimum to reflect the existence of on-site shower, change and locker rooms provided for cyclists.

Separate long-term & short-term parking areas. Because access to unused parking spaces can be a powerful incentive to drive, developments can better manage their parking supply and travel behaviours by separating long-term from short-term parking through the use of landscaping, gated controls or signs. Doing so makes it difficult for long-term parkers (e.g. commuters) to park in short-term areas (e.g. for visitors) as long as enforcement occurs; it also protects long-term parking capacity for its intended users.

▶ *Other*

On-site amenities to minimize off-site trips. Developments that offer facilities to limit employees' need for a car during their commute (e.g. to drop off children at daycare) or during their workday (e.g. to hit the gym) can free employees to make the commuting decision that otherwise works best for them.

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)	☐

Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.3—Transportation Demand Management) requires proponents of qualifying developments to assess the context, need and opportunity for transportation demand management (TDM) measures at their development. The guidelines require that proponents complete the City's **TDM Measures Checklist**, at a minimum, to identify any TDM measures being proposed.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM Measures Checklist: Non-Residential Developments
- TDM Measures Checklist: Residential developments

Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.

Using the Checklist

The City's *TIA Guidelines* are designed so that *Module 3.1—Development-Generated Travel Demand*, *Module 4.1—Development Design*, and *Module 4.2—Parking* are complete before a proponent begins *Module 4.3—Transportation Demand Management*.

Within Module 4.3, *Element 4.3.1—Context for TDM* and *Element 4.3.2—Need and Opportunity* are intended to create an understanding of the need for any TDM measures, and of the results they are expected to achieve or support. Once those two elements are complete, proponents begin *Element 4.3.3—TDM Program* that requires proponents to identify proposed TDM measures using the **TDM Measures Checklist**, at a minimum. The *TIA Guidelines* note that the City may require additional analysis for large or complex development proposals, or those that represent a higher degree of performance risk; as well, proponents proposing TDM measures for a new development must also propose an implementation plan that addresses planning and coordination, funding and human resources, timelines for action, performance targets and monitoring requirements.

This **TDM Measures Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family, condominium or subdivision). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the TDM measures being proposed and provides additional detail on them, including an implementation plan as required by the City's *TIA Guidelines*.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- 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.

Glossary

This glossary defines and describes the following measures that are identified in the **TDM Measures Checklist**:

TDM program management
- Program coordinator
- Travel surveys

Parking
- Priced parking

Walking & cycling
- Information on walking/cycling routes & destinations
- Bicycle skills training
- Valet bike parking

Transit
- Transit information
- Transit fare incentives
- Enhanced public transit service
- Private transit service

Ridesharing
- Ridematching service
- Carpool parking price incentives
- Vanpool service

Carsharing & bikesharing
- Bikeshare stations & memberships
- Carshare vehicles & memberships

TDM marketing & communications
- Multimodal travel information
- Personalized trip planning
- Promotions

Other incentives & amenities
- Emergency ride home
- Alternative work arrangements
- Local business travel options
- Commuter incentives
- On-site amenities

For further information on selecting and implementing TDM measures (particularly as they apply to non-residential developments, with a focus on workplaces), readers may find it helpful to consult Transport Canada's *Workplace Travel Plans: Guidance for Canadian Employers*, which can be downloaded in English and French from the ACT Canada website at www.actcanada.com/resources/act-resources.

▶ *TDM program management*

While some TDM measures can be implemented with a minimum of effort through routine channels (e.g. parking or human resources), more complex measures or a larger development site may warrant assigning responsibility for TDM program coordination to a designated person either inside or outside the implementing organization. Similarly, some TDM measures are more effective if they are targeted or customized for specific audiences, and would benefit from the collection of related information.

Program coordinator. This person is charged with day-to-day TDM program development and implementation. Only in very large employers with thousands of workers is this likely to be a full-time, dedicated position. Usually, it is added to an existing role in parking, real estate, human resources or environmental management. In practice, this role may be called TDM coordinator, commute trip reduction coordinator or employee transportation coordinator. The City of Ottawa can identify external resources (e.g. non-profit organizations or consultants) that could provide these services.

Travel surveys. Travel surveys are most commonly conducted at workplaces, but can be helpful in other settings. They identify how and why people travel the way they do, and what barriers and opportunities exist for different behaviours. They usually capture the following information:

- *Personal data* including home address or postal code, destination, job type or function, employment status (full-time, part-time and/or teleworker), gender, age and hours of work
- *Commute information* including distance or time for the trip between home and work, usual methods of commuting, and reasons for choosing them
- *Barriers and opportunities* including why other commuting methods are unattractive, willingness to consider other options, and what improvements to other options could make them more attractive

▶ *Parking*

Priced parking. Charging for parking is typically among the most effective ways of getting drivers to consider other travel options. While drivers may not support parking fees, they can be more accepting if the revenues are used to improve other travel options (e.g. new showers and change rooms, improved bicycle parking or subsidized transit passes). At workplaces or daytime destinations, parking discounts (e.g. early bird specials, daily passes that cost significantly less than the equivalent hourly charge, monthly passes that cost significantly less than the equivalent daily charge) encourage long-term parking and discourage the use of other travel options. For residential uses, unbundling parking costs from dwelling purchase, lease or rental costs provides an incentive for residents to own fewer cars, and can reduce car use and the costs of parking provision.

▶ *Walking & cycling*

Active transportation options like cycling and walking are particularly attractive for short trips (typically up to 5 km and 2 km, respectively). Other supportive factors include an active, health-conscious audience, and development proximity to high-quality walking and cycling networks. Common challenges to active transportation include rain, darkness, snowy or icy conditions, personal safety concerns, the potential for bicycle theft, and a lack of shower and change facilities for those making longer trips.

Information on walking/cycling routes & destinations. Ottawa, Gatineau and the National Capital Commission all publish maps to help people identify the most convenient and comfortable walking or cycling routes.

Bicycle skills training. Potential cyclists can be intimidated by the need to ride on roads shared with motor vehicles. This barrier can be reduced or eliminated by offering cycling skills training to interested cyclists (e.g. CAN-BIKE certification courses).

Valet bike parking. For large events, temporary “valet parking” areas can be easily set up to maximize convenience and security for cyclists. Experienced local non-profit groups can help.

▶ *Transit*

Transit information. Difficulty in finding or understanding basic information on transit fares, routes and schedules can prevent people from trying transit. Employers can help by providing online links to OC Transpo and STO websites. Transit users also appreciate visible maps and schedules of transit routes that serve the site; even better, a screen that shows real-time transit arrival information is particularly useful at sites with many transit users and an adjacent transit stop or station.

Transit fare incentives. Free or subsidized transit fares are an attractive incentive for non-transit riders to try transit. Many non-users are unsure of how to pay a fare, and providing tickets or a preloaded PRESTO card (or, for special events, pre-arranging with OC Transpo that transit fares are included with event tickets) overcome that barrier.

Enhanced public transit service. OC Transpo may adjust transit routes, stop locations, service hours or frequencies for an agreed fee under contract, or at no cost where warranted by the potential ridership increase. Information provided by a survey of people who travel to a given development can support these decisions.

Private transit service. At remote suburban or rural workplaces, a poor transit connection to the nearest rapid transit station can be an obstacle for potential transit users, and an employer in this situation could initiate a private shuttle service to make transit use more feasible or attractive. Other circumstances where a shuttle makes sense include large special events, or a residential development for people with limited independent mobility who still require regular access to shops and services.

▶ *Ridesharing*

Ridesharing's potential is greatest in situations where transit ridership is low, where parking costs are high, and/or where large numbers of car commuters (e.g. employees or full-time students) live reasonably far from the workplace.

Ridematching service. Potential carpoolers in Ottawa are served by www.OttawaRideMatch.com, an online service to help people find carpool partners. Employers can arrange for a dedicated portal where their employees can search for potential carpool partners only among their colleagues, if they desire. Some very large employers may establish internal ridematching services, to maximize employee uptake and corporate control. Ridematching service providers typically include a waiver to relieve employers of liability when their employees start carpooling through a ridematching service. Ridesharing with co-workers also tends to eliminate security concerns.

Carpool parking price incentives. Discounted parking fees for carpools can be an extra incentive to rideshare.

Vanpool service. Vanpools operate in the Toronto and Vancouver metropolitan areas, where vans that carry up to about ten occupants are driven by one of the vanpool members. Vanpools tend to operate on a cost-recovery basis, and are most practical for long-distance commutes where transit is not an option. Current legislation in Ontario does not permit third-party (i.e. private or non-profit) vanpool services, but does permit employers to operate internal vanpools.

▶ *Carsharing & bikesharing*

Bikeshare station & memberships. VeloGO Bike Share and Right Bike both operate bikesharing services in Ottawa. Developments that would benefit from having a bikeshare station installed at or near their development may negotiate directly with either service provider.

Carshare vehicles & memberships. VRTUCAR and Zipcar both operate carsharing services in Ottawa, for use by the general public or by businesses as an alternative to corporate fleets. Carsharing services offer 24-hour access, self-serve reservation systems, itemized monthly billings, and outsourcing of all financing, insurance, maintenance and administrative responsibilities.

▶ *TDM marketing & communications*

Multimodal travel information. Aside from mode-specific information discussed elsewhere in this document, multimodal information that identifies and explains the full range of travel options available to people can be very influential—especially when provided at times and locations where individuals are actively choosing among those options. Examples include: employees when their employer is relocating, or when they are joining a new employer; students when they are starting a program at a new institution; visitors or customers travelling to an unfamiliar destination, or when faced with new options (e.g. shuttle services or parking restrictions); and residents when they purchase or occupy a residence that is new to them.

Personalized trip planning. As an extension to the simple provision of information, this technique (also known as *individualized marketing*) is effective in helping people make more sustainable travel choices. The approach involves identifying who is most likely to change their travel choices (notably relocating employees, students or residents) giving them customized information, training and incentives to support them in making that change. It may be conducted with assistance from an external service provider with the necessary skills, and delivered in a variety of settings including workplaces and homes.

Promotions. Special events and incentives can raise awareness and encourage individuals to examine and try new travel options.

- *Special events* can help attract attention, build participation and celebrate successes. Events that have been held in Ottawa include Earth Day (in April) Bike to Work Month (in May), Environment Week (early June), International Car Free Day (September 22), and Canadian Ridesharing Week (October). At workplaces or educational institutions, similarly effective internal events could include workshops, lunch-and-learns, inter-departmental challenges, pancake breakfasts, and so on.
- *Incentives* can encourage trial of sustainable modes, and might include loyalty rewards for duration or consistency of activity (e.g. 1,000 km commuted by bicycle), participation prizes (e.g. for completing a survey or joining a special event), or personal recognition that highlights individual accomplishments.

▶ *Other incentives & amenities*

Emergency ride home. This measure assures non-driving commuters that they will be able to get home quickly and conveniently in case of family emergency (or in some workplaces, in case of unexpected overtime, severe weather conditions, or the early departure of a carpool driver) by offering a chit or reimbursement for taxi, carshare or rental car usage. Limits on annual usage or cost per employee may be set, although across North America the actual rates of usage are typically very low.

Alternative work arrangements. A number of alternatives to the standard 9-to-5, Monday-to-Friday workweek can support sustainable commuting (and work-life balance) at workplaces:

- *Flexible working hours* allow transit commuters to take advantage of the fastest and most convenient transit services, and allow potential carpoolers to include people who work slightly different schedules in their search for carpool partners. They also allow active commuters to travel at least one direction in daylight, either in the morning or the afternoon, during the winter.
- *Compressed workweeks* allow employees to work their required hours over fewer days (e.g. five days in four, or ten days in nine), eliminating the need to commute on certain days. For employees, this can promote work-life balance and gives flexibility for appointments. For employers, this can permit extended service hours as well as reduced parking demands if employees stagger their days off.
- *Telework* is a normal part of many workplaces. It helps reduce commuting activity, and can lead to significant cost savings through workspace sharing. Telework initiatives involve many stakeholders, and may face as much resistance as support within an organization. Consultation, education and training are helpful.

Local business travel options. A common obstacle for people who might prefer to not drive to work is that their employer requires them to bring a car to work so they can make business trips during the day. Giving employees convenient alternatives to private cars for local business travel during the workday makes walking, cycling, transit or carpooling in someone else's car more practical.

- *Walking and cycling*—Active transportation can be a convenient and enjoyable way to make short business trips. They can also reduce employer expenses, although they may require extra travel time. Providing a fleet of shared bikes, or reimbursing cyclists for the kilometres they ride, are inexpensive ways to validate their choice.
- *Public transit*—Transit can be convenient and inexpensive compared to driving. OC Transpo's PRESTO cards are transferable among employees and automatically reloadable, making them the perfect tool for enabling transit use during the day.
- *Ridesharin*g—When multiple employees attend the same off-site meeting or event, they can be reminded to carpool whenever possible.
- *Taxis or ride-hailing*—Taxis and ride-hailing can eliminate parking costs, save time and eliminate collision liability concerns. Taxi chits eliminate cash transactions and minimize paperwork.
    - *Fleet vehicles or carsharing*—Fleet vehicles can be cost-effective for high travel volumes, while carsharing is a great option for less frequent trips.
    - *Interoffice shuttles*—Employers with multiple worksites in the region could use a shuttle service to move people as well as mail or supplies.
    - *Videoconferencing*—New technologies mean that staying in the office to hold meetings electronically is more viable, affordable and productive than ever.

Commuter incentives. Financial incentives can help create a level playing field and support commuting by sustainable modes. A "commuting allowance" given to all employees as a taxable benefit is one such incentive; employees who choose to drive could then be charged for parking, while other employees could use the allowance for transit fares or cycling equipment, or for spending or saving. (Note that in the United States this practice is known as "parking cash-out," and is popular because commuting allowances are not taxable up to a certain limit). Alternatively, a monthly commuting allowance for non-driving employees would give drivers an incentive to choose a different commuting mode. Another practical incentive for active commuters or transit users is to offer them discounted "rainy day" parking passes for a small number of days each month.

On-site amenities. Developments that offer services to limit employees' need for a car during their commute (e.g. to drop off clothing at the dry cleaners) or during their workday (e.g. to buy lunch) can free employees to make the commuting decision that otherwise works best for them.

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

Legend

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

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

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

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

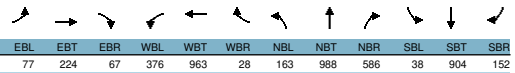
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑
BETTER		3.1.2	Provide real-time arrival information display at entrances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

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

Appendix D INTERSECTION PERFORMANCE WORKSHEETS

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	77	224	67	376	963	28	163	988	586	38	904	152
v/c Ratio	0.39	0.44	0.19	0.50	0.83	0.05	0.78	0.58	0.90	0.36	0.66	0.28
Control Delay	64.7	51.5	1.1	46.4	46.0	0.2	80.4	38.0	46.2	66.9	45.8	3.5
Queue Delay	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	51.5	1.1	46.4	47.5	0.2	80.4	38.0	46.2	66.9	45.8	3.5
Queue Length 50th (m)	10.0	29.5	0.0	39.6	119.2	0.0	40.3	79.6	110.8	9.6	80.5	0.0
Queue Length 95th (m)	18.2	36.6	0.0	60.1	133.5	0.0	#79.3	106.6	#209.9	20.6	#101.0	7.9
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	213	802	453	805	1347	671	215	1711	652	200	1365	539
Starvation Cap Reductn	0	0	0	0	205	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	0.36	0.28	0.15	0.47	0.84	0.04	0.76	0.58	0.90	0.19	0.66	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	202	60	338	867	25	147	889	527	34	814	137
Future Volume (vph)	69	202	60	338	867	25	147	889	527	34	814	137
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.89	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3195	3390	1268	3225	3424	1491	1647	4601	1427	1679	4687	1379
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3195	3390	1268	3225	3424	1491	1647	4601	1427	1679	4687	1379
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	224	67	376	963	28	163	988	586	38	904	152
RTOR Reduction (vph)	0	0	57	0	0	18	0	0	126	0	0	109
Lane Group Flow (vph)	77	224	10	376	963	10	163	988	460	38	904	43
Confl. Peds. (#/hr)	11		40	40		11	51		28	28		51
Confl. Bikes (#/hr)			33			17			1			3
Heavy Vehicles (%)	5%	2%	9%	4%	1%	0%	5%	8%	3%	3%	6%	3%
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
Actuated Green, G (s)	6.8	19.7	19.7	31.6	44.5	44.5	16.6	46.1	46.1	7.3	36.8	36.8
Effective Green, g (s)	6.8	19.7	19.7	31.6	44.5	44.5	16.6	46.1	46.1	7.3	36.8	36.8
Actuated g/C Ratio	0.05	0.15	0.15	0.24	0.34	0.34	0.13	0.35	0.35	0.06	0.28	0.28
Clearance 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
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
Lane Grp Cap (vph)	165	510	190	778	1164	506	208	1620	502	93	1317	387
v/s Ratio Prot	0.02	0.07		c0.12	c0.28		c0.10	0.21		0.02	0.19	
v/s Ratio Perm			0.01			0.01			c0.32			0.03
v/c Ratio	0.47	0.44	0.05	0.48	0.83	0.02	0.78	0.61	0.92	0.41	0.69	0.11
Uniform Delay, d1	60.3	50.6	47.6	42.6	39.7	28.7	55.4	35.0	40.6	59.7	41.9	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.6	0.1	0.5	5.0	0.0	17.3	1.7	24.1	2.9	2.9	0.6
Delay (s)	62.4	51.2	47.7	43.1	44.6	28.7	72.8	36.7	64.7	62.6	44.8	35.5
Level of Service	E	D	D	D	D	C	E	D	E	E	D	D
Approach Delay (s)		52.9			43.9			49.5			44.2	
Approach LOS		D			D			D			D	

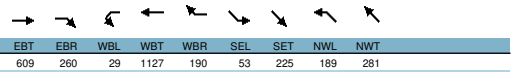
Intersection Summary

HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.9	Sum of lost time (s)	26.2
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021



Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	609	260	29	1127	190	53	225	189	281
v/c Ratio	0.28	0.27	0.06	0.51	0.20	0.32	0.54	0.93	0.64
Control Delay	11.4	2.2	11.5	14.4	2.5	41.9	43.1	94.0	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	2.2	11.5	14.4	2.5	41.9	43.1	94.0	48.7
Queue Length 50th (m)	33.2	0.0	2.6	75.5	0.6	11.1	47.3	47.4	63.9
Queue Length 95th (m)	53.0	11.5	8.0	114.2	10.8	21.1	65.3	#76.0	83.4
Internal Link Dist (m)	130.0			315.4			209.8		255.9
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2174	969	469	2195	933	217	551	268	580
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	0.27	0.06	0.51	0.20	0.24	0.41	0.71	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	548	234	26	1014	171	48	157	46	170	241	12
Future Volume (vph)	0	548	234	26	1014	171	48	157	46	170	241	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.94	1.00	1.00	0.91	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3357	1357	1707	3390	1341	1609	1647		1582	1755	
Flt Permitted		1.00	1.00	0.40	1.00	1.00	0.39	1.00		0.49	1.00	
Satd. Flow (perm)		3357	1357	724	3390	1341	660	1647		813	1755	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	609	260	29	1127	190	53	174	51	189	268	13
RTOR Reduction (vph)	0	0	92	0	0	64	0	9	0	0	2	0
Lane Group Flow (vph)	0	609	168	29	1127	126	53	216	0	189	280	0
Confl. Peds. (#/hr)	28		13	13		28	8		4	4		8
Confl. Bikes (#/hr)			17			2			1			1
Heavy Vehicles (%)	0%	3%	7%	0%	2%	5%	7%	7%	4%	9%	3%	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		
Actuated Green, G (s)		84.2	84.2	84.2	84.2	84.2	32.5	32.5		32.5	32.5	
Effective Green, g (s)		84.2	84.2	84.2	84.2	84.2	32.5	32.5		32.5	32.5	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.25	0.25		0.25	0.25	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2174	878	468	2195	868	165	411		203	438	
v/s Ratio Prot		0.18			c0.33			0.13			0.16	
v/s Ratio Perm			0.12	0.04		0.09	0.08			c0.23		
v/c Ratio		0.28	0.19	0.06	0.51	0.14	0.32	0.53		0.93	0.64	
Uniform Delay, d1		9.9	9.2	8.4	12.1	8.9	39.8	42.1		47.7	43.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.5	0.3	0.9	0.4	1.1	1.2		44.0	3.0	
Delay (s)		10.2	9.7	8.7	12.9	9.3	40.9	43.3		91.6	46.5	
Level of Service		B	A	A	B	A	D	D		F	D	
Approach Delay (s)		10.0			12.3			42.8			64.7	
Approach LOS		B			B			D			E	

Intersection Summary

HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	649	187	1425	21	127	72	158	260
v/c Ratio	0.28	0.34	0.41	0.73	0.13	0.48	0.27	0.58	0.62
Control Delay	13.2	16.8	13.3	23.8	45.2	55.1	5.9	47.0	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	16.8	13.3	23.8	45.2	55.1	5.9	47.0	42.7
Queue Length 50th (m)	3.8	42.8	14.3	123.1	5.0	31.7	0.0	35.1	53.8
Queue Length 95th (m)	11.2	67.1	32.9	198.5	11.6	45.5	6.8	47.3	71.1
Internal Link Dist (m)		315.4		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	194	1900	459	1954	249	405	362	274	547
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	0.34	0.41	0.73	0.08	0.31	0.20	0.58	0.48

Intersection Summary

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	573	11	168	1108	175	19	114	65	142	119	115
Future Volume (vph)	49	573	11	168	1108	175	19	114	65	142	119	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.92	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	3339		1654	3259		1721	1767	1249	1687	1618	
Flt Permitted	0.11	1.00		0.35	1.00		0.60	1.00	1.00	0.50	1.00	
Satd. Flow (perm)	196	3339		612	3259		1084	1767	1249	889	1618	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	54	637	12	187	1231	194	21	127	72	158	132	128
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	61	0	30	0
Lane Group Flow (vph)	54	648	0	187	1417	0	21	127	11	158	230	0
Confl. Peds. (#/hr)	25		15	15		25	5		52	52		5
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	4%	3%	9%	4%	2%	3%	0%	3%	14%	0%	5%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	79.4	74.3		85.0	77.1		19.4	19.4	19.4	31.4	31.4	
Effective Green, g (s)	79.4	74.3		85.0	77.1		19.4	19.4	19.4	31.4	31.4	
Actuated g/C Ratio	0.61	0.57		0.65	0.59		0.15	0.15	0.15	0.24	0.24	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	176	1899		461	1923		161	262	185	260	389	
v/s Ratio Prot	0.01	0.19		c0.02	c0.43			0.07		0.04	c0.14	
v/s Ratio Perm	0.17			0.24			0.02		0.01	c0.11		
v/c Ratio	0.31	0.34		0.41	0.74		0.13	0.48	0.06	0.61	0.59	
Uniform Delay, d1	14.4	15.1		9.5	19.4		48.3	51.0	47.8	43.2	43.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5		0.6	2.6		0.4	1.4	0.1	4.0	2.4	
Delay (s)	15.4	15.5		10.1	22.0		48.6	52.4	47.9	47.2	46.3	
Level of Service	B	B		B	C		D	D	D	D	D	
Approach Delay (s)		15.5			20.6			50.6			46.7	
Approach LOS		B			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.72			
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	80.4%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	674	176	1428	261	7	1567
v/c Ratio	0.86	0.39	0.49	0.26	0.04	0.53
Control Delay	55.0	30.2	14.9	3.7	12.7	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	30.2	14.9	3.7	12.7	15.5
Queue Length 50th (m)	83.4	27.9	70.5	5.3	0.7	80.1
Queue Length 95th (m)	101.0	45.8	91.3	18.0	3.2	102.8
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	906	519	2899	992	161	2955
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.34	0.49	0.26	0.04	0.53

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	607	158	1285	235	6	1410
Future Volume (vph)	607	158	1285	235	6	1410
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.96	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2683	1465	4687	1477	1728	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.14	1.00
Satd. Flow (perm)	2683	1465	4687	1477	260	4778
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	674	176	1428	261	7	1567
RTOR Reduction (vph)	0	26	0	79	0	0
Lane Group Flow (vph)	674	150	1428	182	7	1567
Confl. Peds. (#/hr)		25		3	3	
Heavy Vehicles (%)	25%	1%	6%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	38.0	38.0	80.4	80.4	80.4	80.4
Effective Green, g (s)	38.0	38.0	80.4	80.4	80.4	80.4
Actuated g/C Ratio	0.29	0.29	0.62	0.62	0.62	0.62
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	784	428	2898	913	160	2955
v/s Ratio Prot	c0.25		0.30			c0.33
v/s Ratio Perm		0.10		0.12	0.03	
v/c Ratio	0.86	0.35	0.49	0.20	0.04	0.53
Uniform Delay, d1	43.5	36.3	13.6	10.8	9.7	14.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	0.5	0.6	0.5	0.5	0.7
Delay (s)	52.8	36.8	14.2	11.3	10.2	14.8
Level of Service	D	D	B	B	B	B
Approach Delay (s)	49.5		13.8			14.7
Approach LOS	D		B			B

Intersection Summary				
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	60.5%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	331	1093	216	1059
v/c Ratio	0.01	0.78	0.34	0.73	0.34
Control Delay	60.0	33.3	8.7	64.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	33.3	8.7	64.4	10.1
Queue Length 50th (m)	0.3	35.5	31.9	53.2	37.0
Queue Length 95th (m)	2.3	64.0	66.8	73.2	59.0
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	127	764	3226	714	3123
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.43	0.34	0.30	0.34

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

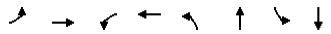
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	0	0	298	0	959	24	194	952	1
Future Volume (vph)	0	1	0	0	0	298	0	959	24	194	952	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		1.00		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1820				1528		4533		1662	4687	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1820				1528		4533		1662	4687	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1	0	0	0	331	0	1066	27	216	1058	1
RTOR Reduction (vph)	0	0	0	0	0	156	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	175	0	1092	0	216	1059	0
Confl. Peds. (#/hr)			24				21		24	24		21
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	9%	9%	4%	6%	0%
Turn Type		NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				23.1		87.9		23.1	82.0	
Effective Green, g (s)		1.2				23.1		87.9		23.1	82.0	
Actuated g/C Ratio		0.01				0.18		0.68		0.18	0.63	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				271		3062		295	2954	
v/s Ratio Prot		c0.00				0.11		c0.24		c0.13	0.23	
v/s Ratio Perm												
v/c Ratio		0.06				0.64		0.36		0.73	0.36	
Uniform Delay, d1		63.9				49.7		9.0		50.6	11.5	
Progression Factor		1.00				1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.6				5.2		0.3		9.0	0.3	
Delay (s)		65.5				54.9		9.3		59.6	11.8	
Level of Service		E				D		A		E	B	
Approach Delay (s)		65.5			54.9			9.3			19.9	
Approach LOS		E			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	60.2%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



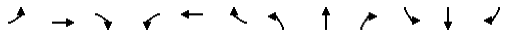
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	303	183	646	9	57	151	148
v/c Ratio	0.10	0.28	0.30	0.62	0.05	0.19	0.68	0.48
Control Delay	5.9	5.8	12.4	16.3	27.1	17.9	46.7	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	5.8	12.4	16.3	27.1	17.9	46.7	32.6
Queue Length 50th (m)	1.4	12.2	9.6	42.6	1.1	3.5	20.5	18.0
Queue Length 95th (m)	5.1	30.2	35.7	#146.9	5.0	13.3	41.6	36.5
Internal Link Dist (m)		131.0		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	411	1093	605	1036	218	374	274	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28	0.30	0.62	0.04	0.15	0.55	0.39

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	174	99	165	441	140	8	26	25	136	112	22
Future Volume (vph)	31	174	99	165	441	140	8	26	25	136	112	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1405	1617		1644	1691		1515	1611		1652	1685	
Flt Permitted	0.28	1.00		0.58	1.00		0.63	1.00		0.72	1.00	
Satd. Flow (perm)	408	1617		996	1691		998	1611		1252	1685	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	34	193	110	183	490	156	9	29	28	151	124	24
RTOR Reduction (vph)	0	20	0	0	10	0	0	23	0	0	8	0
Lane Group Flow (vph)	34	283	0	183	636	0	9	34	0	151	140	0
Confl. Peds. (#/hr)	6		21	21		6	5		11	11		5
Confl. Bikes (#/hr)			1			2			2			3
Heavy Vehicles (%)	23%	7%	0%	3%	3%	3%	13%	4%	0%	2%	1%	24%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	55.9	55.9		48.7	48.7		14.2	14.2		14.2	14.2	
Effective Green, g (s)	55.9	55.9		48.7	48.7		14.2	14.2		14.2	14.2	
Actuated g/C Ratio	0.66	0.66		0.58	0.58		0.17	0.17		0.17	0.17	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	1069		574	974		167	270		210	283	
v/s Ratio Prot	0.00	c0.17			c0.38			0.02			0.08	
v/s Ratio Perm	0.07			0.18			0.01			c0.12		
v/c Ratio	0.11	0.26		0.32	0.65		0.05	0.12		0.72	0.49	
Uniform Delay, d1	7.0	5.9		9.3	12.2		29.5	29.9		33.3	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.6		1.5	3.4		0.1	0.2		11.2	1.4	
Delay (s)	7.2	6.5		10.8	15.6		29.6	30.1		44.4	33.2	
Level of Service	A	A		B	B		C	C		D	C	
Approach Delay (s)		6.5			14.5			30.0			38.9	
Approach LOS		A			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.65			
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	66.0%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/25/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	349	663	237	539	424	34	210	1154	703	82	876	222
v/c Ratio	0.50	0.82	0.49	1.02	0.65	0.08	0.93	0.76	1.26	0.70	0.78	0.47
Control Delay	47.2	52.4	10.1	95.1	49.1	0.4	94.8	41.0	157.8	85.1	48.5	8.4
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	47.2	52.4	10.1	95.1	49.1	0.4	94.8	41.0	157.8	85.1	48.5	8.4
Queue Length 50th (m)	36.9	76.9	3.8	~76.9	50.8	0.0	49.8	90.1	~184.1	19.3	71.5	0.0
Queue Length 95th (m)	57.4	98.1	25.1	#111.8	60.8	0.0	#94.6	107.3	#256.4	#42.5	87.4	20.1
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	692	877	509	527	877	504	228	1527	560	121	1128	470
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	0.50	0.76	0.47	1.02	0.48	0.07	0.92	0.76	1.26	0.68	0.78	0.47

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/25/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	597	213	485	382	31	189	1039	633	74	788	200
Future Volume (vph)	314	597	213	485	382	31	189	1039	633	74	788	200
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.87	1.00	1.00	0.95	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3354	3424	1357	3288	3424	1350	1572	4824	1442	1712	4687	1253
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3354	3424	1357	3288	3424	1350	1572	4824	1442	1712	4687	1253
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	349	663	237	539	424	34	210	1154	703	82	876	222
RTOR Reduction (vph)	0	0	165	0	0	28	0	0	104	0	0	169
Lane Group Flow (vph)	349	663	72	539	424	6	210	1154	599	82	876	53
Confl. Peds. (#/hr)	65		47	47		65	130		30	30		130
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	0%	1%	5%	2%	1%	0%	10%	3%	2%	1%	6%	2%
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
Actuated Green, G (s)	25.0	28.7	28.7	19.4	23.1	23.1	17.5	38.3	38.3	8.3	29.1	29.1
Effective Green, g (s)	25.0	28.7	28.7	19.4	23.1	23.1	17.5	38.3	38.3	8.3	29.1	29.1
Actuated g/C Ratio	0.21	0.24	0.24	0.16	0.19	0.19	0.14	0.32	0.32	0.07	0.24	0.24
Clearance 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
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
Lane Grp Cap (vph)	693	812	322	527	654	257	227	1528	456	117	1128	301
v/s Ratio Prot	c0.10	c0.19		c0.16	0.12		c0.13	0.24		0.05	0.19	
v/s Ratio Perm			0.05			0.00			c0.42			0.04
v/c Ratio	0.50	0.82	0.22	1.02	0.65	0.03	0.93	0.76	1.31	0.70	0.78	0.18
Uniform Delay, d1	42.5	43.6	37.1	50.8	45.1	39.7	51.1	37.1	41.3	55.1	42.9	36.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	6.4	0.4	45.1	2.2	0.0	39.4	3.5	156.2	17.3	5.3	1.3
Delay (s)	43.0	50.0	37.5	95.9	47.4	39.8	90.4	40.6	197.5	72.3	48.1	37.7
Level of Service	D	D	D	F	D	D	F	D	F	E	D	D
Approach Delay (s)		45.7			73.3			99.0			47.9	
Approach LOS		D			E			F			D	

Intersection Summary

HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.11			
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	26.2	
Intersection Capacity Utilization	95.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/25/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	1127	294	46	772	142	153	355	134	277
v/c Ratio	0.54	0.31	0.21	0.36	0.15	0.76	0.77	0.99	0.58
Control Delay	15.5	2.5	22.3	16.3	8.0	53.1	39.8	115.7	40.7
Queue Delay	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	2.5	22.3	16.3	8.0	53.1	39.8	115.7	40.7
Queue Length 50th (m)	71.9	0.0	2.7	24.7	0.0	35.8	80.3	~32.6	56.0
Queue Length 95th (m)	115.5	12.6	m10.2	74.7	m16.5	55.7	107.9	#60.2	72.3
Internal Link Dist (m)	130.0			184.1			209.8		189.7
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2106	951	215	2127	918	268	610	182	635
Starvation Cap Reductn	654	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	0.78	0.31	0.21	0.36	0.15	0.57	0.58	0.74	0.44

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/25/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	1014	265	41	695	128	138	238	82	121	216	33
Future Volume (vph)	0	1014	265	41	695	128	138	238	82	121	216	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.90	1.00	1.00	0.93	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3390	1353	1660	3424	1391	1675	1679		1610	1765	
Flt Permitted		1.00	1.00	0.20	1.00	1.00	0.43	1.00		0.30	1.00	
Satd. Flow (perm)		3390	1353	346	3424	1391	751	1679		510	1765	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1127	294	46	772	142	153	264	91	134	240	37
RTOR Reduction (vph)	0	0	111	0	0	54	0	12	0	0	5	0
Lane Group Flow (vph)	0	1127	183	46	772	88	153	343	0	134	272	0
Confl. Peds. (#/hr)	23		33	33		23	4		8	8		4
Confl. Bikes (#/hr)			8			3						
Heavy Vehicles (%)	0%	2%	3%	3%	1%	3%	3%	4%	3%	7%	1%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		74.6	74.6	74.6	74.6	74.6	32.1	32.1		32.1	32.1	
Effective Green, g (s)		74.6	74.6	74.6	74.6	74.6	32.1	32.1		32.1	32.1	
Actuated g/C Ratio		0.62	0.62	0.62	0.62	0.62	0.27	0.27		0.27	0.27	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2107	841	215	2128	864	200	449		136	472	
v/s Ratio Prot		c0.33			0.23			0.20			0.15	
v/s Ratio Perm			0.14	0.13		0.06	0.20			c0.26		
v/c Ratio		0.53	0.22	0.21	0.36	0.10	0.77	0.76		0.99	0.58	
Uniform Delay, d1		12.9	9.9	9.9	11.1	9.2	40.5	40.5		43.7	38.1	
Progression Factor		1.00	1.00	1.47	1.28	3.43	0.79	0.77		1.00	1.00	
Incremental Delay, d2		1.0	0.6	1.6	0.3	0.2	15.2	7.2		72.1	1.7	
Delay (s)		13.8	10.5	16.2	14.5	31.7	46.9	38.2		115.8	39.8	
Level of Service		B	B	B	B	C	D	D		F	D	
Approach Delay (s)		13.2			17.1			40.8			64.6	
Approach LOS		B			B			D			E	

Intersection Summary

HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3	
Intersection Capacity Utilization	83.4%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Queues
3: Cummings Ave & Ogilvie Rd.

