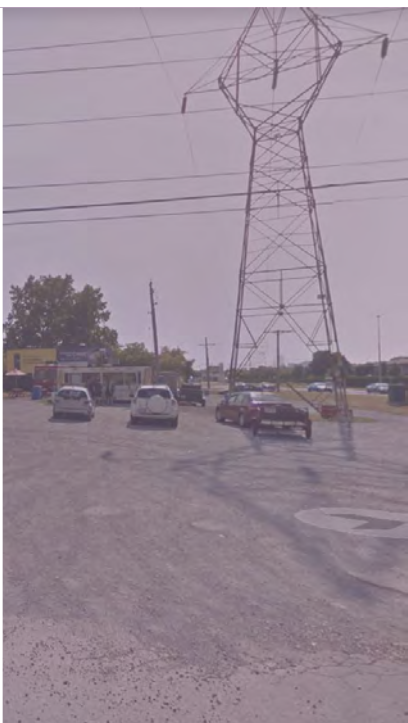
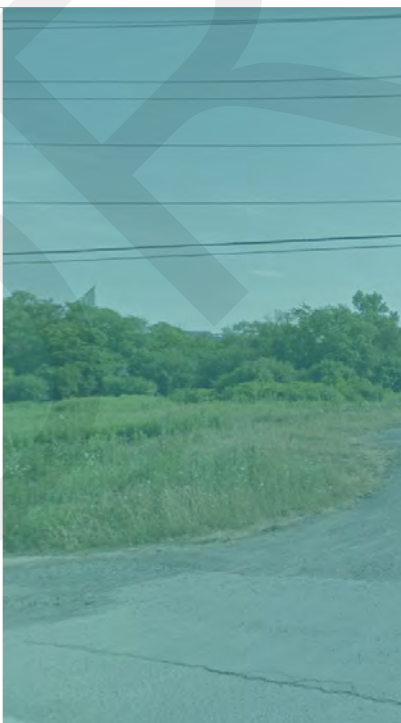




1098 Ogilvie Road

TIA Strategy Report



1098 Ogilvie Road

Transportation Strategy Report

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TIA Report

Parsons has been retained by 6770967 Canada inc. to prepare a Transportation Impact Assessment (TIA) in support of a Zoning By-Law Amendment (ZBLA) and Site Plan Application (SPA) for a residential and hotel development located at 1098 Ogilvie Road. The following report represents Step 5 – TIA Submission, of the TIA process. City comments from the previous submission have been provided in Appendix A.

1. SCREENING FORM

The screening form was submitted in conjunction with the Scoping Report for the subject development to the City of Ottawa staff for review and confirmation of the need for a TIA. Trip generation triggers were met based on the size of the development. The location triggers were met based on the site's location in a Design Priority Area (DPA) and proximity to the future Cyrville LRT Station. The safety triggers were met based on the proposed site driveway's proximity to the Ogilvie/Cummings intersection, which is located adjacent to the site. The Screening Form is provided as Appendix B.

2. SCOPING REPORT

2.1. EXISTING AND PLANNED CONDITIONS

2.1.1. PROPOSED DEVELOPMENT

Based on the proposed Site Plan provided by Douville, Moffet & Associés inc, it is our understanding that the proponent is proposing a two-phase residential development located at 1098 Ogilvie Road with an expected date of occupancy of 2022 for Phase 1 and 2024 for Phase 2. The proposed residential development will consist of three residential towers and a hotel, totalling approximately 850 residential units and 175 hotel rooms. The unit breakdown of each tower has been provided in **Table 1**. Phase 1 will consist of the construction of the southern block, which includes Tower 3 and the hotel on a shared 1-storey podium. Phase 2 will consist of the construction of the northern block, which includes Towers 1 and 2 on a shared 6-storey podium. A right-in/right-out access is proposed along Ogilvie Road and a full movement access is proposed on Cummings Avenue. The site is currently a vacant lot and zoned as R3V V – Residential Zone and will have to be rezoned prior to construction. The local context of the site is provided as **Figure 1** and the proposed Site Plan is provided as **Figure 2**.

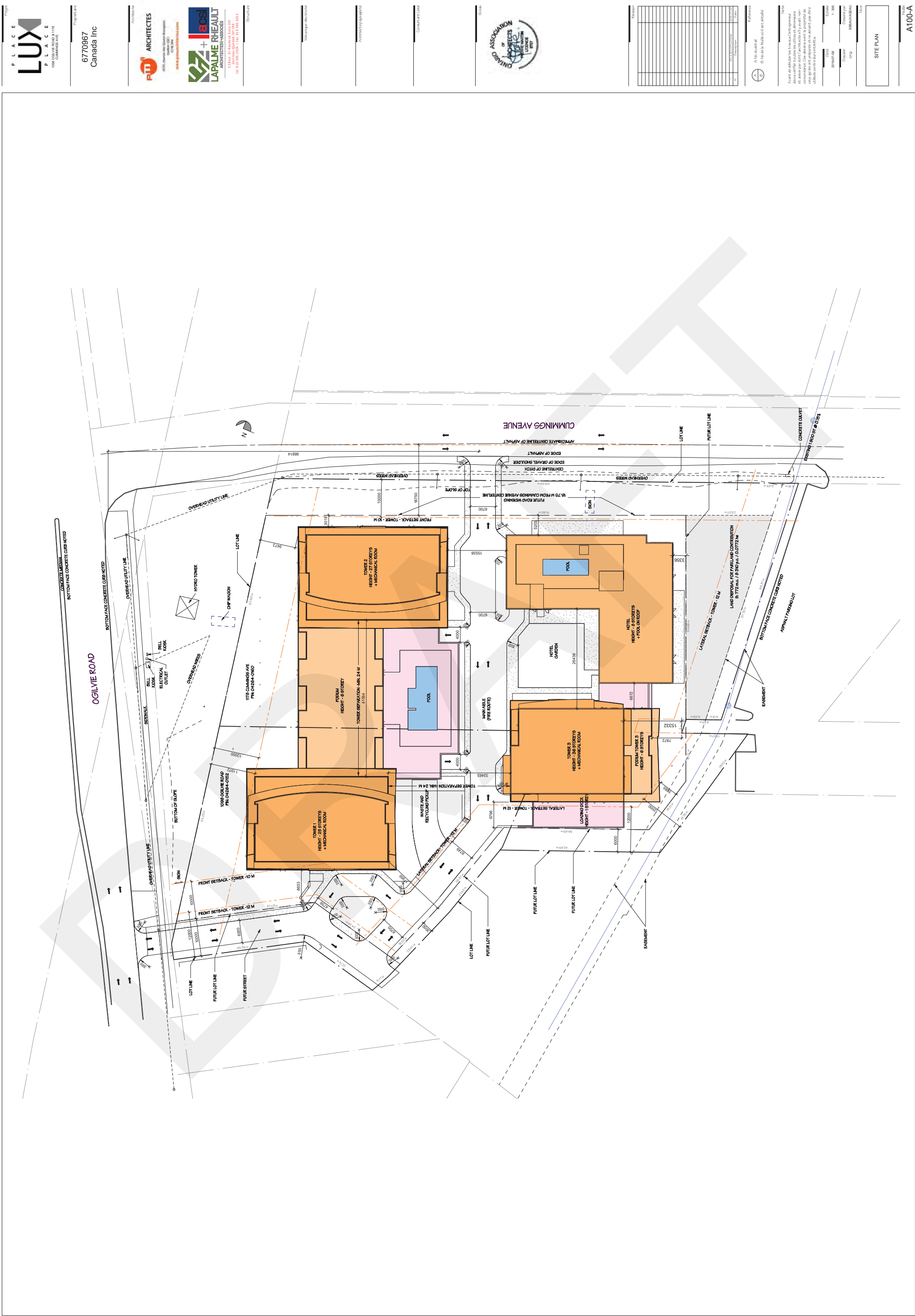
Table 1: Proposed Land Use and Density

Phase	Building	# of Storeys	# of Units
Phase 1 (buildout 2022)	Tower 3	36	283
	Hotel	8	175 rooms
Phase 2 (buildout 2024)	Tower 2	27	566
	Tower 1	25	

Figure 1: Local Context



Figure 2: Proposed Site Plan



2.1.2. EXISTING CONDITIONS

Area Road Network

Ogilvie Road is an arterial roadway with a four-lane cross-section. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 60 km/h.

Aviation Parkway is a north-south federal arterial roadway, which extends from Highway 417 in the south to Sir George-Etienne Cartier Parkway in the north. Aviation Parkway has a four-lane divided cross-section with auxiliary turn-lane provided at major intersections. The posted speed limit within the study area is 60 km/h.

St. Laurent Boulevard is an arterial roadway with a six-lane divided cross-section south of Cyrville Road and a four-lane divided cross-section north of Cyrville Road. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 60 km/h.

Cummings Avenue is designated as an arterial roadway between Ogilvie Road and Cyrville Road (adjacent to the site) and is designated a major collector roadway between Donald Street and Ogilvie Road. Within the study area, Cummings Avenue has a two-lane undivided cross-section. Auxiliary turn lanes are provided at major intersections and its unposted speed is understood to be 50 km/h.

Cyrville Road is designated as an arterial roadway southeast of Cumming Avenue and is designated a collector roadway northwest of Cumming Avenue. Cyrville Road has a two-lane undivided cross-section with auxiliary turn lanes provided at major intersections. Within the study area it has a posted speed limit of 60 km/h.

Donald Street is a major collector roadway within the study area and has a two-lane undivided cross-section. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 50 km/h.

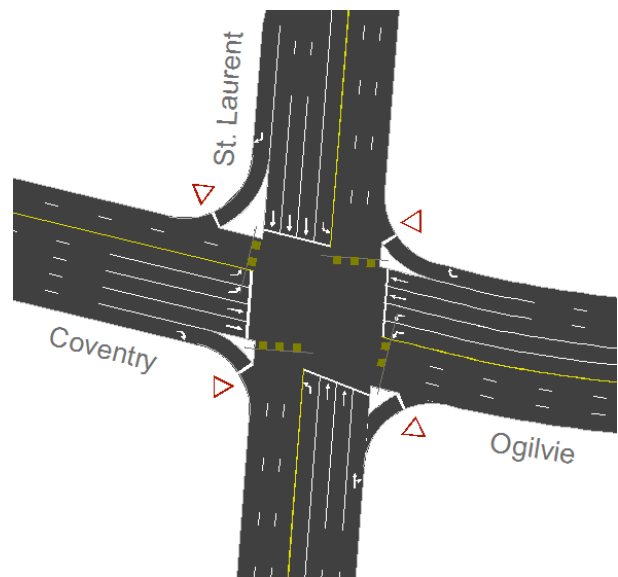
Lemieux Street is a major collector roadway which has a three-lane cross-section and auxiliary turn lanes at intersections. The posted speed is 50 km/h.

Labelle Street is a major collector roadway which has a two-lane undivided cross-section and auxiliary turn lanes at intersections. The unposted speed is understood to be 50 km/h.

Existing Study Area Intersections

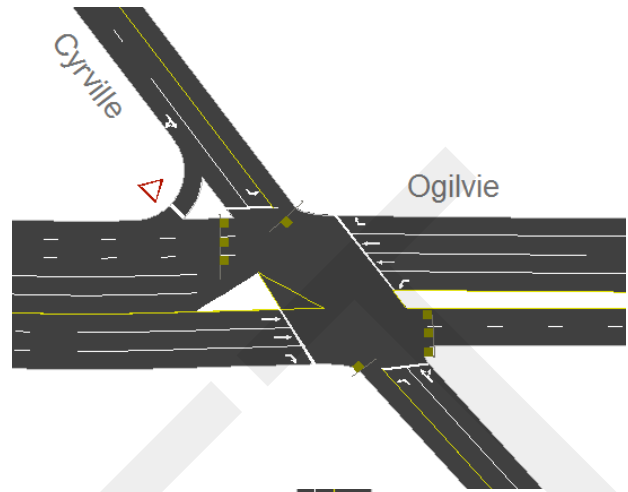
St. Laurent/Ogilvie

The St. Laurent/Ogilvie & Coventry intersection is a signalized four-legged intersection. The east and westbound approaches consist of double left-turn lanes, two through lanes and a channelized right-turn lane. East and westbound bike lanes are provided on both the east and west legs of the intersection. The southbound approach consists of a single left-turn lane, three through lanes and a channelized right-turn lane. The northbound approach consists of a single left-turn lane, two through lanes and a shared through/channelized right-turn lane. U-turns are prohibited along all four approaches.



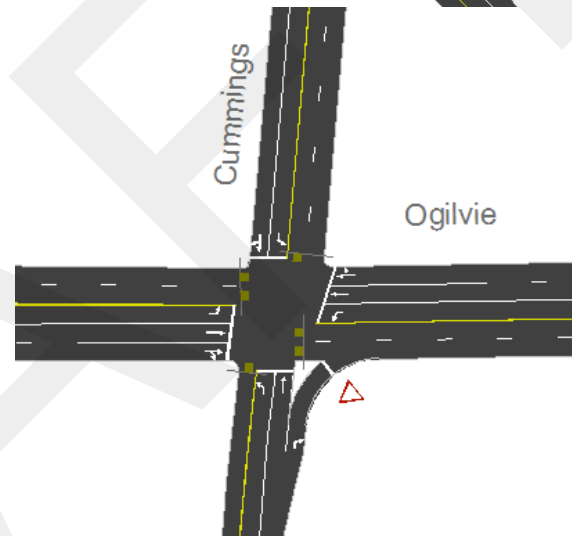
Ogilvie/Cyrville

The Ogilvie/Cyrville intersection is a signalized four-legged intersection. The eastbound approach consists of two through lanes and a right-turn lane. The westbound approach consists of a single left-turn lane, two through lanes and a right-turn lane. East and westbound bike lanes are provided on both the east and west legs of the intersection. The north and southbound approaches consist of an auxiliary left-turn lane and a shared through-right turn lane. The eastbound left-turn movement is prohibited at this location.



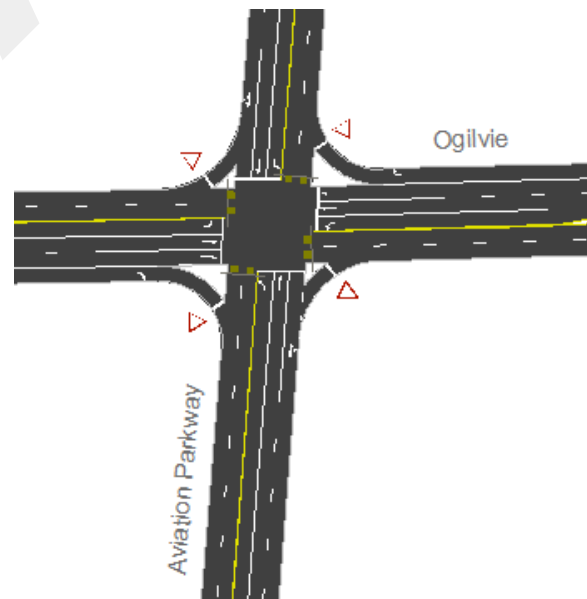
Ogilvie/Cummings

The Ogilvie/Cummings intersection is a signalized four-legged intersection. The east and westbound approaches consist of a single auxiliary left-turn lane, a through lane and a shared through-right turn lane. East and westbound bike lanes are provided on both the east and west legs of the intersection. The northbound approach consists of a single auxiliary left-turn lane, a through lane and channelized right-turn lane. The southbound approach consists of a single auxiliary left-turn lane and a shared through-right turn lane. All movements are permitted at this location.



Ogilvie/Aviation

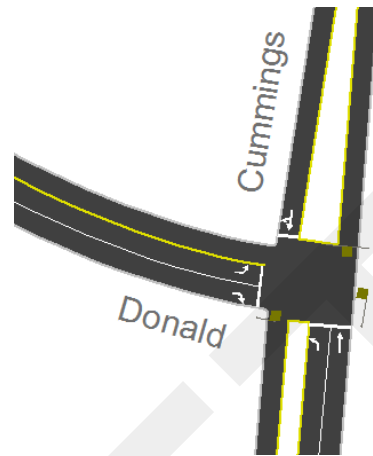
The Ogilvie/Aviation intersection is a signalized four-legged intersection. The east and westbound approaches consist of a single auxiliary left-turn lane, two through lanes, and a channelized right turn lane. East and westbound bike lanes are provided on both the east and west legs of the intersection. The north and southbound approaches consist of a single auxiliary left-turn lane, a through lane and a shared through/channelized right-turn lane. A north-south MUP is provided along the west side of Aviation Parkway (north of Ogilvie Road). All movements are permitted at this location.



PARSONS

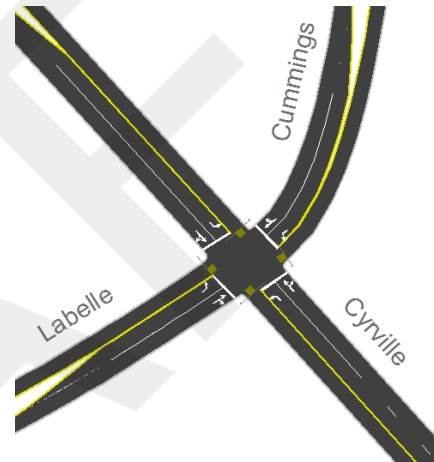
Cummings/Donald

The Cummings/Donald intersection is a signalized 'T' intersection. The eastbound approach consists of a single left-turn lane and single right-turn lane. The northbound approach consists of a single auxiliary left-turn lane and single through-lane. The southbound approach consists of a single shared through/right-turn lane. All movements are permitted at this location.



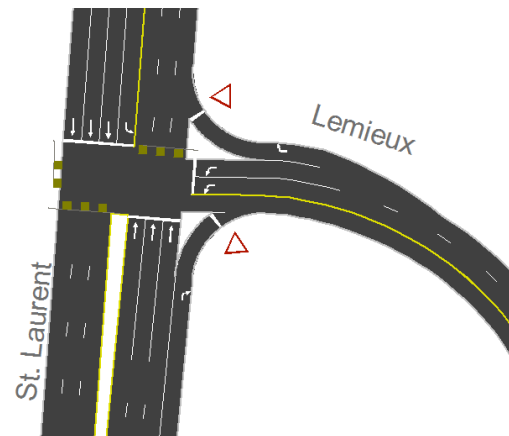
Cummings/Cyrville

The Cummings/Cyrville intersection is a signalized four-legged intersection. All four approaches consist of a single auxiliary left-turn lane and a shared through-right turn lane. Bike lanes are provided along both side of Cyrville Road and green thermoplastic is provided for cyclists through the intersection. All movements are permitted at this location.



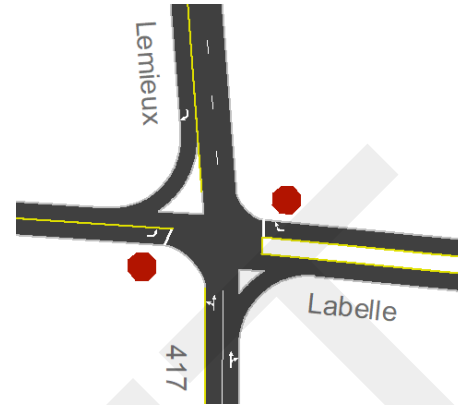
St. Laurent/Lemieux

The St. Laurent/Lemieux intersection is a signalized 'T' intersection. The westbound approach consists of dual left-turn lanes and a channelized right-turn lane. The northbound approach consists of three through lanes and a channelized right-turn lane. The southbound approach consists of a single auxiliary left-turn lane and three through lanes. All movements are permitted at this location.



Lemieux/Labelle

The Lemieux/Labelle intersection is an unsignalized four-legged intersection. The east and west approach are stop controlled. Both east and west approach traffic must continue northbound on Lemieux. The south approach has two free flow lanes which are allowed to turn left, right or continue through. The north approach is a single lane that is forced to continue westbound towards St. Laurent Shopping Center.



Existing Driveways to Adjacent Developments

There are five commercial driveways on the south side of Ogilvie Road between the west property line and the Ogilvie/Cyrville intersection. There are three commercial driveways on the east side and one commercial driveway on the west side of Cummings Avenue between Ogilvie Road and Cyrville Road.

Pedestrian/Cycling Network

With respect to pedestrians, sidewalk facilities on boundary streets are provided along both sides of Ogilvie Road and on the east side of Cummings Avenue, south of Ogilvie Road. Within the study area, sidewalks are provided along St. Laurent Boulevard, Donald Street, Labelle Street, Cummings Avenue (north of Ogilvie), and Cyrville Road.

With respect to cyclists, according to the Ottawa Cycling Plan, Ogilvie Road, Cyrville Road and St. Laurent Boulevard are classified as “Spine” cycling routes and Cummings Avenue, Donald Street, Labelle Street and Lemieux Street are classified as “Local” cycling routes. Cyrville Road and Ogilvie Road west of Cyrville Road are also identified as a part of the Cross-Town Bikeway. Cycling facilities are currently provided on Ogilvie Road and Cyrville Road in the form of curb-side bike lanes. Cummings Avenue and Donald Street are identified as a suggested route in the Ottawa Cycling Plan.

Transit Network

The transit network for the study area is illustrated in **Figure 3**. The following OC Transpo routes currently operate within 600-meter radius of the site frontage:

- **Route #1 Confederation Line LRT (Blair <-> Tunney's Pasture):** identified by OC Transpo as “rapid transit”, this grade separated light rail line operates 7 days a week in all time periods and provides connectivity to the BRT in the east at Blair Station, BRT to the south at Hurdman Station and LRT to the south at Bayview Station, BRT to the west at Tunney's Pasture and provides access to Ottawa's Downtown. Cyrville Station is the nearest station to the proposed site, located approximately 550m walk. When the LRT line is being maintained at night, bus route #39 provides connectivity between Orleans and the Rideau Center downtown with bus stops available on both sides of Ogilvie Road less than 100m from the proposed site.
- **Route #24 (Beacon Hill <-> St. Laurent):** identified by OC Transpo as a “Local Route”, this route operates on customized routing and schedules, to serve local destinations with connection to the Confederation LRT Line at St. Laurent Station. Route #24 operates at an average rate of 30 minutes during weekdays. Bus stops for this route are available on both sides of Ogilvie Road less than 100m from the proposed site.
- **Routes #7, 14, 19 and 20:** identified by OC Transpo as “frequent and local transit”, these routes operate to the north, east and west of the site with destinations such as Downtown Ottawa, Carleton University, and Montfort Hospital. All these routes start or finish at St. Laurent Station. Bus stops for these routes are available on both sides of St. Laurent Boulevard, located approximately 550m walk from the proposed site.

Figure 3: Area Transit Network

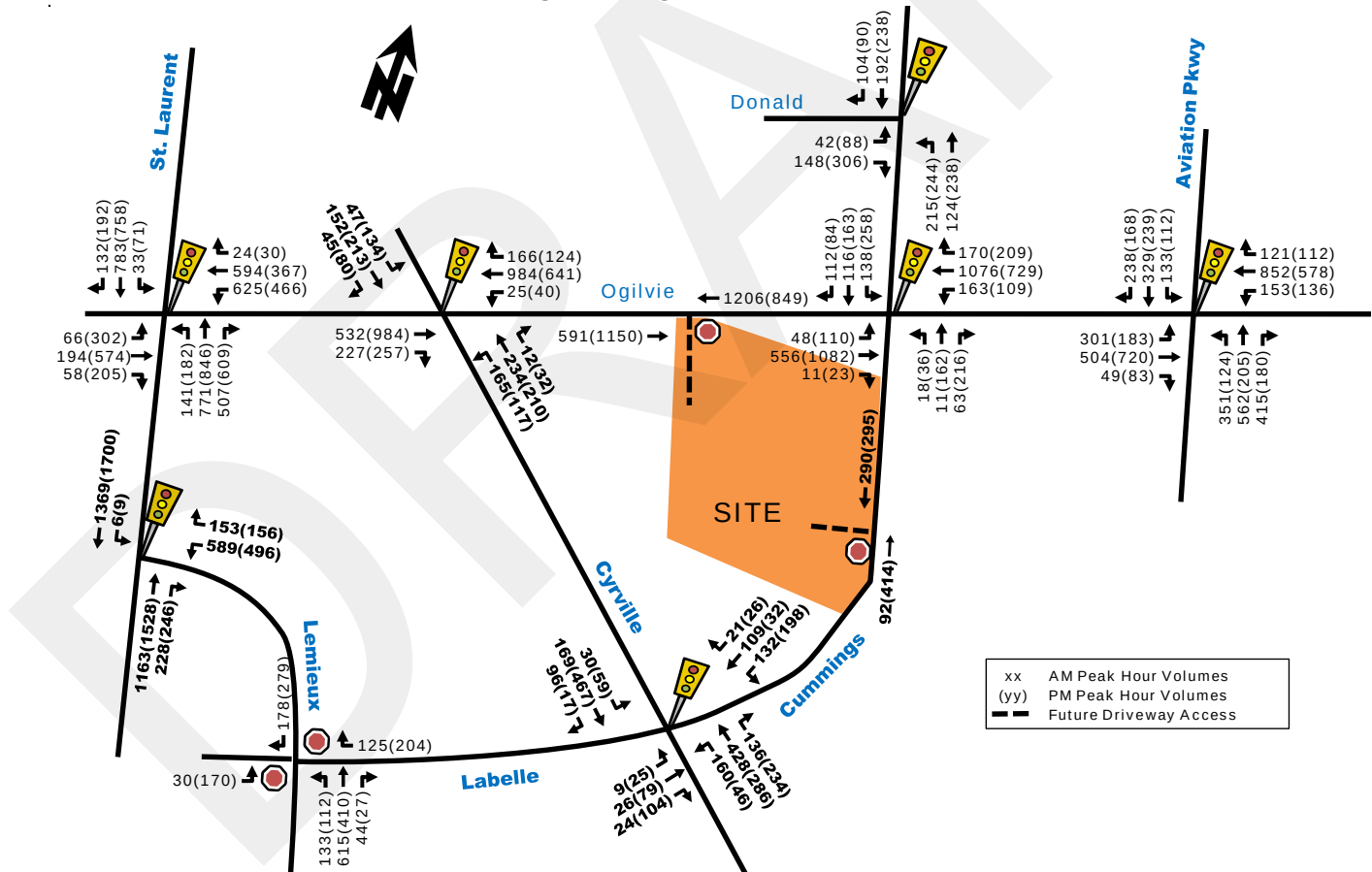


Source: <https://www.octranspo.com/images/files/maps/systemmap.pdf>

Peak hour travel demands

The existing peak hour traffic volumes within the study area were obtained from the City of Ottawa and are illustrated in Figure 4. The peak hour traffic volume count data is included as Appendix C.