08/25/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	126	1265	124	1073	41	186	247	296	284
v/c Ratio	0.51	0.86	0.63	0.74	0.24	0.60	0.63	0.75	0.48
Control Delay	29.5	31.1	35.7	33.2	42.6	52.2	22.3	41.7	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	31.1	35.7	33.2	42.6	52.2	22.3	41.7	29.7
Queue Length 50th (m)	8.3	138.8	12.2	99.3	8.7	42.2	17.9	55.8	49.3
Queue Length 95th (m)	29.4	#226.3	35.9	#173.0	17.3	58.3	40.6	69.1	63.9
Internal Link Dist (m)		107.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	267	1476	214	1452	278	501	526	393	758
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	0.47	0.86	0.58	0.74	0.15	0.37	0.47	0.75	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/25/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	1114	24	112	751	215	37	167	222	266	168	87
Future Volume (vph)	113	1114	24	112	751	215	37	167	222	266	168	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.97	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1695	3404		1647	3297		1622	1802	1462	1721	1668	
Flt Permitted	0.14	1.00		0.08	1.00		0.59	1.00	1.00	0.41	1.00	
Satd. Flow (perm)	246	3404		133	3297		1000	1802	1462	738	1668	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	1238	27	124	834	239	41	186	247	296	187	97
RTOR Reduction (vph)	0	1	0	0	19	0	0	0	136	0	18	0
Lane Group Flow (vph)	126	1264	0	124	1054	0	41	186	111	296	266	0
Confl. Peds. (#/hr)	10		21	21		10	25		16	16		25
Confl. Bikes (#/hr)			11			12			4			2
Heavy Vehicles (%)	2%	1%	4%	5%	0%	0%	3%	1%	2%	0%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	62.0	52.0		62.4	52.2		20.8	20.8	20.8	40.8	40.8	
Effective Green, g (s)	62.0	52.0		62.4	52.2		20.8	20.8	20.8	40.8	40.8	
Actuated g/C Ratio	0.52	0.43		0.52	0.44		0.17	0.17	0.17	0.34	0.34	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	247	1475		197	1434		173	312	253	379	567	
v/s Ratio Prot	0.04	c0.37		c0.05	0.32			0.10		c0.10	0.16	
v/s Ratio Perm	0.22			0.27			0.04		0.08	c0.16		
v/c Ratio	0.51	0.86		0.63	0.74		0.24	0.60	0.44	0.78	0.47	
Uniform Delay, d1	18.7	30.6		22.2	28.2		42.8	45.7	44.4	32.4	31.1	
Progression Factor	1.59	0.72		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	5.9		6.2	3.4		0.7	3.0	1.2	10.0	0.6	
Delay (s)	31.3	28.0		28.4	31.5		43.5	48.8	45.6	42.4	31.7	
Level of Service	C	C		C	C		D	D	D	D	C	
Approach Delay (s)		28.3			31.2			46.7			37.2	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/25/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	568	179	1926	293	10	1946
v/c Ratio	0.82	0.56	0.59	0.28	0.11	0.60
Control Delay	53.8	43.3	12.0	3.0	11.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	53.8	43.3	12.0	3.0	11.3	12.4
Queue Length 50th (m)	65.0	33.6	84.2	5.5	0.8	86.1
Queue Length 95th (m)	81.9	54.6	106.8	16.5	3.5	109.5
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	810	370	3256	1061	95	3224
Starvation Cap Reductn	0	0	0	0	0	458
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.48	0.59	0.28	0.11	0.70

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/25/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	511	161	1733	264	9	1751
Future Volume (vph)	511	161	1733	264	9	1751
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.93	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3049	1345	4824	1466	1728	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.08	1.00
Satd. Flow (perm)	3049	1345	4824	1466	141	4778
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	568	179	1926	293	10	1946
RTOR Reduction (vph)	0	13	0	72	0	0
Lane Group Flow (vph)	568	166	1926	222	10	1946
Confl. Peds. (#/hr)		49		7	7	
Heavy Vehicles (%)	10%	7%	3%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	27.4	27.4	81.0	81.0	81.0	81.0
Effective Green, g (s)	27.4	27.4	81.0	81.0	81.0	81.0
Actuated g/C Ratio	0.23	0.23	0.68	0.68	0.68	0.68
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	696	307	3256	989	95	3225
v/s Ratio Prot	c0.19		0.40			c0.41
v/s Ratio Perm		0.12		0.15	0.07	
v/c Ratio	0.82	0.54	0.59	0.22	0.11	0.60
Uniform Delay, d1	43.9	40.8	10.5	7.5	6.8	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	1.9	0.8	0.5	2.2	0.8
Delay (s)	51.2	42.7	11.3	8.0	9.0	11.5
Level of Service	D	D	B	A	A	B
Approach Delay (s)	49.2		10.9			11.5
Approach LOS	D		B			B

Intersection Summary

HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/25/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	371	1538	338	1141
v/c Ratio	0.01	0.65	0.53	0.77	0.31
Control Delay	55.0	36.4	15.5	52.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	36.4	15.5	52.3	8.1
Queue Length 50th (m)	0.2	53.6	64.6	74.2	40.6
Queue Length 95th (m)	2.1	83.1	122.2	94.6	65.0
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	130	899	2919	860	3663
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.41	0.53	0.39	0.31

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/25/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	334	0	1295	89	304	1023	4
Future Volume (vph)	1	0	0	0	0	334	0	1295	89	304	1023	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		0.99		1.00	1.00	
Flpb, ped/bikes		0.94				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		0.99		1.00	1.00	
Flt Protected		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1625				1543		4698		1695	4728	
Flt Permitted		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1625				1543		4698		1695	4728	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	0	0	0	0	371	0	1439	99	338	1137	4
RTOR Reduction (vph)	0	0	0	0	0	176	0	4	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	195	0	1534	0	338	1141	0
Confl. Peds. (#/hr)	2		15	15		2	57		44	44		57
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	4%	3%	2%	5%	0%
Turn Type	Perm	NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				31.1		69.8		31.1	83.5	
Effective Green, g (s)		1.2				31.1		69.8		31.1	83.5	
Actuated g/C Ratio		0.01				0.26		0.58		0.26	0.70	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				399		2732		439	3289	
v/s Ratio Prot						0.13		c0.33		c0.20	0.24	
v/s Ratio Perm		0.00										
v/c Ratio		0.06				0.49		0.56		0.77	0.35	
Uniform Delay, d1		58.8				37.7		15.6		41.1	7.3	
Progression Factor		1.00				2.49		1.00		1.00	1.00	
Incremental Delay, d2		1.6				0.9		0.8		8.0	0.3	
Delay (s)		60.5				94.7		16.4		49.1	7.6	
Level of Service		E				F		B		D	A	
Approach Delay (s)		60.5			94.7			16.4			17.1	
Approach LOS		E			F			B			B	

Intersection Summary				
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/25/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	554	52	596	29	207	234	68
v/c Ratio	0.22	0.57	0.15	0.77	0.08	0.42	0.90	0.15
Control Delay	12.7	18.0	21.3	31.7	24.8	20.5	69.5	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	18.0	21.3	31.7	24.8	20.5	69.5	16.4
Queue Length 50th (m)	6.1	72.2	6.4	97.8	3.9	20.2	41.7	5.1
Queue Length 95th (m)	12.5	105.9	15.4	#168.5	10.4	39.8	#83.1	14.7
Internal Link Dist (m)		197.2		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	348	967	349	773	423	564	305	543
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.57	0.15	0.77	0.07	0.37	0.77	0.13

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

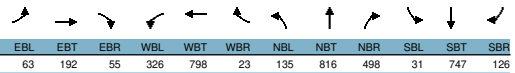
08/25/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	481	18	47	295	241	26	81	105	211	34	27
Future Volume (vph)	61	481	18	47	295	241	26	81	105	211	34	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.93		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		0.97	1.00		0.96	1.00		0.94	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1615	1738		1685	1651		1667	1537		1570	1547	
Flt Permitted	0.21	1.00		0.44	1.00		0.71	1.00		0.55	1.00	
Satd. Flow (perm)	359	1738		773	1651		1251	1537		907	1547	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	534	20	52	328	268	29	90	117	234	38	30
RTOR Reduction (vph)	0	1	0	0	26	0	0	49	0	0	22	0
Lane Group Flow (vph)	68	553	0	52	570	0	29	158	0	234	46	0
Confl. Peds. (#/hr)	10		33	33		10	14		34	34		14
Confl. Bikes (#/hr)						2			4			1
Heavy Vehicles (%)	7%	4%	0%	0%	1%	1%	0%	0%	2%	3%	3%	12%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	53.1	53.1		42.5	42.5		26.9	26.9		26.9	26.9	
Effective Green, g (s)	53.1	53.1		42.5	42.5		26.9	26.9		26.9	26.9	
Actuated g/C Ratio	0.56	0.56		0.45	0.45		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	279	966		344	734		352	432		255	435	
v/s Ratio Prot	0.02	c0.32			c0.35			0.10			0.03	
v/s Ratio Perm	0.12			0.07			0.02			c0.26		
v/c Ratio	0.24	0.57		0.15	0.78		0.08	0.37		0.92	0.11	
Uniform Delay, d1	13.3	13.8		15.8	22.5		25.2	27.5		33.2	25.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	2.5		0.9	7.9		0.1	0.5		34.7	0.1	
Delay (s)	13.7	16.3		16.7	30.4		25.3	28.0		68.0	25.5	
Level of Service	B	B		B	C		C	C		E	C	
Approach Delay (s)		16.0			29.3			27.7			58.4	
Approach LOS		B			C			C			E	

Intersection Summary				
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	82.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	192	55	326	798	23	135	816	498	31	747	126
v/c Ratio	0.32	0.39	0.16	0.53	0.80	0.04	0.69	0.40	0.68	0.31	0.46	0.21
Control Delay	62.3	50.8	0.9	51.2	48.7	0.1	72.4	29.3	26.2	65.9	37.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	50.8	0.9	51.2	48.8	0.1	72.4	29.3	26.2	65.9	37.7	1.2
Queue Length 50th (m)	8.1	25.3	0.0	36.0	100.2	0.0	33.7	56.8	69.4	7.8	56.8	0.0
Queue Length 95th (m)	15.3	32.0	0.0	54.3	113.0	0.0	54.2	81.2	#148.6	17.9	80.9	1.4
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	222	802	452	747	1347	671	215	2031	737	200	1612	600
Starvation Cap Reductn	0	0	0	0	98	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	0.28	0.24	0.12	0.44	0.64	0.03	0.63	0.40	0.68	0.15	0.46	0.21

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	192	55	326	798	23	135	816	498	31	747	126
Future Volume (vph)	63	192	55	326	798	23	135	816	498	31	747	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.89	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3195	3390	1263	3225	3424	1488	1647	4601	1425	1679	4687	1378
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3195	3390	1263	3225	3424	1488	1647	4601	1425	1679	4687	1378
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	192	55	326	798	23	135	816	498	31	747	126
RTOR Reduction (vph)	0	0	47	0	0	16	0	0	114	0	0	84
Lane Group Flow (vph)	63	192	8	326	798	7	135	816	384	31	747	42
Confl. Peds. (#/hr)	11		41	41		11	52		29	29		52
Confl. Bikes (#/hr)			34			17			1			3
Heavy Vehicles (%)	5%	2%	9%	4%	1%	0%	5%	8%	3%	3%	6%	3%
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
Actuated Green, G (s)	7.0	19.2	19.2	26.2	38.4	38.4	15.7	53.8	53.8	5.5	43.6	43.6
Effective Green, g (s)	7.0	19.2	19.2	26.2	38.4	38.4	15.7	53.8	53.8	5.5	43.6	43.6
Actuated g/C Ratio	0.05	0.15	0.15	0.20	0.29	0.29	0.12	0.41	0.41	0.04	0.33	0.33
Clearance 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
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
Lane Grp Cap (vph)	170	497	185	645	1004	436	197	1891	585	70	1561	458
v/s Ratio Prot	0.02	0.06		c0.10	c0.23		c0.08	0.18		0.02	0.16	
v/s Ratio Perm			0.01			0.00			c0.27			0.03
v/c Ratio	0.37	0.39	0.04	0.51	0.79	0.02	0.69	0.43	0.66	0.44	0.48	0.09
Uniform Delay, d1	59.8	50.5	48.0	46.6	42.6	32.8	55.2	27.6	31.1	61.2	34.6	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.5	0.1	0.6	4.4	0.0	9.5	0.7	5.7	4.4	1.1	0.4
Delay (s)	61.2	51.0	48.1	47.2	47.0	32.8	64.7	28.3	36.7	65.6	35.7	30.4
Level of Service	E	D	D	D	D	C	E	C	D	E	D	C
Approach Delay (s)		52.6			46.8			34.6			36.0	
Approach LOS		D			D			C			D	

Intersection Summary				
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	130.9	Sum of lost time (s)	26.2	
Intersection Capacity Utilization	85.1%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	524	215	24	949	157	44	186	156	232
v/c Ratio	0.23	0.22	0.04	0.41	0.16	0.26	0.51	0.80	0.60
Control Delay	9.6	2.0	10.2	11.4	2.1	41.7	44.4	74.4	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	2.0	10.2	11.4	2.1	41.7	44.4	74.4	50.2
Queue Length 50th (m)	23.0	0.0	1.8	49.0	0.0	9.7	40.4	39.1	54.8
Queue Length 95th (m)	42.3	10.0	6.3	84.8	8.7	18.3	55.7	57.6	71.0
Internal Link Dist (m)	130.0			315.4			209.8		255.9
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2277	988	549	2300	958	255	547	294	580
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	0.23	0.22	0.04	0.41	0.16	0.17	0.34	0.53	0.40

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	524	215	24	949	157	44	144	42	156	221	11
Future Volume (vph)	0	524	215	24	949	157	44	144	42	156	221	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.94	1.00	1.00	0.91	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.98	1.00	1.00	1.00	1.00		0.99	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3357	1358	1703	3390	1338	1658	1636		1577	1755	
Flt Permitted		1.00	1.00	0.45	1.00	1.00	0.44	1.00		0.54	1.00	
Satd. Flow (perm)		3357	1358	808	3390	1338	774	1636		892	1755	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	524	215	24	949	157	44	144	42	156	221	11
RTOR Reduction (vph)	0	0	69	0	0	50	0	9	0	0	2	0
Lane Group Flow (vph)	0	524	146	24	949	107	44	177	0	156	230	0
Confl. Peds. (#/hr)	29		13	13		29	4		8	8		4
Confl. Bikes (#/hr)			17			2			1			1
Heavy Vehicles (%)	0%	3%	7%	0%	2%	5%	4%	7%	7%	9%	3%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		88.2	88.2	88.2	88.2	88.2	28.5	28.5		28.5	28.5	
Effective Green, g (s)		88.2	88.2	88.2	88.2	88.2	28.5	28.5		28.5	28.5	
Actuated g/C Ratio		0.68	0.68	0.68	0.68	0.68	0.22	0.22		0.22	0.22	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2277	921	548	2299	907	169	358		195	384	
v/s Ratio Prot		0.16			c0.28			0.11			0.13	
v/s Ratio Perm			0.11	0.03		0.08	0.06			c0.17		
v/c Ratio		0.23	0.16	0.04	0.41	0.12	0.26	0.49		0.80	0.60	
Uniform Delay, d1		8.0	7.5	6.9	9.3	7.3	42.0	44.4		48.1	45.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.4	0.2	0.5	0.3	0.8	1.1		20.5	2.6	
Delay (s)		8.2	7.9	7.1	9.9	7.6	42.8	45.5		68.5	48.3	
Level of Service		A	A	A	A	A	D	D		E	D	
Approach Delay (s)		8.1			9.5			45.0			56.4	
Approach LOS		A			A			D			E	

Intersection Summary				
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.3	
Intersection Capacity Utilization	70.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	45	550	158	1178	35	110	62	130	218
v/c Ratio	0.17	0.29	0.31	0.60	0.21	0.43	0.23	0.46	0.53
Control Delay	11.0	15.7	11.4	19.8	48.1	53.7	4.2	42.8	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	15.7	11.4	19.8	48.1	53.7	4.2	42.8	38.8
Queue Length 50th (m)	3.0	33.3	11.4	86.5	8.5	27.5	0.0	28.8	43.0
Queue Length 95th (m)	9.8	55.8	28.0	145.4	16.5	40.3	3.9	39.5	58.3
Internal Link Dist (m)		315.4		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	261	1923	508	1965	258	405	362	283	546
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	0.17	0.29	0.31	0.60	0.14	0.27	0.17	0.46	0.40

Intersection Summary

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	540	10	158	1017	161	35	110	62	130	112	106
Future Volume (vph)	45	540	10	158	1017	161	35	110	62	130	112	106
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.92	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	3340		1650	3257		1721	1767	1247	1680	1620	
Flt Permitted	0.18	1.00		0.40	1.00		0.62	1.00	1.00	0.54	1.00	
Satd. Flow (perm)	310	3340		702	3257		1126	1767	1247	955	1620	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	540	10	158	1017	161	35	110	62	130	112	106
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	53	0	29	0
Lane Group Flow (vph)	45	549	0	158	1170	0	35	110	9	130	189	0
Confl. Peds. (#/hr)	26		15	15		26	5		53	53		5
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	4%	3%	9%	4%	2%	3%	0%	3%	14%	0%	5%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	80.2	75.2		85.0	77.6		19.0	19.0	19.0	31.0	31.0	
Effective Green, g (s)	80.2	75.2		85.0	77.6		19.0	19.0	19.0	31.0	31.0	
Actuated g/C Ratio	0.61	0.58		0.65	0.59		0.15	0.15	0.15	0.24	0.24	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	242	1923		510	1935		163	257	181	269	384	
v/s Ratio Prot	0.01	0.16		c0.02	c0.36			0.06		0.03	c0.12	
v/s Ratio Perm	0.11			0.18			0.03		0.01	0.09		
v/c Ratio	0.19	0.29		0.31	0.60		0.21	0.43	0.05	0.48	0.49	
Uniform Delay, d1	11.7	14.1		9.1	16.8		49.2	50.8	48.0	41.6	43.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4		0.3	1.4		0.7	1.1	0.1	1.4	1.0	
Delay (s)	12.0	14.4		9.4	18.2		49.9	52.0	48.1	43.0	44.0	
Level of Service	B	B		A	B		D	D	D	D	D	
Approach Delay (s)		14.3			17.2			50.5			43.6	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	84.5%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	561	145	1200	216	6	1312
v/c Ratio	0.82	0.35	0.39	0.21	0.03	0.42
Control Delay	56.2	22.2	11.3	2.2	10.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	22.2	11.3	2.2	10.3	11.6
Queue Length 50th (m)	70.3	16.1	47.9	1.0	0.5	53.7
Queue Length 95th (m)	84.0	31.8	68.0	11.1	2.5	75.7
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	906	537	3079	1040	237	3138
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.27	0.39	0.21	0.03	0.42

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	561	145	1200	216	6	1312
Future Volume (vph)	561	145	1200	216	6	1312
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2683	1463	4687	1477	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	2683	1463	4687	1477	362	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	561	145	1200	216	6	1312
RTOR Reduction (vph)	0	49	0	70	0	0
Lane Group Flow (vph)	561	96	1200	146	6	1312
Confl. Peds. (#/hr)		26		3	3	
Heavy Vehicles (%)	25%	1%	6%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	33.0	33.0	85.4	85.4	85.4	85.4
Effective Green, g (s)	33.0	33.0	85.4	85.4	85.4	85.4
Actuated g/C Ratio	0.25	0.25	0.66	0.66	0.66	0.66
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	681	371	3078	970	237	3138
v/s Ratio Prot	c0.21		0.26			c0.27
v/s Ratio Perm		0.07		0.10	0.02	
v/c Ratio	0.82	0.26	0.39	0.15	0.03	0.42
Uniform Delay, d1	45.8	38.7	10.3	8.5	7.8	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	0.4	0.4	0.3	0.2	0.4
Delay (s)	53.7	39.1	10.7	8.8	8.0	11.0
Level of Service	D	D	B	A	A	B
Approach Delay (s)	50.7		10.4			10.9
Approach LOS	D		B			B