Figure 4: Existing Peak Hour Traffic Volumes



Existing Road Safety Conditions

Collision history for study area intersections and roads (2012 to 2016, inclusive) was obtained from the City of Ottawa and most collisions (79%) involved only property damage, indicating low impact speeds, and (20%) involved personal injuries.

The primary causes of collisions cited by police include; rear end (47%), turning movement (17%) and sideswipe (15%) type collisions.

A standard unit of measure for assessing collisions at an intersection is based on the number collisions per million entering vehicles (MEV). At intersections within the study area, reported collisions have historically take place at a rate of:

- 1.31/MEV at the St. Laurent/Ogilvie intersection;
- 0.64/MEV at the Ogilvie/Cyrville intersection;
- 0.91/MEV at the Ogilvie/Cummings intersection;
- 1.10/MEV at the Ogilvie/Aviation intersection;
- 0.49/MEV at the Cummings/Donald intersection;
- 0.52/MEV at the Cummings/Cyrville intersection; and
- 0.84/MEV at the St. Laurent/Lemieux intersection.

It is noteworthy that within the five-years of recorded collision data there were 15 collisions involving pedestrians and 10 collisions involving cyclists. The list below shows the number and location of collisions involving pedestrian and cyclists within the study area.

Collisions involving pedestrians

- St. Laurent/Ogilvie (1);
- Ogilvie/Cyrville (3);
- Ogilvie/Cummings (4);
- Ogilvie/Aviation (1);
- Cummings/Donald (1);
- Cummings/Cyrville (2); and
- St. Laurent/Lemieux (3).

Collisions involving cyclists

- St. Laurent/Ogilvie (3);
- Ogilvie/Cummings (4);
- Ogilvie/Aviation (1);
- St. Laurent/Lemieux (1); and,
- Ogilvie Road between Cyrville Road and Cummings Avenue (1, fatal).

A deeper investigation was done to determine if there were patterns involved in pedestrian and cyclist collisions. For pedestrians, it was determined that 6 of the 15 noted collisions involved through movements while the remaining 9 collisions involved left turns. Of the 6 through collisions, 3 occurred during clear, daylight, dry driving conditions and 3 occurred during dry but poor lighting conditions. Congestion mixed with human error were considered the likely causes for these collisions, as there are no discernable design constraints (blind spots, grade changes etc.). Of the 9 turning left collisions, 6 occurred during clear dry daylight conditions.

Of the 10 cyclist collisions, 6 involved through movements and all involved dry, clear, daylight conditions. All 6 through movement collisions occurred either on Ogilvie Road east-west through movement or St Laurent north-south through movement. The remaining 4 bicycle collisions occurred while vehicles made turning movements. The likely triggers were high vehicle traffic volumes combined with narrow or non segregated bike lanes and high operating speeds.

The collision data as provided by the City of Ottawa and related analysis has been provided in Appendix D.

2.1.3. PLANNED CONDITIONS

Planned Study Area Transportation Network Changes

Transit Projects

The following transit projects have been identified within the vicinity of the site:

- St. Laurent Boulevard – Within the study area, Transit Signal Priority (TSP) and queue jump lanes have been proposed as a part of the 2031 Affordable Network; and
- Ogilvie Road – Transit Signal Priority is planned between Blair Road and St. Laurent Boulevard as a part of the 2031 Network Concept, however, it is not identified as part of the Affordable Network.

Road Projects

The following road projects have been identified within the vicinity of the site:

- Cyrville Road – Identified on the Planned Construction Projects 2018-2021¹ is the construction of a MUP from Michael Street to St. Laurent Boulevard;
- Cyrville Road – Identified in the TMP is the widening of Cyrville Road from two to four lanes from Star Top to St. Laurent (Affordable Network) and from St. Laurent to Innes (Network Concept Plan). This is identified as a Phase 3 City project;
- Cummings Avenue – Identified on the Planned Construction Projects 2018-2021² is the construction of a sidewalk from Cyrville Road to the south boundary of subject site (substantially completed in late 2019); and,
- Donald Street – Identified on the Planned Construction Projects 2018-2021³ is the road resurfacing of Donald Street from Cummings Avenue to St. Laurent Boulevard.

Other Area Development

According to the City's development application search tool, the following developments are planned within the vicinity of the subject site.

1125-1145 Cyrville

At one time, Mark Motors was proposing the construction of a new car dealership at the above-noted address, which is located directly west of the subject development. The Transportation Impact Study (prepared by Delcan) projected an increase in vehicle traffic of approximately 50 veh/h and 65 veh/h during the morning and afternoon peak hours, respectively. The status of this development proposal is unknown given that Mark Motors has opened Audi Ottawa at 458 Montreal Road.

1220 Ogilvie, 1235 Cyrville

Richcraft is proposing a residential development at the above-noted address, which is located approximately 350 m east of the subject development. The Transportation Impact Study Addendum (prepared by Parsons) projected an increase in vehicle traffic of approximately 40 veh/h during both the morning and afternoon peak hours.

1298 Ogilvie

Construction of six 12-unit and one 6-unit apartment dwellings.

1098 Ogilvie, 1178 Cummings

Planned development of 85 townhomes. The status of this development is unknown as the application has not seen any progress since the last status update on May 29, 2012 (more than 8 years ago).

2.2. STUDY AREA AND TIME PERIODS

As the proposed site is a residential development, the time periods assessed will be the weekday morning and afternoon peak hours. The proposed study area is outlined below and highlighted in **Figure 5**.

- St. Laurent/Ogilvie;
- Ogilvie/Cyrville;
- Ogilvie/Cummings;
- Ogilvie/Aviation;
- Cummings/Donald;
- Cummings/Cyrville;
- St. Laurent/Lemieux;
- Lemieux/Labelle
- Ogilvie between Cyrville and Cummings; and,
- Cummings between Cyrville and Ogilvie.

¹ Source: https://documents.ottawa.ca/sites/documents.ottawa.ca/files/construction_ward11_en.pdf;

² Source: https://documents.ottawa.ca/sites/documents.ottawa.ca/files/construction_ward11_en.pdf

³ Source: https://documents.ottawa.ca/sites/documents.ottawa.ca/files/construction_ward11_en.pdf

Figure 5: Study Area



2.3. EXEMPTION REVIEW

Based on the City's TIA guidelines and the subject site, the following modules/elements of the TIA process, summarized in **Table 2**, are recommended to be exempt in the subsequent steps of the TIA process:

Table 2: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.2 New Streets Network	Not required for applications involving site plans.
4.2 Parking	4.2.2 Spillover Parking	The parking is expected to meet By-Law requirements.
4.4 Access Intersection Design	4.4.3 Intersection Design	As the proposed site access intersection is assumed to be unsignalized, MMLoS analysis is not possible for unsignalized intersection.
4.6 Neighbourhood Traffic Management	All elements	The site relies on two arterial roadways for access.
4.8 Review of Network Concept	All elements	The site is not expected to generate 200 trips more than the established zoning. This will be confirmed in Step 3.

3. FORECASTING REPORT

3.1. DEVELOPMENT-GENERATED TRAVEL DEMAND

3.1.1. TRIP GENERATION RATES

Trip generation rates for the proposed development, consisting of 849 high-rise residential units, were obtained from the City's 2009 TRANS Trip Generation Report and 175 hotel rooms obtained from the ITE Trip Generation Manual. **Table 3** provides the appropriate trip generation rates for both land uses.

Table 3: Vehicle Trip Generation Rates

Land Use	Data Source	Trip Rates	
		AM Peak	PM Peak
High-Rise Condominiums	TRANS	$T = 0.38(du)$	$T = 0.34(du)$
Hotel	ITE 310	$T = 0.5(x) - 5.34$	$T = 0.75(x) - 26.02$

Notes: T = Average Vehicle Trip Ends
 du = Residential units; x = Hotel Rooms

Using the TRANS Trip Generation rates, the total amount of vehicle trips generated by the proposed Phase 1 development (consisting of 282 units) and Phase 2 development (consisting of an additional 590 units) was calculated. The results are summarized in **Table 4**. Note that the 182 hotel rooms to be built in phase 1 were calculated using the ITE Manual.

Table 4: Projected Vehicle Trip Generation

Land Use	Source	Units	AM Peak (veh/h)			PM Peak(veh/h)		
			In	Out	Total	In	Out	Total
Phase 1 Condominiums	TRANS	283 units	30	78	108	55	41	96
Phase 2 Condominiums	TRANS	566 units	60	155	215	111	81	192
Total Residential Vehicle Trips			90	233	323	166	122	288

As shown in **Table 4**, the total projected number of vehicle trips expected to be generated by residential development for Phase 1 is approximately 110 and 100 veh/h during the morning and afternoon peak hours, respectively. At full-build out, the total new vehicle traffic related to the proposed residential development is estimated to be 325 and 290 veh/h during the morning and afternoon peak hours, respectively. Using the TRANS guidelines and table 3.13, the person trips were calculated and shown in **Table 5** and **Table 9** for interim and ultimate buildout respectively. The person trips were then used to calculate the vehicle trips generated based on mode shares for Ottawa East extracted from the OD-Survey conducted in 2011 as seen in

Table 6, **Table 7**, and

Table 10. The total site generated 'new trips' in accordance to the OD-Survey 2011 are summarized in **Table 8** and **Table 11** for interim and full buildout respectively.

Table 5: 2009 Trans Report Site 'Person Trips' Generated - Phase 1 (Tower 3)

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Mode Share	PM Peak (persons/h)		
		In	Out	Total		In	Out	Total
Auto Driver	37%	30	78	108	40%	55	41	96
Auto Passenger	8%	6	17	23	9%	13	8	21
Transit	41%	33	87	120	37%	52	37	89
Non-motorized	14%	11	30	41	14%	20	14	34
Total People Trips	100%	80	212	292	100%	140	100	240

Table 6: 2011 OD-Survey Site 'Vehicle Trips' Generated - Phase 1 (Tower 3)

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	50%	40	106	146	50%	70	50	120
Auto Passenger	15%	12	31	43	15%	21	15	36

Transit	20%	16	43	59	20%	28	20	48
Non-motorized	15%	12	32	44	15%	21	15	36
Total People Trips	100%	80	212	292	100%	140	100	240
Total 'New' Vehicle Trips		40	106	146	-	70	50	120

Table 7: Site 'Vehicle Trips' Generated - Phase 1 (Hotel)

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	50%	31	22	53	50%	34	34	68
Auto Passenger	15%	9	7	16	15%	11	10	21
Transit	20%	12	9	21	20%	13	13	26
Non-motorized	15%	9	6	15	15%	10	10	20
Total People Trips	100%	61	44	105	100%	68	67	135
Total Vehicle Trips		31	22	53	-	34	34	68

Table 8: Site 'Vehicle Trips' Generated - Interim Phase 1 Total (Tower 3 & Hotel)

Travel Mode	AM Peak (veh/h)			PM Peak (veh/h)		
	In	Out	Total	In	Out	Total
Total Vehicle Trips Tower 3	40	106	146	70	50	120
Total Vehicle Trips Hotel	31	22	53	34	34	68
Total Vehicle Trips Phase 1	71	128	199	104	84	188

Table 9: 2009 Trans Report Site Trip Generation - Phase 2 Total (Tower 1 & 2)

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Mode Share	PM Peak (persons/h)		
		In	Out	Total		In	Out	Total
Auto Driver	37%	60	155	215	40%	111	81	192
Auto Passenger	8%	12	34	46	9%	25	19	44
Transit	41%	66	173	239	37%	102	75	177
Non-motorized	14%	22	59	81	14%	38	29	67
Total People Trips	100%	160	421	581	100%	276	204	480

Table 10: 2011 OD-Survey Site 'Vehicle Trips' Generated - Phase 2 (Tower 1 & 2)

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	50%	81	210	291	50%	139	101	240
Auto Passenger	15%	24	64	88	15%	41	31	72
Transit	20%	31	84	115	20%	55	41	96
Non-motorized	15%	24	63	87	15%	41	31	72
Total People Trips	100%	160	421	581	100%	276	204	480
Total Vehicle Trips		81	210	291	-	139	101	240

Table 11: Site Trip Generation - Full Buildout (Phase 1 and 2)

Travel Mode	AM Peak (veh/h)			PM Peak (veh/h)		
	In	Out	Total	In	Out	Total
Total Vehicle Trips Phase 1	71	128	199	104	84	188
Total Vehicle Trips Phase 2	81	210	291	139	101	240
Total Vehicle Trips Ultimate Buildout	152	338	490	243	185	428

Using the mode shares extracted from the OD-Survey 2011, TRANS guidelines for residential and ITE trip rates for the hotel, the Phases 1 and 2 developments are projected to generate a total of approximately 490 and 430 'new' vehicle trips per hour during the morning and afternoon peak hours, respectively. As the site is within 600m of the Cyrville LRT Station, which opened mid 2019, adjustments to the future mode shares for the proposed development are possible as described in the following section.

3.1.2. MODE SHARES

The modal shares outlined above were used to calculate the number of person trips projected to be generated by the proposed Phases 1 and 2 of the development which are based on existing travel patterns within the City. As the City invests in transit and active mode infrastructure, travel mode shares are expected to shift. The proposed development is located within 600 m of the new Cyrville LRT Station, which opened in mid 2019, and as such the following future mode shares are forecasted for the subject development for Phase 1 (2022), Phase 2 (2024) and five years beyond full build-out (2029).

Table 12: Future Mode Share Targets for the Proposed Development

Travel Mode	Mode Share Target	Rationale
Transit	65%	Development is located in close proximity to both the future Cyrville LRT Station and St. Laurent Rapid Transit Station. This is consistent with the City's target modal shares for developments within 600 m of LRT stations.
Walking	10%	This is consistent with the City's TMP and existing mode shares shown in Tables 5 through 11.
Biking	5%	
Auto Passenger	5%	Given the close proximity to transit, the driver and passenger mode splits are forecasted to be lower than other areas of the City.
Auto Driver	15%	

Using the future mode shares summarized in **Table 12** for the study area and the total person-trips for the residential towers and hotel outlined in **Table 5**,

Table 6 and **Table 9**, the trips by mode were calculated and are summarized for each phase of development in **Table 13** and **Table 14**.

Table 13: TOD Future Site Trip Generation – Interim Phase 1 (Tower 3 & Hotel)

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	15%	22	39	61	15%	32	26	58
Auto Passenger	5%	6	14	20	5%	10	8	18
Transit	65%	92	165	257	65%	135	108	243
Non-motorized	15%	21	38	59	15%	31	25	56
Total People Trips	100%	141	256	397	100%	208	167	375
Total Vehicle Trips	-	22	39	61	-	32	26	58

Table 14: TOD Future Total Site Trip Generation – Full Buildout (Phase 1 and 2)

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	15%	46	102	148	15%	73	57	130
Auto Passenger	5%	14	36	50	5%	24	18	42
Transit	65%	196	438	634	65%	315	240	555
Non-motorized	15%	45	101	146	15%	72	56	128
Total People Trips	100%	301	677	978	100%	484	371	855
Total Vehicle Trips	-	46	102	148	-	73	57	130

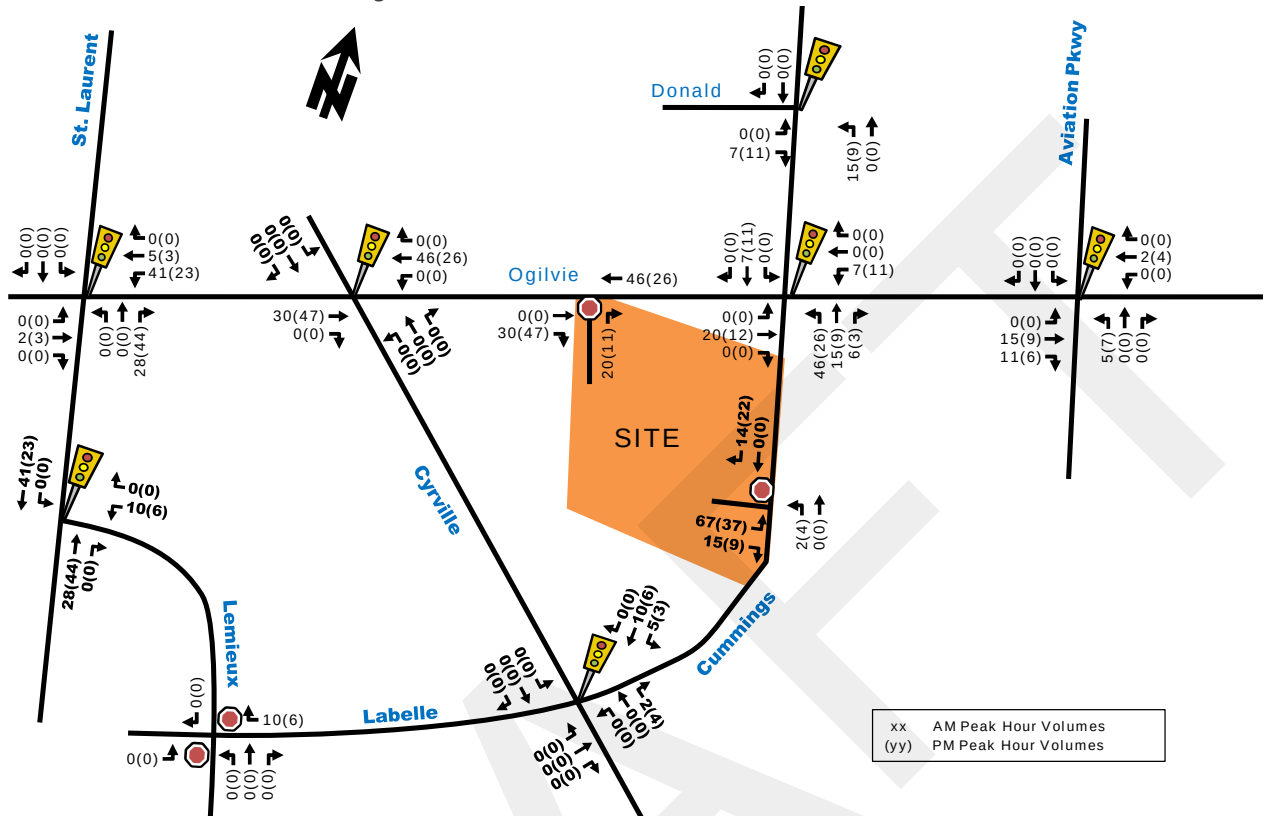
As shown in **Table 14**, based on the TRANS trip generation rate for residential and ITE trip generation rate for hotel, the proposed site is projected to generate approximately 980 and 855 new person-trips per hour during the weekday commuter peak hours. The two-way transit trips are estimated to be 635 and 555 persons per hour in the AM and PM peak respectively, and the bike/walk trips are approximately 145 and 130 persons per hour. The total amount of 'new' vehicle traffic to the study area is projected to be 150 and 130 vehicles per hour during the peak AM and PM hours, respectively.

- 20% to/from the north;
- 50% to/from the south;
- 10% to/from the east; and
- 20% to/from the west.

Figure 6: Phase 1 Site Generated Traffic



Figure 7: Total Phase 1 and 2 Site Generated Traffic



3.2. BACKGROUND NETWORK TRAVEL DEMANDS

3.2.1. TRANSPORTATION NETWORK PLANS

See Section 2.1.3.

3.2.2. BACKGROUND GROWTH

The following background traffic growth through the immediate study area (summarized in **Table 15**) was calculated based on historical traffic count data (years 2001, 2009, and 2018) provided by the City of Ottawa at the Ogilvie/Cyrville intersection. Detailed background traffic growth analysis is included as Appendix E.

Table 15: Ogilvie/Cyrville Historical Background Growth (2001 - 2018)

Time Period	Percent Annual Change				
	North Leg	South Leg	East Leg	West Leg	Overall
8 hrs	2.20%	0.80%	1.24%	1.02%	1.23%
AM Peak	2.75%	2.53%	1.72%	1.97%	2.07%
PM Peak	1.25%	0.37%	0.45%	0.54%	0.58%

As shown in **Table 15**, the Ogilvie/Cyrville intersection has experienced an approximate 0.5% to 2% annual increase overall in vehicle traffic within recent years. To account for area development within the surrounding area, a 1% per annum growth factor was applied to existing traffic volumes along the arterial roadways, namely St. Laurent Boulevard, Ogilvie Road, Cyrville Road, Cummings Avenue and Aviation Parkway. Background traffic volumes for the 2022 built-out horizon year, 2024 built-out horizon year and 2029 (5-years beyond site build-out) are depicted within **Figure 8**, **Figure 9**, and **Figure 10**, respectively.

Figure 8: 2022 Background Traffic Volumes

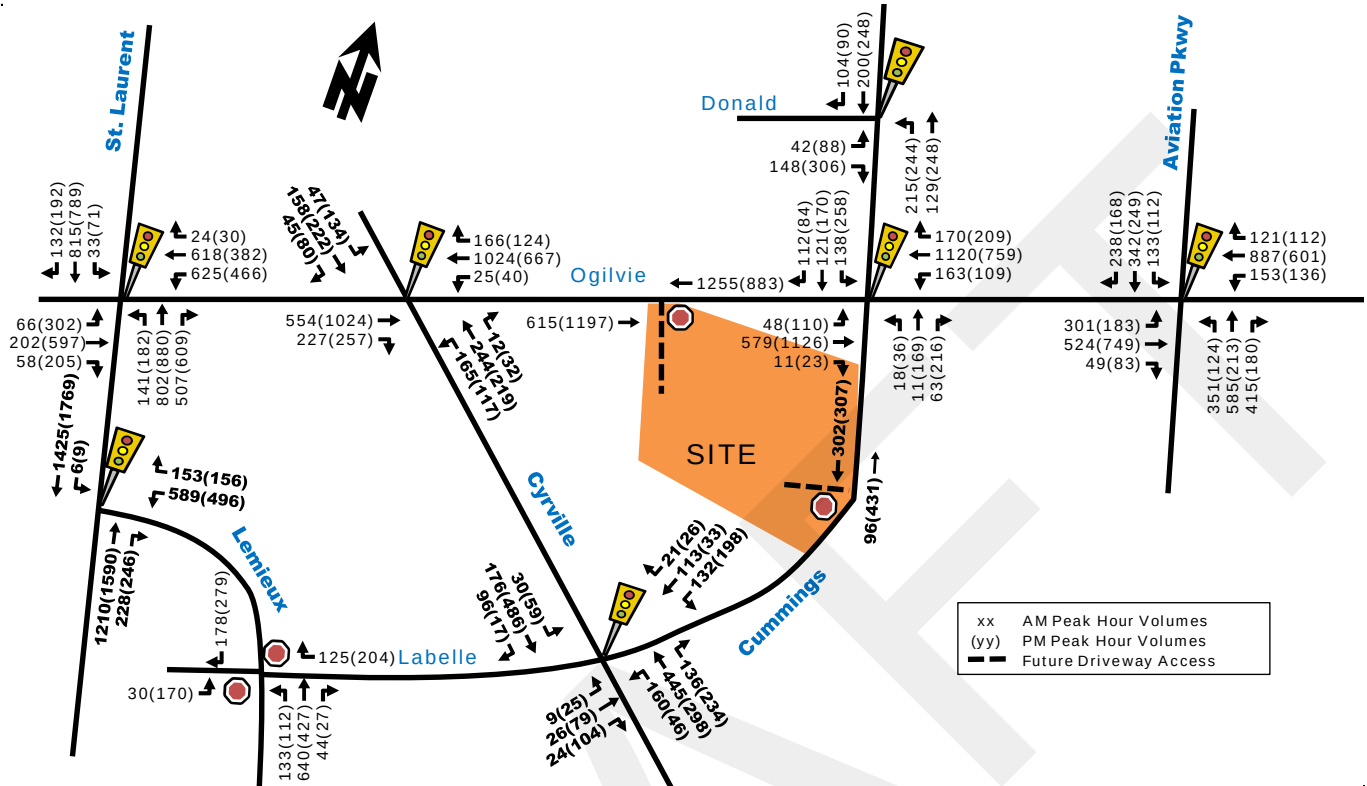


Figure 9: 2024 Background Traffic Volumes

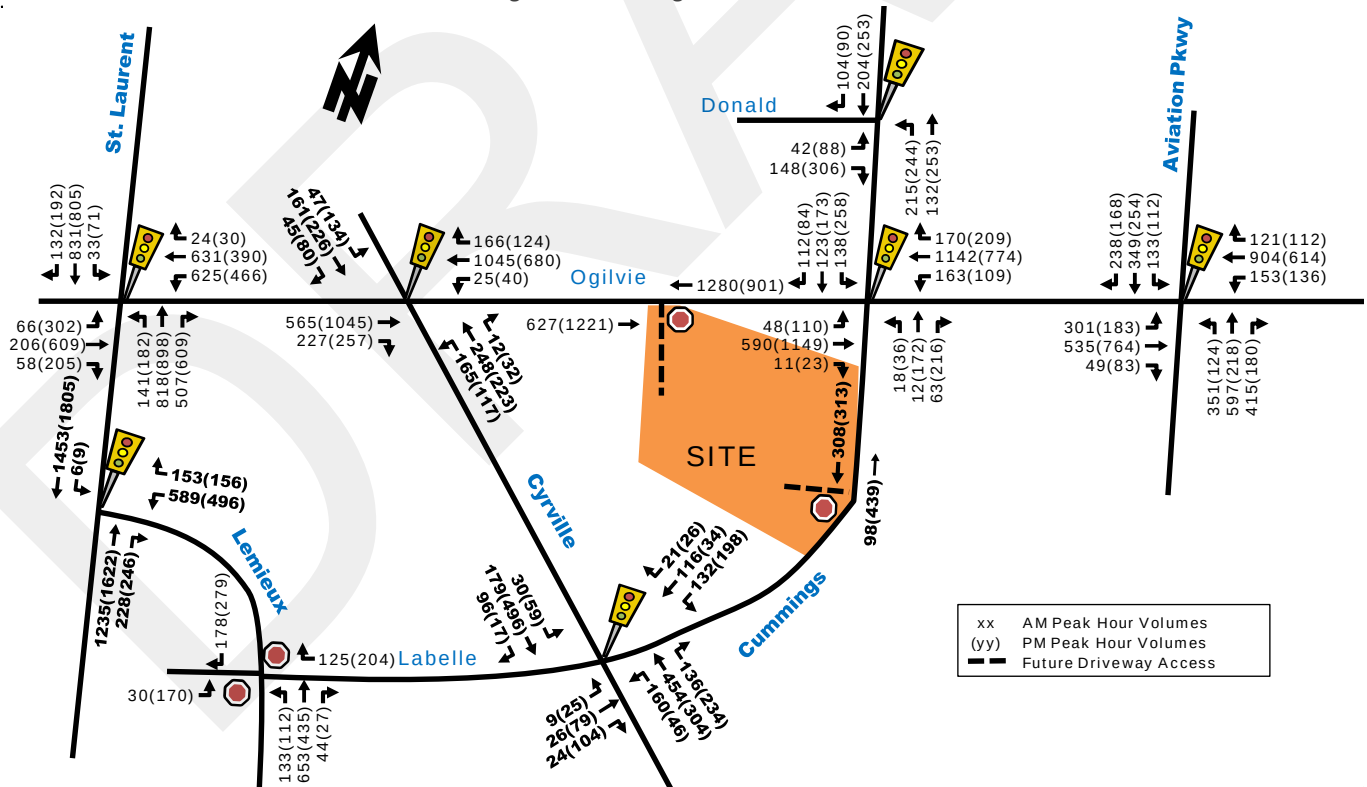
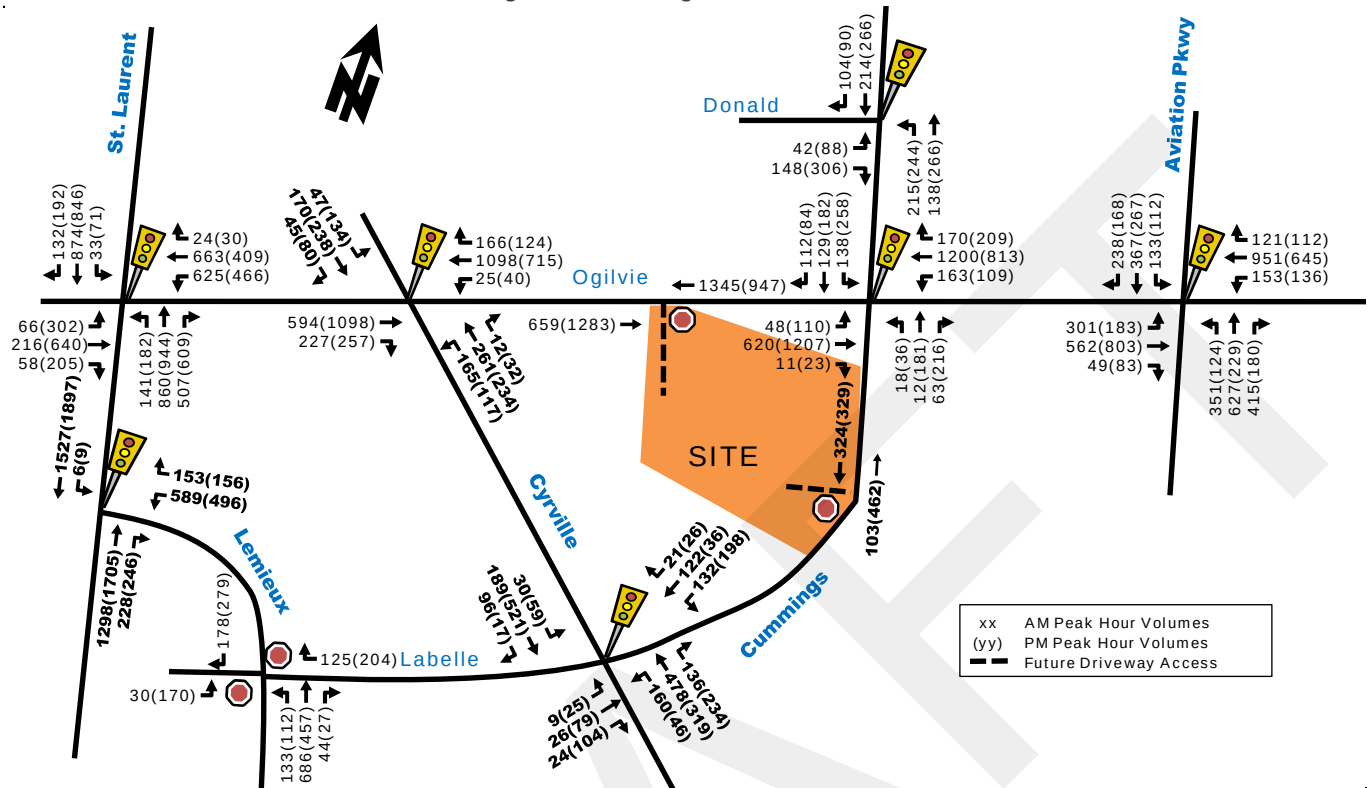


Figure 10: 2029 Background Traffic Volumes



3.2.3. OTHER DEVELOPMENTS

See Section 2.1.3.

3.3. DEMAND RATIONALIZATION

3.3.1. EXISTING CAPACITY ISSUES

The following **Table 16** provides a summary of the existing traffic operations at the study area intersection based on the SYNCHRO (V10) traffic analysis software. The subject intersections were assessed in terms of the volume-to-capacity (v/c) ratio and the corresponding Level of Service (LoS) for the critical movement(s). The SYNCHRO model outputs of existing conditions are provided within Appendix F.

Table 16: Existing Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	E(D)	0.93(0.90)	WBL(WBL)	44.4(47.4)	C(C)	0.72(0.76)
Ogilvie/Cyrville	E(E)	0.92(0.95)	NBL(NBL)	19.8(28.3)	A(A)	0.54(0.55)
Ogilvie/Cummings	C(D)	0.72(0.82)	WBT(EBT)	21.8(33.3)	B(C)	0.68(0.74)
Ogilvie/Aviation Parkway	F(C)	1.31(0.75)	EBL(SBT)	73.1(31.6)	F(A)	1.00(0.56)
Cummings/Donald	B(D)	0.67(0.82)	NBL(NBL)	12.8(17.4)	A(A)	0.51(0.57)
Cummings/Cyrville	B(C)	0.61(0.74)	NBT(WBL)	14.2(17.3)	A(A)	0.55(0.56)
St. Laurent/Lemieux	D(C)	0.81(0.76)	WBL(WBL)	16.0(16.1)	A(A)	0.57(0.58)
Unsignalized						
Lemieux/Labelle	C(C)	18(25)	EB(EB)	2(7)	A(A)	-

Note: Analysis of signalized intersections assumes a PHF of 0.90 and a saturation flow rate of 1800 veh/h/lane.

As shown in **Table 16**, the majority of the intersections within the subject area are currently operating 'as a whole' at an acceptable LoS 'C' or better during both peak hours with the exception of the Ogilvie/Aviation intersection that is operating at a LoS 'F' during the morning peak hour.

Similarly, the majority of the 'critical movements' at study area intersections are currently operating at an acceptable LoS 'D' or better during both peak hours. However, the exceptions are the westbound left-turn movement at the St. Laurent/Ogilvie intersection, eastbound and northbound left-turn movements at the Ogilvie/Aviation intersection during the morning peak hour, westbound left-turn movement at Ogilvie/Cyrville for both peak hours and the eastbound through movement at the Ogilvie/Cummings intersection during the afternoon peak hour.

From field observations, it has also been noted that during the peak periods, occasional queues occur heading northbound and southbound on Cummings Avenue and eastbound along Ogilvie near the Ogilvie/Cummings intersection.

The foregoing SYNCHRO analysis indicates that there is currently some spare vehicle capacity at certain study area intersections; however, there are capacity constraints at some locations in the study area network.

4. STRATEGY REPORT

4.1. DEVELOPMENT DESIGN

4.1.1. DESIGN FOR SUSTAINABLE MODES

Location of Transit Facilities

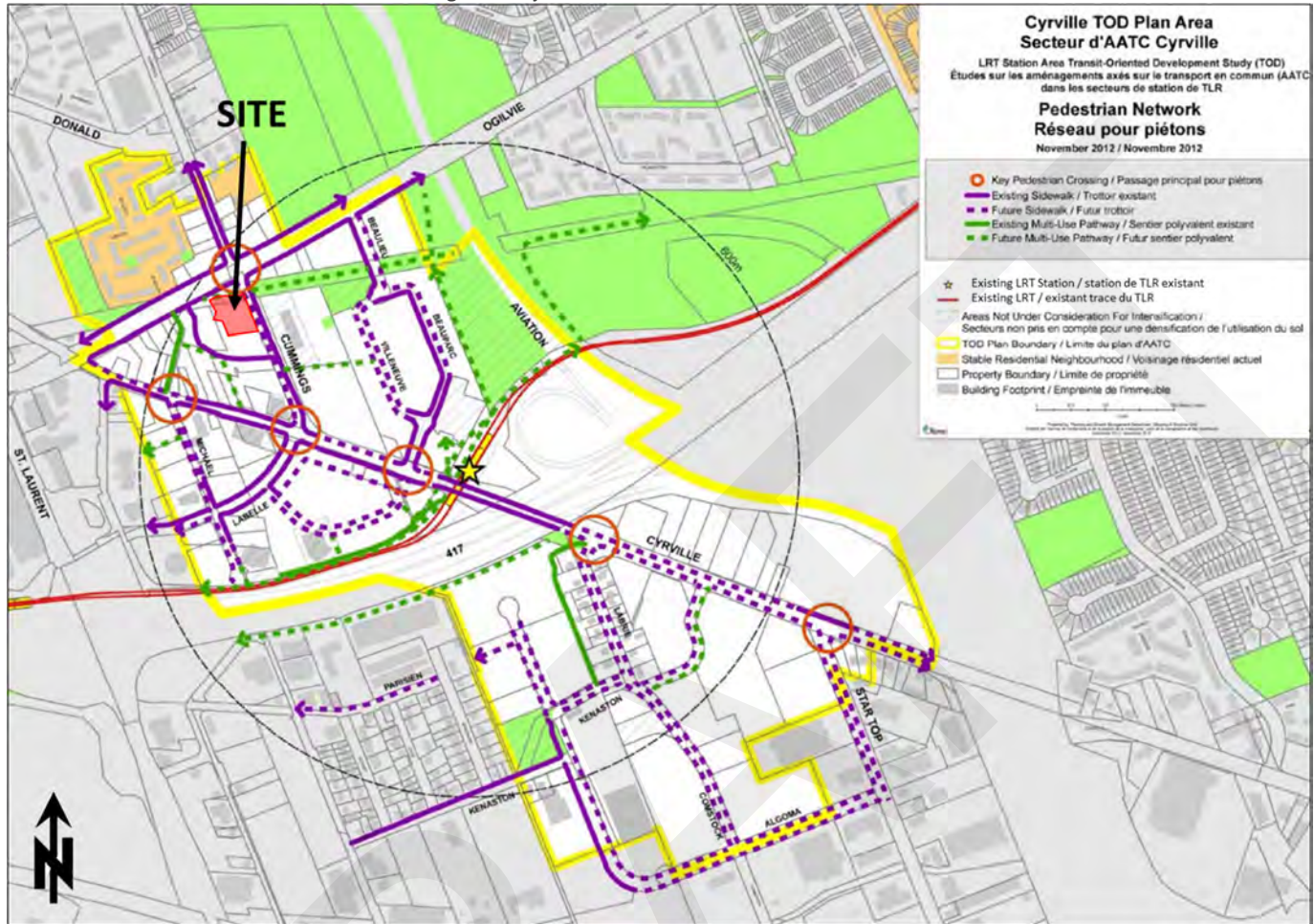
The proposed development will be located approximately 570m walk to the Cyrville LRT Station. In addition, the site is located less than 100m from OC Transpo bus stops #6699 and #3711 with local bus route #24 from Beacon Hill to Blair. The aforementioned functional sketch of the sidewalk on the west side of Cummings Avenue features a bus pad located on the north end of the site. Note that OC Transpo has requested that the stop be positioned slightly further south than originally proposed to take advantage of the straighter curb alignment.

Pedestrian Routes and Facilities

Sidewalks are located on both sides of Ogilvie Road (east-west arterial) and on the east side of Cummings Avenue (north-south arterial road). The developer intends to construct a sidewalk on the west side of Cummings Avenue along the site's frontage in accordance with the Cyrville TOD Plan as seen in **Figure 11**, which would connect to a recently built sidewalk that extends from Cyrville Road to the southern boundary of the subject site. Note that north of subject site, adjacent to the Hydro Corridor, there are no known plans for a sidewalk on the west side of Cummings Avenue that would provide a pedestrian connection to Ogilvie Road. It is recommended that this link be provided to complete the network. A functional sketch of the proposed sidewalk along the site's frontage has been included in Appendix G. Also of note in the Cyrville TOD Plan is the identification of enhancement of the nearby Ogilvie/Cummings intersection as a Key Pedestrian Crossing, which implies that the crossings would benefit from improved markings and refinements to the signal timing plan to enhance pedestrian crossing. Note that a 5 second advanced walk already exists at Cummings/Cyrville. Implementing 5 second advances at Ogilvie/Cyrville and Ogilvie/Cummings would improve pedestrian safety and performance but would reduce vehicle capacity by allocating 5 seconds of drive time to a pedestrian phase.

Internal pedestrian walkways are proposed through landscaped courtyards which connect all the towers and provide access to the existing sidewalk on the south side of Ogilvie Road and the proposed sidewalk on the west side of Cummings Avenue. These facilities are shown in the Landscape Plan included as Appendix G.

Figure 11: Cyrville TOD Plan Area – Pedestrian Network

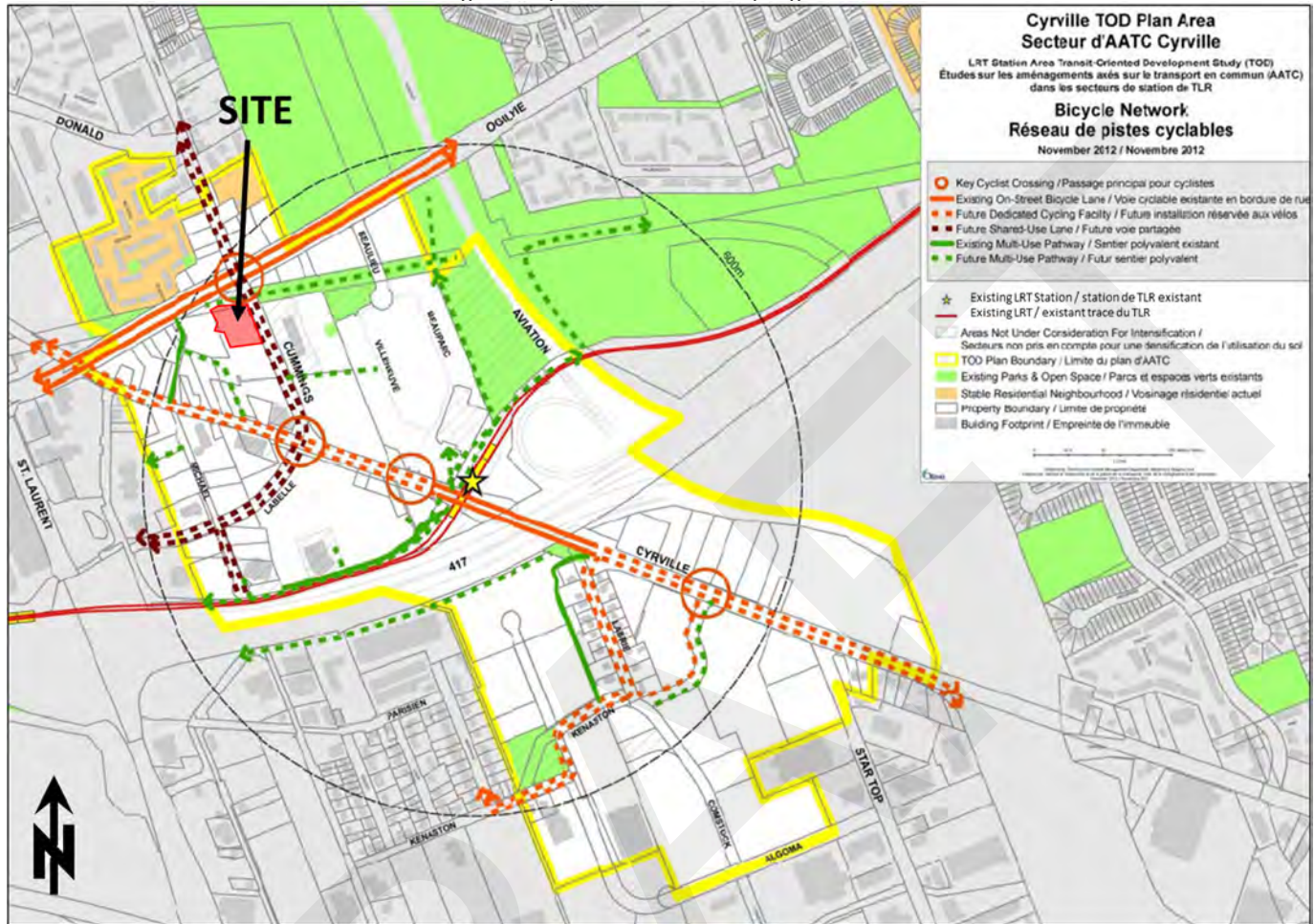


Source: City of Ottawa 'Transit-Oriented Development (TOD) Plans' report, January 29, 2014.

Bicycle Facilities and Parking

The proposed development fronts the existing on-street bicycle lanes on Ogilvie Road. According to the Cyrville TOD Plan related to the Bicycle Network, as seen in **Figure 12**, the Cyrville Road on-street bicycle lanes will be expanded from the Cyrville LRT Station north to the cycling facilities on Ogilvie Road. However, it is understood that the City is now planning for segregated cycling facilities on Cummings Avenue as evidenced by the 2m boulevard provided next to the newly constructed sidewalk south of the subject site set aside for this purpose. The protected right of way (ROW) on Cummings Avenue is identified as 37.5m, which provides ample space for high quality pedestrian and cycling facilities within the Corridor in the fulness of time. Regarding bicycle parking facilities, the proponent is providing 437 bicycle parking spaces which meets the minimum By-law requirement. The bicycle parking spaces are located indoors on the first floor in a well-lit area near the building entrance.

Figure 12: Cyrville TOD Plan Area – Cycling Network



Source: City of Ottawa 'Transit-Oriented Development (TOD) Plans' report, January 29, 2014.

4.1.2. CIRCULATION AND ACCESS

The proposed development access will be provided through two vehicular driveways; one is a right-in right-out access to Ogilvie Road and the other is a full movement, minor stop-controlled access to Cummings Avenue.

The proposed two-way internal site roadways vary between 6m to 6.7m wide. Underground parking lot ramps are separated by direction and have a width of 4m per direction, satisfying the minimum ramp width requirements. one-way drive aisle widths are greater than the minimum width of 2.4m.

It is anticipated that garbage pick-up will take place on-site.

4.2. PARKING SUPPLY

4.2.1. PARKING SUPPLY

According to the City of Ottawa parking By-law, the development is located in Area C within Schedule 1 and Area Z within Schedule 1a. Based on this information, no on-site parking is required for the residential nor hotel aspect of the development. Visitor parking is required at a rate of 0.1 per dwelling, with a maximum of 30 parking spaces per building. Section 74 of the City's Zoning By-Law states "(1) Where buildings are connected only below grade, they are considered separate buildings for the purposes of applying the provisions of the by-law". Given that Towers 1 and 2 are connected by a six-storey podium, they are considered to be one building. Tower 3 is separated above ground from Towers 1 and 2 and thus, is considered an additional building. On this basis, a minimum total of 60 visitor parking spaces is required. In terms

of maximum parking spaces allowed for this area, the rate 1.75 parking spaces per dwelling units applies, which would equate to a maximum of 1,526 parking spaces.

Given that the development is located in a Design Priority Area (DPA) and a Transit-Oriented Development (TOD) zone which emphasises on reduced vehicle use, a number closer to the minimum parking requirements is preferable. The subject development is proposing a total of 874 parking spaces, with 60 of the spots being designated visitor parking spots. This equates to a rate of 0.79 spaces per residential dwelling (if hotel rooms treated as a unit each) and 0.85 combined residential, hotel and visitor parking rate; the development meets both minimum parking requirements and would be well below the maximum allowed parking rate of 1.75 spaces per dwelling.

Table 17 summarizes bicycle parking requirements as per City of Ottawa Zoning By-Law-Part 4, sections 100-114. A total of 437 proposed bicycle parking spaces will be located indoors on the first floor. The subject development meets City requirements for bicycle parking spaces.

Table 17: Bicycle Parking Requirements

Land Use	Units	# of Bicycle Spaces	
		Required	Proposed
Towers 1 to 3	849	425	437
Hotel	175 (~10,300m ²)	11	
Total		436	437

4.2.2. SPILLOVER PARKING

Exempt. See **Table 2**.

4.3. BOUNDARY STREET DESIGN

The boundary streets for the development are Ogilvie Road and Cummings Avenue.

Adjacent to the site, Cummings Avenue has an existing sidewalk on the east side of the roadway only. The developer intends to construct a sidewalk on the west side of Cummings Avenue along the site's frontage, which would connect to a future sidewalk that the City is proposing which would extend from Cyrville Road to the southern boundary of the subject site. Note that north of subject site on the west side of Cummings Avenue, adjacent to the Hydro Corridor, there are no known plans for a sidewalk on the west side of Cummings Avenue that would provide a pedestrian connection to Ogilvie Road. It is recommended that this link be provided to complete the network.

Regarding the location of the proposed sidewalk along the site's frontage of Cummings Avenue, there is an existing ditch and utility poles that constrain the placement and width of the sidewalk. Should the proposed 2m sidewalk be located on the east side of the existing utility poles, the available pavement width for vehicle travel is limited to approximately 7.5m. Some additional asphalt width could be provided if a narrower sidewalk is considered acceptable. However, should the proposed 2m sidewalk be located on the west side of the existing utility poles, a wide boulevard area could be protected for a future cycle track and buffer/boulevard area. This is considered the preferred configuration, although note that the existing ditch and utility poles would remain in the interim as seen in **Figure 13**. As for the sidewalk segment to the north, within the Hydro Corridor, there is currently insufficient ROW to accommodate a future cycle track and boulevard, and as such any sidewalk would need to be located next to the travel lane. The City will need to negotiate an easement with the Hydro corridors property owner when the time comes to implement a future segregated cycling facility along the entire length of Cummings Avenue. A functional sketch for a proposed 2m sidewalk (located west of the existing utility poles) is included in Appendix G.