Intersection Summary				
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	274	902	178	875
v/c Ratio	0.01	0.68	0.27	0.71	0.28
Control Delay	60.0	22.5	6.8	67.2	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	22.5	6.8	67.2	9.6
Queue Length 50th (m)	0.3	16.0	22.2	44.0	29.1
Queue Length 95th (m)	2.3	42.7	47.1	64.3	47.1
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	127	773	3346	714	3123
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.35	0.27	0.25	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

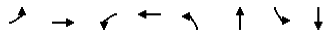
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	0	0	274	0	880	22	178	874	1
Future Volume (vph)	0	1	0	0	0	274	0	880	22	178	874	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		1.00		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1820				1528		4533		1662	4686	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1820				1528		4533		1662	4686	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1	0	0	0	274	0	880	22	178	874	1
RTOR Reduction (vph)	0	0	0	0	0	174	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	100	0	901	0	178	875	0
Confl. Peds. (#/hr)			24				21		24	24		21
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	9%	9%	4%	6%	0%
Turn Type		NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				19.7		91.3		19.7	82.0	
Effective Green, g (s)		1.2				19.7		91.3		19.7	82.0	
Actuated g/C Ratio		0.01				0.15		0.70		0.15	0.63	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				231		3181		251	2953	
v/s Ratio Prot		c0.00				0.07		c0.20		c0.11	c0.19	
v/s Ratio Perm												
v/c Ratio		0.06				0.43		0.28		0.71	0.30	
Uniform Delay, d1		63.9				50.1		7.2		52.5	10.9	
Progression Factor		1.00				1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.6				1.3		0.2		8.8	0.3	
Delay (s)		65.5				51.4		7.4		61.3	11.2	
Level of Service		E				D		A		E	B	
Approach Delay (s)		65.5			51.4			7.4			19.7	
Approach LOS		E			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021

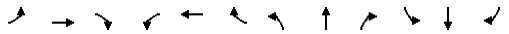


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	251	151	535	7	47	127	127
v/c Ratio	0.06	0.23	0.23	0.51	0.04	0.17	0.61	0.44
Control Delay	5.3	5.0	10.9	12.7	27.1	18.3	43.3	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	5.0	10.9	12.7	27.1	18.3	43.3	31.8
Queue Length 50th (m)	1.0	8.5	6.9	28.9	0.8	2.9	16.8	15.0
Queue Length 95th (m)	4.5	23.6	28.2	97.0	4.3	11.8	35.2	31.8
Internal Link Dist (m)		131.0		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	480	1110	645	1055	232	366	272	372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.23	0.51	0.03	0.13	0.47	0.34

Intersection Summary

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	160	91	151	405	130	7	24	23	127	107	20
Future Volume (vph)	28	160	91	151	405	130	7	24	23	127	107	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1404	1617		1641	1690		1514	1611		1652	1688	
Flt Permitted	0.35	1.00		0.60	1.00		0.68	1.00		0.73	1.00	
Satd. Flow (perm)	523	1617		1043	1690		1077	1611		1263	1688	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	28	160	91	151	405	130	7	24	23	127	107	20
RTOR Reduction (vph)	0	20	0	0	10	0	0	19	0	0	8	0
Lane Group Flow (vph)	28	231	0	151	525	0	7	28	0	127	119	0
Confl. Peds. (#/hr)	6		21	21		6	5		11	11		5
Confl. Bikes (#/hr)			1			2			2			3
Heavy Vehicles (%)	23%	7%	0%	3%	3%	3%	13%	4%	0%	2%	1%	24%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	56.4	56.4		49.3	49.3		13.1	13.1		13.1	13.1	
Effective Green, g (s)	56.4	56.4		49.3	49.3		13.1	13.1		13.1	13.1	
Actuated g/C Ratio	0.67	0.67		0.59	0.59		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	378	1086		612	993		168	251		197	263	
v/s Ratio Prot	0.00	c0.14			c0.31			0.02			0.07	
v/s Ratio Perm	0.05			0.14			0.01			c0.10		
v/c Ratio	0.07	0.21		0.25	0.53		0.04	0.11		0.64	0.45	
Uniform Delay, d1	5.6	5.3		8.3	10.4		30.1	30.4		33.2	32.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		1.0	2.0		0.1	0.2		7.0	1.2	
Delay (s)	5.7	5.7		9.3	12.4		30.2	30.6		40.3	33.4	
Level of Service	A	A		A	B		C	C		D	C	
Approach Delay (s)		5.7			11.7			30.5			36.8	
Approach LOS		A			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	83.9	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	62.9%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	288	565	196	455	352	28	174	954	600	68	723	184
v/c Ratio	0.42	0.75	0.43	0.85	0.57	0.07	0.82	0.56	0.99	0.60	0.58	0.38
Control Delay	45.6	50.2	7.0	65.0	47.9	0.3	80.0	34.5	65.3	76.0	41.8	5.7
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	45.6	50.2	7.0	65.0	47.9	0.3	80.0	34.5	65.3	76.0	41.8	5.7
Queue Length 50th (m)	29.0	66.2	0.0	53.7	42.3	0.0	40.2	70.7	~132.6	15.9	56.7	0.0
Queue Length 95th (m)	47.7	82.1	15.5	#88.7	50.5	0.0	#73.4	85.5	#201.9	#33.1	70.7	12.6
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	684	877	502	537	877	504	228	1701	606	121	1237	482
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	0.42	0.64	0.39	0.85	0.40	0.06	0.76	0.56	0.99	0.56	0.58	0.38

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	565	196	455	352	28	174	954	600	68	723	184
Future Volume (vph)	288	565	196	455	352	28	174	954	600	68	723	184
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.87	1.00	1.00	0.95	1.00	1.00	0.82
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3354	3424	1354	3288	3424	1345	1572	4824	1440	1712	4687	1248
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3354	3424	1354	3288	3424	1345	1572	4824	1440	1712	4687	1248
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	288	565	196	455	352	28	174	954	600	68	723	184
RTOR Reduction (vph)	0	0	153	0	0	23	0	0	100	0	0	135
Lane Group Flow (vph)	288	565	43	455	352	5	174	954	500	68	723	49
Confl. Peds. (#/hr)	66		48	48		66	133		31	31		133
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	0%	1%	5%	2%	1%	0%	10%	3%	2%	1%	6%	2%
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
Actuated Green, G (s)	24.7	26.7	26.7	19.8	21.8	21.8	16.3	41.3	41.3	6.9	31.9	31.9
Effective Green, g (s)	24.7	26.7	26.7	19.8	21.8	21.8	16.3	41.3	41.3	6.9	31.9	31.9
Actuated g/C Ratio	0.20	0.22	0.22	0.16	0.18	0.18	0.13	0.34	0.34	0.06	0.26	0.26
Clearance 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
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
Lane Grp Cap (vph)	685	756	299	538	617	242	211	1647	491	97	1236	329
v/s Ratio Prot	c0.09	c0.17		c0.14	0.10		c0.11	0.20		0.04	0.15	
v/s Ratio Perm			0.03			0.00			c0.35			0.04
v/c Ratio	0.42	0.75	0.14	0.85	0.57	0.02	0.82	0.58	1.02	0.70	0.58	0.15
Uniform Delay, d1	41.9	44.0	37.9	49.1	45.3	40.8	50.9	32.7	39.8	56.0	38.7	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	4.1	0.2	11.7	1.3	0.0	22.3	1.5	45.3	20.4	2.0	0.9
Delay (s)	42.3	48.0	38.1	60.7	46.6	40.8	73.2	34.2	85.1	76.4	40.8	35.0
Level of Service	D	D	D	E	D	D	E	C	F	E	D	D
Approach Delay (s)		44.6			54.1			55.8			42.2	
Approach LOS		D			D			E			D	

Intersection Summary

HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	26.2
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	967	243	38	650	118	127	293	111	228
v/c Ratio	0.44	0.25	0.13	0.29	0.13	0.62	0.70	0.74	0.53
Control Delay	12.6	2.3	17.7	13.5	6.7	42.2	37.5	68.2	41.2
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	2.3	17.7	13.5	6.7	42.2	37.5	68.2	41.2
Queue Length 50th (m)	49.5	0.0	1.9	19.2	0.0	30.2	67.6	25.2	47.2
Queue Length 95th (m)	88.2	11.0	m9.9	61.2	16.0	46.7	88.0	41.2	61.5
Internal Link Dist (m)	130.0			184.1			209.8		189.7
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2197	959	289	2220	943	305	610	222	635
Starvation Cap Reductn	792	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	0.69	0.25	0.13	0.29	0.13	0.42	0.48	0.50	0.36

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	967	243	38	650	118	127	218	75	111	198	30
Future Volume (vph)	0	967	243	38	650	118	127	218	75	111	198	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.90	1.00	1.00	0.93	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.98	1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3390	1350	1651	3424	1391	1671	1679		1609	1764	
Flt Permitted		1.00	1.00	0.26	1.00	1.00	0.49	1.00		0.37	1.00	
Satd. Flow (perm)		3390	1350	446	3424	1391	854	1679		622	1764	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	967	243	38	650	118	127	218	75	111	198	30
RTOR Reduction (vph)	0	0	85	0	0	41	0	12	0	0	5	0
Lane Group Flow (vph)	0	967	158	38	650	77	127	281	0	111	223	0
Confl. Peds. (#/hr)	23		34	34		23	8		8	8		8
Confl. Bikes (#/hr)			8			3						
Heavy Vehicles (%)	0%	2%	3%	3%	1%	3%	3%	4%	3%	7%	1%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		77.8	77.8	77.8	77.8	77.8	28.9	28.9		28.9	28.9	
Effective Green, g (s)		77.8	77.8	77.8	77.8	77.8	28.9	28.9		28.9	28.9	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2197	875	289	2219	901	205	404		149	424	
v/s Ratio Prot		c0.29			0.19			0.17			0.13	
v/s Ratio Perm			0.12	0.09		0.05	0.15			c0.18		
v/c Ratio		0.44	0.18	0.13	0.29	0.08	0.62	0.70		0.74	0.53	
Uniform Delay, d1		10.4	8.4	8.1	9.2	7.9	40.6	41.5		42.1	39.6	
Progression Factor		1.00	1.00	1.43	1.25	2.86	0.76	0.75		1.00	1.00	
Incremental Delay, d2		0.6	0.5	0.8	0.3	0.2	5.3	5.0		18.2	1.2	
Delay (s)		11.0	8.9	12.4	11.7	22.6	36.2	36.0		60.3	40.8	
Level of Service		B	A	B	B	C	D	D		E	D	
Approach Delay (s)		10.6			13.3			36.1			47.2	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	1071	108	886	46	157	206	244	239
v/c Ratio	0.34	0.70	0.44	0.58	0.26	0.53	0.55	0.61	0.42
Control Delay	14.0	25.3	19.6	27.7	43.8	50.4	16.1	35.2	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	25.3	19.6	27.7	43.8	50.4	16.1	35.2	28.4
Queue Length 50th (m)	7.2	104.9	10.1	71.3	10.0	35.7	9.4	45.5	40.4
Queue Length 95th (m)	12.2	#174.0	23.9	119.8	18.8	49.8	28.8	56.6	52.5
Internal Link Dist (m)		107.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	335	1534	270	1516	293	501	524	404	765
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	0.31	0.70	0.40	0.58	0.16	0.31	0.39	0.60	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1045	26	108	689	197	46	157	206	244	159	80
Future Volume (vph)	104	1045	26	108	689	197	46	157	206	244	159	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00	1.00	0.99	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1694	3401		1647	3298		1641	1802	1462	1719	1686	
Flt Permitted	0.22	1.00		0.15	1.00		0.61	1.00	1.00	0.46	1.00	
Satd. Flow (perm)	395	3401		253	3298		1054	1802	1462	830	1686	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	1045	26	108	689	197	46	157	206	244	159	80
RTOR Reduction (vph)	0	1	0	0	18	0	0	0	135	0	18	0
Lane Group Flow (vph)	104	1070	0	108	868	0	46	157	71	244	221	0
Confl. Peds. (#/hr)	10		21	21		10	26		16	16		26
Confl. Bikes (#/hr)			11			12			4			2
Heavy Vehicles (%)	2%	1%	4%	5%	0%	0%	3%	1%	2%	0%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	63.3	54.2		64.1	54.6		19.8	19.8	19.8	39.3	39.3	
Effective Green, g (s)	63.3	54.2		64.1	54.6		19.8	19.8	19.8	39.3	39.3	
Actuated g/C Ratio	0.53	0.45		0.53	0.46		0.17	0.17	0.17	0.33	0.33	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	306	1536		245	1500		173	297	241	384	552	
v/s Ratio Prot	0.03	c0.31		c0.03	0.26			0.09		c0.08	0.13	
v/s Ratio Perm	0.15			0.20			0.04		0.05	c0.13		
v/c Ratio	0.34	0.70		0.44	0.58		0.27	0.53	0.29	0.64	0.40	
Uniform Delay, d1	15.7	26.3		17.2	24.2		43.8	45.8	44.0	31.9	31.2	
Progression Factor	0.80	0.76		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.4		1.3	1.6		0.8	1.7	0.7	3.4	0.5	
Delay (s)	13.2	22.5		18.5	25.8		44.6	47.5	44.6	35.3	31.7	
Level of Service	B	C		B	C		D	D	D	D	C	
Approach Delay (s)		21.7			25.0			45.7			33.5	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	86.4%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	472	148	1613	242	8	1623
v/c Ratio	0.75	0.49	0.48	0.22	0.05	0.49
Control Delay	52.3	36.3	9.4	1.9	8.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	36.3	9.4	1.9	8.4	9.5
Queue Length 50th (m)	54.7	23.7	55.3	1.6	0.5	56.1
Queue Length 95th (m)	68.1	41.6	78.1	10.6	2.6	79.2
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	810	382	3363	1087	156	3331
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.39	0.48	0.22	0.05	0.49

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	472	148	1613	242	8	1623
Future Volume (vph)	472	148	1613	242	8	1623
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.93	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3049	1343	4824	1466	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.12	1.00
Satd. Flow (perm)	3049	1343	4824	1466	223	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	472	148	1613	242	8	1623
RTOR Reduction (vph)	0	28	0	66	0	0
Lane Group Flow (vph)	472	120	1613	176	8	1623
Confl. Peds. (#/hr)		50		7	7	
Heavy Vehicles (%)	10%	7%	3%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	24.7	24.7	83.7	83.7	83.7	83.7
Effective Green, g (s)	24.7	24.7	83.7	83.7	83.7	83.7
Actuated g/C Ratio	0.21	0.21	0.70	0.70	0.70	0.70
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	627	276	3364	1022	155	3332
v/s Ratio Prot	c0.15		0.33			c0.34
v/s Ratio Perm		0.09		0.12	0.04	
v/c Ratio	0.75	0.44	0.48	0.17	0.05	0.49
Uniform Delay, d1	44.8	41.6	8.2	6.2	5.7	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	1.1	0.5	0.4	0.6	0.5
Delay (s)	49.9	42.7	8.7	6.6	6.3	8.8
Level of Service	D	D	A	A	A	A
Approach Delay (s)	48.2		8.5			8.8
Approach LOS	D		A			A

Intersection Summary				
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	65.7%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	307	1271	279	943
v/c Ratio	0.01	0.59	0.41	0.75	0.26
Control Delay	55.0	32.9	11.4	55.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.9	11.4	55.9	7.7
Queue Length 50th (m)	0.2	41.9	42.9	62.0	31.8
Queue Length 95th (m)	2.1	69.1	85.5	82.3	51.7
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	130	900	3105	860	3662
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.34	0.41	0.32	0.26

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

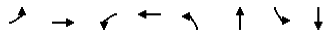
08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	307	0	1189	82	279	939	4
Future Volume (vph)	1	0	0	0	0	307	0	1189	82	279	939	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		0.99		1.00	1.00	
Flpb, ped/bikes		0.94				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		0.99		1.00	1.00	
Flt Protected		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1625				1543		4697		1695	4727	
Flt Permitted		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1625				1543		4697		1695	4727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	0	0	307	0	1189	82	279	939	4
RTOR Reduction (vph)	0	0	0	0	0	186	0	3	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	121	0	1268	0	279	943	0
Confl. Peds. (#/hr)	2		15	15		2	58		45	45		58
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	4%	3%	2%	5%	0%
Turn Type	Perm	NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				26.3		74.6		26.3	83.5	
Effective Green, g (s)		1.2				26.3		74.6		26.3	83.5	
Actuated g/C Ratio		0.01				0.22		0.62		0.22	0.70	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				338		2919		371	3289	
v/s Ratio Prot						0.08		c0.27		c0.16	0.20	
v/s Ratio Perm		0.00										
v/c Ratio		0.06				0.36		0.43		0.75	0.29	
Uniform Delay, d1		58.8				39.7		11.8		43.8	6.9	
Progression Factor		1.00				3.00		1.00		1.00	1.00	
Incremental Delay, d2		1.6				0.6		0.5		8.4	0.2	
Delay (s)		60.5				119.8		12.2		52.2	7.2	
Level of Service		E				F		B		D	A	
Approach Delay (s)		60.5			119.8			12.2			17.4	
Approach LOS		E			F			B			B	

Intersection Summary				
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	65.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	459	43	494	24	170	195	59
v/c Ratio	0.13	0.44	0.09	0.56	0.08	0.40	0.82	0.15
Control Delay	9.9	13.1	17.5	20.1	25.3	19.0	58.2	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	13.1	17.5	20.1	25.3	19.0	58.2	17.3
Queue Length 50th (m)	3.1	35.5	3.7	50.6	3.0	13.3	29.6	4.2
Queue Length 95th (m)	10.8	82.0	12.9	113.8	9.1	31.1	57.2	13.6
Internal Link Dist (m)		197.2		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	479	1043	458	882	456	598	352	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.44	0.09	0.56	0.05	0.28	0.55	0.10