Figure 13: Potential Interim Cross Section with Sidewalk near Ogilvie/Cummings



The existing/proposed roadway geometry consists of the following features:

- Existing Ogilvie Road
 - 2 vehicle travel lane in each direction;
 - 1.8m sidewalk with greater than 2m boulevard on both sides of the roadway; and,
 - More than 3,000 vehicles per day.
- Existing Cummings Avenue East Side
 - 1 vehicle travel lane in each direction;
 - 1.8m sidewalk with no boulevard; and,
 - More than 3,000 vehicles per day.
- Existing Cummings Avenue West Side
 - 1 vehicle travel lane in each direction;
 - No sidewalk; and,
 - More than 3,000 vehicles per day.
- Proposed Cummings Avenue West Side between Cyrville & northern extent of property
 - 1 vehicle travel lane in each direction;
 - 2m sidewalk with greater than 2m boulevard; and,
 - More than 3,000 vehicles per day.
- Proposed Cummings Avenue West Side between northern extent of property & Ogilvie
 - 1 vehicle travel lane in each direction;
 - 2m sidewalk with no boulevard (if using City ROW); and,
 - More than 3,000 vehicles per day.

The multi-modal level of service analysis for the subject road segments adjacent to the site is summarized in **Table 18** with detail analysis provided in Appendix H.

Table 18: MMLOS – Road Segments Adjacent to the Site

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Ogilvie Road between Cummings & Cyrville	D	A	C	C	D	D	C	D
Cummings Avenue between Ogilvie & Cyrville - East	D	A	B	B	D	D	D	D
Existing Cummings Avenue between Ogilvie & Cyrville - West	F	A	B	B	D	D	D	D
Proposed Cummings Avenue between Cyrville & northern extent of property - West	B	A	B	B	D	D	D	D
Proposed Cummings Avenue between northern extent of property & Ogilvie - West	C	A	B	B	D	D	D	D

Pedestrian PLOS targets were not met on any road segment. The triggers were due to high vehicle volumes, high operating speeds and lack of sidewalks in certain locations. The proposed sidewalk on the west side of Cummings Avenue adjacent to site improves PLOS from 'F' to 'B' but fails to meet the target goal due to vehicle volumes in excess of 3000 vehicles daily on Cummings Avenue.

Cyclist BLOS, Transit TLOS and Truck TkLOS targets were met on all road segments.

4.4. ACCESS INTERSECTION DESIGN

The proposed development will be accessed via two driveways:

- The first driveway consists of a right-in right-out access located approximately 130m west of Ogilvie/Cummings intersection on Ogilvie Road. A clear throat length of approximately 40m is proposed for the Ogilvie Road access which satisfies the minimum clear throat length recommendations of the TAC Guidelines
- The second driveway consists of a full movement, three-legged intersection on Cummings Avenue with STOP control on the minor leg, located approximately 120m south of Ogilvie/Cummings intersection. A clear throat length of approximately 40m to the first conflict point⁴, which is considered to be the inbound ramp serving the parking lot. This distance satisfies the minimum clear throat length recommendations of the TAC Guidelines.

On-site vehicle turning templates are included as Appendix I.

Auxiliary turn lanes are not warranted for either of the access driveways based on TAC Guidelines and queue lengths forecasted by SYNCHRO. This statement is applicable even if volumes associated with meeting the TOD targets are not realized:

- For the left-turn warrant to be satisfied for the northbound movement from Cummings to the site driveway, the total northbound left-turn movement would need to exceed 20 veh/h. This threshold value is higher than the non-TOD forecasted volume of 12 veh/h during the PM peak hour; however, only 5% of the site-generated traffic has been assigned to this driveway.
- Regarding the existing northbound left-turn storage lane at Ogilvie/Cummings, should the non-TOD modal share targets identified in **Table 11** targets be assumed, the required storage length would need to increase from the existing 35m to 50m. Since the proposed Cummings Site Access is located approximately 100m south of the Ogilvie/Cummings intersection, an extension of the left turn lane storage by 15 meters more would not be in influence zone of the proposed site access on Cummings Avenue. As seen in **Sections 4.8.7**, creating a northbound permissive/protected phase could create a bit more capacity for this movement.

⁴ Note that there is a drop off bay located 17 meters from the driveway curb radii; however, the proposed driveway is 6.7 meters wide with an additional 2.7 meters for the drop off bay on the north and 4 meters on the south, anticipated to cause negligible delays due to the available width.

Auxiliary turn lane warrants have been provided in Appendix J. Furthermore, there are no adjacent driveways or existing auxiliary lanes within the influence zone of either of the two proposed driveway accesses. As seen in **Figure 14** nearby driveways to proposed site access points include:

- Cummings Avenue:
 - Located approximately 20 meters south of Ogilvie/Cummings intersection on the east side of roadway, Pioneer Gas Bar has a full movement driveway. At times, there is congestion at this location as delayed southbound left-turning vehicles into the gas bar can block southbound through traffic (with potential spillback into the Ogilvie/Cummings intersection)
 - Located approximately 60 meters south of Ogilvie/Cummings intersection on the east side of roadway, Cyrville Towers Apartments has a full access driveway to approximately 70 parking stalls at 1177 Cummings Avenue
 - Located approximately 175 meters south of Ogilvie/Cummings intersection on the east side of roadway, Cyrville Towers Apartments has a second full access driveway to the same 70 parking stalls at 1177 Cummings Avenue
 - Located approximately 200 meters south of Ogilvie/Cummings intersection on both sides of roadway, there is access to a small commercial strip and office buildings
 - North of Ogilvie/Cummings intersection along the west side of Cummings are 5 driveways where 1 driveway provides access to a gas station, and the remaining 4 driveways provide access to private residential buildings and complexes.
 - North of Ogilvie/Cummings intersection along the east side of Cummings are 3 driveways where 2 driveways provide access to a commercial property that includes restaurants, and the remaining driveway provides access to private residential building.
- Ogilvie Road (note: due to median separated traffic and proposed right-in right-out site access, only the south side of Ogilvie Road is relevant):
 - West of Ogilvie/Cummings intersection, there are 5 driveways located on the south side of Ogilvie Road which service several restaurants, commercial properties and gated parking lot for the Mission Ottawa.
 - West of Ogilvie/Cummings intersection along the north Side of Ogilvie are 3 driveways where 1 services a residential development and 2 provide access to a gas station.
 - East of Ogilvie/Cummings intersection along the south side of Ogilvie are 6 driveways that provide service to commercial properties, a gas station and a funeral home.
 - East of Ogilvie/Cummings intersection along the north side of Ogilvie are 2 driveways where 1 provides service to a commercial property with restaurants, and the second provides access to a City Park parking lot.

Figure 14: Nearby Driveways to Site Access Points



4.5. TRANSPORTATION DEMAND MANAGEMENT

4.5.1. CONTEXT FOR TDM

Based on the type of development proposed, it is assumed that most trips generated by the proposed site will be outbound in the AM peak and inbound in the PM peak. Sections 3.1.1 and 3.1.2 describe how many trips are anticipated by each travel mode and the expected origin/destination based on the 2011 OD-Survey. The site is located in a Design Priority Area (DPA) and a Transit-Oriented Development (TOD) zone according to the Official Plan.

4.5.2. NEED AND OPPORTUNITY

Developments located in Design Priority Area (DPA) and a Transit-Oriented Development (TOD) zone are expected to utilize measures to provide sustainable active mode shares. Such measures are described in more detail in Section 4.5.3 below, but can include reduced parking ratios as described in Section 4.2, more aggressive Multi-Modal Levels of Service (MMLOS) as described in Section 4.3, and connectivity to public transit as described in Sections 4.1.1 and 4.7.

4.5.3. TDM PROGRAM

TDM checklists, for both the residential and hotel components, are attached as Appendix K. The checklists have additional comments as to how they intend to satisfy certain criteria. TDM measures that the proponent is providing/considering include:

- Proposed sidewalk on the west side of Cummings Avenue along the site's frontage, including bus pad;
- Provide internal pathway network linking to adjacent street sidewalks;
- Provide sufficient bicycle parking;
- Identify a TDM Coordinator to encourage/monitor program;
- Provide walking/cycling/transit information on their site;
- Carshare membership;
- Try to have bikeshare station;
- Hotel shuttle service on demand when OC Transpo cannot offer service;
- Priced parking.

Given the type of development and its location, a high amount of non-auto trips is expected to be generated by the proposed development. As a result, non-auto mode shares are expected to increase towards the established targets, and auto shares expected to decrease over time for the subject site.

4.6. NEIGHBOURHOOD TRAFFIC MANAGEMENT

4.6.1. ADJACENT NEIGHBOURHOODS

Exempt. See Table 2.

4.7. TRANSIT

4.7.1. ROUTE CAPACITY

It is projected that 655 and 575 'new' two-way transit passenger trips will be generated for the AM and PM peak hours, respectively. Considering the Confederation LRT Line operates with a capacity of 600 passengers per train and 12 trains per hour per direction during peak hours, it is anticipated that the future transit network will have sufficient capacity to accommodate the projected transit demand. For measures aiming to improve pedestrian and cyclist connectivity from the site to Cyrville Station, see Section 4.1.1.

4.7.2. TRANSIT PRIORITY

The Confederation LRT Line (Route #1) operates on a grade-separated corridor.

4.8. INTERSECTION DESIGN

4.8.1. MULTI-MODAL LEVEL OF SERVICE

The Ogilvie/Cummings intersection is within 600m of high-frequency transit. Cummings/Cyrville intersection was also analysed as it will be required to be crossed by pedestrians and cyclists heading to the Cyrville LRT Station. The applicable target levels of service for pedestrians and cyclists is PLoS 'A' and BLoS 'B', respectively. The MMLoS analysis for the existing signalized intersections Ogilvie/Cummings and Cummings/Cyrville within the study area are summarized in **Table 19**, with detailed analyses provided in Appendix L. As stated in the MMLoS Guidelines, only signalized or roundabout intersections are considered for the intersection level of service measures.

Table 19: MMLoS - Intersections

Intersection	Level of Service							
	Pedestrian (PLoS)		Bicycle (BLoS)		Transit (TLoS)		Truck (TkLoS)	
	PLoS	Target	BLoS	Target	TLoS	Target	TkLoS	Target
Ogilvie/Cummings	F	A	F	B	F	D	E	D
Cummings/Cyrville	C	A	D	B	D	D	E	D

As shown in **Table 19**, the pedestrian and bicycle target level of service were not met on Ogilvie/Cummings and Cummings/Cyrville. Pedestrians have to cross 5 to 6 lanes of traffic when crossing Ogilvie Road resulting in the poor PLoS 'F' for Ogilvie/Cummings. The lack of bicycle facilities on Cummings Avenue and high operating speeds on Ogilvie Road result in poor BLoS. If a dedicated cycling facility such as pocket bike lane, curb bike lane, cycle track or MUP was built on Cummings Avenue, and 2-stage left turning box on Ogilvie Road and Cyrville Road approaches, the BLoS targets could be met for both intersections. Transit TLoS targets were not met on Ogilvie/Cummings due to delays; however, nearby grade separated LRT Rapid Transit is located less than 600m walk. Truck TkLoS was not met at either intersection due to the low number of receiving lanes and short effective corner radius.

The Cummings/Cyrville intersection is expected to be modified once Cyrville Road is widened as per Phase 3 of the 2031 Affordable Road Network. Phase 3 widening are expected to occur between 2026 and 2031 according to the Transportation Master Plan. Due to the anticipated timing of this widening, it is assumed that MMLoS for intersections will remain the same for all horizon years.

As per the Cyrville TOD Area illustrated in **Figure 11** and **Figure 12**, Ogilvie/Cummings, Cummings/Cyrville and Beauparc/Cyrville are key pedestrian and cyclist crossing points. Special consideration should be given to these intersections as they connect the neighbourhoods to public transport facilities, cycling routes and pedestrian trails. At the nearby Ogilvie/Cummings intersection, potential treatments could include wider and textured road crossings, advanced pedestrian signal timings and longer walk signal times. Note that a 5 second advanced walk already exists at Cummings/Cyrville. Implementing 5 second advances at Ogilvie/Cyrville and Ogilvie/Cummings would improve pedestrian safety and performance but would reduce vehicle capacity by allocating 5 seconds of drive time to a pedestrian phase.

4.8.2. PROJECTED BACKGROUND 2022 OPERATIONS

The interim Phase 1 background volumes from Section 3.2.2 and **Figure 8** were evaluated using Synchro. Results are summarized in **Table 20** with detailed analyses provided in Appendix M.

Table 20: Projected Background Phase 1 Interim 2022 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	D(D)	0.89(0.89)	WBL(WBL)	41.9(45.6)	B(C)	0.66(0.75)
Ogilvie/Cyrville	D(D)	0.90(0.89)	NBL(NBL)	20.5(27.7)	A(A)	0.51(0.55)
Ogilvie/Cummings	B(D)	0.68(0.81)	WBT(EBT)	21.6(32.8)	B(C)	0.63(0.73)
Ogilvie/Aviation Parkway	F(C)	1.08(0.75)	EBL(SBT)	58.9(31.3)	E(A)	0.93(0.56)
Cummings/Donald	B(C)	0.62(0.79)	NBL(NBL)	12.4(16.9)	A(A)	0.48(0.56)
Cummings/Cyrville	B(C)	0.69(0.75)	NBT(NBT)	14.0(18.1)	A(A)	0.59(0.60)
St. Laurent/Lemieux	C(C)	0.79(0.74)	WBL(WBL)	16.0(15.7)	A(A)	0.54(0.57)
Unsignalized						
Lemieux/Labelle	C(C)	17(23)	EB(EB)	2(7)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.						

As shown in **Table 20**, all the intersections within the subject area are projected to operate ‘as a whole’ at acceptable LoS ‘C’ or better during the AM and PM peak hours with the exception of Ogilvie/Aviation in the AM peak hour. The majority of the ‘critical movements’ at study area intersections are projected to operate at acceptable LoS ‘D’ or better during both peak hours with the exception of Ogilvie/Cummings and Ogilvie/Aviation. In general, intersections will operate similarly to existing conditions.

4.8.3. PROJECTED BACKGROUND 2024 OPERATIONS

The ultimate buildout background 2024 volumes from Section 3.2.2 and **Figure 9** were evaluated using Synchro. Results are summarized in **Table 21** with detailed analyses provided in Appendix M.

Table 21: Projected Background 2024 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	D(D)	0.89(0.89)	WBL(WBL)	42.2(46.1)	B(C)	0.67(0.75)
Ogilvie/Cyrville	E(D)	0.91(0.89)	NBL(NBL)	20.8(27.7)	A(A)	0.52(0.55)
Ogilvie/Cummings	B(D)	0.69(0.83)	WBT(EBT)	21.2(33.2)	B(C)	0.64(0.75)
Ogilvie/Aviation Parkway	F(C)	1.11(0.75)	EBL(SBT)	60.4(31.6)	E(A)	0.95(0.56)
Cummings/Donald	B(D)	0.62(0.81)	NBL(NBL)	12.5(17.2)	A(A)	0.48(0.57)
Cummings/Cyrville	B(C)	0.69(0.75)	NBT(NBT)	14.2(18.2)	A(A)	0.59(0.60)
St. Laurent/Lemieux	C(C)	0.79(0.74)	WBL(WBL)	15.8(15.5)	A(A)	0.54(0.58)
Unsignalized						
Lemieux/Labelle	C(C)	18(23)	EB(EB)	2(7)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.						

As shown in **Table 21**, all the intersections within the study area are projected to operate ‘as a whole’ at acceptable LoS ‘C’ or better during the AM and PM peak hours. The majority of the ‘critical movements’ at study area intersections are projected to operate at acceptable LoS ‘D’ or better during both peak hours with the exception of Ogilvie/Cyrville and Ogilvie/Aviation. In general, intersections will operate similarly to existing conditions.

4.8.4. PROJECTED BACKGROUND 2029 OPERATIONS

The ultimate buildout background 2029 volumes from Section 3.2.4 and **Figure 10** were evaluated using Synchro. Results are summarized in **Table 22** with detailed analyses provided in Appendix M.

Table 22: Projected Background 2029 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	D(E)	0.89(0.91)	WBL(WBL)	42.7(47.7)	B(C)	0.68(0.78)
Ogilvie/Cyrville	E(E)	0.93(0.91)	NBL(NBL)	20.8(27.9)	A(A)	0.54(0.57)
Ogilvie/Cummings	C(D)	0.71(0.87)	WBT(EBT)	21.0(34.4)	B(C)	0.67(0.78)
Ogilvie/Aviation Parkway	F(C)	1.18(0.76)	EBL(SBT)	64.2(32.1)	E(A)	0.97(0.58)
Cummings/Donald	B(D)	0.63(0.83)	NBL(NBL)	12.7(18.1)	A(A)	0.49(0.58)
Cummings/Cyrville	C(C)	0.71(0.76)	NBT(NBT)	14.5(18.6)	B(B)	0.61(0.61)
St. Laurent/Lemieux	C(C)	0.79(0.74)	WBL(WBL)	15.1(15.0)	A(A)	0.55(0.60)
Unsignalized						
Lemieux/Labelle	C(C)	18(23)	EB(EB)	2(7)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.						

As shown in **Table 22**, all the intersections within the subject area are projected to operate ‘as a whole’ at acceptable LoS ‘C’ or better during the AM and PM peak hours with the exception of Ogilvie/Aviation. The majority of the ‘critical movements’ at study area intersections are projected to operate at acceptable LoS ‘D’ or better during both peak hours with the exception of St.Laurent/Ogilvie in the PM peak and Ogilvie/Cyrville in both AM and PM peaks which are projected to operate at LoS ‘E’ and Ogilvie/Aviation which is projected to operate at LoS ‘F’ in the AM peak. In general, intersections will operate similarly to existing conditions.

4.8.5. FUTURE PROJECTED 2022 CONDITIONS

The total future projected interim 2022 conditions were derived by superimposing the interim 2022 background volumes onto the interim 2022 site-generated volumes and are illustrated in **Figure 15**. Synchro results for study area intersection performance are summarized in **Table 23** with detailed analyses provided in Appendix N.

Figure 15: Future Projected Interim 2022 Conditions

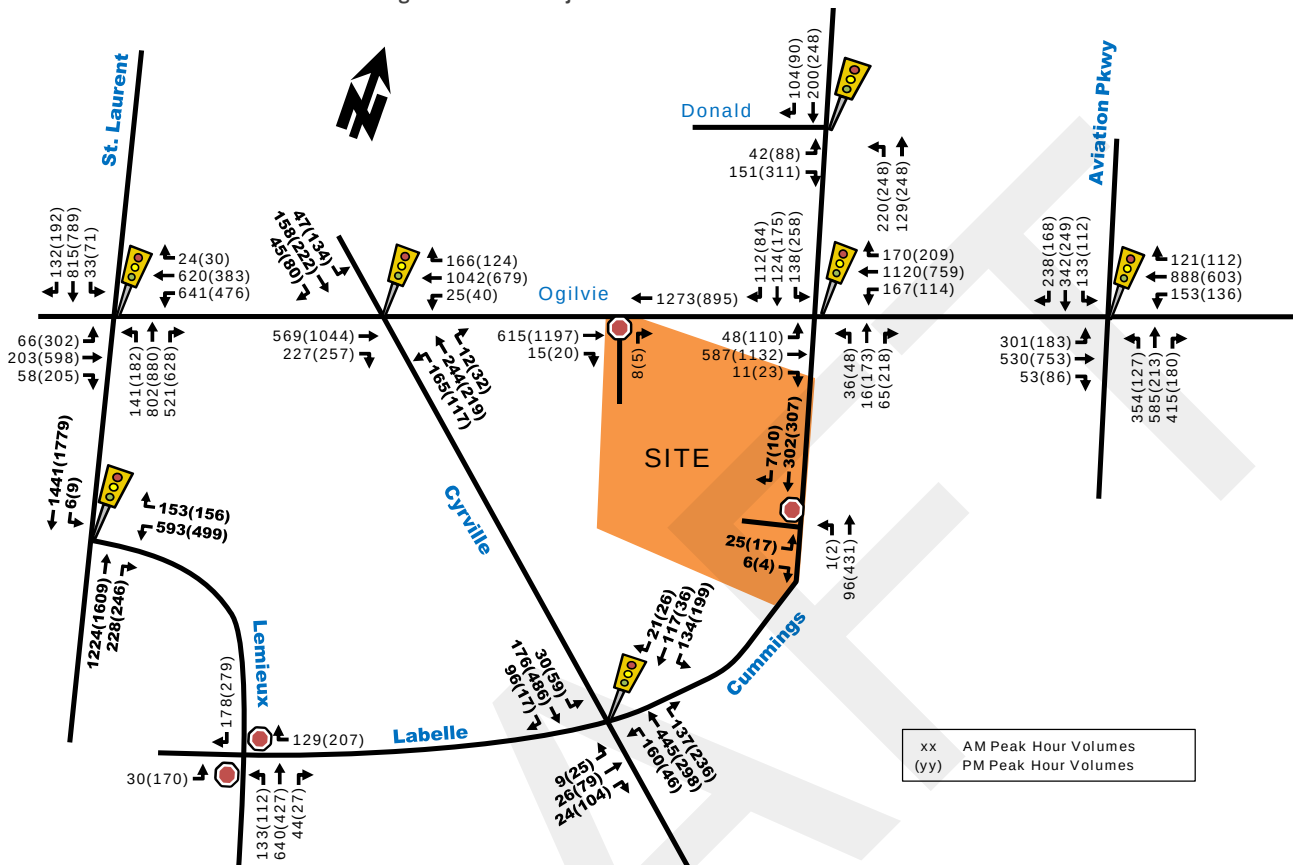


Table 23: Future Projected Interim 2022 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	E(D)	0.91(0.89)	WBL(WBL)	43.5(46.1)	B(C)	0.68(0.75)
Ogilvie/Cyrville	E(D)	0.91(0.89)	NBL(NBL)	20.1(27.2)	A(A)	0.52(0.55)
Ogilvie/Cummings	B(D)	0.65(0.82)	SBT(EBT)	21.7(33.0)	B(C)	0.61(0.74)
Ogilvie/Aviation Parkway	F(C)	1.10(0.75)	EBL(SBT)	58.1(31.1)	E(A)	0.93(0.57)
Cummings/Donald	B(C)	0.63(0.80)	NBL(NBL)	12.4(17.1)	A(A)	0.48(0.56)
Cummings/Cyrville	B(C)	0.68(0.75)	NBT(NBT)	13.9(18.1)	A(A)	0.58(0.60)
St. Laurent/Lemieux	C(C)	0.80(0.74)	WBL(WBL)	15.9(15.6)	A(A)	0.54(0.57)
Unsignalized						
Lemieux/Labelle	C(C)	18(23)	EB(EB)	2(7)	A(A)	-
Ogilvie Site Access	B(B)	10(13)	NB(NB)	0(0)	A(A)	-
Cummings Site Access	B(B)	11(14)	EB(EB)	1(0)	A(A)	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.

As shown in **Table 23**, all the intersections within the subject area are projected to operate 'as a whole' at acceptable LoS 'C' or better during the AM and PM peak hours with the exception of Ogilvie/Aviation in the AM peak. The majority of the 'critical movements' at study area intersections are projected to operate at acceptable LoS 'D' or better during both peak hours with the exception of St. Laurent/Ogilvie, Ogilvie/Cyrville and Ogilvie/Aviation in the AM peak. In general, intersections will operate similarly to existing conditions.

4.8.6. FUTURE PROJECTED 2024 CONDITIONS

The total future projected ultimate buildout 2024 conditions were derived by superimposing the ultimate 2024 background volumes onto the 2024 site-generated volumes and are illustrated in **Figure 16**. Synchro results for study area intersection performance are summarized in **Table 24** with detailed analyses provided in Appendix N.