Intersection Summary

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	442	17	43	271	223	24	74	96	195	34	25
Future Volume (vph)	56	442	17	43	271	223	24	74	96	195	34	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.94		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.97	1.00		0.97	1.00		0.93	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1613	1738		1680	1652		1669	1540		1564	1556	
Flt Permitted	0.34	1.00		0.50	1.00		0.72	1.00		0.60	1.00	
Satd. Flow (perm)	570	1738		882	1652		1263	1540		982	1556	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	442	17	43	271	223	24	74	96	195	34	25
RTOR Reduction (vph)	0	1	0	0	23	0	0	52	0	0	19	0
Lane Group Flow (vph)	56	458	0	43	471	0	24	118	0	195	40	0
Confl. Peds. (#/hr)	10		33	33		10	14		34	34		14
Confl. Bikes (#/hr)						2			4			1
Heavy Vehicles (%)	7%	4%	0%	0%	1%	1%	0%	0%	2%	3%	3%	12%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	54.7	54.7		45.8	45.8		21.4	21.4		21.4	21.4	
Effective Green, g (s)	54.7	54.7		45.8	45.8		21.4	21.4		21.4	21.4	
Actuated g/C Ratio	0.60	0.60		0.50	0.50		0.24	0.24		0.24	0.24	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	393	1044		443	831		297	362		230	365	
v/s Ratio Prot	0.01	c0.26			c0.28			0.08			0.03	
v/s Ratio Perm	0.08			0.05			0.02			c0.20		
v/c Ratio	0.14	0.44		0.10	0.57		0.08	0.33		0.85	0.11	
Uniform Delay, d1	8.9	9.8		11.8	15.7		27.1	28.8		33.2	27.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.3		0.4	2.8		0.1	0.5		24.0	0.1	
Delay (s)	9.0	11.2		12.2	18.5		27.2	29.4		57.3	27.5	
Level of Service	A	B		B	B		C	C		E	C	
Approach Delay (s)		10.9			18.0			29.1			50.3	
Approach LOS		B			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	78.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	192	55	326	801	25	135	816	498	32	747	126
v/c Ratio	0.32	0.39	0.16	0.53	0.80	0.05	0.69	0.40	0.68	0.31	0.46	0.21
Control Delay	62.4	50.8	0.9	51.1	48.6	0.2	72.7	29.4	26.3	66.0	37.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	50.8	0.9	51.1	48.8	0.2	72.7	29.4	26.3	66.0	37.7	1.2
Queue Length 50th (m)	8.1	25.3	0.0	36.0	100.6	0.0	33.7	57.0	69.6	8.1	56.9	0.0
Queue Length 95th (m)	15.3	32.0	0.0	54.2	113.3	0.0	54.3	81.6	#149.5	18.4	80.9	1.4
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	222	802	452	748	1347	671	215	2025	735	200	1610	600
Starvation Cap Reductn	0	0	0	0	101	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	0.28	0.24	0.12	0.44	0.64	0.04	0.63	0.40	0.68	0.16	0.46	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	192	55	326	801	25	135	816	498	32	747	126
Future Volume (vph)	63	192	55	326	801	25	135	816	498	32	747	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.89	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.92
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3195	3390	1263	3225	3424	1488	1647	4601	1425	1679	4687	1378
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3195	3390	1263	3225	3424	1488	1647	4601	1425	1679	4687	1378
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	192	55	326	801	25	135	816	498	32	747	126
RTOR Reduction (vph)	0	0	47	0	0	18	0	0	115	0	0	84
Lane Group Flow (vph)	63	192	8	326	801	7	135	816	383	32	747	42
Confl. Peds. (#/hr)	11		41	41		11	52		29	29		52
Confl. Bikes (#/hr)			34			17			1			3
Heavy Vehicles (%)	5%	2%	9%	4%	1%	0%	5%	8%	3%	3%	6%	3%
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
Actuated Green, G (s)	7.0	19.2	19.2	26.3	38.5	38.5	15.6	53.6	53.6	5.6	43.6	43.6
Effective Green, g (s)	7.0	19.2	19.2	26.3	38.5	38.5	15.6	53.6	53.6	5.6	43.6	43.6
Actuated g/C Ratio	0.05	0.15	0.15	0.20	0.29	0.29	0.12	0.41	0.41	0.04	0.33	0.33
Clearance 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
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
Lane Grp Cap (vph)	170	497	185	647	1007	437	196	1883	583	71	1561	458
v/s Ratio Prot	0.02	0.06		c0.10	c0.23		c0.08	0.18		0.02	0.16	
v/s Ratio Perm			0.01			0.00			c0.27			0.03
v/c Ratio	0.37	0.39	0.04	0.50	0.80	0.02	0.69	0.43	0.66	0.45	0.48	0.09
Uniform Delay, d1	59.8	50.5	48.0	46.5	42.6	32.8	55.3	27.7	31.2	61.1	34.6	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.5	0.1	0.6	4.4	0.0	9.7	0.7	5.7	4.5	1.1	0.4
Delay (s)	61.2	51.0	48.1	47.1	47.0	32.8	65.0	28.5	37.0	65.6	35.7	30.4
Level of Service	E	D	D	D	D	C	E	C	D	E	D	C
Approach Delay (s)		52.6			46.7			34.8			36.0	
Approach LOS		D			D			C			D	

Intersection Summary

HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.74				
Actuated Cycle Length (s)	130.9	Sum of lost time (s)	26.2		
Intersection Capacity Utilization	85.1%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	524	217	24	949	157	44	186	161	232
v/c Ratio	0.23	0.22	0.04	0.41	0.16	0.26	0.50	0.81	0.59
Control Delay	9.7	2.0	10.3	11.5	2.1	41.5	44.0	75.4	49.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	2.0	10.3	11.5	2.1	41.5	44.0	75.4	49.6
Queue Length 50th (m)	23.5	0.0	1.8	49.9	0.0	9.6	40.1	40.3	54.4
Queue Length 95th (m)	42.3	10.1	6.4	84.8	8.7	18.3	55.7	59.5	71.0
Internal Link Dist (m)	130.0			193.3			209.8		189.5
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2268	986	545	2291	954	253	547	295	580
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	0.23	0.22	0.04	0.41	0.16	0.17	0.34	0.55	0.40

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	524	217	24	949	157	44	144	42	161	221	11
Future Volume (vph)	0	524	217	24	949	157	44	144	42	161	221	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.94	1.00	1.00	0.91	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.98	1.00	1.00	0.98	1.00		0.99	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3357	1358	1703	3390	1338	1635	1636		1577	1754	
Flt Permitted		1.00	1.00	0.45	1.00	1.00	0.45	1.00		0.54	1.00	
Satd. Flow (perm)		3357	1358	807	3390	1338	768	1636		895	1754	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	524	217	24	949	157	44	144	42	161	221	11
RTOR Reduction (vph)	0	0	70	0	0	51	0	9	0	0	2	0
Lane Group Flow (vph)	0	524	147	24	949	106	44	177	0	161	230	0
Confl. Peds. (#/hr)	29		13	13		29	26		8	8		26
Confl. Bikes (#/hr)			17			2			1			1
Heavy Vehicles (%)	0%	3%	7%	0%	2%	5%	4%	7%	7%	9%	3%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		87.9	87.9	87.9	87.9	87.9	28.8	28.8		28.8	28.8	
Effective Green, g (s)		87.9	87.9	87.9	87.9	87.9	28.8	28.8		28.8	28.8	
Actuated g/C Ratio		0.68	0.68	0.68	0.68	0.68	0.22	0.22		0.22	0.22	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2269	918	545	2292	904	170	362		198	388	
v/s Ratio Prot		0.16			c0.28			0.11			0.13	
v/s Ratio Perm			0.11	0.03		0.08	0.06			c0.18		
v/c Ratio		0.23	0.16	0.04	0.41	0.12	0.26	0.49		0.81	0.59	
Uniform Delay, d1		8.1	7.6	7.0	9.5	7.4	41.8	44.2		48.0	45.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.4	0.2	0.6	0.3	0.8	1.0		21.9	2.4	
Delay (s)		8.3	8.0	7.2	10.0	7.7	42.6	45.2		69.9	47.8	
Level of Service		A	A	A	B	A	D	D		E	D	
Approach Delay (s)		8.2			9.6			44.7			56.9	
Approach LOS		A			A			D			E	

Intersection Summary

HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.51				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.3		
Intersection Capacity Utilization	77.8%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Queues
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	45	551	158	1178	35	110	62	130	218
v/c Ratio	0.17	0.29	0.31	0.60	0.21	0.43	0.23	0.46	0.53
Control Delay	11.0	15.7	11.4	19.8	48.1	53.7	4.2	42.8	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	15.7	11.4	19.8	48.1	53.7	4.2	42.8	38.8
Queue Length 50th (m)	3.0	33.4	11.4	86.5	8.5	27.5	0.0	28.8	43.0
Queue Length 95th (m)	9.8	56.0	28.0	145.4	16.5	40.3	3.9	39.5	58.3
Internal Link Dist (m)		98.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	261	1923	508	1965	258	405	362	283	546
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	0.17	0.29	0.31	0.60	0.14	0.27	0.17	0.46	0.40

Intersection Summary

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	541	10	158	1017	161	35	110	62	130	112	106
Future Volume (vph)	45	541	10	158	1017	161	35	110	62	130	112	106
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.92	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	3340		1651	3257		1721	1767	1247	1680	1620	
Flt Permitted	0.18	1.00		0.40	1.00		0.62	1.00	1.00	0.54	1.00	
Satd. Flow (perm)	310	3340		701	3257		1126	1767	1247	955	1620	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	541	10	158	1017	161	35	110	62	130	112	106
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	53	0	29	0
Lane Group Flow (vph)	45	550	0	158	1170	0	35	110	9	130	189	0
Confl. Peds. (#/hr)	26		15	15		26	5		53	53		5
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	4%	3%	9%	4%	2%	3%	0%	3%	14%	0%	5%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	80.2	75.2		85.0	77.6		19.0	19.0	19.0	31.0	31.0	
Effective Green, g (s)	80.2	75.2		85.0	77.6		19.0	19.0	19.0	31.0	31.0	
Actuated g/C Ratio	0.61	0.58		0.65	0.59		0.15	0.15	0.15	0.24	0.24	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	242	1923		510	1935		163	257	181	269	384	
v/s Ratio Prot	0.01	0.16		c0.02	c0.36			0.06		0.03	c0.12	
v/s Ratio Perm	0.11			0.18			0.03		0.01	0.09		
v/c Ratio	0.19	0.29		0.31	0.60		0.21	0.43	0.05	0.48	0.49	
Uniform Delay, d1	11.7	14.1		9.1	16.8		49.2	50.8	48.0	41.6	43.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4		0.3	1.4		0.7	1.1	0.1	1.4	1.0	
Delay (s)	12.0	14.4		9.4	18.2		49.9	52.0	48.1	43.0	44.0	
Level of Service	B	B		A	B		D	D	D	D	D	
Approach Delay (s)		14.3			17.2			50.5			43.6	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	84.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	570	145	1200	221	6	1312
v/c Ratio	0.83	0.34	0.39	0.21	0.03	0.42
Control Delay	55.9	22.0	11.5	2.2	10.5	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	22.0	11.5	2.2	10.5	11.9
Queue Length 50th (m)	71.4	16.0	48.5	1.1	0.5	54.4
Queue Length 95th (m)	85.1	31.6	68.6	11.4	2.5	76.4
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	906	537	3064	1037	236	3122
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.27	0.39	0.21	0.03	0.42

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	570	145	1200	221	6	1312
Future Volume (vph)	570	145	1200	221	6	1312
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2683	1463	4687	1477	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	2683	1463	4687	1477	362	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	570	145	1200	221	6	1312
RTOR Reduction (vph)	0	49	0	72	0	0
Lane Group Flow (vph)	570	96	1200	149	6	1312
Confl. Peds. (#/hr)		26		3	3	
Heavy Vehicles (%)	25%	1%	6%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	33.4	33.4	85.0	85.0	85.0	85.0
Effective Green, g (s)	33.4	33.4	85.0	85.0	85.0	85.0
Actuated g/C Ratio	0.26	0.26	0.65	0.65	0.65	0.65
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	689	375	3064	965	236	3124
v/s Ratio Prot	c0.21		0.26			c0.27
v/s Ratio Perm		0.07		0.10	0.02	
v/c Ratio	0.83	0.26	0.39	0.15	0.03	0.42
Uniform Delay, d1	45.6	38.4	10.5	8.7	7.9	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.4	0.4	0.3	0.2	0.4
Delay (s)	53.6	38.8	10.8	9.0	8.1	11.2
Level of Service	D	D	B	A	A	B
Approach Delay (s)	50.6		10.6			11.1
Approach LOS	D		B			B

Intersection Summary				
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	58.1%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	274	904	178	876
v/c Ratio	0.01	0.68	0.27	0.71	0.28
Control Delay	60.0	22.5	6.8	67.2	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	22.5	6.8	67.2	9.6
Queue Length 50th (m)	0.3	16.0	22.2	44.0	29.1
Queue Length 95th (m)	2.3	42.7	47.3	64.3	47.2
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	127	773	3346	714	3123
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.35	0.27	0.25	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

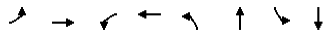
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	0	0	274	0	882	22	178	875	1
Future Volume (vph)	0	1	0	0	0	274	0	882	22	178	875	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		1.00		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1820				1528		4533		1662	4686	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1820				1528		4533		1662	4686	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1	0	0	0	274	0	882	22	178	875	1
RTOR Reduction (vph)	0	0	0	0	0	174	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	100	0	903	0	178	876	0
Confl. Peds. (#/hr)			24				21		24	24		21
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	9%	9%	4%	6%	0%
Turn Type		NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				19.7		91.3		19.7	82.0	
Effective Green, g (s)		1.2				19.7		91.3		19.7	82.0	
Actuated g/C Ratio		0.01				0.15		0.70		0.15	0.63	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				231		3181		251	2953	
v/s Ratio Prot		c0.00				0.07		c0.20		c0.11	c0.19	
v/s Ratio Perm												
v/c Ratio		0.06				0.43		0.28		0.71	0.30	
Uniform Delay, d1		63.9				50.1		7.2		52.5	10.9	
Progression Factor		1.00				1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.6				1.3		0.2		8.8	0.3	
Delay (s)		65.5				51.4		7.4		61.3	11.2	
Level of Service		E				D		A		E	B	
Approach Delay (s)		65.5			51.4			7.4			19.7	
Approach LOS		E			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021

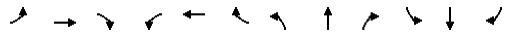


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	251	151	535	7	47	127	127
v/c Ratio	0.07	0.23	0.23	0.52	0.04	0.16	0.61	0.44
Control Delay	5.4	5.0	10.9	13.3	27.1	18.3	43.0	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	5.0	10.9	13.3	27.1	18.3	43.0	31.7
Queue Length 50th (m)	1.0	8.5	6.9	29.4	0.8	2.9	16.8	15.0
Queue Length 95th (m)	4.6	24.0	28.6	100.8	4.3	11.7	35.2	31.8
Internal Link Dist (m)		105.5		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	468	1109	644	1020	237	374	278	380
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.23	0.23	0.52	0.03	0.13	0.46	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	160	91	151	405	130	7	24	23	127	107	20
Future Volume (vph)	28	160	91	151	405	130	7	24	23	127	107	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.96		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	0.98	1.00		0.98	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1382	1617		1641	1635		1514	1611		1652	1688	
Flt Permitted	0.35	1.00		0.60	1.00		0.68	1.00		0.73	1.00	
Satd. Flow (perm)	514	1617		1043	1635		1077	1611		1263	1688	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	28	160	91	151	405	130	7	24	23	127	107	20
RTOR Reduction (vph)	0	20	0	0	10	0	0	19	0	0	8	0
Lane Group Flow (vph)	28	231	0	151	525	0	7	28	0	127	119	0
Confl. Peds. (#/hr)	97		21	21		97	5		11	11		5
Confl. Bikes (#/hr)			1			2			2			3
Heavy Vehicles (%)	23%	7%	0%	3%	3%	3%	13%	4%	0%	2%	1%	24%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	56.4	56.4		49.3	49.3		13.2	13.2		13.2	13.2	
Effective Green, g (s)	56.4	56.4		49.3	49.3		13.2	13.2		13.2	13.2	
Actuated g/C Ratio	0.67	0.67		0.59	0.59		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	1085		612	959		169	253		198	265	
v/s Ratio Prot	0.00	c0.14			c0.32			0.02			0.07	
v/s Ratio Perm	0.05			0.14			0.01			c0.10		
v/c Ratio	0.08	0.21		0.25	0.55		0.04	0.11		0.64	0.45	
Uniform Delay, d1	5.7	5.3		8.4	10.6		30.0	30.4		33.2	32.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		1.0	2.3		0.1	0.2		6.9	1.2	
Delay (s)	5.7	5.7		9.3	12.8		30.1	30.5		40.1	33.3	
Level of Service	A	A		A	B		C	C		D	C	
Approach Delay (s)		5.7			12.1			30.5			36.7	
Approach LOS		A			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	64.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
7: North Site Access & Ogilvie Rd.

08/30/2021

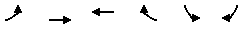
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	564	15	0	1112	0	9
Future Volume (Veh/h)	564	15	0	1112	0	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	564	15	0	1112	0	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	217			122		
pX, platoon unblocked			0.95		0.81	0.95
vC, conflicting volume			579		1128	290
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			459		420	155
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1060		458	829

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	376	203	556	556	9
Volume Left	0	0	0	0	0
Volume Right	0	15	0	0	9
cSH	1700	1700	1700	1700	829
Volume to Capacity	0.22	0.12	0.33	0.33	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	9.4
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.4
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: Cyrville Rd. & South Site Access

08/30/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	279	432	0	0	14
Future Volume (Veh/h)	7	279	432	0	0	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	279	432	0	0	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		213	221			
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	432				725	432
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288				620	288
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	98
cM capacity (veh/h)	1133				398	666

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	286	432	14
Volume Left	7	0	0
Volume Right	0	0	14
cSH	1133	1700	666
Volume to Capacity	0.01	0.25	0.02
Queue Length 95th (m)	0.1	0.0	0.5
Control Delay (s)	0.3	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	288	565	196	455	354	29	174	954	600	68	723	184
v/c Ratio	0.42	0.75	0.43	0.85	0.57	0.07	0.82	0.56	0.99	0.60	0.58	0.38
Control Delay	45.6	50.2	7.0	65.0	48.0	0.3	80.0	34.5	65.3	76.0	41.8	5.7
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	45.6	50.2	7.0	65.0	48.0	0.3	80.0	34.5	65.3	76.0	41.8	5.7
Queue Length 50th (m)	29.0	66.2	0.0	53.7	42.5	0.0	40.2	70.7	~132.6	15.9	56.7	0.0
Queue Length 95th (m)	47.7	82.1	15.5	#88.7	50.9	0.0	#73.4	85.5	#201.9	#33.1	70.7	12.6
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	684	877	502	537	877	504	228	1701	606	121	1237	482
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	0.42	0.64	0.39	0.85	0.40	0.06	0.76	0.56	0.99	0.56	0.58	0.38