Figure 16: Future Projected Interim 2024 Conditions

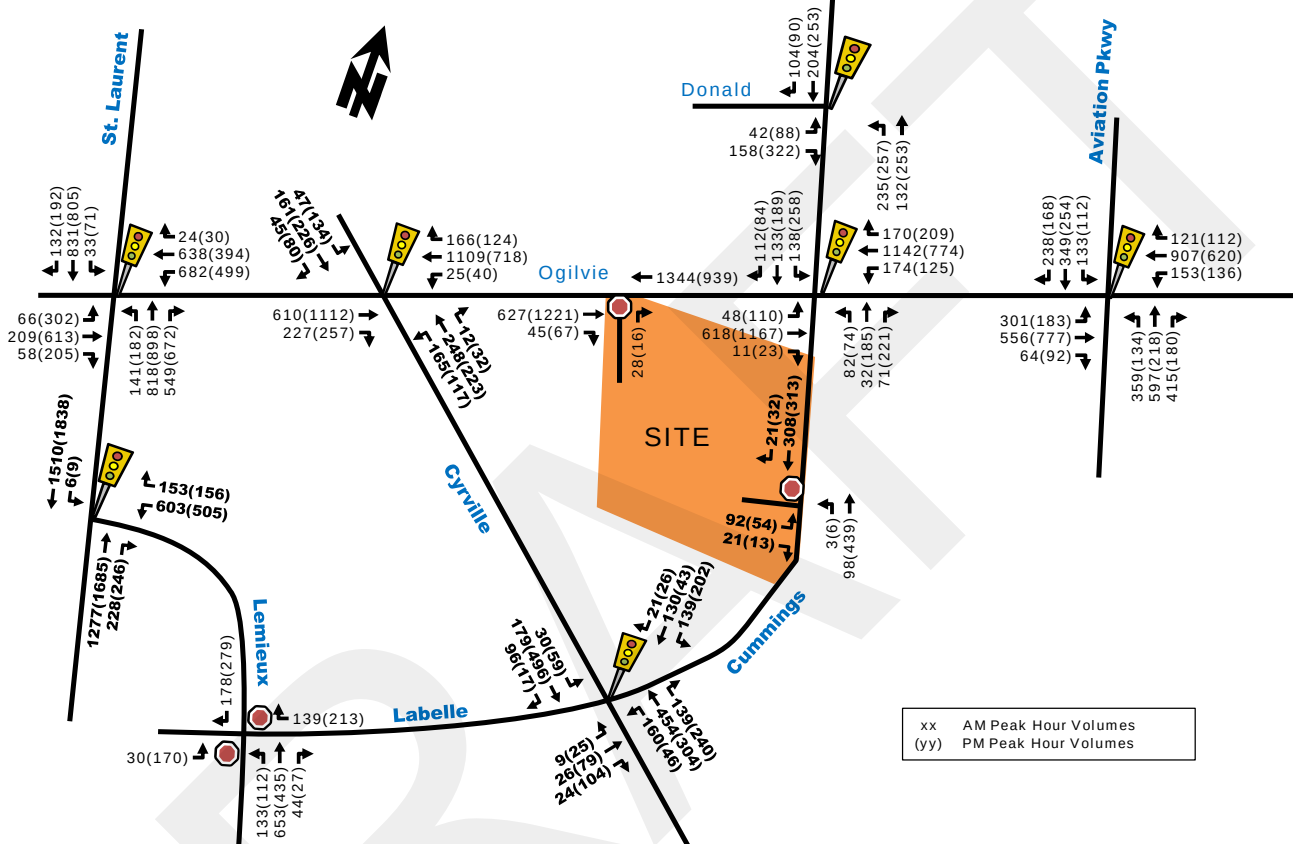


Table 24: Future Projected Interim 2024 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	E(E)	0.93(0.92)	WBL(WBL)	44.0(48.5)	B(C)	0.70(0.77)
Ogilvie/Cyrville	E(D)	0.91(0.89)	NBL(NBL)	19.3(26.5)	A(A)	0.54(0.57)
Ogilvie/Cummings	B(D)	0.67(0.85)	WBT(EBT)	23.8(33.8)	B(C)	0.64(0.77)
Ogilvie/Aviation Parkway	F(C)	1.13(0.75)	EBL(SBT)	60.2(31.5)	E(A)	0.94(0.59)
Cummings/Donald	B(D)	0.66(0.82)	NBL(NBL)	12.8(17.5)	A(A)	0.49(0.57)
Cummings/Cyrville	B(C)	0.69(0.76)	NBT(NBT)	14.3(18.4)	A(B)	0.59(0.61)
St. Laurent/Lemieux	C(C)	0.80(0.75)	WBL(WBL)	15.3(15.5)	A(A)	0.56(0.59)
Unsignalized						
Lemieux/Labelle	C(C)	18(23)	EB(EB)	2(7)	A(A)	-
Ogilvie Site Access	B(B)	11(14)	NB(NB)	0(0)	A(A)	-
Cummings Site Access	B(C)	12(16)	EB(EB)	3(1)	A(A)	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.

As shown in **Table 24**, all the intersections within the subject area are projected to operate 'as a whole' at acceptable LoS 'C' or better during the AM and PM peak hours with the exception of Ogilvie/Aviation in the AM peak. The majority of the

The total future projected ultimate buildout 2029 conditions were derived by superimposing the ultimate buildout 2029 background volumes onto the ultimate buildout 2029 site-generated volumes and are illustrated in **Figure 17**. Synchro results for study area intersection performance are summarized in **Table 25** with detailed analyses provided in Appendix N.

The map illustrates the proposed site location in the Ogilvie area. The site is highlighted in orange and is bounded by Cummings Street to the east and a road to the south. Major roads shown include St. Laurent, Ogilvie, and Aviation Pkwy. Traffic volumes are indicated for various road segments, with AM peak hour volumes in black and PM peak hour volumes in parentheses. A north arrow is present in the upper left corner. A legend in the bottom right corner explains the volume notation: 'xx AM Peak Hour Volumes' and '(yy) PM Peak Hour Volumes'.

Location / Road Segment	AM Peak Hour Volumes (xx)	PM Peak Hour Volumes (yy)
St. Laurent / Ogilvie (Northbound)	132	192
St. Laurent / Ogilvie (Southbound)	874	846
St. Laurent / Ogilvie (Eastbound)	33	71
St. Laurent / Ogilvie (Westbound)	24	30
St. Laurent / Ogilvie (Southbound)	670	413
St. Laurent / Ogilvie (Southbound)	682	499
Ogilvie / St. Laurent (Northbound)	166	124
Ogilvie / St. Laurent (Northbound)	1162	753
Ogilvie / St. Laurent (Northbound)	25	40
Ogilvie / St. Laurent (Southbound)	47	134
Ogilvie / St. Laurent (Southbound)	170	338
Ogilvie / St. Laurent (Southbound)	45	180
Ogilvie / St. Laurent (Eastbound)	1409	985
Ogilvie / St. Laurent (Westbound)	659	1283
Ogilvie / St. Laurent (Westbound)	45	67
Ogilvie / St. Laurent (Southbound)	12	32
Ogilvie / St. Laurent (Southbound)	264	324
Ogilvie / St. Laurent (Southbound)	165	117
Ogilvie / St. Laurent (Eastbound)	28	16
Ogilvie / St. Laurent (Eastbound)	48	110
Ogilvie / St. Laurent (Eastbound)	648	1225
Ogilvie / St. Laurent (Eastbound)	11	23
Ogilvie / St. Laurent (Eastbound)	21	32
Ogilvie / St. Laurent (Eastbound)	324	329
Ogilvie / St. Laurent (Eastbound)	92	54
Ogilvie / St. Laurent (Eastbound)	21	13
Ogilvie / St. Laurent (Eastbound)	3	6
Ogilvie / St. Laurent (Eastbound)	103	462
Ogilvie / St. Laurent (Eastbound)	21	26
Ogilvie / St. Laurent (Eastbound)	136	45
Ogilvie / St. Laurent (Eastbound)	139	202
Ogilvie / St. Laurent (Eastbound)	139	240
Ogilvie / St. Laurent (Eastbound)	478	319
Ogilvie / St. Laurent (Eastbound)	169	46
Ogilvie / St. Laurent (Eastbound)	9	25
Ogilvie / St. Laurent (Eastbound)	29	79
Ogilvie / St. Laurent (Eastbound)	24	104
Ogilvie / St. Laurent (Eastbound)	133	112
Ogilvie / St. Laurent (Eastbound)	686	457
Ogilvie / St. Laurent (Eastbound)	44	27
Ogilvie / St. Laurent (Eastbound)	30	170
Ogilvie / St. Laurent (Eastbound)	1340	1768
Ogilvie / St. Laurent (Eastbound)	228	246
Ogilvie / St. Laurent (Eastbound)	153	156
Ogilvie / St. Laurent (Eastbound)	603	505
Ogilvie / St. Laurent (Eastbound)	141	182
Ogilvie / St. Laurent (Eastbound)	860	944
Ogilvie / St. Laurent (Eastbound)	549	672
Ogilvie / St. Laurent (Eastbound)	1584	1930
Ogilvie / St. Laurent (Eastbound)	6	9
Ogilvie / St. Laurent (Eastbound)	66	302
Ogilvie / St. Laurent (Eastbound)	219	644
Ogilvie / St. Laurent (Eastbound)	58	205
Ogilvie / St. Laurent (Eastbound)	238	168
Ogilvie / St. Laurent (Eastbound)	367	267
Ogilvie / St. Laurent (Eastbound)	133	112
Ogilvie / St. Laurent (Eastbound)	121	112
Ogilvie / St. Laurent (Eastbound)	954	651
Ogilvie / St. Laurent (Eastbound)	153	136
Ogilvie / St. Laurent (Eastbound)	359	134
Ogilvie / St. Laurent (Eastbound)	627	229
Ogilvie / St. Laurent (Eastbound)	415	180
Ogilvie / St. Laurent (Eastbound)	301	183
Ogilvie / St. Laurent (Eastbound)	583	816
Ogilvie / St. Laurent (Eastbound)	64	92

Table 25: Future Projected Ultimate 2029 Buildout Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	E(E)	0.93(0.94)	WBL(WBL)	44.4(51.0)	C(C)	0.71(0.79)
Ogilvie/Cyrville	E(E)	0.93(0.91)	NBL(NBL)	19.6(26.9)	A(A)	0.56(0.59)
Ogilvie/Cummings	B(D)	0.70(0.90)	WBT(EBT)	23.0(35.4)	B(D)	0.67(0.81)
Ogilvie/Aviation Parkway	F(C)	1.18(0.76)	EBL(SBT)	64.0(32.0)	E(B)	0.96(0.61)
Cummings/Donald	B(D)	0.66(0.85)	NBL(NBL)	12.9(18.3)	A(A)	0.50(0.59)
Cummings/Cyrville	C(C)	0.71(0.76)	NBT(NBT)	14.6(18.7)	B(B)	0.61(0.61)
St. Laurent/Lemieux	C(C)	0.80(0.75)	WBL(WBL)	14.9(15.0)	A(B)	0.57(0.61)
Unsignalized						
Lemieux/Labelle	C(C)	18(24)	EB(EB)	2(7)	A(A)	-
Ogilvie Site Access	B(B)	11(15)	NB(NB)	0(0)	A(A)	-
Cummings Site Access	B(C)	13(17)	EB(EB)	3(1)	A(A)	-
Optimized Critical Intersections						
St. Laurent/Ogilvie	D(E)	0.89(0.92)	WBL(WBL)	47.7(51.7)	B(C)	0.68(0.77)
Ogilvie/Cyrville	C(C)	0.73(0.72)	NBL(NBL)	17.8(19.8)	A(A)	0.56(0.59)
Ogilvie/Cummings ₁	C(D)	0.75(0.82)	WBT(EBT)	20.9(30.8)	C(C)	0.72(0.77)
Ogilvie/Aviation Parkway	E(C)	0.99(0.76)	NBL(SBT)	65.6(33.0)	E(B)	0.96(0.61)
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.						
1.) Ogilvie/Cummings was optimized to improve NBL movement which had a queue length reaching capacity.						

As shown in **Table 25**, all the intersections within the subject area are projected to operate ‘as a whole’ at acceptable LoS ‘D’ or better during the AM and PM peak hours with the exception of Ogilvie/Aviation in AM peak. The majority of the ‘critical movements’ at study area intersections are projected to operate at acceptable LoS ‘D’ or better during both peak hours with the exception of St.Laurent/Ogilvie and Ogilvie/Cyrville which are expected to operate at LoS ‘E’ in both peaks and Ogilvie/Aviation which is projected to operate at LoS ‘F’ in the AM peak. In general, intersections will operate similarly to existing conditions. No significant change between 2029 background conditions and 2029 projected future conditions were noted, indicating that the majority of vehicles impacting the operations at the study area intersections come from background growth.

It is noteworthy that Synchro projects the 95th percentile queue length at Ogilvie/Cummings approaching or at capacity for the northbound left-turn movement. Adding a permissive/protected cycle for the northbound movement reduces the 95th percentile queue lengths from capacity, 35m, to approximately 21m.

Other intersections which had critical movements of LoS ‘E’ or higher were optimized to improve intersection performance. The improvements in LoS demonstrate that there is available capacity within the existing intersection layouts; however, in some cases, preference to having longer pedestrian cycles, advanced pedestrian cycles or smoother flow from intersection to intersection is preferred and can result in lower vehicle LoS performance.

It is important to note that the future background traffic volumes were not adjusted to reflect future mode shares, which are expected to change when the next counts are conducted which will include Stage 1 and possibly Stage 2 LRT system is operation. It is expected that arterial-to-arterial intersections will continue to be congested, but as LRT is adopted traffic behaviour around new stations and local trips near LRT stations will adjust.

4.8.8. FUTURE 2029 CONDITIONS IF TOD TARGETS NOT MET

Impacts to the existing network were analysed and summarised in **Table 26** in the event that TOD targets are not met and existing mode shares were used, based on the OD-Mode Share Survey. The vehicle trip generation was extracted from **Table 11**. A detailed analysis is provided in Appendix N.

Table 26: Future Projected Ultimate 2029 Buildout Operations if TOD Targets Not Met

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
St. Laurent/Ogilvie	E(F)	0.92(1.02)	WBL(WBL)	45.1(57.3)	C(D)	0.74(0.82)
Ogilvie/Cyrville	E(E)	0.91(0.91)	NBL(NBL)	18.6(25.5)	A(B)	0.58(0.62)
Ogilvie/Cummings	D(E)	0.85(0.93)	NBL(EBT)	26.1(37.4)	C(D)	0.73(0.84)
Ogilvie/Aviation Parkway	F(C)	1.18(0.76)	EBL(SBT)	64.9(32.6)	E(B)	0.97(0.62)
Cummings/Donald	B(D)	0.70(0.85)	NBL(NBL)	13.1(17.9)	A(A)	0.51(0.59)
Cummings/Cyrville	C(C)	0.73(0.76)	NBT(NBT)	15.3(19.0)	B(B)	0.62(0.62)
St. Laurent/Lemieux	C(C)	0.80(0.76)	WBL(WBL)	14.9(14.9)	A(B)	0.59(0.62)
Unsignalized						
Lemieux/Labelle	C(D)	19(25)	EB(EB)	3(7)	A(A)	-
Ogilvie Site Access	B(C)	11(16)	NB(NB)	0(0)	A(A)	-
Cummings Site Access	C(C)	17(22)	EB(EB)	6(3)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.						

As seen in **Table 26**, even if TOD projections are not met, most intersections continue to operate at an acceptable LoS of 'D' or better with the exception of Ogilvie/Aviation which begin to approach capacity. In terms of critical movements, most intersections function similarly to TOD projected 2029 performance, with Ogilvie/Cummings experiencing the most notable change in performance. Similar to TOD projected 2029 analysis, the northbound left-turn storage lane has reached capacity. Implementing a permissive/protective phase for the northbound improves the 95th percentile queue length to a projected length of approximately 37 meters. Given that the storage lane is currently approximately 35 meters, it is possible that an extension of this storage lane may be require if TOD targets are not met.

5. SUMMARY OF FINDINGS

Proposed Development

- The proposed development is located at 1098 Ogilvie Road
- The site is currently a vacant lot
- The proposed development will consist of two phases. Phase 1 consists of a residential and hotel towers expected to have occupancy by 2022. Phase 2 consists of two additional residential towers expected to have occupancy by 2024
- The proposed development will consist of the following:
 - Tower 3 (Phase 1): 36-storey building with 283 units
 - Hotel Tower (Phase 1): 8-storeys building with 175 hotel rooms
 - Tower 1 & 2 (Phase 2): 25 and 27-storeys buildings respectively with 566 units
- Full buildout will consist of 849 units and 175 hotel rooms

Existing Conditions

- Overall, all intersections operate at LoS 'C' or better with the exception of Ogilvie/Aviation which operates at LoS 'F' in the AM
- The critical movements all operate at LoS 'D' or better with the exception of westbound left-turn movement at the St. Laurent/Ogilvie intersection, eastbound and northbound left-turn movements at the Ogilvie/Aviation intersection during the morning peak hour, westbound left-turn movement at Ogilvie/Cyrville for both peak hours and the eastbound through movement at the Ogilvie/Cummings intersection during the afternoon peak hour

Background Conditions

- A 1% annual growth rate was applied to study area intersections on the through movements

Trip Generation and Parking

- At interim buildout (2022) which includes Towers 3 and the Hotel Tower, the proposed development was expected to generate approximately 60 vehicle trips in the weekday morning and afternoon peak hours respectively based on TRANS mode shares for residential and ITE for the hotel.
- At ultimate buildout (2024), the proposed development was expected to generate approximately 150 and 130 vehicle trips during the weekday morning and afternoon periods, respectively (assuming TOD targets are met).
- The subject development is proposing 874 parking spaces, with 60 of the spaces being designated visitor parking. This equates to a rate of 0.79 spaces per residential dwelling (if hotel rooms treated as a unit each) and 0.85 combined residential, hotel and visitor parking rate; the development meets both minimum parking requirements and would be well below the maximum allowed parking rate of 1.75 spaces per dwelling.
- The subject development will provide a total of 437 bicycle parking spaces located indoors on ground level, which meets City requirements.

Projected Conditions

- Most intersections in the future operate better than existing conditions despite growing volumes from background and site generated traffic due to a peak factor of 0.9 used in existing and 1.0 used in future analysis as required by TIA Guidelines
- Future Projected 2029 conditions operate similarly to 2029 background operations, indicating that most of the traffic and congestion added to the network comes from background volume growth.
- All the intersections within the subject area are projected to operate 'as a whole' at acceptable LoS 'D' or better during the AM and PM peak hours with the exception of Ogilvie/Aviation in AM peak. The majority of the 'critical movements' at study area intersections are projected to operate at acceptable LoS 'D' or better during both peak hours with the exception of St.Laurent/Ogilvie and Ogilvie/Cyrville which are expected to operate at LoS 'E' in both peaks and Ogilvie/Aviation which is projected to operate at LoS 'F' in the AM peak. These results may be considered conservative as they were based on pre-LRT background traffic volumes and assumes a larger share of auto drivers
- It is anticipated that even if TOD targets are not met, all intersections "as a whole" will operate at a LOS 'E' or better
- The Ogilvie/Cummings northbound left-turn is projected to approach storage lane capacity. An addition of a permissive/protected phase for the northbound movement would reduce the 95th percentile queue length and should provide sufficient storage capacity as to not spillover into other lanes. If TOD targets are not met, an extension of the storage lane may be required.
- An auxiliary left-turn lane on Cummings at the site driveway is not warranted based on the analysis; However, should more traffic enter the site from the south resulting in northbound left-turn volumes greater than 20 veh/h, an auxiliary lane should be provided.
- The MMLOS road segment analysis shows that none of the road segments would meet minimum targets for pedestrians due to high operating speeds, high vehicle volumes and a lack of on road parking. The proposed sidewalk on the west side of Cummings Avenue does not meet targets due to high vehicle volume, despite having a large boulevard separation of over 2 meters. Considering that both boundary roads are arterials, it is unlikely that any of the triggers could be mitigated without causing major vehicle delays. Cyclist BLoS, Transit TLoS and Truck TkLoS targets were met on all road segments
- The proposed sidewalk on the west side of Cummings Road improves PLoS from 'F' to 'B' along the site frontage and PLoS 'C' north of the property line due to the elimination of a boulevard within the reduced right of way. The proposed sidewalk would connect to a recently built City sidewalk to the south, that extends from Cyrville Road.

Transit

- Site-generated transit trips at interim (2022) buildout was approximately 260 and 245 during the weekday morning and afternoon peak hour, respectively
- Site-generated transit trips at full buildout (2024) was approximately 635 and 555 during the weekday morning and afternoon peak hour, respectively
- The estimated transit trips could be accommodated by the Confederation LRT Line which is projected to operate with a capacity of 600 passengers per train and 12 trains per hour per direction during peak hours

- The developer is proposing to include a bus pad for OC Transpo stop #1769 as part of the proposed sidewalk on the west side of Cummings Avenue

Site Access, Circulation and Connectivity

- The proposed development will be accessed via two driveways to the arterial road network. The first driveway consists of a right-in/right-out access located approximately 130 meters west of Ogilvie/Cummings intersection on Ogilvie Road. The second driveway consists of a full movement, three-legged intersection with STOP control on the minor leg, located approximately 120 meters south of Ogilvie/Cummings intersection on Cummings Avenue
- No off-site roadway or intersection modifications are required to support the development apart from a sidewalk on the west side of Cummings Avenue along the site's frontage
- If TOD targets are not met:
 - Northbound left-turn lane of minimum storage should be considered on Cummings at the site driveway.
 - It is noteworthy that the City has indicated that the site access may need to be restricted to right-in/right-out access if congestion of Cummings is persistent, although this treatment is not recommended based on the analyses herein; and
 - The Ogilvie/Cummings northbound left storage lane would exceed capacity assuming the existing permissive phase. A combination of adding a permissive/protected phase and/or extend storage length from existing 35m to 50m would suffice.
- The proposed Site Plan is considered supportive of pedestrian connectivity by providing a network of internal pathways that connect all towers to Ogilvie Road and Cummings Avenue as well as future connectivity to a proposed public park at the south end of the development.

Based on the foregoing, the proposed Site Plan for Lux Place Towers 1 to 3 and the Hotel, all located at 1098 Ogilvie, is recommended from a transportation perspective.

Prepared By:

Reviewed By:

Juan Lavin, E.I.T.

Mark Baker, P.Eng.
Senior Transportation Engineer

Appendix A

City Comments

3 June 2020

City of Ottawa
Development Review Services
110 Laurier Avenue West
Ottawa, ON K1P 1J1

**Re: 1098 Ogilvie Road – Lux Place
TIA Report (Step 4) – Comment and Response Form**

The following response form has been prepared to address City of Ottawa comments received on March 24th, 2020 related to the TIA Report dated September 24th, 2019. City comments are noted in black text, with the corresponding responses from Parsons provided in blue text.

TRANSPORTATION ENGINEERING SERVICES

Section 4.1 Development Design and Section 4.3 Boundary Street Design:

Note that the City's sidewalk project (a sidewalk on the west side of Cummings Avenue from Cyrville Road to the southern boundary of subject site) began construction in the fall of 2019 and is expected to be completed in 2020 (refer to the attached sidewalk plan). The project left a boulevard space in between the sidewalk and the road for the future provision of a southbound cycle track. The City project's functional design will be provided under a separate email.

The proposed sidewalk as shown on the west side of Cummings Avenue is not to City standards. The sidewalk design must include the following:

- 2.0m wide sidewalk;
- 8.0m pavement width for vehicle travel (while Cummings Avenue is an arterial road, guidance can be found in the City of Ottawa's Designing Neighborhood Collector Streets (2019) document, which recommends an 8.0m pavement width for a road with no on-street parking); and
- An absolute minimum boulevard width of 2.0m to achieve the target PLOS of 'A' and to accommodate a future southbound cycle track, with a preferred minimum boulevard width of 3.4m to (in the future) accommodate 0.2m of tactile delineation, a 2.0m-wide southbound cycle track, and a 1.2m buffer.