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	565	196	455	354	29	174	954	600	68	723	184
Future Volume (vph)	288	565	196	455	354	29	174	954	600	68	723	184
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.87	1.00	1.00	0.95	1.00	1.00	0.82
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3354	3424	1354	3288	3424	1345	1572	4824	1440	1712	4687	1248
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3354	3424	1354	3288	3424	1345	1572	4824	1440	1712	4687	1248
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	288	565	196	455	354	29	174	954	600	68	723	184
RTOR Reduction (vph)	0	0	153	0	0	24	0	0	100	0	0	135
Lane Group Flow (vph)	288	565	43	455	354	5	174	954	500	68	723	49
Confl. Peds. (#/hr)	66		48	48		66	133		31	31		133
Confl. Bikes (#/hr)			15			40			1			4
Heavy Vehicles (%)	0%	1%	5%	2%	1%	0%	10%	3%	2%	1%	6%	2%
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
Actuated Green, G (s)	24.7	26.7	26.7	19.8	21.8	21.8	16.3	41.3	41.3	6.9	31.9	31.9
Effective Green, g (s)	24.7	26.7	26.7	19.8	21.8	21.8	16.3	41.3	41.3	6.9	31.9	31.9
Actuated g/C Ratio	0.20	0.22	0.22	0.16	0.18	0.18	0.13	0.34	0.34	0.06	0.26	0.26
Clearance 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
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
Lane Grp Cap (vph)	685	756	299	538	617	242	211	1647	491	97	1236	329
v/s Ratio Prot	c0.09	c0.17		c0.14	0.10		c0.11	0.20		0.04	0.15	
v/s Ratio Perm			0.03			0.00			c0.35			0.04
v/c Ratio	0.42	0.75	0.14	0.85	0.57	0.02	0.82	0.58	1.02	0.70	0.58	0.15
Uniform Delay, d1	41.9	44.0	37.9	49.1	45.3	40.8	50.9	32.7	39.8	56.0	38.7	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	4.1	0.2	11.7	1.3	0.0	22.3	1.5	45.3	20.4	2.0	0.9
Delay (s)	42.3	48.0	38.1	60.7	46.6	40.8	73.2	34.2	85.1	76.4	40.8	35.0
Level of Service	D	D	D	E	D	D	E	C	F	E	D	D
Approach Delay (s)		44.6			54.1			55.8			42.2	
Approach LOS		D			D			E			D	

Intersection Summary

HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	26.2	
Intersection Capacity Utilization	93.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	967	246	38	650	118	127	293	111	228
v/c Ratio	0.44	0.25	0.13	0.29	0.13	0.63	0.70	0.74	0.53
Control Delay	12.6	2.2	17.5	13.5	6.6	42.8	37.5	68.2	41.3
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	2.2	17.5	13.5	6.6	42.8	37.5	68.2	41.3
Queue Length 50th (m)	49.5	0.0	2.0	19.3	0.0	30.3	67.5	25.2	47.2
Queue Length 95th (m)	88.2	11.0	m9.9	61.1	15.8	46.7	88.1	41.2	61.5
Internal Link Dist (m)	130.0			184.1			209.8		189.7
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2197	985	290	2220	919	301	610	222	633
Starvation Cap Reductn	792	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	0.69	0.25	0.13	0.29	0.13	0.42	0.48	0.50	0.36

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	967	246	38	650	118	127	218	75	111	198	30
Future Volume (vph)	0	967	246	38	650	118	127	218	75	111	198	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.92	1.00	1.00	0.90	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.98	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3390	1387	1660	3424	1354	1649	1679		1609	1760	
Flt Permitted		1.00	1.00	0.26	1.00	1.00	0.49	1.00		0.37	1.00	
Satd. Flow (perm)		3390	1387	448	3424	1354	844	1679		622	1760	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	967	246	38	650	118	127	218	75	111	198	30
RTOR Reduction (vph)	0	0	87	0	0	41	0	12	0	0	5	0
Lane Group Flow (vph)	0	967	159	38	650	77	127	281	0	111	223	0
Confl. Peds. (#/hr)	34		23	23		34	29		8	8		29
Confl. Bikes (#/hr)			8			3						
Heavy Vehicles (%)	0%	2%	3%	3%	1%	3%	3%	4%	3%	7%	1%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		77.8	77.8	77.8	77.8	77.8	28.9	28.9		28.9	28.9	
Effective Green, g (s)		77.8	77.8	77.8	77.8	77.8	28.9	28.9		28.9	28.9	
Actuated g/C Ratio		0.65	0.65	0.65	0.65	0.65	0.24	0.24		0.24	0.24	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2197	899	290	2219	877	203	404		149	423	
v/s Ratio Prot		c0.29			0.19			0.17			0.13	
v/s Ratio Perm			0.11	0.08		0.06	0.15			c0.18		
v/c Ratio		0.44	0.18	0.13	0.29	0.09	0.63	0.70		0.74	0.53	
Uniform Delay, d1		10.4	8.4	8.1	9.2	7.9	40.7	41.5		42.1	39.6	
Progression Factor		1.00	1.00	1.42	1.24	2.83	0.76	0.75		1.00	1.00	
Incremental Delay, d2		0.6	0.4	0.8	0.3	0.2	5.7	5.0		18.2	1.2	
Delay (s)		11.0	8.8	12.3	11.7	22.4	36.7	36.0		60.3	40.8	
Level of Service		B	A	B	B	C	D	D		E	D	
Approach Delay (s)		10.6			13.3			36.2			47.2	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3	
Intersection Capacity Utilization	84.4%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Queues
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	1071	109	886	46	157	206	244	239
v/c Ratio	0.34	0.70	0.44	0.58	0.26	0.53	0.55	0.61	0.42
Control Delay	13.9	25.4	19.7	27.7	43.8	50.4	16.1	35.2	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	25.4	19.7	27.7	43.8	50.4	16.1	35.2	28.4
Queue Length 50th (m)	7.1	105.0	10.1	71.3	10.0	35.7	9.4	45.5	40.4
Queue Length 95th (m)	12.4	#174.3	24.1	119.8	18.8	49.8	28.8	56.6	52.5
Internal Link Dist (m)		107.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	335	1534	270	1516	293	501	524	404	765
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	0.31	0.70	0.40	0.58	0.16	0.31	0.39	0.60	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1045	26	109	689	197	46	157	206	244	159	80
Future Volume (vph)	104	1045	26	109	689	197	46	157	206	244	159	80
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.96	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00	1.00	0.99	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1694	3401		1647	3298		1641	1802	1462	1719	1686	
Flt Permitted	0.22	1.00		0.15	1.00		0.61	1.00	1.00	0.46	1.00	
Satd. Flow (perm)	395	3401		253	3298		1054	1802	1462	830	1686	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	1045	26	109	689	197	46	157	206	244	159	80
RTOR Reduction (vph)	0	1	0	0	18	0	0	0	135	0	18	0
Lane Group Flow (vph)	104	1070	0	109	868	0	46	157	71	244	221	0
Confl. Peds. (#/hr)	10		21	21		10	26		16	16		26
Confl. Bikes (#/hr)			11			12			4			2
Heavy Vehicles (%)	2%	1%	4%	5%	0%	0%	3%	1%	2%	0%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	63.3	54.2		64.1	54.6		19.8	19.8	19.8	39.3	39.3	
Effective Green, g (s)	63.3	54.2		64.1	54.6		19.8	19.8	19.8	39.3	39.3	
Actuated g/C Ratio	0.53	0.45		0.53	0.46		0.17	0.17	0.17	0.33	0.33	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	306	1536		245	1500		173	297	241	384	552	
v/s Ratio Prot	0.03	c0.31		c0.04	0.26			0.09		c0.08	0.13	
v/s Ratio Perm	0.15			0.20			0.04		0.05	c0.13		
v/c Ratio	0.34	0.70		0.44	0.58		0.27	0.53	0.29	0.64	0.40	
Uniform Delay, d1	15.7	26.3		17.3	24.2		43.8	45.8	44.0	31.9	31.2	
Progression Factor	0.80	0.77		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.5		1.3	1.6		0.8	1.7	0.7	3.4	0.5	
Delay (s)	13.2	22.6		18.6	25.8		44.6	47.5	44.6	35.3	31.7	
Level of Service	B	C		B	C		D	D	D	D	C	
Approach Delay (s)		21.8			25.0			45.7			33.5	
Approach LOS		C			C			D			C	

Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	477	148	1613	242	8	1623
v/c Ratio	0.76	0.49	0.48	0.22	0.05	0.49
Control Delay	52.4	36.1	9.4	1.9	8.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	36.1	9.4	1.9	8.4	9.5
Queue Length 50th (m)	55.4	23.6	55.4	1.6	0.5	56.3
Queue Length 95th (m)	68.8	41.5	78.5	10.6	2.7	79.6
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	810	382	3359	1086	156	3326
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.39	0.48	0.22	0.05	0.49

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/30/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	477	148	1613	242	8	1623
Future Volume (vph)	477	148	1613	242	8	1623
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.93	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3049	1343	4824	1466	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.12	1.00
Satd. Flow (perm)	3049	1343	4824	1466	223	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	477	148	1613	242	8	1623
RTOR Reduction (vph)	0	28	0	66	0	0
Lane Group Flow (vph)	477	120	1613	176	8	1623
Confl. Peds. (#/hr)		50		7	7	
Heavy Vehicles (%)	10%	7%	3%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	24.8	24.8	83.6	83.6	83.6	83.6
Effective Green, g (s)	24.8	24.8	83.6	83.6	83.6	83.6
Actuated g/C Ratio	0.21	0.21	0.70	0.70	0.70	0.70
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	630	277	3360	1021	155	3328
v/s Ratio Prot	c0.16		0.33			c0.34
v/s Ratio Perm		0.09		0.12	0.04	
v/c Ratio	0.76	0.43	0.48	0.17	0.05	0.49
Uniform Delay, d1	44.8	41.5	8.3	6.3	5.7	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	1.1	0.5	0.4	0.6	0.5
Delay (s)	50.0	42.6	8.8	6.6	6.4	8.9
Level of Service	D	D	A	A	A	A
Approach Delay (s)	48.2		8.5			8.9
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/30/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	307	1272	279	944
v/c Ratio	0.01	0.59	0.41	0.75	0.26
Control Delay	55.0	32.8	11.4	55.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.8	11.4	55.9	7.7
Queue Length 50th (m)	0.2	42.2	42.9	62.0	31.9
Queue Length 95th (m)	2.1	68.9	85.6	82.3	51.9
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	130	900	3106	860	3662
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.34	0.41	0.32	0.26

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

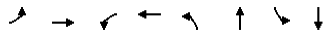
08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	307	0	1190	82	279	940	4
Future Volume (vph)	1	0	0	0	0	307	0	1190	82	279	940	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		0.99		1.00	1.00	
Flpb, ped/bikes		0.94				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		0.99		1.00	1.00	
Flt Protected		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1625				1543		4697		1695	4727	
Flt Permitted		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1625				1543		4697		1695	4727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	0	0	307	0	1190	82	279	940	4
RTOR Reduction (vph)	0	0	0	0	0	186	0	3	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	121	0	1269	0	279	944	0
Confl. Peds. (#/hr)	2		15	15		2	58		45	45		58
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	4%	3%	2%	5%	0%
Turn Type	Perm	NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				26.3		74.6		26.3	83.5	
Effective Green, g (s)		1.2				26.3		74.6		26.3	83.5	
Actuated g/C Ratio		0.01				0.22		0.62		0.22	0.70	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				338		2919		371	3289	
v/s Ratio Prot						0.08		c0.27		c0.16	0.20	
v/s Ratio Perm		0.00										
v/c Ratio		0.06				0.36		0.43		0.75	0.29	
Uniform Delay, d1		58.8				39.7		11.8		43.8	6.9	
Progression Factor		1.00				2.99		1.00		1.00	1.00	
Incremental Delay, d2		1.6				0.6		0.5		8.4	0.2	
Delay (s)		60.5				119.4		12.2		52.2	7.2	
Level of Service		E				F		B		D	A	
Approach Delay (s)		60.5			119.4			12.2			17.4	
Approach LOS		E			F			B			B	

Intersection Summary				
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	65.8%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	459	43	494	24	170	195	60
v/c Ratio	0.13	0.44	0.09	0.60	0.08	0.40	0.82	0.15
Control Delay	9.9	13.1	17.5	21.7	25.3	19.0	58.2	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	13.1	17.5	21.7	25.3	19.0	58.2	17.1
Queue Length 50th (m)	3.1	35.5	3.7	52.4	3.0	13.3	29.6	4.2
Queue Length 95th (m)	10.8	82.0	12.9	#130.2	9.1	31.1	57.2	13.5
Internal Link Dist (m)		197.2		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	464	1043	458	819	455	598	352	577
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.44	0.09	0.60	0.05	0.28	0.55	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/30/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	442	17	43	271	223	24	74	96	195	34	26
Future Volume (vph)	56	442	17	43	271	223	24	74	96	195	34	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.92		1.00	0.94		1.00	0.97	
Flpb, ped/bikes	0.98	1.00		0.97	1.00		0.97	1.00		0.93	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1587	1738		1680	1542		1669	1540		1564	1552	
Flt Permitted	0.34	1.00		0.50	1.00		0.72	1.00		0.60	1.00	
Satd. Flow (perm)	561	1738		882	1542		1262	1540		982	1552	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	442	17	43	271	223	24	74	96	195	34	26
RTOR Reduction (vph)	0	1	0	0	23	0	0	52	0	0	20	0
Lane Group Flow (vph)	56	458	0	43	471	0	24	118	0	195	40	0
Confl. Peds. (#/hr)	101		33	33		101	14		34	34		14
Confl. Bikes (#/hr)						2			4			1
Heavy Vehicles (%)	7%	4%	0%	0%	1%	1%	0%	0%	2%	3%	3%	12%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	54.7	54.7		45.8	45.8		21.4	21.4		21.4	21.4	
Effective Green, g (s)	54.7	54.7		45.8	45.8		21.4	21.4		21.4	21.4	
Actuated g/C Ratio	0.60	0.60		0.50	0.50		0.24	0.24		0.24	0.24	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	386	1044		443	776		296	362		230	364	
v/s Ratio Prot	0.01	c0.26			c0.31			0.08			0.03	
v/s Ratio Perm	0.08			0.05			0.02			c0.20		
v/c Ratio	0.15	0.44		0.10	0.61		0.08	0.33		0.85	0.11	
Uniform Delay, d1	8.9	9.8		11.8	16.2		27.1	28.8		33.2	27.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.3		0.4	3.5		0.1	0.5		24.0	0.1	
Delay (s)	9.1	11.2		12.2	19.7		27.3	29.4		57.3	27.5	
Level of Service	A	B		B	B		C	C		E	C	
Approach Delay (s)		10.9			19.1			29.1			50.2	
Approach LOS		B			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	79.4%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
7: North Site Access & Ogilvie Rd.

08/30/2021

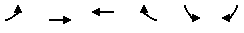
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1104	20	0	793	0	5
Future Volume (Veh/h)	1104	20	0	793	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1104	20	0	793	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	208			131		
pX, platoon unblocked			0.86		0.90	0.86
vC, conflicting volume			1124		1510	562
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			822		642	170
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			692		364	733

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	736	388	396	396	5
Volume Left	0	0	0	0	0
Volume Right	0	20	0	0	5
cSH	1700	1700	1700	1700	733
Volume to Capacity	0.43	0.23	0.23	0.23	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: Cyrville Rd. & South Site Access

08/30/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	514	319	1	1	9
Future Volume (Veh/h)	11	514	319	1	1	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	514	319	1	1	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		214	221			
pX, platoon unblocked					0.89	
vC, conflicting volume	320				856	320
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320				780	320
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1251				325	726

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	525	320	10
Volume Left	11	0	1
Volume Right	0	1	9
cSH	1251	1700	646
Volume to Capacity	0.01	0.19	0.02
Queue Length 95th (m)	0.2	0.0	0.4
Control Delay (s)	0.3	0.0	10.7
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/31/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	203	58	341	840	26	142	856	522	34	784	132
v/c Ratio	0.34	0.41	0.16	0.53	0.81	0.05	0.71	0.43	0.72	0.33	0.50	0.23
Control Delay	62.9	51.0	1.0	50.2	48.2	0.2	74.7	30.9	29.2	66.4	39.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	51.0	1.0	50.2	48.5	0.2	74.7	30.9	29.2	66.4	39.4	1.8
Queue Length 50th (m)	8.5	26.7	0.0	37.2	104.5	0.0	35.4	62.3	80.1	8.6	62.4	0.0
Queue Length 95th (m)	15.8	33.4	0.0	55.6	117.7	0.0	57.8	87.9	#167.2	19.1	85.2	2.9
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	219	802	451	762	1347	670	214	1976	721	200	1556	584
Starvation Cap Reductn	0	0	0	0	135	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	0.30	0.25	0.13	0.45	0.69	0.04	0.66	0.43	0.72	0.17	0.50	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	203	58	341	840	26	142	856	522	34	784	132
Future Volume (vph)	66	203	58	341	840	26	142	856	522	34	784	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.89	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3195	3390	1259	3225	3424	1486	1647	4601	1423	1679	4687	1372
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3195	3390	1259	3225	3424	1486	1647	4601	1423	1679	4687	1372
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	203	58	341	840	26	142	856	522	34	784	132
RTOR Reduction (vph)	0	0	49	0	0	18	0	0	116	0	0	90
Lane Group Flow (vph)	66	203	9	341	840	8	142	856	406	34	784	42
Confl. Peds. (#/hr)	12		43	43		12	55		30	30		55
Confl. Bikes (#/hr)			35			18			1			3
Heavy Vehicles (%)	5%	2%	9%	4%	1%	0%	5%	8%	3%	3%	6%	3%
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
Actuated Green, G (s)	6.9	19.4	19.4	27.3	39.8	39.8	15.9	52.3	52.3	5.7	42.1	42.1
Effective Green, g (s)	6.9	19.4	19.4	27.3	39.8	39.8	15.9	52.3	52.3	5.7	42.1	42.1
Actuated g/C Ratio	0.05	0.15	0.15	0.21	0.30	0.30	0.12	0.40	0.40	0.04	0.32	0.32
Clearance 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
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
Lane Grp Cap (vph)	168	502	186	672	1041	451	200	1838	568	73	1507	441
v/s Ratio Prot	0.02	0.06		c0.11	c0.25		c0.09	0.19		0.02	0.17	
v/s Ratio Perm			0.01			0.01			c0.28			0.03
v/c Ratio	0.39	0.40	0.05	0.51	0.81	0.02	0.71	0.47	0.71	0.47	0.52	0.10
Uniform Delay, d1	60.0	50.5	47.8	45.8	42.0	31.9	55.3	29.0	33.0	61.1	36.2	31.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5	0.1	0.6	4.7	0.0	11.0	0.9	7.5	4.6	1.3	0.4
Delay (s)	61.5	51.0	47.9	46.5	46.7	31.9	66.3	29.8	40.5	65.8	37.5	31.5
Level of Service	E	D	D	D	D	C	E	C	D	E	D	C
Approach Delay (s)		52.6			46.3			36.9			37.6	
Approach LOS		D			D			D			D	

Intersection Summary

HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.77				
Actuated Cycle Length (s)	130.9	Sum of lost time (s)	26.2		
Intersection Capacity Utilization	86.2%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/31/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	549	227	25	994	165	46	195	169	244
v/c Ratio	0.24	0.23	0.05	0.44	0.17	0.27	0.51	0.85	0.61
Control Delay	10.0	2.1	10.4	12.1	2.1	41.7	44.0	80.9	49.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	2.1	10.4	12.1	2.1	41.7	44.0	80.9	49.7
Queue Length 50th (m)	25.9	0.0	1.9	55.7	0.0	9.9	41.8	42.4	56.7
Queue Length 95th (m)	44.5	10.1	6.6	90.3	8.9	19.3	58.2	63.6	74.6
Internal Link Dist (m)	130.0			193.3			209.8		189.5
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2249	980	524	2271	947	244	547	288	580
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	0.24	0.23	0.05	0.44	0.17	0.19	0.36	0.59	0.42

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	549	227	25	994	165	46	151	44	169	232	12
Future Volume (vph)	0	549	227	25	994	165	46	151	44	169	232	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.94	1.00	1.00	0.91	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	0.98	1.00	1.00	0.98	1.00		0.99	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3357	1353	1702	3390	1334	1636	1635		1576	1753	
Flt Permitted		1.00	1.00	0.44	1.00	1.00	0.43	1.00		0.53	1.00	
Satd. Flow (perm)		3357	1353	782	3390	1334	740	1635		872	1753	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	549	227	25	994	165	46	151	44	169	232	12
RTOR Reduction (vph)	0	0	75	0	0	54	0	9	0	0	2	0
Lane Group Flow (vph)	0	549	152	25	994	111	46	186	0	169	242	0
Confl. Peds. (#/hr)	30		14	14		30	26		9	9		26
Confl. Bikes (#/hr)			18			2			1			1
Heavy Vehicles (%)	0%	3%	7%	0%	2%	5%	4%	7%	7%	9%	3%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		87.1	87.1	87.1	87.1	87.1	29.6	29.6		29.6	29.6	
Effective Green, g (s)		87.1	87.1	87.1	87.1	87.1	29.6	29.6		29.6	29.6	
Actuated g/C Ratio		0.67	0.67	0.67	0.67	0.67	0.23	0.23		0.23	0.23	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2249	906	523	2271	893	168	372		198	399	
v/s Ratio Prot		0.16			c0.29			0.11			0.14	
v/s Ratio Perm			0.11	0.03		0.08	0.06			c0.19		
v/c Ratio		0.24	0.17	0.05	0.44	0.12	0.27	0.50		0.85	0.61	
Uniform Delay, d1		8.5	8.0	7.3	10.0	7.7	41.3	43.7		48.1	45.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3	0.4	0.2	0.6	0.3	0.9	1.1		28.2	2.6	
Delay (s)		8.7	8.4	7.5	10.6	8.0	42.2	44.8		76.3	47.6	
Level of Service		A	A	A	B	A	D	D		E	D	
Approach Delay (s)		8.6			10.2			44.3			59.4	
Approach LOS		A			B			D			E	

Intersection Summary

HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.54				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.3		
Intersection Capacity Utilization	79.4%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Queues
3: Cummings Ave & Ogilvie Rd.