Please consider placing the sidewalk on the west side of the utility poles to provide adequate boulevard width for all future facilities. **Noted. The concept design has been modified to place the sidewalk on the west side of utility poles.**

The developer should strongly consider providing the approximately 35m-long section of additional sidewalk on the west side of Cummings Avenue alongside 1043 Cyrville Road (the Hydro transmission corridor) to connect the proposed development to the Ogilvie Road and Cummings Avenue intersection. This supports the development's ambitious 65% transit mode target by connecting residents and hotel guests to local transit Route 24 on Ogilvie Road (Route 24 no longer utilises Cummings Avenue). The provision of additional sidewalk in addition to the development's immediate frontage is consistent with Section 4.1 of the Ottawa Pedestrian Plan, in which one of the guiding principles for expanding the pedestrian network is to "create no new deficiencies"; as well as Ottawa's Official Plan (Section 4.3, Policy 15), which requires that new plans of subdivision and other developments link to the existing or planned network of public sidewalks. Note that the boulevard requirements (as discussed above) may be reduced alongside 1043 Cyrville Road if constrained by limited road ROW. **Noted. The concept design has been modified to demonstrate the feasibility of extending the sidewalk north to Cyrville Road.**

Please ensure all proposed sidewalks associated with the development are shown on the development's site plan and landscape plan. **Noted. The Architect has been advised.**

A Roadway Modification Agreement (RMA) will be required for the works alongside Cummings Avenue. **Noted. The RMA package will be provided for SPA submittal.**

Access Intersection Design:

There is no reason to continue the Ogilvie Road private access road's sidewalk all the way to the edge of Ogilvie Road's vehicle lanes. This sidewalk should be truncated at Ogilvie Road's existing south sidewalk. [Noted. The Architect has been advised.](#)

Please examine/discuss whether auxiliary turn lanes for the site driveways are required if the TOD mode share targets are not met. [The updated analysis in Section 4.4 of the report indicate that auxiliary turn lanes on Cummings at the site driveway are not required, even if TOD targets are not met.](#)

Section 4.2 Parking Supply:

Please correct Table 17. There is no requirement for residential parking in a TOD zone, and no more than 30 visitor parking spaces are required per building. [The parking numbers have been updated in Section 4.2.](#)

Explain the allocation/distribution of the 1,012 proposed parking spaces for the hotel, residential, and visitor uses. If only 32 spaces are provided for the hotel use, there may be internal spillover parking into the visitor or residential spaces. [This discussion has been included in Section 4.2.1.](#)

Section 4.5 Transportation Demand Management:

Provide the TDM checklists for the hotel component of the development. [The TDM checklist for the hotel use has been included in Appendix K.](#)

Please correct Section 4.5 and the provided TDM Checklist by providing more definitive language on proposed TDM measures. The checklist should only contain measures that will be implemented, as they will be included as conditions of the site plan agreement. [Noted. Section 4.5 has been updated, and comments added to subsections within Appendix K for further explanation.](#)

Items 1.2.5 (required) and 1.2.6 of the TDM-Supportive Development Design and Infrastructure Checklist should not be checked in this submission. They may be checked once the Cummings Avenue sidewalk connection to Ogilvie Road is proposed to be provided by the development. [Noted.](#)

Additional justification is required to check Item 6.1.2 of the TDM-Supportive Development Design and Infrastructure Checklist, as the proposed long-term parking supply does not seem consistent with mode share targets. [Noted. Justification has been added within Appendix K, and parking further discussed in Section 4.2.](#)

Explain why Item 6.1.3 of the TDM-Supportive Development Design and Infrastructure Checklist is checked. Is residential parking shared with the hotel? [Residential visitor parking shared with hotel guest parking.](#)

The TDM measures provided may not be sufficient to achieve a 65% transit mode share. Monitoring of mode share achievement one-year post-occupancy is recommended through the on-site coordinator. For related assistance, the City's TDM officer can be reached at travelwise@ottawa.ca. [Noted. The coordinates of the City's TDM officer have been provided to the developer.](#)

Section 4.7 Intersection Design:

Consider implementing intersection improvements to improve MMLOS PETSI scores. As per the Cyrville TOD Plan, Section 10.5.2: "Key pedestrian crossing points of roadways are highlighted by red circles on the plan. These locations require special design consideration to ensure safe and expedient crossing movements for pedestrians. These include wider and textured crossing routes, signalization and consideration of longer walk signal times." [Noted. Reference to the Cyrville TOD Plan have been included and discussed in Section 4.8.1.](#)

TRAFFIC SIGNAL OPERATIONS

Please consider the following comments that were provided in response to previous development application submissions for this area of Cyrville. They remain relevant today.

- If the proposed full-movement access on Cummings Avenue develops a collision pattern or interferes with traffic signal operations (at the intersection of Ogilvie Road and Cummings Avenue), then conversion to RIRO may be required. [Noted](#)

- Northbound left-turn storage at Ogilvie Road and Cummings Avenue may be inadequate if the TOD modal share is not achieved. This, again, may have impacts on the proposed site access on Cummings Avenue. Existing storage of approximately 35m, and approximately 50m storage would be required if TOD targets not met. This extended storage length would not be in the influence area of the proposed site access on Cummings.
- If the TOD modal share is not achieved, delays entering and exiting the site at Cummings Avenue may become excessive during peak hours. Delays of up to 22 seconds projected if TOD targets not met (LoS 'C'), which are considered acceptable.
- Traffic signal timing will not be an effective mitigation tool in alleviating congestion or delay if the TOD mode share is not achieved. **Noted**

TRANSIT SERVICES

Please note that the Transit network information and map are out of date. Please update them accordingly. **Noted.** Figure 3 and associated text has been updated.

Please relocate the proposed bus pad roughly 10 metres south, so that the bus can stop along a straight curb and that all doors are alongside the sidewalk. **Noted.** Sidewalk has been relocated 10m south. See concept drawing in Appendix G.

OC Transpo has been working with Planning, Infrastructure and Economic Development staff to include the purchase of pre-loaded Presto cards with ePurse for future residents of condo developments in proximity of LRT service. A similar arrangement is currently being implemented via draft conditions for the development situated at 1960 Scott Street. A similar comment has been included for the site at 90 Champlain Street and 208-212 Slater Street. Discussions are still being held to clarify official policy, but it is expected that developers shall purchase a Presto card for each future owner/tenant of 1178 Cummings Avenue/1098 Ogilvie Road. The Presto cards will be preloaded with a certain amount of money in ePurse format and will require a \$6 activation fee. **Noted.**

Strategy comments are below:

Transportation Engineering Services

Will the future park south of the development have access to Cyrville Road? If not, given the unknown timing of the widening and urbanization of Cummings Avenue, the applicant should consider constructing a sidewalk/MUP as an interim measure along the frontage of the site on Cummings Avenue to provide a more desirable walking/cycling link to Cyrville Road / Cyrville Station. **Appendix G includes both a functional sketch of the proposed 2-meter wide sidewalk connecting the site to Cyrville Road and a surface concept plan that shows the proposed internal pathways and park south of the development.**

Please fill out the TDM-supportive Development Design and Infrastructure Checklist for residential and non-residential developments, as well as the TDM Measures checklist for non-residential developments. Please describe the implementation plans for all measures, as required. **Appropriate TDM checklists have been included in Appendix J.**

Please provide turning templates for municipal services within the development. **Turning templates included in Appendix I**

There are no minimum parking requirements for developments within 600 m of rapid transit, except for visitor parking. If visitor parking will be inaccessible to hotel guests, consider spillover parking potential for the hotel tower. Please provide the location of surface parking and the access points/grade of the underground garage. **There is no surface parking proposed. Hotel guests will have access to underground visitor parking spots. The development is expected to meet all parking demands for residential, visitors and hotel.**

If the minimum bicycle parking requirements will not be met, a variance will need to be submitted for the City's approval. Given the large amount of required bicycle parking, please provide the locations and ensure that they are conveniently located to support its usage. **Site plan has been updated and now meets bylaw requirements. Bicycle parking is proposed on the first floor located indoors (436 spots) and outdoors near the building entrance (9).**

Segment BLOS is E on Cummings Avenue due to bicycle travel in mixed traffic. Consider measures to improve BLOS. PLOS is E along Ogilvie Road, operating speed is 70 km/h. Please include Transit Level of Service and Truck Level of Service for all MMLOS analyses. **Noted, MMLOS updated and measures discussed in section 4.3.**

Given the number of pedestrian and cyclist collisions at Ogilvie Road / Cummings Avenue and the high number of proposed transit users needing to cross this intersection to reach Cyrville Station, please consider some measures to improve safety. **It is not anticipated that pedestrians or cyclists will cross Ogilvie/Cummings to get to Cyrville Station. The majority of non-motorized person trips are anticipated to head south on the proposed sidewalk on Cummings Avenue to Cyrville, where they will continue east on Cyrville Road to the Cyrville LRT Station.**

Please include access design parameters such as access width, clear throat, access grade, location of any parking gates, etc. for both accesses. **Report updated to include.**

MMLOS should be completed for all signalized intersections in the study area, but particularly for those that vulnerable road users could use to reach Cyrville Station. **MMLOS updated to include intersections with vulnerable roads users headed to Cyrville Station.**

Traffic Signal Operations

In the event that the proposed full movement access on Cummings Avenue develops a collision pattern or interferes with traffic signal operations (at the intersection of Ogilvie Road and Cummings Avenue), conversion to RIRO may be required.

NBL turn storage at Ogilvie Road and Cummings Avenue may be inadequate if TOD modal share is not achieved. This again may have impacts on proposed site access on Cummings Avenue.

If TOD modal share is not achieved, delays entering and exiting the site at Cummings Avenue may become excessive during peak hours.

Traffic signal timing will not be an effective mitigation tool in alleviating congestion or delay if TOD mode share is not achieved.

Noted

Traffic Signal Design

No comments to this TIA for this circulation. Traffic Signal Design and Specification Unit reserves the right to make future comments based on subsequent submissions.

Future considerations:

If there are any future proposed changes in the existing roadway geometry for the purpose of construction of a new TCS(s) or modifications to existing TCS(s) i.e. Cummings Avenue / Ogilvie Road, Ogilvie Road / Cyrville Road, the City of Ottawa Traffic Signal Design and Specification Unit is required to complete a review for traffic signal plant re-design and provide the actual re-design.

Further advice will come with subsequent submission(s). **Noted, will advise if new roadway geometry changes are proposed.**

Street Lighting

No comments with TIA for this circulation. Street Lighting reserves the right to make future comments based on subsequent submissions.

Future considerations may include as follows:

If there are any proposed changes to the existing roadway geometry, or changes to City of Ottawa traffic plant, the City of Ottawa Street Light Asset Management Group is required to provide a full review and possibly a street light design. **Noted, will advise if new roadway geometry changes are proposed.**

Transit Services

OC Transpo has been working with PIED to include the purchase of pre-loaded Presto cards with ePurse for future residents of condo developments in proximity of LRT service. A similar arrangement is currently being implemented via draft conditions for the project situated on 1960 Scott Street. A similar comment has been produced for the site of 90 Champlain Street and 208-212 Slater Street. Discussions are still being held to clarify official policy, but it is expected that developers shall purchase a Presto card for each future owner/tenant of 1098 Ogilvie Road. The Presto cards will be preloaded with a certain amount of money in ePurse format and will require a 6\$ activation fee.

Because of the proximity to rapid transit at Cyrville and St-Laurent Stations, the developer should reduce the number of vehicle parking spaces. OC Transpo recommends a rate of 0.5 spaces per unit for this development.

Bicycle parking should be increased to meet minimum requirements as there are cycling lanes on Ogilvie Road and Cyrville Road, and as stated in this TIA, anticipated improvements on Cummings Avenue may also include cycling facilities. These adjustments would support the future mode share goals outlined in the TIA.

Noted, additional bicycle parking has been included to meet bylaw.

Appendix B

Screening Form

City of Ottawa 2017 TIA Guidelines

Date

5/6/2018

TIA Screening Form

Project

1098 Ogilvie TIA

Project Number

476751-01000

Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	Yes
Development Satisfies the Safety Trigger	Yes

Module 1.1 - Description of Proposed Development

Municipal Address	1098 Ogilvie Road
Description of location	Southwest corner of the Cummings/Ogilvie intersection
Land Use	Residential
Development Size	Four residential towers (20 storeys and 250 units per tower)
Number of Accesses and Locations	Three proposed accesses: one right-in/right-out driveway on Ogilvie Road, one right-in/right-out driveway on Cummings Avenue and one full movement access on Cummings Avenue.
Development Phasing	Phase 1 - Towers 1 & 2, Amenity Area Phase 2 - Towers 3 & 4
Buildout Year	Phase 1 - Assumed 2020 Phase 2 - Assumed 2022
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger

Land Use Type	Townhomes or Apartments
Development Size	1000 Units
Trip Generation Trigger Met?	Yes

Module 1.3 - Location Triggers

Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	Yes
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	Yes
Location Trigger Met?	Yes

Module 1.4 - Safety Triggers

Posted Speed Limit on any boundary road	<80 km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No
A proposed driveway is 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) or within auxiliary lanes of an intersection;	Yes
A proposed driveway makes use of an existing median break that serves an existing site	No
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	Yes
The development includes a drive-thru facility	No
Safety Trigger Met?	Yes