08/31/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	578	166	1236	36	115	65	137	229
v/c Ratio	0.20	0.30	0.34	0.63	0.22	0.45	0.25	0.49	0.55
Control Delay	11.4	16.0	11.8	20.6	48.2	54.1	4.8	43.7	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	16.0	11.8	20.6	48.2	54.1	4.8	43.7	39.8
Queue Length 50th (m)	3.2	35.9	12.1	94.0	8.7	28.8	0.0	30.3	45.8
Queue Length 95th (m)	10.1	58.8	29.3	156.4	17.0	41.8	4.9	41.4	61.7
Internal Link Dist (m)		98.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	243	1917	494	1968	256	405	360	280	547
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	0.19	0.30	0.34	0.63	0.14	0.28	0.18	0.49	0.42

Intersection Summary

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	567	11	166	1067	169	36	115	65	137	118	111
Future Volume (vph)	47	567	11	166	1067	169	36	115	65	137	118	111
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.91	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	3339		1651	3265		1721	1767	1242	1680	1622	
Flt Permitted	0.16	1.00		0.39	1.00		0.62	1.00	1.00	0.53	1.00	
Satd. Flow (perm)	281	3339		676	3265		1115	1767	1242	933	1622	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	47	567	11	166	1067	169	36	115	65	137	118	111
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	55	0	29	0
Lane Group Flow (vph)	47	577	0	166	1228	0	36	115	10	137	200	0
Confl. Peds. (#/hr)	27		16	16		27	5		56	56		5
Confl. Bikes (#/hr)			16			2			1			1
Heavy Vehicles (%)	4%	3%	9%	4%	2%	3%	0%	3%	14%	0%	5%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	80.0	75.0		85.0	77.5		19.1	19.1	19.1	31.1	31.1	
Effective Green, g (s)	80.0	75.0		85.0	77.5		19.1	19.1	19.1	31.1	31.1	
Actuated g/C Ratio	0.61	0.57		0.65	0.59		0.15	0.15	0.15	0.24	0.24	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	225	1917		495	1937		163	258	181	266	386	
v/s Ratio Prot	0.01	0.17		c0.02	c0.38			0.07		0.03	c0.12	
v/s Ratio Perm	0.12			0.20			0.03		0.01	0.09		
v/c Ratio	0.21	0.30		0.34	0.63		0.22	0.45	0.05	0.52	0.52	
Uniform Delay, d1	12.2	14.3		9.2	17.3		49.2	50.9	48.0	42.0	43.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.4		0.4	1.6		0.7	1.2	0.1	1.7	1.2	
Delay (s)	12.6	14.7		9.6	18.9		49.9	52.1	48.1	43.7	44.4	
Level of Service	B	B		A	B		D	D	D	D	D	
Approach Delay (s)		14.6			17.8			50.5			44.1	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	130.6	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	87.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/31/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	598	152	1257	231	6	1376
v/c Ratio	0.83	0.35	0.42	0.23	0.03	0.45
Control Delay	55.2	24.6	12.5	2.6	11.2	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	24.6	12.5	2.6	11.2	12.9
Queue Length 50th (m)	74.2	19.0	54.2	2.0	0.5	61.1
Queue Length 95th (m)	88.8	35.2	74.8	13.2	2.6	83.5
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	906	531	3013	1023	214	3071
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.29	0.42	0.23	0.03	0.45

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/31/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	598	152	1257	231	6	1376
Future Volume (vph)	598	152	1257	231	6	1376
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.95	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	2683	1463	4687	1477	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.18	1.00
Satd. Flow (perm)	2683	1463	4687	1477	334	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	598	152	1257	231	6	1376
RTOR Reduction (vph)	0	42	0	74	0	0
Lane Group Flow (vph)	598	110	1257	157	6	1376
Confl. Peds. (#/hr)		26		3	3	
Heavy Vehicles (%)	25%	1%	6%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	34.8	34.8	83.6	83.6	83.6	83.6
Effective Green, g (s)	34.8	34.8	83.6	83.6	83.6	83.6
Actuated g/C Ratio	0.27	0.27	0.64	0.64	0.64	0.64
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	718	391	3014	949	214	3072
v/s Ratio Prot	c0.22		0.27			c0.29
v/s Ratio Perm		0.08		0.11	0.02	
v/c Ratio	0.83	0.28	0.42	0.17	0.03	0.45
Uniform Delay, d1	44.9	37.7	11.3	9.3	8.4	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	0.4	0.4	0.4	0.2	0.5
Delay (s)	53.1	38.1	11.7	9.6	8.7	12.1
Level of Service	D	D	B	A	A	B
Approach Delay (s)	50.0		11.4			12.1
Approach LOS	D		B			B

Intersection Summary				
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	59.8%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/31/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	287	949	187	919
v/c Ratio	0.01	0.71	0.29	0.72	0.29
Control Delay	60.0	25.4	7.1	67.0	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	25.4	7.1	67.0	9.7
Queue Length 50th (m)	0.3	20.3	24.3	46.2	30.9
Queue Length 95th (m)	2.3	48.7	51.0	66.9	49.9
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	127	770	3321	714	3123
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.37	0.29	0.26	0.29

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/31/2021

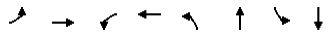
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	0	0	0	287	0	926	23	187	918	1
Future Volume (vph)	0	1	0	0	0	287	0	926	23	187	918	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Flpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		1.00		1.00	1.00	
Flt Protected		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		1820				1528		4533		1662	4687	
Flt Permitted		1.00				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		1820				1528		4533		1662	4687	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1	0	0	0	287	0	926	23	187	918	1
RTOR Reduction (vph)	0	0	0	0	0	169	0	1	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	118	0	948	0	187	919	0
Confl. Peds. (#/hr)			24				21		24	24		21
Heavy Vehicles (%)	0%	0%	0%	0%	0%	3%	0%	9%	9%	4%	6%	0%
Turn Type		NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				20.4		90.6		20.4	82.0	
Effective Green, g (s)		1.2				20.4		90.6		20.4	82.0	
Actuated g/C Ratio		0.01				0.16		0.70		0.16	0.63	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		16				239		3156		260	2954	
v/s Ratio Prot		c0.00				0.08		c0.21		c0.11	c0.20	
v/s Ratio Perm												
v/c Ratio		0.06				0.50		0.30		0.72	0.31	
Uniform Delay, d1		63.9				50.1		7.6		52.1	11.1	
Progression Factor		1.00				1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.6				1.6		0.2		9.2	0.3	
Delay (s)		65.5				51.8		7.8		61.3	11.3	
Level of Service		E				D		A		E	B	
Approach Delay (s)		65.5			51.8			7.8			19.8	
Approach LOS		E			D			A			B	

Intersection Summary				
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.37			
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/31/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	263	159	561	8	49	133	133
v/c Ratio	0.07	0.24	0.25	0.55	0.05	0.17	0.63	0.46
Control Delay	5.5	5.2	11.3	14.0	27.1	18.2	43.9	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	5.2	11.3	14.0	27.1	18.2	43.9	32.1
Queue Length 50th (m)	1.1	9.3	7.5	32.3	1.0	3.0	17.7	15.8
Queue Length 95th (m)	4.8	25.4	30.3	108.8	4.6	12.1	36.6	32.9
Internal Link Dist (m)		105.5		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	452	1105	634	1016	232	373	277	379
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.24	0.25	0.55	0.03	0.13	0.48	0.35

Intersection Summary

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	168	95	159	425	136	8	25	24	133	112	21
Future Volume (vph)	30	168	95	159	425	136	8	25	24	133	112	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	0.96		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	0.98	1.00		0.98	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.93		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1385	1616		1640	1635		1514	1611		1652	1688	
Flt Permitted	0.34	1.00		0.60	1.00		0.66	1.00		0.73	1.00	
Satd. Flow (perm)	488	1616		1030	1635		1059	1611		1261	1688	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	168	95	159	425	136	8	25	24	133	112	21
RTOR Reduction (vph)	0	19	0	0	10	0	0	20	0	0	8	0
Lane Group Flow (vph)	30	244	0	159	551	0	8	29	0	133	125	0
Confl. Peds. (#/hr)	97		22	22		97	5		11	11		5
Confl. Bikes (#/hr)			1			2			2			3
Heavy Vehicles (%)	23%	7%	0%	3%	3%	3%	13%	4%	0%	2%	1%	24%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	56.4	56.4		49.2	49.2		13.4	13.4		13.4	13.4	
Effective Green, g (s)	56.4	56.4		49.2	49.2		13.4	13.4		13.4	13.4	
Actuated g/C Ratio	0.67	0.67		0.58	0.58		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	355	1082		601	955		168	256		200	268	
v/s Ratio Prot	0.00	c0.15			c0.34			0.02			0.07	
v/s Ratio Perm	0.05			0.15			0.01			c0.11		
v/c Ratio	0.08	0.23		0.26	0.58		0.05	0.11		0.67	0.46	
Uniform Delay, d1	5.9	5.4		8.6	11.0		30.0	30.3		33.3	32.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		1.1	2.5		0.1	0.2		8.1	1.3	
Delay (s)	6.0	5.9		9.7	13.5		30.1	30.5		41.4	33.4	
Level of Service	A	A		A	B		C	C		D	C	
Approach Delay (s)		5.9			12.7			30.5			37.4	
Approach LOS		A			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	66.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Unsignalized Intersection Capacity Analysis
7: North Site Access & Ogilvie Rd.

08/31/2021

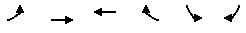
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	592	15	0	1166	0	9
Future Volume (Veh/h)	592	15	0	1166	0	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	592	15	0	1166	0	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	217			122		
pX, platoon unblocked			0.95		0.79	0.95
vC, conflicting volume			607		1182	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			473		408	153
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1041		457	826

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	395	212	583	583	9
Volume Left	0	0	0	0	0
Volume Right	0	15	0	0	9
cSH	1700	1700	1700	1700	826
Volume to Capacity	0.23	0.12	0.34	0.34	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	9.4
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.4
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: Cyrville Rd. & South Site Access

08/31/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	293	454	0	0	14
Future Volume (Veh/h)	7	293	454	0	0	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	293	454	0	0	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		213	221			
pX, platoon unblocked	0.86				0.86	0.86
vC, conflicting volume	454				761	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288				644	288
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	98
cM capacity (veh/h)	1109				378	652

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	300	454	14
Volume Left	7	0	0
Volume Right	0	0	14
cSH	1109	1700	652
Volume to Capacity	0.01	0.27	0.02
Queue Length 95th (m)	0.1	0.0	0.5
Control Delay (s)	0.3	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/31/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	302	594	205	477	371	31	182	1001	629	72	759	193
v/c Ratio	0.43	0.77	0.44	0.87	0.59	0.07	0.85	0.60	1.06	0.63	0.64	0.41
Control Delay	45.5	50.6	7.7	66.9	48.2	0.4	82.5	35.8	84.4	78.2	43.7	6.7
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	45.5	50.6	7.7	66.9	48.2	0.4	82.5	35.8	84.4	78.2	43.7	6.7
Queue Length 50th (m)	30.7	69.0	0.0	57.8	44.6	0.0	42.3	75.1	~147.3	16.9	60.1	0.0
Queue Length 95th (m)	50.0	86.8	17.8	#95.0	53.3	0.0	#78.3	90.5	#217.6	#35.6	74.5	14.9
Internal Link Dist (m)		226.6			130.0			121.6			153.6	
Turn Bay Length (m)	90.0		63.0	110.0			55.0		7.0	83.0		55.0
Base Capacity (vph)	706	877	501	549	877	501	228	1656	593	121	1182	468
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	0.43	0.68	0.41	0.87	0.42	0.06	0.80	0.60	1.06	0.60	0.64	0.41

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
1: St. Laurent Blvd. & Coventry Rd./Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	594	205	477	371	31	182	1001	629	72	759	193
Future Volume (vph)	302	594	205	477	371	31	182	1001	629	72	759	193
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
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
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.86	1.00	1.00	0.95	1.00	1.00	0.82
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3354	3424	1350	3288	3424	1334	1572	4824	1438	1712	4687	1236
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3354	3424	1350	3288	3424	1334	1572	4824	1438	1712	4687	1236
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	302	594	205	477	371	31	182	1001	629	72	759	193
RTOR Reduction (vph)	0	0	159	0	0	25	0	0	101	0	0	144
Lane Group Flow (vph)	302	594	46	477	371	6	182	1001	528	72	759	49
Confl. Peds. (#/hr)	70		50	50		70	139		32	32		139
Confl. Bikes (#/hr)			16			43			1			4
Heavy Vehicles (%)	0%	1%	5%	2%	1%	0%	10%	3%	2%	1%	6%	2%
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
Actuated Green, G (s)	25.5	27.4	27.4	20.2	22.1	22.1	16.6	40.2	40.2	6.9	30.5	30.5
Effective Green, g (s)	25.5	27.4	27.4	20.2	22.1	22.1	16.6	40.2	40.2	6.9	30.5	30.5
Actuated g/C Ratio	0.21	0.23	0.23	0.17	0.18	0.18	0.14	0.33	0.33	0.06	0.25	0.25
Clearance 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
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
Lane Grp Cap (vph)	707	775	305	549	625	243	215	1604	478	97	1182	311
v/s Ratio Prot	c0.09	c0.17		c0.15	0.11		c0.12	0.21		0.04	0.16	
v/s Ratio Perm			0.03			0.00			c0.37			0.04
v/c Ratio	0.43	0.77	0.15	0.87	0.59	0.02	0.85	0.62	1.10	0.74	0.64	0.16
Uniform Delay, d1	41.4	43.8	37.4	49.1	45.3	40.5	50.9	34.0	40.4	56.1	40.3	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	4.6	0.2	13.7	1.5	0.0	25.2	1.8	72.5	26.0	2.7	1.1
Delay (s)	41.8	48.3	37.7	62.7	46.8	40.6	76.1	35.8	112.8	82.1	43.0	36.3
Level of Service	D	D	D	E	D	D	E	D	F	F	D	D
Approach Delay (s)		44.5			55.2			66.6			44.5	
Approach LOS		D			E			E			D	

Intersection Summary

HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	26.2
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queues
2: Cyrville Rd. & Ogilvie Rd.

08/31/2021

Lane Group	EBT	EBR	WBL	WBT	WBR	SEL	SET	NWL	NWT
Lane Group Flow (vph)	1012	258	39	681	123	133	308	120	240
v/c Ratio	0.46	0.26	0.14	0.31	0.13	0.67	0.72	0.83	0.55
Control Delay	13.2	2.2	18.5	14.2	7.1	45.6	38.4	81.6	41.5
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	2.2	18.5	14.2	7.1	45.6	38.4	81.6	41.5
Queue Length 50th (m)	54.6	0.0	2.1	20.5	0.0	31.6	70.7	27.8	49.6
Queue Length 95th (m)	93.8	11.3	m9.9	66.1	m17.2	49.4	93.6	#46.5	64.9
Internal Link Dist (m)	130.0			184.1			209.8		189.7
Turn Bay Length (m)			55.0		60.0	75.0		35.0	
Base Capacity (vph)	2180	983	270	2202	914	291	610	210	633
Starvation Cap Reductn	762	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	0.71	0.26	0.14	0.31	0.13	0.46	0.50	0.57	0.38

Intersection Summary

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.