Appendix C

Traffic Counts



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

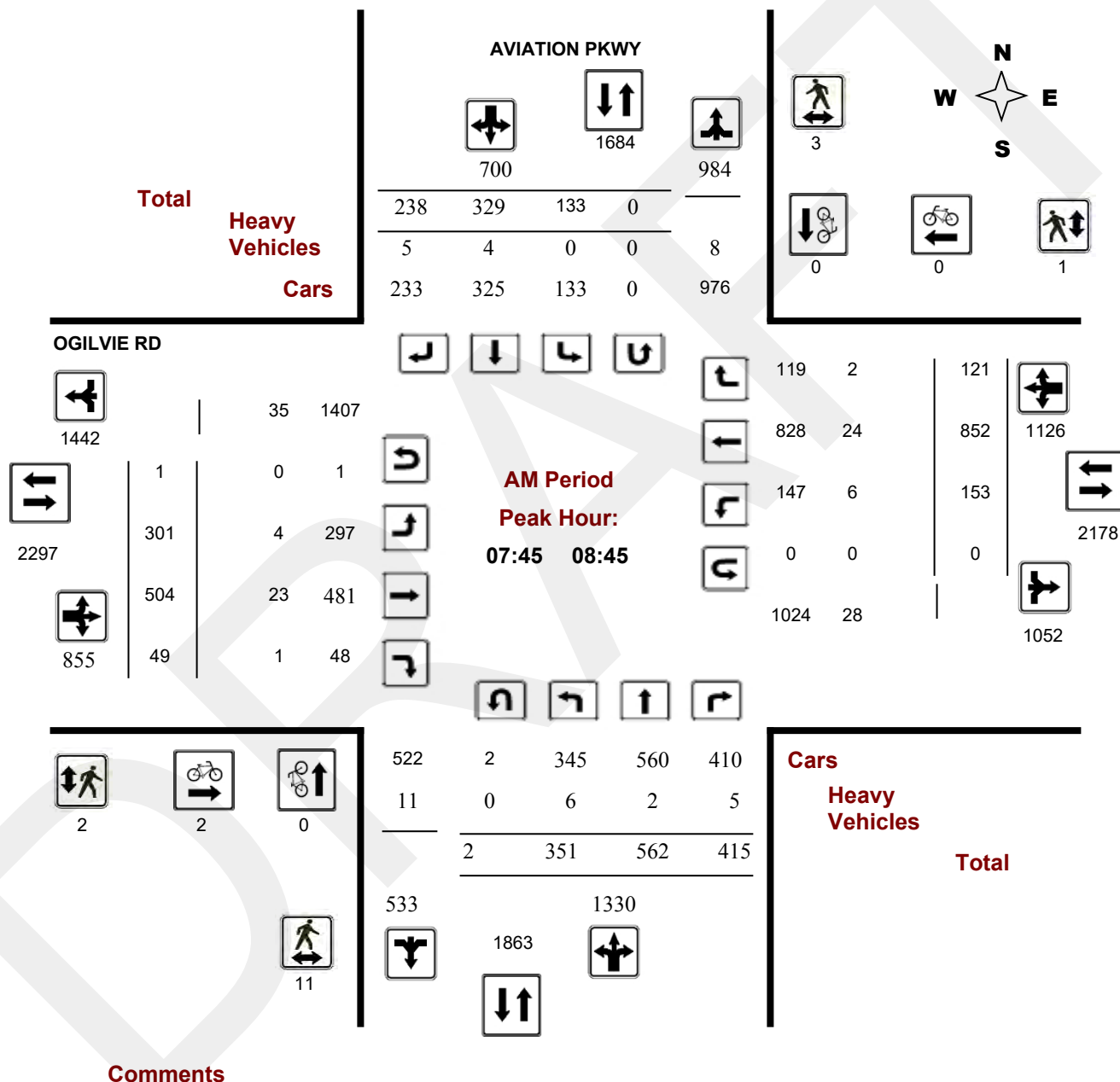
AVIATION PKWY @ OGILVIE RD

Survey Date: Thursday, January 25, 2018

Start Time: 07:00

WO No: 37443

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

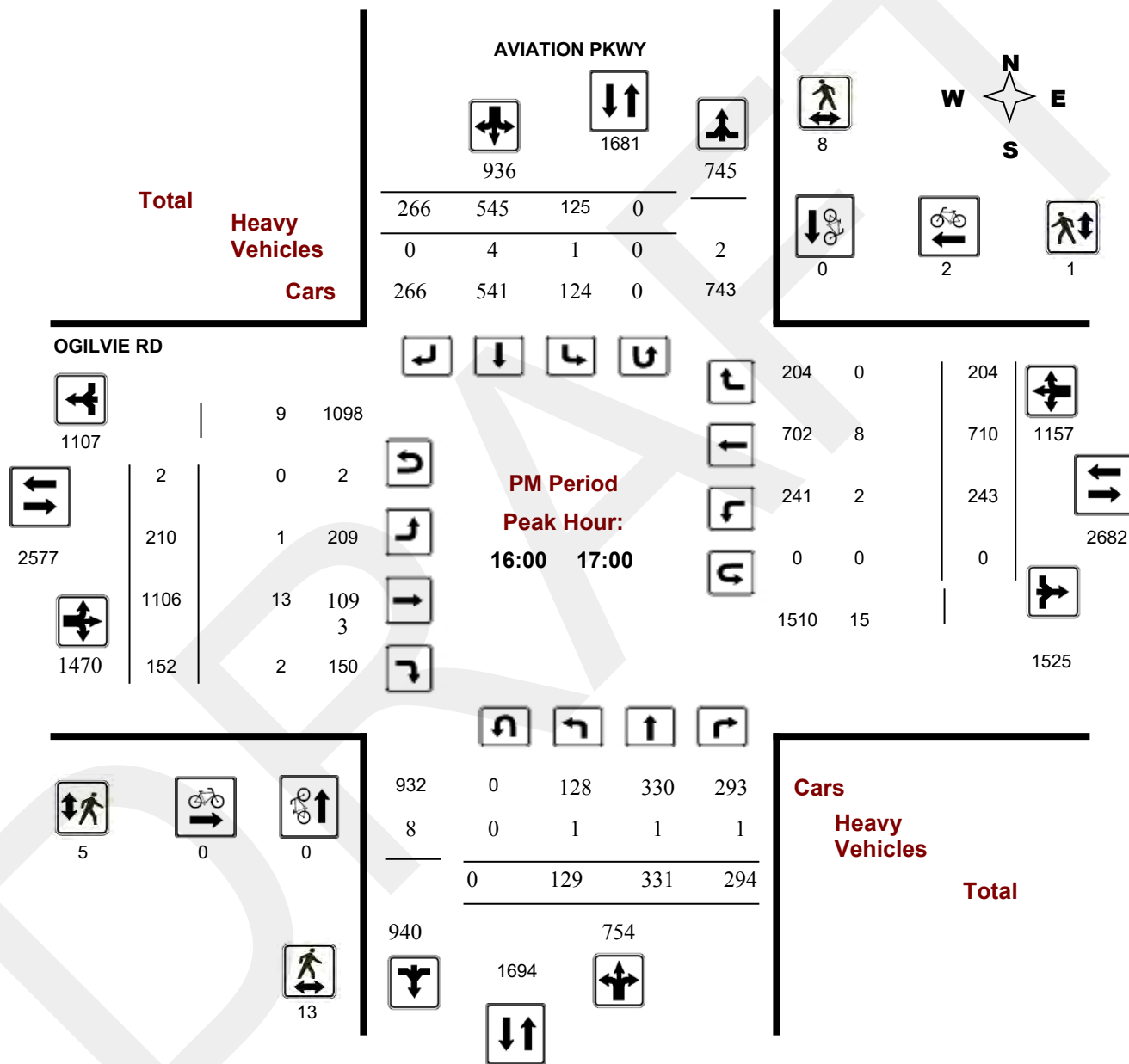
AVIATION PKWY @ OGILVIE RD

Survey Date: Thursday, January 25, 2018

Start Time: 07:00

WO No: 37443

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

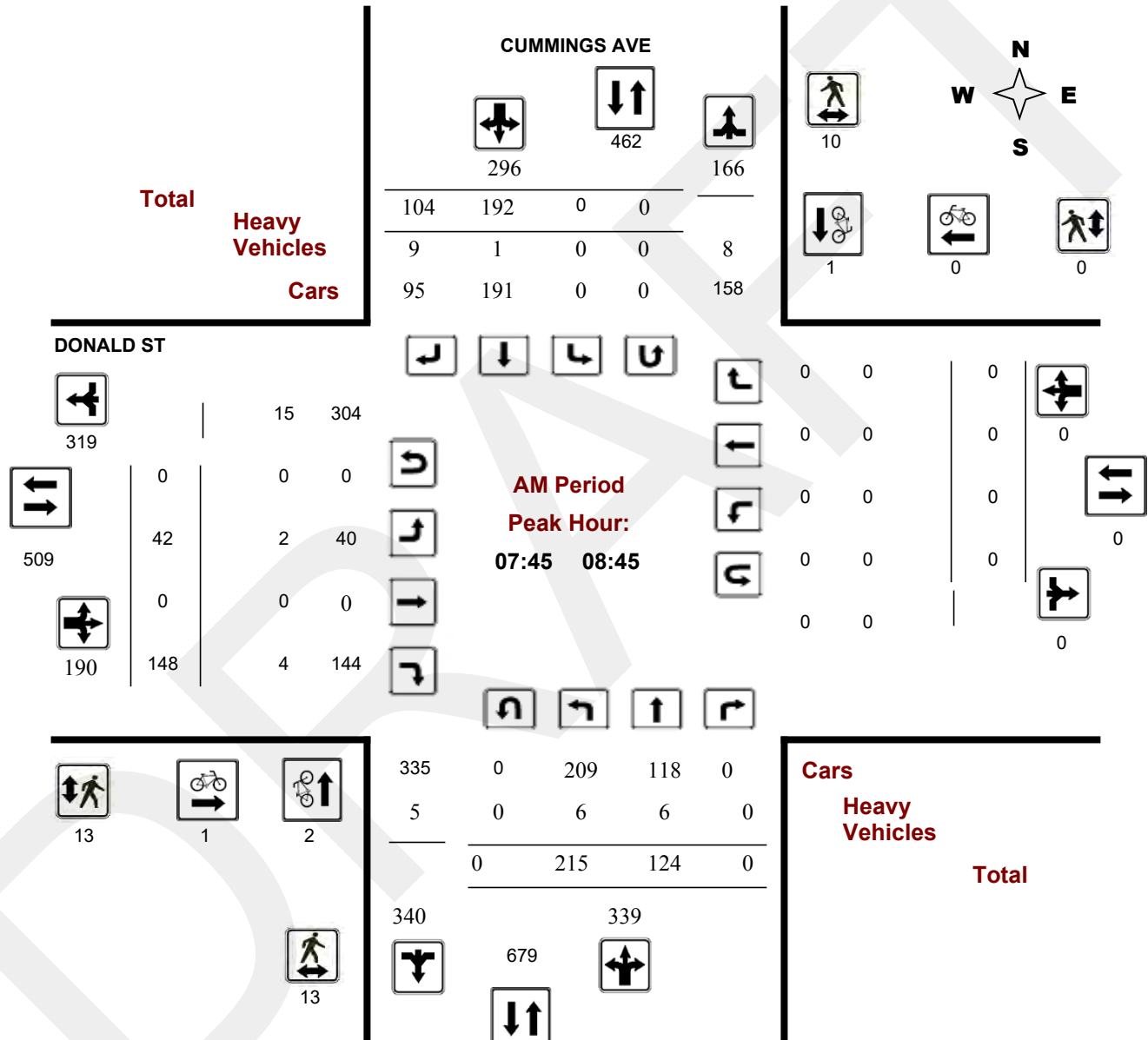
CUMMINGS AVE @ DONALD ST

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37720

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

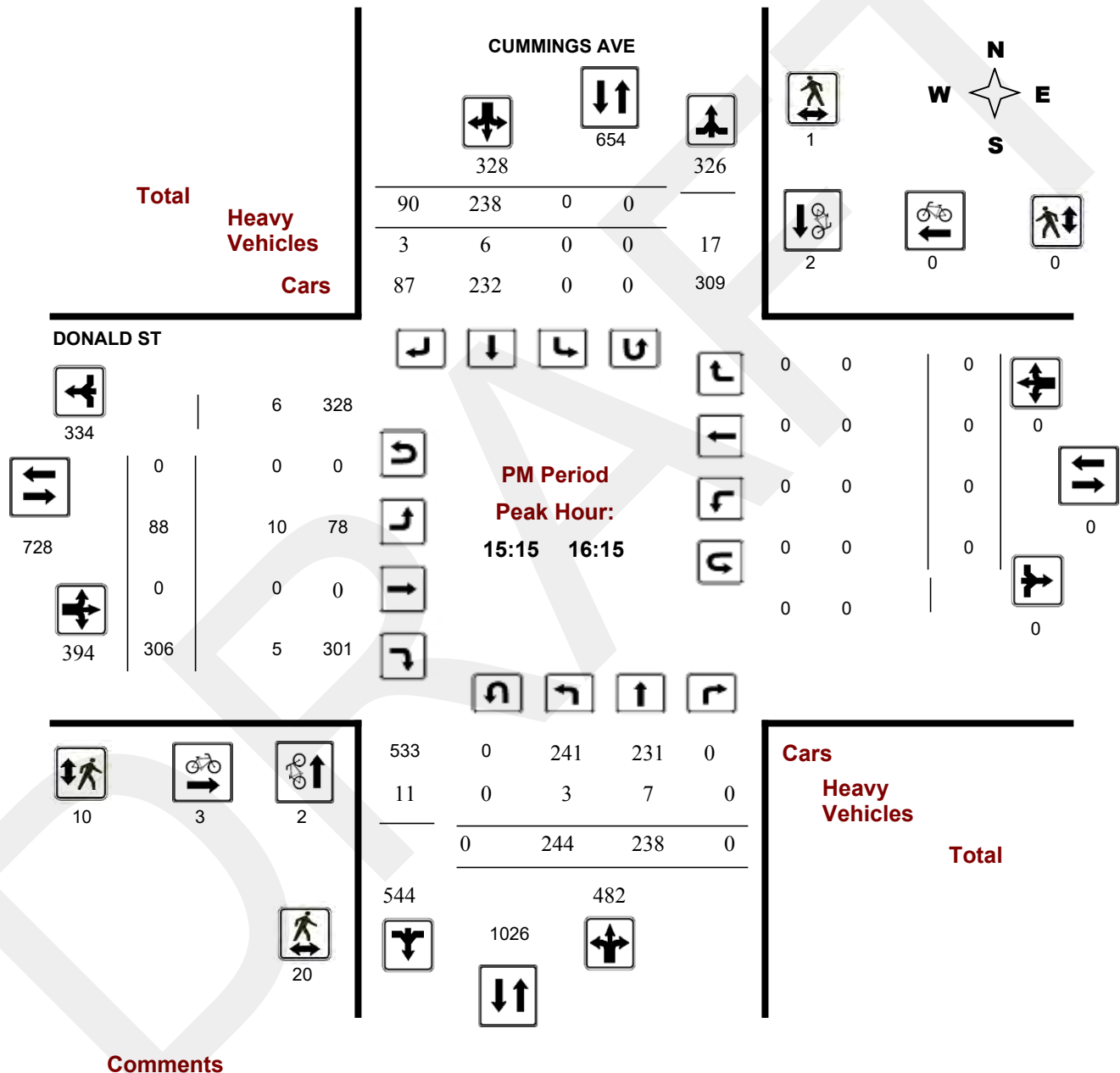
CUMMINGS AVE @ DONALD ST

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37720

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

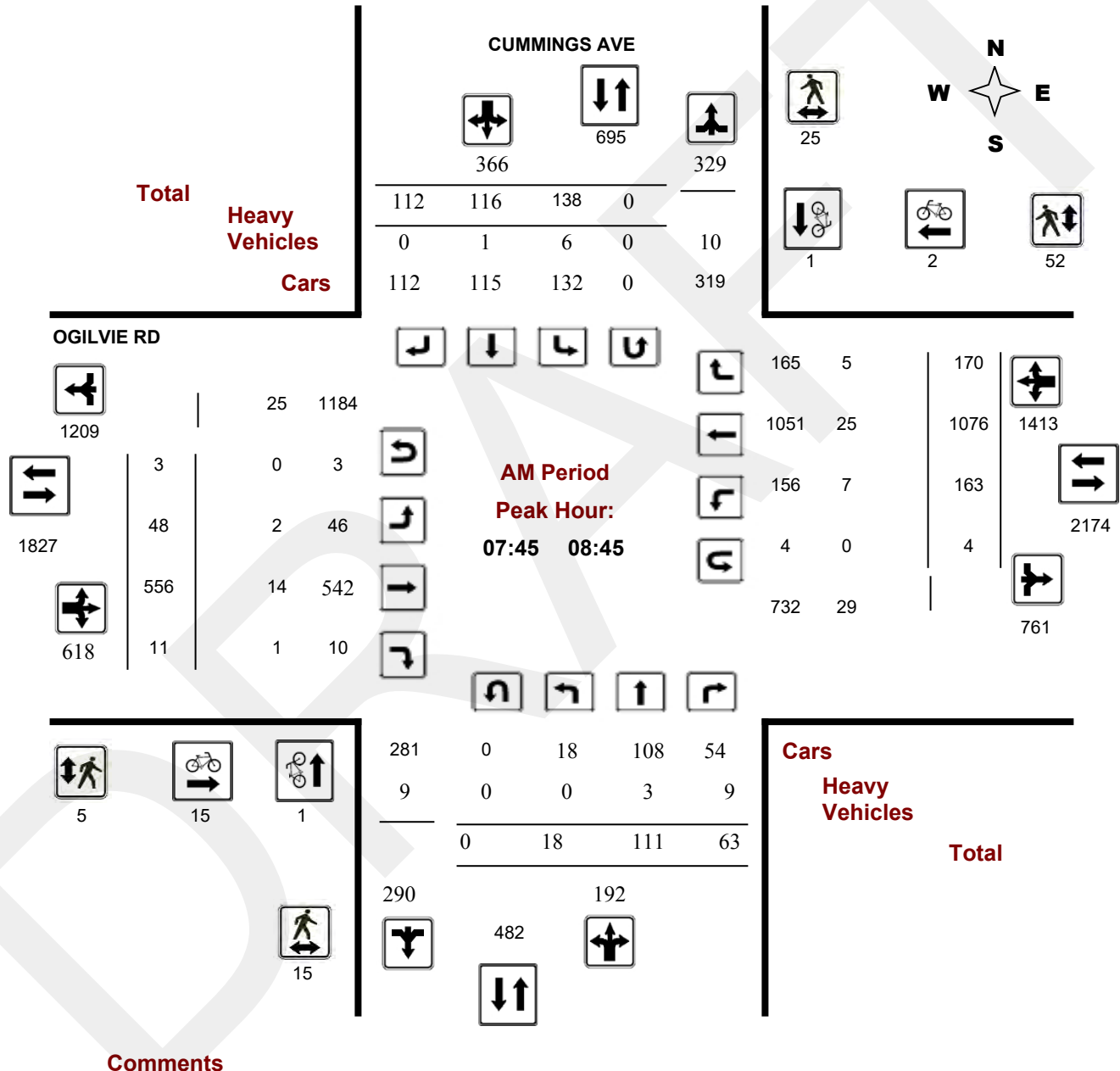
CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37738

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

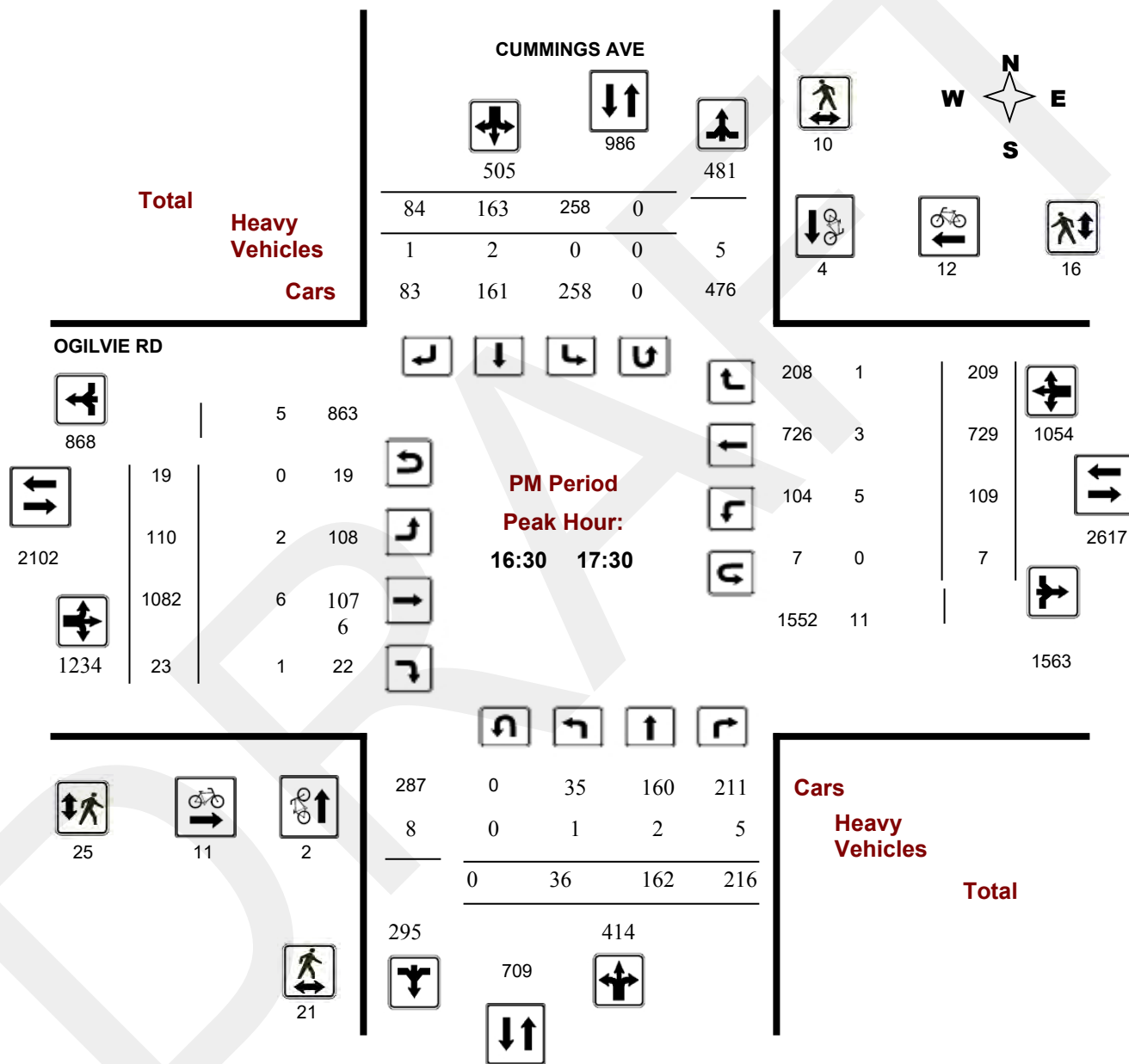
CUMMINGS AVE @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37738

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

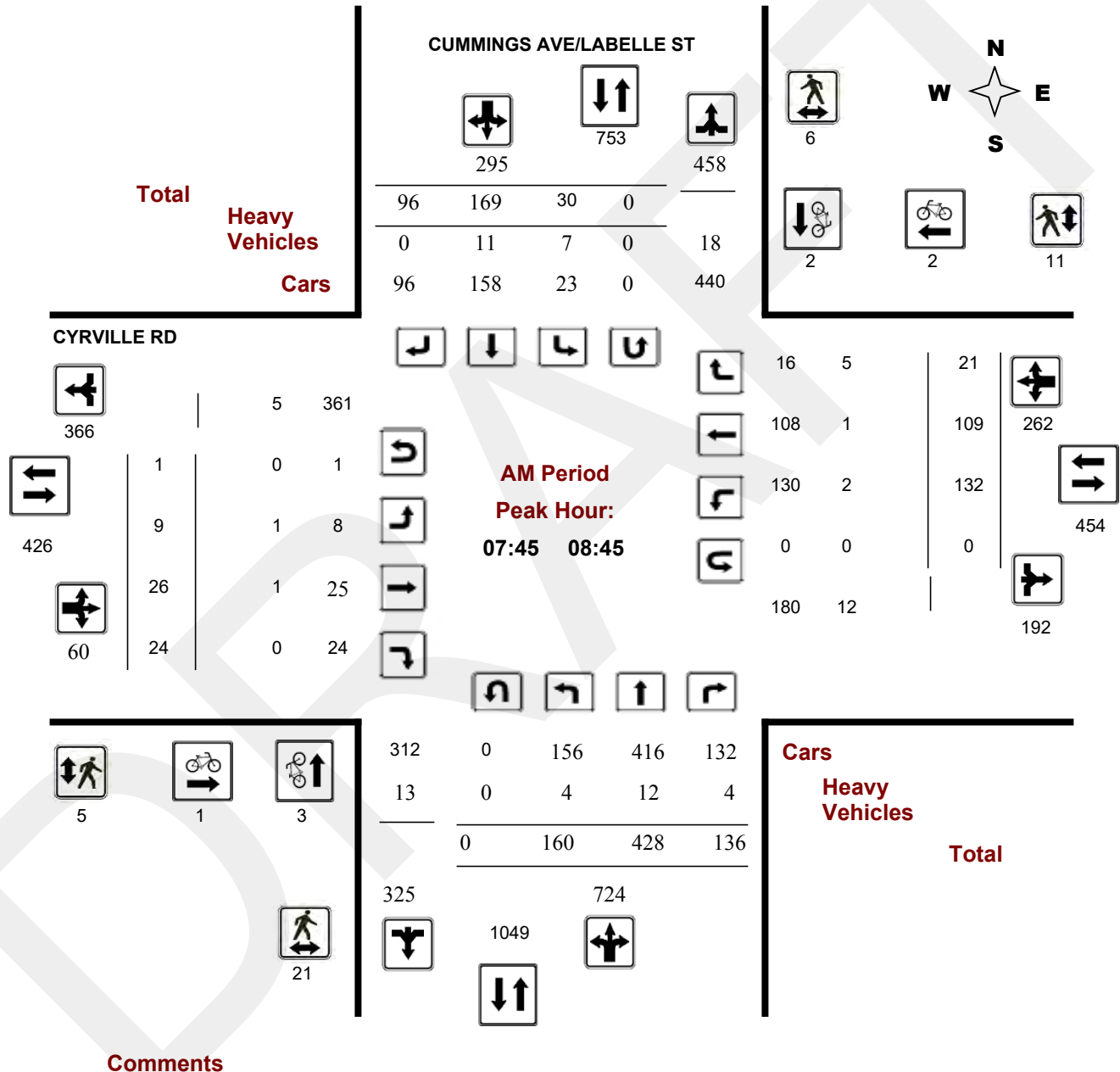
CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37718

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

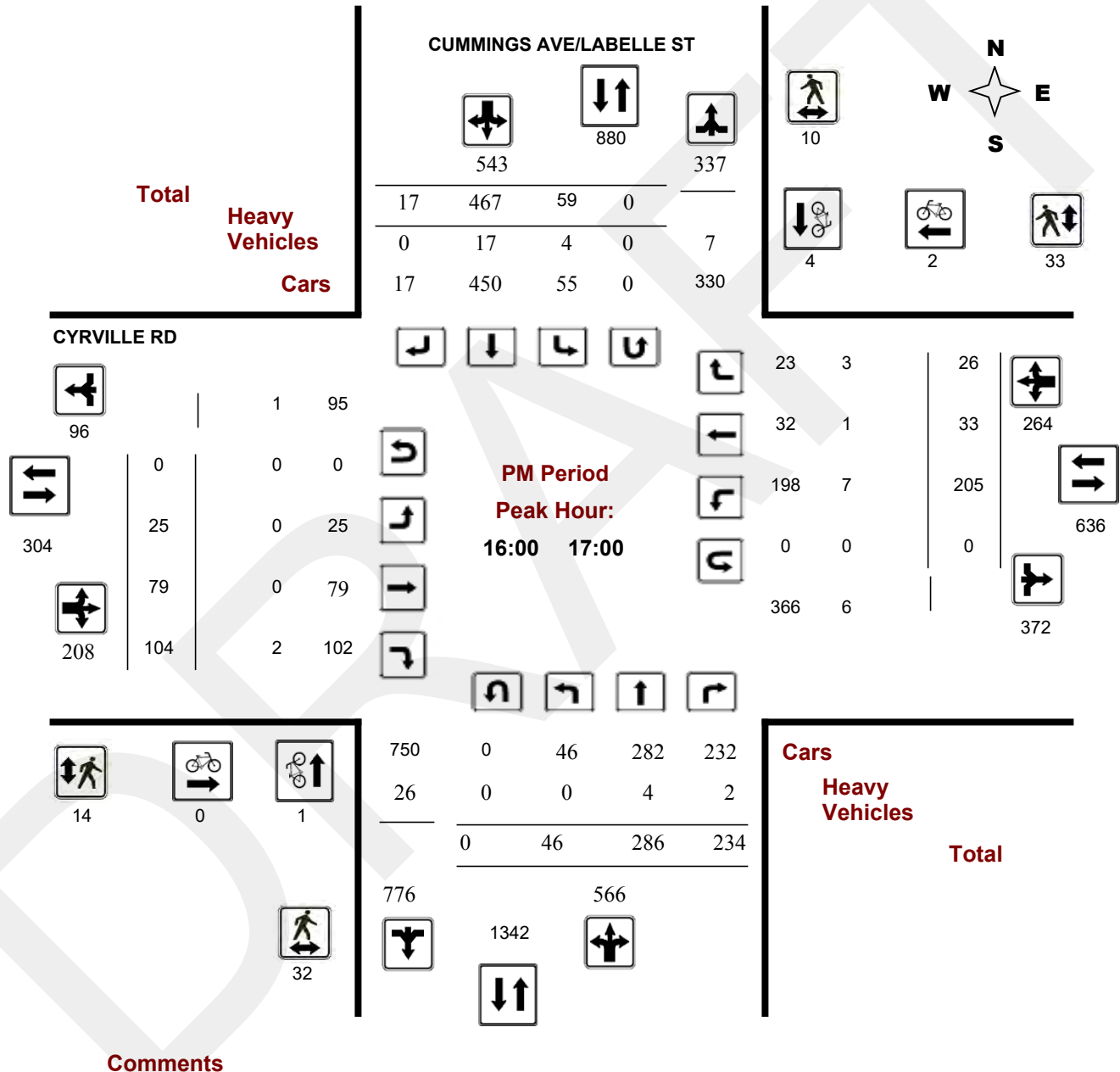
CUMMINGS AVE/LABELLE ST @ CYRVILLE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37718

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

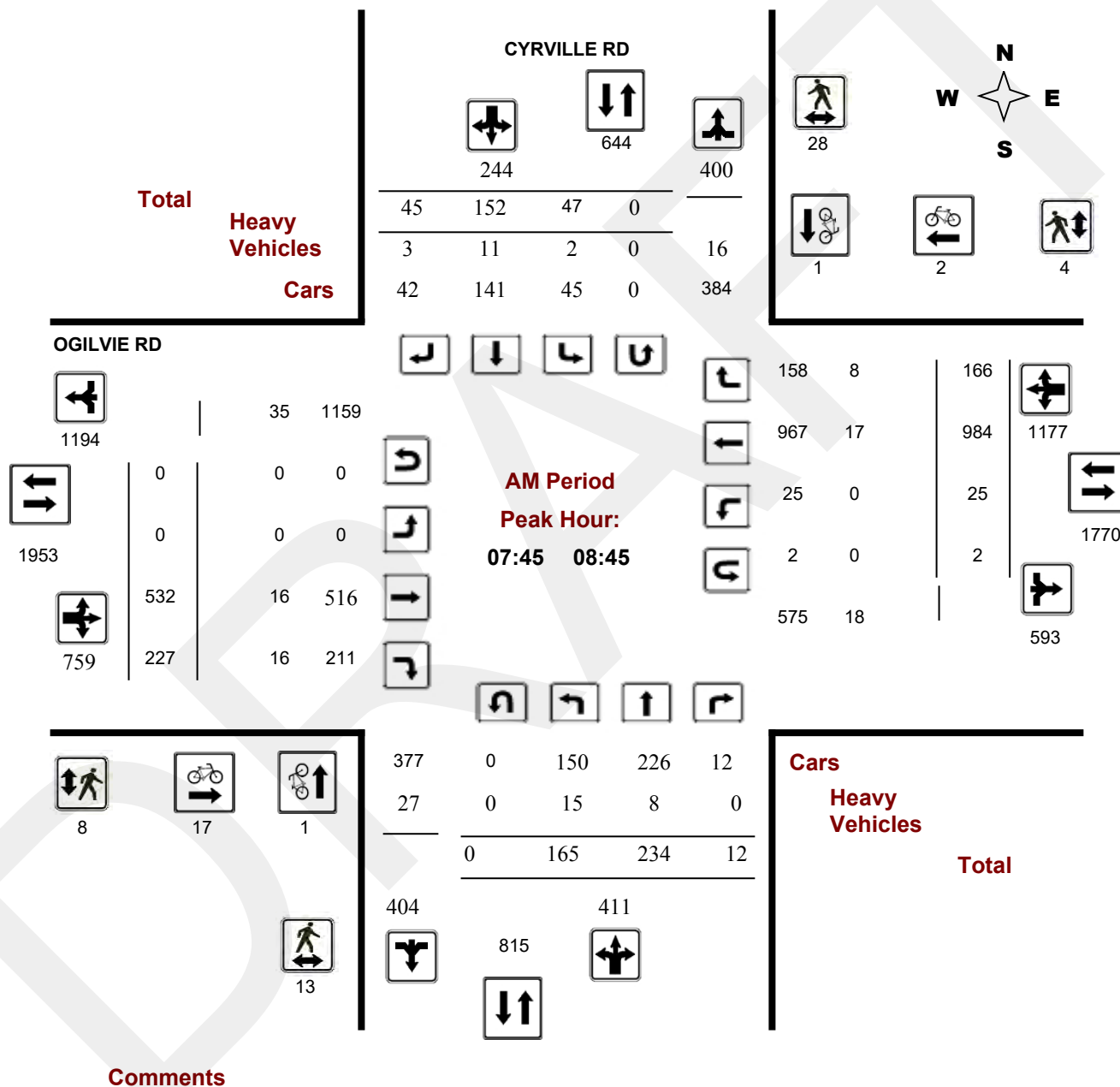
CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37723

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

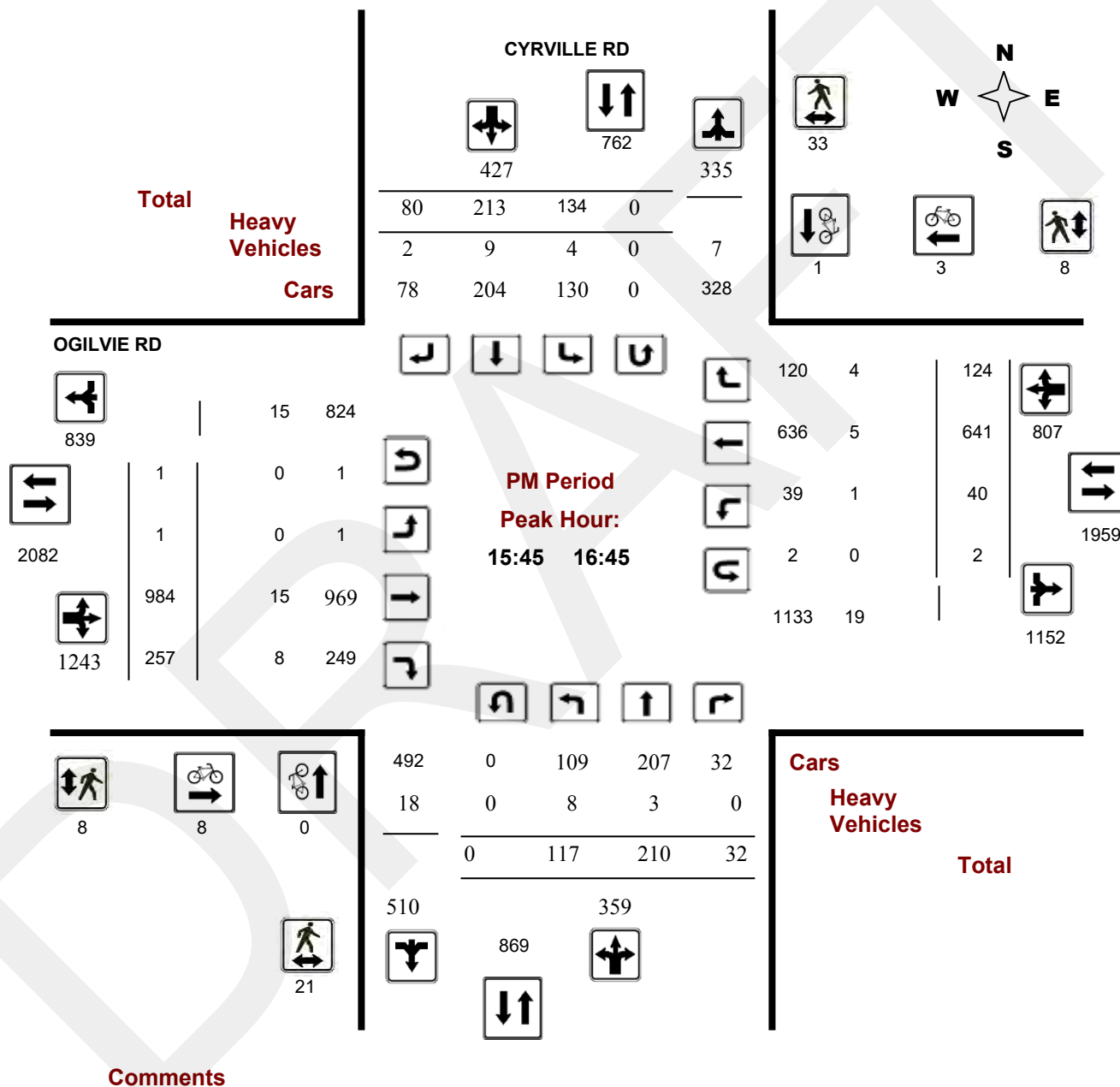
CYRVILLE RD @ OGILVIE RD

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37723

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

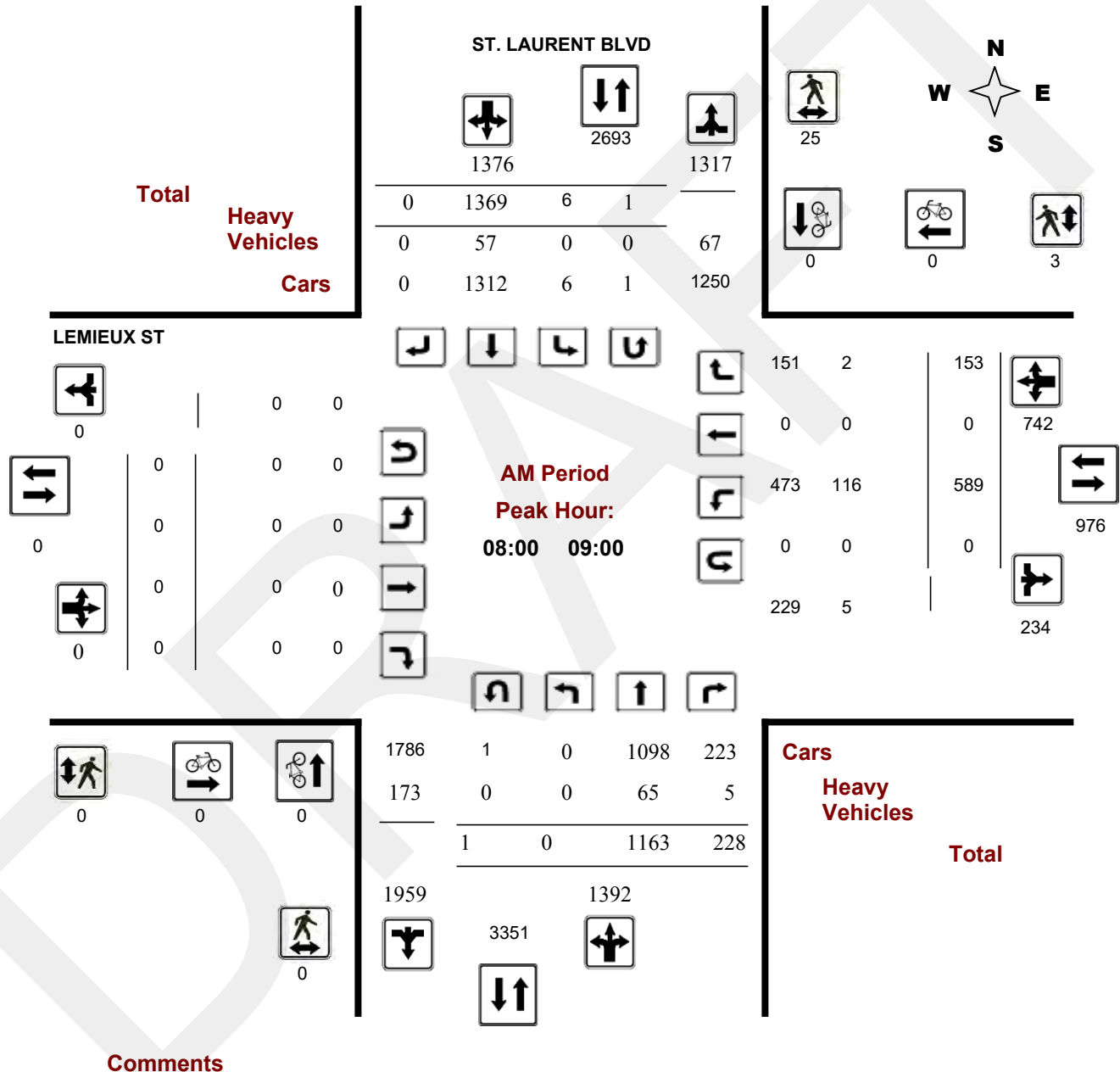
LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018