HCM Signalized Intersection Capacity Analysis
2: Cyrville Rd. & Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	1012	258	39	681	123	133	229	79	120	208	32
Future Volume (vph)	0	1012	258	39	681	123	133	229	79	120	208	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.92	1.00	1.00	0.90	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00	0.99	1.00	1.00	0.98	1.00		1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3390	1387	1662	3424	1354	1650	1679		1609	1759	
Flt Permitted		1.00	1.00	0.24	1.00	1.00	0.47	1.00		0.35	1.00	
Satd. Flow (perm)		3390	1387	420	3424	1354	814	1679		589	1759	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1012	258	39	681	123	133	229	79	120	208	32
RTOR Reduction (vph)	0	0	92	0	0	44	0	12	0	0	5	0
Lane Group Flow (vph)	0	1012	166	39	681	79	133	296	0	120	235	0
Confl. Peds. (#/hr)	34		23	23		34	29		8	8		29
Confl. Bikes (#/hr)			8			3						
Heavy Vehicles (%)	0%	2%	3%	3%	1%	3%	3%	4%	3%	7%	1%	0%
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Actuated Green, G (s)		77.2	77.2	77.2	77.2	77.2	29.5	29.5		29.5	29.5	
Effective Green, g (s)		77.2	77.2	77.2	77.2	77.2	29.5	29.5		29.5	29.5	
Actuated g/C Ratio		0.64	0.64	0.64	0.64	0.64	0.25	0.25		0.25	0.25	
Clearance Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		2180	892	270	2202	871	200	412		144	432	
v/s Ratio Prot		c0.30			0.20			0.18			0.13	
v/s Ratio Perm			0.12	0.09		0.06	0.16			c0.20		
v/c Ratio		0.46	0.19	0.14	0.31	0.09	0.67	0.72		0.83	0.54	
Uniform Delay, d1		10.9	8.7	8.4	9.5	8.1	40.8	41.4		42.9	39.4	
Progression Factor		1.00	1.00	1.45	1.27	3.06	0.77	0.75		1.00	1.00	
Incremental Delay, d2		0.7	0.5	0.9	0.3	0.2	7.8	5.7		31.9	1.4	
Delay (s)		11.6	9.1	13.2	12.4	25.0	39.1	36.8		74.8	40.8	
Level of Service		B	A	B	B	C	D	D		E	D	
Approach Delay (s)		11.1			14.3			37.5			52.1	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues
3: Cummings Ave & Ogilvie Rd.

08/31/2021

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	109	1122	114	930	48	165	216	256	251
v/c Ratio	0.37	0.73	0.47	0.62	0.27	0.56	0.58	0.66	0.45
Control Delay	14.7	26.3	20.7	29.1	43.8	51.4	18.3	37.1	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	26.3	20.7	29.1	43.8	51.4	18.3	37.1	29.0
Queue Length 50th (m)	7.5	112.6	10.8	78.0	10.4	37.4	11.6	47.8	42.8
Queue Length 95th (m)	12.9	#186.6	24.8	129.2	19.4	52.5	31.9	59.6	56.2
Internal Link Dist (m)		107.3		289.1		192.8			160.9
Turn Bay Length (m)	80.0		95.0		30.0		15.0	145.0	
Base Capacity (vph)	322	1535	266	1495	289	487	505	391	738
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	0.34	0.73	0.43	0.62	0.17	0.34	0.43	0.65	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
3: Cummings Ave & Ogilvie Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	1095	27	114	723	207	48	165	216	256	167	84
Future Volume (vph)	109	1095	27	114	723	207	48	165	216	256	167	84
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.93	1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.95	1.00	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	0.97		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1729	3439		1729	3301		1640	1750	1394	1667	1625	
Flt Permitted	0.20	1.00		0.13	1.00		0.60	1.00	1.00	0.45	1.00	
Satd. Flow (perm)	361	3439		230	3301		1042	1750	1394	784	1625	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	109	1095	27	114	723	207	48	165	216	256	167	84
RTOR Reduction (vph)	0	1	0	0	18	0	0	0	135	0	18	0
Lane Group Flow (vph)	109	1121	0	114	912	0	48	165	81	256	233	0
Confl. Peds. (#/hr)	2		15	15		2	61		47	47		61
Confl. Bikes (#/hr)			11			12			4			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	4%	3%	2%	5%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	62.9	53.5		63.1	53.6		20.3	20.3	20.3	40.0	40.0	
Effective Green, g (s)	62.9	53.5		63.1	53.6		20.3	20.3	20.3	40.0	40.0	
Actuated g/C Ratio	0.52	0.45		0.53	0.45		0.17	0.17	0.17	0.33	0.33	
Clearance Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	296	1533		239	1474		176	296	235	374	541	
v/s Ratio Prot	0.03	c0.33		c0.04	0.28			0.09		c0.09	0.14	
v/s Ratio Perm	0.16			0.21			0.05		0.06	c0.14		
v/c Ratio	0.37	0.73		0.48	0.62		0.27	0.56	0.35	0.68	0.43	
Uniform Delay, d1	16.4	27.3		18.4	25.4		43.4	45.7	44.0	31.8	31.1	
Progression Factor	0.82	0.76		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	2.9		1.5	2.0		0.8	2.3	0.9	5.1	0.6	
Delay (s)	14.1	23.6		19.9	27.3		44.3	48.0	44.9	36.9	31.7	
Level of Service	B	C		B	C		D	D	D	D	C	
Approach Delay (s)		22.7			26.5			46.0			34.3	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	94.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Queues
4: St. Laurent Blvd. & Lemieux St.

08/31/2021

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	500	155	1691	262	9	1702
v/c Ratio	0.77	0.50	0.51	0.24	0.07	0.52
Control Delay	52.6	38.5	10.0	2.2	9.1	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	38.5	10.0	2.2	9.1	10.2
Queue Length 50th (m)	57.9	26.4	61.5	2.5	0.6	62.4
Queue Length 95th (m)	71.3	44.3	86.6	12.4	3.0	87.9
Internal Link Dist (m)	157.8		39.4			59.0
Turn Bay Length (m)		47.0		41.0	113.0	
Base Capacity (vph)	810	377	3330	1081	138	3298
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.41	0.51	0.24	0.07	0.52

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: St. Laurent Blvd. & Lemieux St.

08/31/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	500	155	1691	262	9	1702
Future Volume (vph)	500	155	1691	262	9	1702
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	0.93	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3049	1340	4824	1466	1727	4778
Flt Permitted	0.95	1.00	1.00	1.00	0.11	1.00
Satd. Flow (perm)	3049	1340	4824	1466	200	4778
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	500	155	1691	262	9	1702
RTOR Reduction (vph)	0	23	0	69	0	0
Lane Group Flow (vph)	500	132	1691	193	9	1702
Confl. Peds. (#/hr)		52		7	7	
Heavy Vehicles (%)	10%	7%	3%	2%	0%	4%
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Actuated Green, G (s)	25.5	25.5	82.9	82.9	82.9	82.9
Effective Green, g (s)	25.5	25.5	82.9	82.9	82.9	82.9
Actuated g/C Ratio	0.21	0.21	0.69	0.69	0.69	0.69
Clearance Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	647	284	3332	1012	138	3300
v/s Ratio Prot	c0.16		0.35			c0.36
v/s Ratio Perm		0.10		0.13	0.05	
v/c Ratio	0.77	0.47	0.51	0.19	0.07	0.52
Uniform Delay, d1	44.5	41.3	8.8	6.6	6.0	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	1.2	0.6	0.4	0.9	0.6
Delay (s)	50.2	42.5	9.4	7.0	6.9	9.5
Level of Service	D	D	A	A	A	A
Approach Delay (s)	48.4		9.1			9.5
Approach LOS	D		A			A

Intersection Summary				
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Queues
5: St. Laurent Blvd. & Cyrville Rd.

08/31/2021

Lane Group	EBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	1	322	1334	293	990
v/c Ratio	0.02	0.60	0.43	0.76	0.27
Control Delay	55.0	33.7	12.3	55.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	33.7	12.3	55.1	7.8
Queue Length 50th (m)	0.2	44.8	47.4	64.9	33.8
Queue Length 95th (m)	2.1	73.2	93.5	85.2	55.0
Internal Link Dist (m)	28.0		153.6		206.8
Turn Bay Length (m)				140.0	
Base Capacity (vph)	89	900	3074	860	3663
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.36	0.43	0.34	0.27

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: St. Laurent Blvd. & Cyrville Rd.

08/31/2021

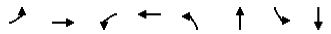
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	322	0	1248	86	293	986	4
Future Volume (vph)	1	0	0	0	0	322	0	1248	86	293	986	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.9				6.1		5.9		6.1	5.9	
Lane Util. Factor		1.00				1.00		0.91		1.00	0.91	
Frpb, ped/bikes		1.00				1.00		1.00		1.00	1.00	
Flpb, ped/bikes		0.46				1.00		1.00		1.00	1.00	
Frt		1.00				0.86		0.99		1.00	1.00	
Flt Protected		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (prot)		795				1543		4717		1695	4729	
Flt Permitted		0.95				1.00		1.00		0.95	1.00	
Satd. Flow (perm)		795				1543		4717		1695	4729	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	0	0	322	0	1248	86	293	986	4
RTOR Reduction (vph)	0	0	0	0	0	184	0	3	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	0	138	0	1331	0	293	990	0
Confl. Peds. (#/hr)	101		21	21		101	26		16	16		26
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	4%	3%	2%	5%	0%
Turn Type	Perm	NA				Over		NA		Prot	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4											
Actuated Green, G (s)		1.2				27.4		73.5		27.4	83.5	
Effective Green, g (s)		1.2				27.4		73.5		27.4	83.5	
Actuated g/C Ratio		0.01				0.23		0.61		0.23	0.70	
Clearance Time (s)		5.9				6.1		5.9		6.1	5.9	
Vehicle Extension (s)		3.0				3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		7				352		2889		387	3290	
v/s Ratio Prot						0.09		c0.28		c0.17	0.21	
v/s Ratio Perm		0.00										
v/c Ratio		0.14				0.39		0.46		0.76	0.30	
Uniform Delay, d1		58.9				39.3		12.5		43.2	7.0	
Progression Factor		1.00				2.81		1.00		1.00	1.00	
Incremental Delay, d2		9.2				0.7		0.5		8.2	0.2	
Delay (s)		68.1				110.8		13.1		51.4	7.3	
Level of Service		E				F		B		D	A	
Approach Delay (s)		68.1			110.8			13.1			17.3	
Approach LOS		E			F			B			B	

Intersection Summary				
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.9	
Intersection Capacity Utilization	73.7%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Queues
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/31/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	59	481	45	518	25	179	204	63
v/c Ratio	0.14	0.46	0.11	0.63	0.08	0.41	0.84	0.15
Control Delay	10.2	13.7	18.4	23.1	25.1	19.4	60.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	13.7	18.4	23.1	25.1	19.4	60.0	16.9
Queue Length 50th (m)	3.4	39.3	4.0	56.7	3.1	14.5	31.4	4.5
Queue Length 95th (m)	11.3	86.3	13.3	#132.6	9.4	33.3	#62.4	14.1
Internal Link Dist (m)		197.2		159.3		79.7		83.7
Turn Bay Length (m)	45.0		53.0		27.0		37.0	
Base Capacity (vph)	467	1051	414	822	443	591	348	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.46	0.11	0.63	0.06	0.30	0.59	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
6: Labelle St./Cummings Ave. & Cyrville Rd.

08/31/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	464	17	45	284	234	25	78	101	204	36	27
Future Volume (vph)	59	464	17	45	284	234	25	78	101	204	36	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.94		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.97	1.00		0.97	1.00		0.93	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1770		1649	1635		1637	1528		1583	1628	
Flt Permitted	0.30	1.00		0.49	1.00		0.72	1.00		0.59	1.00	
Satd. Flow (perm)	536	1770		848	1635		1234	1528		975	1628	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	59	464	17	45	284	234	25	78	101	204	36	27
RTOR Reduction (vph)	0	1	0	0	25	0	0	51	0	0	20	0
Lane Group Flow (vph)	59	480	0	45	493	0	25	128	0	204	43	0
Confl. Peds. (#/hr)	10		33	33		10	14		34	34		14
Confl. Bikes (#/hr)						2			4			1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	53.4	53.4		43.2	43.2		22.2	22.2		22.2	22.2	
Effective Green, g (s)	53.4	53.4		43.2	43.2		22.2	22.2		22.2	22.2	
Actuated g/C Ratio	0.59	0.59		0.48	0.48		0.25	0.25		0.25	0.25	
Clearance Time (s)	4.5	6.3		6.3	6.3		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	389	1044		404	780		302	374		239	399	
v/s Ratio Prot	0.01	c0.27			c0.30			0.08			0.03	
v/s Ratio Perm	0.08			0.05			0.02			c0.21		
v/c Ratio	0.15	0.46		0.11	0.63		0.08	0.34		0.85	0.11	
Uniform Delay, d1	9.7	10.4		13.1	17.7		26.3	28.1		32.6	26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5		0.6	3.9		0.1	0.5		24.4	0.1	
Delay (s)	9.8	11.9		13.6	21.6		26.4	28.7		57.0	26.6	
Level of Service	A	B		B	C		C	C		E	C	
Approach Delay (s)		11.7			21.0			28.4			49.8	
Approach LOS		B			C			C			D	

Intersection Summary				
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	18.3	
Intersection Capacity Utilization	80.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
7: North Site Access & Ogilvie Rd.

08/31/2021

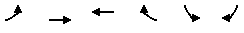
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1157	20	0	832	0	5
Future Volume (Veh/h)	1157	20	0	832	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1157	20	0	832	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	208			131		
pX, platoon unblocked			0.85		0.89	0.85
vC, conflicting volume			1177		1583	588
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			853		632	159
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			675		369	733

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	771	406	416	416	5
Volume Left	0	0	0	0	0
Volume Right	0	20	0	0	5
cSH	1700	1700	1700	1700	733
Volume to Capacity	0.45	0.24	0.24	0.24	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: Cyrville Rd. & South Site Access

08/31/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	536	319	1	1	9
Future Volume (Veh/h)	11	536	319	1	1	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	536	319	1	1	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		214	221			
pX, platoon unblocked					0.89	
vC, conflicting volume	320				878	320
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320				797	320
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1240				312	721

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	547	320	10
Volume Left	11	0	1
Volume Right	0	1	9
cSH	1240	1700	638
Volume to Capacity	0.01	0.19	0.02
Queue Length 95th (m)	0.2	0.0	0.4
Control Delay (s)	0.3	0.0	10.7
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E CORESPONDENCE

Al Hasoo, Mohammed

From: Al Hasoo, Mohammed
Sent: Wednesday, October 6, 2021 10:15 AM
To: Giampa, Mike
Subject: RE: 1125-1149 Cyrville Road - Draft Strategy Report

Good Morning Mike,

Hope this finds you well.

Thank you very much for your review and comments. Kindly note the responses below in blue.

I will update the site plan and add a reference to traffic calming measures / signage prior to submitting the signed Step 5 TIA.

Regards,

Mohammed Al Hasoo, M.Eng, P.Eng
Transportation Engineer

Direct: 613-983-5959
Fax: 613-722-2799
Mohammed.AlHasoo@stantec.com

Stantec
400 - 1331 Clyde Avenue
Ottawa ON K2C 3G4

From: Giampa, Mike <Mike.Giampa@ottawa.ca>
Sent: Thursday, September 30, 2021 2:27 PM
To: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: RE: 1125-1149 Cyrville Road - Draft Strategy Report

Hi Mohammed,
Sorry about the delay- my comments are below:

Ensure that the “future roadway” shown on the site plan is relabeled as a private access. The site plan in the TIA will be relabeled as a “Private Access” as opposed to a “Future Roadway”

Also, to prevent the private drive aisle from being used to circumvent the Cyrville/Ogilvie intersection, some internal traffic calming is recommended. This information has been passed on to the developer. Internal traffic calming measures (along the private driveway) will be included in the design stage

Although the vehicle generation is low, increasing the visibility of the accesses (signage and/or thermoplastic) will benefit cyclists on Cyrville and Ogilvie. This information has been passed on to the developer. Signage / thermoplastic at the accesses on Cyrville Road and Ogilvie Road will be included in the design stage

Regards,
Mike

From: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Sent: September 07, 2021 9:56 AM
To: Giampa, Mike <Mike.Giampa@ottawa.ca>
Subject: 1125-1149 Cyrville Road - Draft Strategy Report

Hello Mike,

Trust all is well.

In reference to our correspondence below, enclosed is the draft strategy report and the synchro analysis files pertaining to the proposed development at 1125-1149 Cyrville Road for the City's review and comments.

Please note that the new proposed road between Cyrville Road and Ogilvie Road (on the west side of the proposed development) is indeed planned to be a private drive aisle / access.

If you have any questions, please do not hesitate to reach me.

Thank you very much,

Mohammed Al Hasoo, M.Eng, P.Eng
Transportation Engineer

Direct: 613-983-5959
Fax: 613-722-2799
Mohammed.AlHasoo@stantec.com

Stantec
400 - 1331 Clyde Avenue
Ottawa ON K2C 3G4

From: Giampa, Mike <Mike.Giampa@ottawa.ca>
Sent: Tuesday, August 3, 2021 2:05 PM
To: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: RE: 1125-1149 Cyrville Road - Forecasting Report

Hi Mohammed,
I have no concerns with your trip generation and distribution, proceed to step 4.

But, if the applicant intends to construct a public road, then the analysis should allocate some background traffic to this new road. Especially when you consider that it would provide a shortcut

from Cyrville northbound to Ogilvie eastbound. If it is to remain a private drive aisle, then ignore my comment.

Thanks,
Mike

From: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Sent: July 29, 2021 12:37 PM
To: Giampa, Mike <Mike.Giampa@ottawa.ca>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: 1125-1149 Cyrville Road - Forecasting Report

Trust all is well.

Enclosed is the Forecasting Report pertaining to the proposed development at 1125-1149 Cyrville Road for the City's review and comments. I am also enclosing preliminary supporting Synchro analysis of the 2028 total future scenario

Please reach out to myself or to Ahmed Abdelnaby (cc'd) if you have any questions or comments.

With Thanks,

Mohammed Al Hasoo, M.Eng, P.Eng
Transportation Engineer

Direct: 613-983-5959
Fax: 613-722-2799
Mohammed.AlHasoo@stantec.com

Stantec
400 - 1331 Clyde Avenue
Ottawa ON K2C 3G4

From: Giampa, Mike <Mike.Giampa@ottawa.ca>
Sent: Tuesday, June 29, 2021 7:57 AM
To: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: RE: 1125-1149 Cyrville Road - Screening & Scoping Report

Hi Mohammed,
I have no issues with the scoping report. Please proceed to forecasting.

Please note that if the applicant wishes to construct a public road- it requires an RMA and functional plan submission at step 4.

Regards,
Mike

From: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Sent: June 28, 2021 3:07 PM
To: Giampa, Mike <Mike.Giampa@ottawa.ca>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: 1125-1149 Cyrville Road - Screening & Scoping Report

Afternoon Mike,

Trust all is well.

Enclosed is the **Screening and Scoping** report pertaining to the proposed residential development at 1125-1149 Cyrville Road for the City's review and comments.

If you have any questions, please reach out to myself or Ahmed Abdelnaby (cc'd).

Thank you very much for your help.

Regards,

Mohammed Al Hasoo, M.Eng, P.Eng
Transportation Engineer

Direct: 613-983-5959
Fax: 613-722-2799
Mohammed.AlHasoo@stantec.com

****Vacation Alert – I will be away from the office from Wednesday June 30th to Tuesday July 6th (inclusive)****

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