Start Time: 07:00

WO No: 37620

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

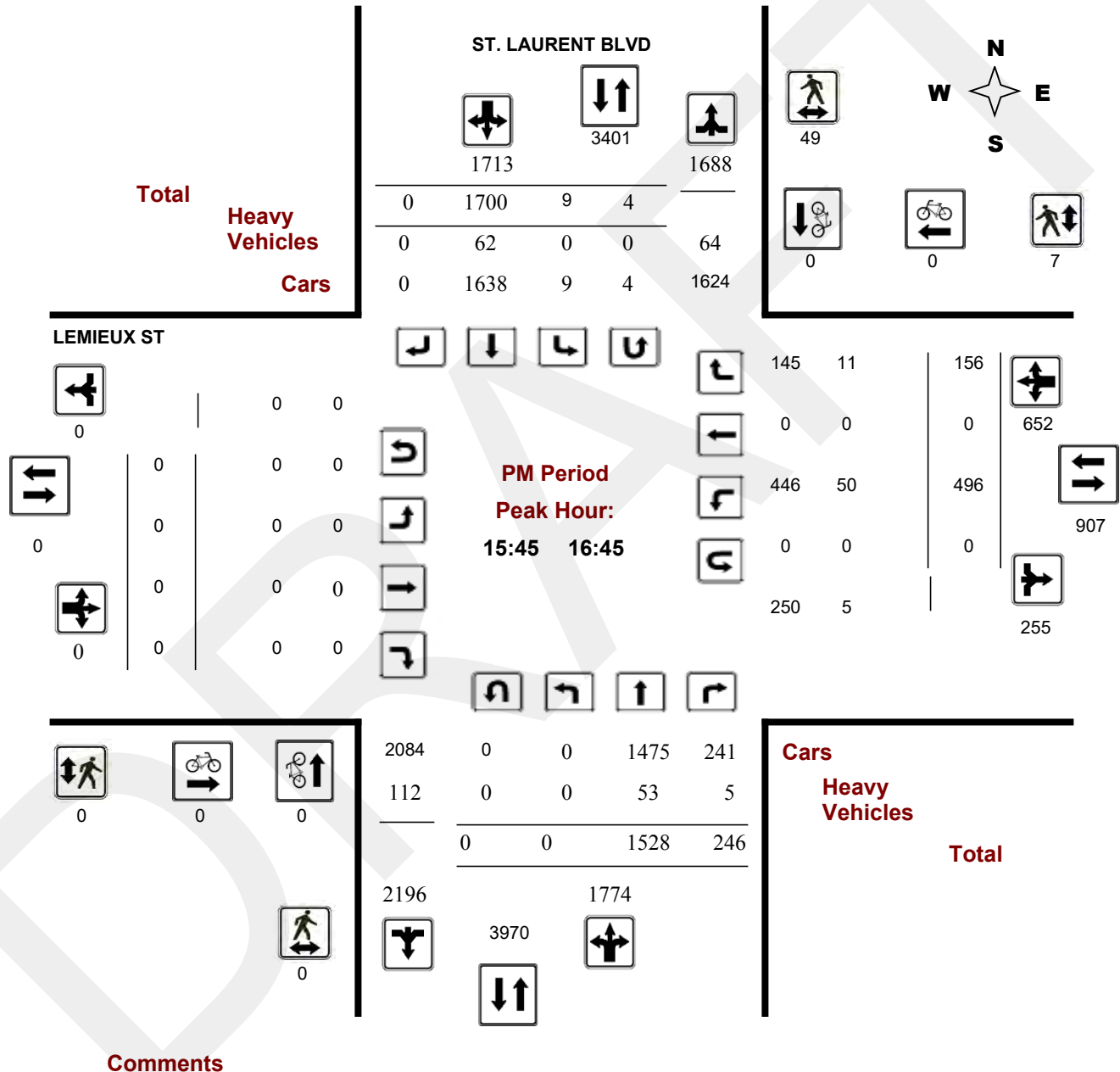
LEMIEUX ST @ ST. LAURENT BLVD

Survey Date: Wednesday, March 21, 2018

Start Time: 07:00

WO No: 37620

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

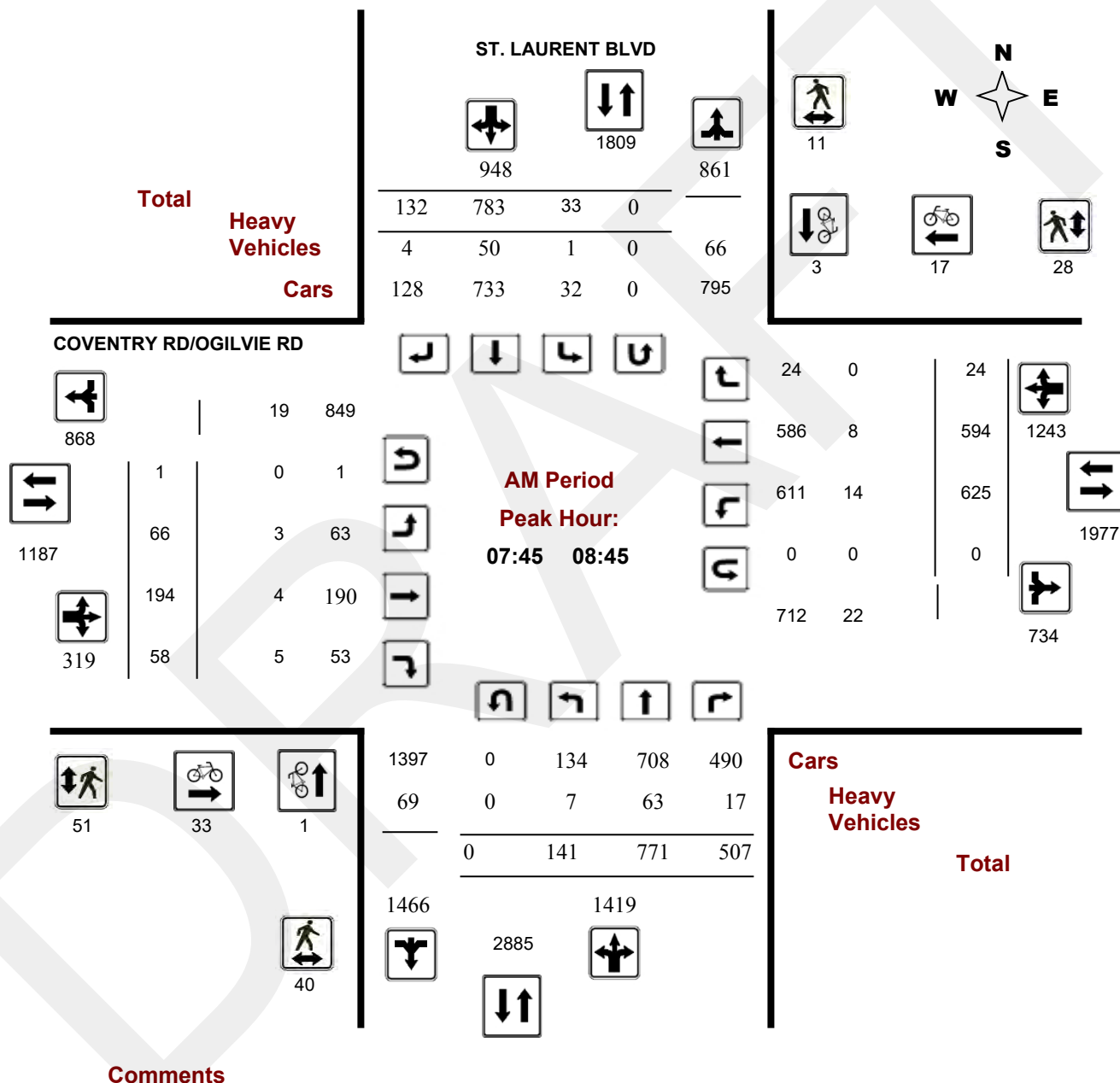
ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017

Start Time: 07:00

WO No: 37069

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

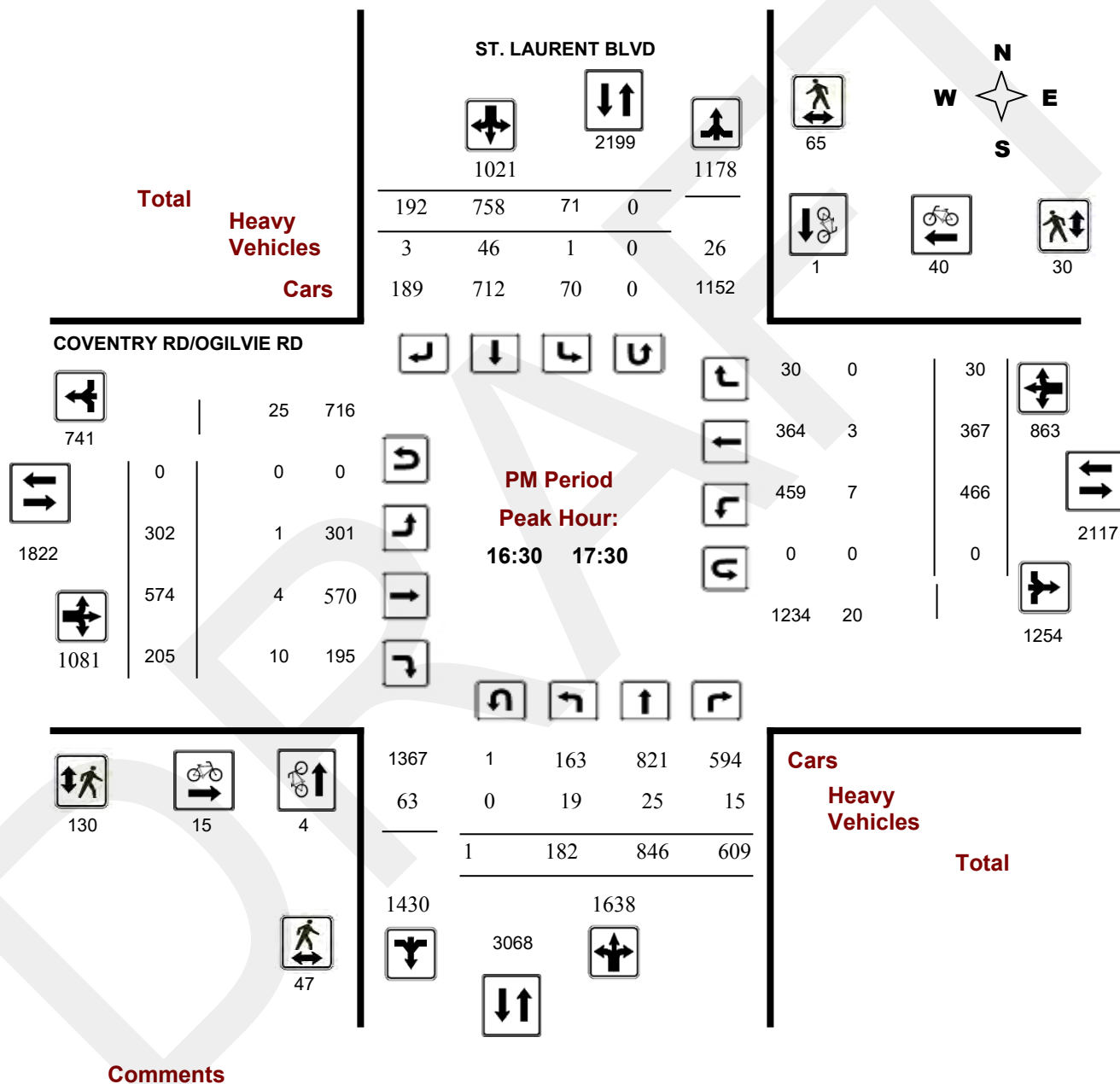
ST. LAURENT BLVD @ COVENTRY RD/OGILVIE RD

Survey Date: Thursday, June 01, 2017

Start Time: 07:00

WO No: 37069

Device: Miovision



Appendix D

Collision Data

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	168	59	64	39	3	11	1	8	353
Non-fatal injury	40	16	3	16	0	15	0	1	91
Fatal Injury	0	1	1	0	0	0	0	0	2
Total	208	76	68	55	3	26	1	9	446
	#1 or 47%	#2 or 17%	#3 or 15%	#4 or 12%	#7 or 1%	#5 or 6%	#8 or 0%	#6 or 2%	

79%
20%
0%
100%

OGILVIE RD/AVIATION PKWY

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	101	50,437	1825	1.10

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	50	18	4	6	0	4	0	1	83
Non-fatal injury	6	6	1	3	0	1	0	0	17
Fatal Injury	0	1	0	0	0	0	0	0	1
Total	56	25	5	9	0	5	0	1	101
	55%	25%	5%	9%	0%	5%	0%	1%	

82%
17%
1%
100%

OGILVIE RD/CUMMINGS AVE

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	56	33,543	1825	0.91

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	15	14	2	3	1	2	0	1	38
Non-fatal injury	5	3	1	4	0	4	0	1	18
Fatal Injury	0	0	0	0	0	0	0	0	0
Total	20	17	3	7	1	6	0	2	56
	36%	30%	5%	13%	2%	11%	0%	4%	

68%
32%
0%
100%

CYRVILLE RD/CUMMINGS AVE/LABELLE ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	16	16,883	1825	0.52

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	8	2	0	2	1	0	0	1	14
Non-fatal injury	0	0	0	0	0	2	0	0	2
Fatal Injury	0	0	0	0	0	0	0	0	0
Total	8	2	0	2	1	2	0	1	16
	50%	13%	0%	13%	6%	13%	0%	6%	

88%
13%
0%
100%

OGILVIE RD/CYRVILLE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	36	30,688	1825	0.64

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	8	1	7	6	0	0	0	2	24
Non-fatal injury	6	1	0	2	0	3	0	0	12
Fatal Injury	0	0	0	0	0	0	0	0	0
Total	14	2	7	8	0	3	0	2	36
	39%	6%	19%	22%	0%	8%	0%	6%	

67%
33%
0%
100%

ST. LAURENT BLVD/LEMIEUX ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	78	50,892	1825	0.84

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	26	15	11	6	0	1	0	1	60
Non-fatal injury	9	3	0	3	0	3	0	0	18
Fatal Injury	0	0	0	0	0	0	0	0	0
Total	35	18	11	9	0	4	0	1	78
	45%	23%	14%	12%	0%	5%	0%	1%	

77%
23%
0%
100%

COVENTRY RD/OGILVIE RD /ST. LAURENT BLVD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	125	52,270	1825	1.31

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	55	5	36	7	0	3	0	1	107	86%
Non-fatal injury	12	2	0	3	0	1	0	0	18	14%
Fatal Injury	0	0	0	0	0	0	0	0	0	0%
Total	67	7	36	10	0	4	0	1	125	100%
	54%	6%	29%	8%	0%	3%	0%	1%		

DONALD ST/CUMMINGS AVE

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	11	12,186	1825	0.49

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	5	2	1	0	0	0	0	0	8	73%
Non-fatal injury	2	0	0	0	0	1	0	0	3	27%
Fatal Injury	0	0	0	0	0	0	0	0	0	0%
Total	7	2	1	0	0	1	0	0	11	100%
	64%	18%	9%	0%	0%	9%	0%	0%		

CUMMINGS AVE , OGILVIE RD to LABELLE ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	12	n/a	1825	n/a

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	2	0	5	1	0	1	1	11	92%
Non-fatal injury	0	0	0	1	0	0	0	0	1	8%
Fatal Injury	0	0	0	0	0	0	0	0	0	0%
Total	1	2	0	6	1	0	1	1	12	100%
	8%	17%	0%	50%	8%	0%	8%	8%		

OGILVIE RD, CYRVILLE RD to CUMMINGS AVE

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	11	n/a	1825	n/a

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	3	4	0	1	0	0	8	73%
Non-fatal injury	0	1	1	0	0	0	0	0	2	18%
Fatal Injury	0	0	1	0	0	0	0	0	1	9%
Total	0	1	5	4	0	1	0	0	11	100%
	0%	9%	45%	36%	0%	9%	0%	0%		

Appendix E

Background Traffic Growth

Ogilvie/Cyrville
8 hrs

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2001	Monday 16 July	1588	1934	2525	2453	5227	5222	5840	5571	30360
2009	Friday 31 July	2438	2605	2756	2524	6408	5849	5938	6562	35080
2018	Wednesday April 11	2684	2556	2550	3144	6740	6217	6751	6808	37450

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	1934	1588	3522	30360				
2009	2605	2438	5043	35080	34.7%	53.5%	43.2%	15.5%
2018	2556	2684	5240	37450	-1.9%	10.1%	3.9%	6.8%

Regression Estimate 2001 2067 1706 3773
Regression Estimate 2018 2675 2789 5463
Average Annual Change 1.53% 2.93% 2.20%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	5840	5571	11411	30360				
2009	5938	6562	12500	35080	1.7%	17.8%	9.5%	15.5%
2018	6751	6808	13559	37450	13.7%	3.7%	8.5%	6.8%

Regression Estimate 2001 5723 5715 11439
Regression Estimate 2018 6647 6936 13583
Average Annual Change 0.88% 1.15% 1.02%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	5222	5227	10449	30360				
2009	5849	6408	12257	35080	12.0%	22.6%	17.3%	15.5%
2018	6217	6740	12957	37450	6.3%	5.2%	5.7%	6.8%

Regression Estimate 2001 5278 5392 10670
Regression Estimate 2018 6267 6887 13154
Average Annual Change 1.02% 1.45% 1.24%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	2525	2453	4978	30360				
2009	2756	2524	5280	35080	9.1%	2.9%	6.1%	15.5%
2018	2550	3144	5694	37450	-7.5%	24.6%	7.8%	6.8%

Regression Estimate 2001 2602 2363 4966
Regression Estimate 2018 2619 3064 5683
Average Annual Change 0.04% 1.54% 0.80%

Ogilvie/Cyrville
AM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2001	Monday 16 July	174	240	269	278	950	404	485	956	3756
2009	Friday 31 July	214	255	306	273	858	434	480	896	3716
2018	Wednesday April 11	244	400	411	404	1177	593	759	1194	5182

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	240	174	414	3756				
2009	255	214	469	3716	6.3%	23.0%	13.3%	-1.1%
2018	400	244	644	5182	56.9%	14.0%	37.3%	39.5%

Regression Estimate 2001 219 176 395
Regression Estimate 2018 381 246 627
Average Annual Change 3.32% 1.98% 2.75%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	485	956	1441	3756				
2009	480	896	1376	3716	-1.0%	-6.3%	-4.5%	-1.1%
2018	759	1194	1953	5182	58.1%	33.3%	41.9%	39.5%

Regression Estimate 2001 438 895 1333
Regression Estimate 2018 717 1140 1857
Average Annual Change 2.94% 1.43% 1.97%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	404	950	1354	3756				
2009	434	858	1292	3716	7.4%	-9.7%	-4.6%	-1.1%
2018	593	1177	1770	5182	36.6%	37.2%	37.0%	39.5%

Regression Estimate 2001 383 880 1263
Regression Estimate 2018 575 1115 1689
Average Annual Change 2.41% 1.40% 1.72%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	269	278	547	3756				
2009	306	273	579	3716	13.8%	-1.8%	5.9%	-1.1%
2018	411	404	815	5182	34.3%	48.0%	40.8%	39.5%

Regression Estimate 2001 258 255 514
Regression Estimate 2018 402 384 786
Average Annual Change 2.63% 2.43% 2.53%

Ogilvie/Cyrville
PM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2001	Monday 16 July	284	320	394	422	702	1101	1184	721	5128
2009	Friday 31 July	440	370	385	449	922	1134	1141	935	5776
2018	Wednesday April 11	427	335	359	510	807	1152	1253	839	5682

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	320	284	604	5128				
2009	370	440	810	5776	15.6%	54.9%	34.1%	12.6%
2018	335	427	762	5682	-9.5%	-3.0%	-5.9%	-1.6%

Regression Estimate 2001 335 315 650
Regression Estimate 2018 348 455 803
Average Annual Change 0.23% 2.18% 1.25%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	1184	721	1905	5128				
2009	1141	935	2076	5776	-3.6%	29.7%	9.0%	12.6%
2018	1253	839	2092	5682	9.8%	-10.3%	0.8%	-1.6%

Regression Estimate 2001 1157 777 1934
Regression Estimate 2018 1229 889 2118
Average Annual Change 0.36% 0.79% 0.54%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2001	1101	702	1803	5128				
2009	1134	922	2056	5776	3.0%	31.3%	14.0%	12.6%
2018	1152	807	1959	5682	1.6%	-12.5%	-4.7%	-1.6%

Regression Estimate 2001 1104 762 1866
Regression Estimate 2018 1155 860 2015
Average Annual Change 0.26% 0.72% 0.45%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2001	394	422	816	5128				
2009	385	449	834	5776	-2.3%	6.4%	2.2%	12.6%
2018	359	510	869	5682	-6.8%	13.6%	4.2%	-1.6%

Regression Estimate 2001 397 417 814
Regression Estimate 2018 361 505 867
Average Annual Change -0.55% 1.14% 0.37%

Ogilvie/St Laurent
8 hrs

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2009	Friday 15 May	8550	9494	12118	11486	7630	6164	5419	6573	67434
2010	Thursday 19 August	7334	8785	10830	11859	8675	5120	5266	6341	64210
2017	Thursday June 1	7517	8177	11578	10755	7246	7097	5554	5866	63790

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	9494	8550	18044	67434				
2010	8785	7334	16119	64210	-7.5%	-14.2%	-10.7%	-4.8%
2017	8177	7517	15694	63790	-6.9%	2.5%	-2.6%	-0.7%

Regression Estimate 2009 9227 8016 17243
Regression Estimate 2017 8139 7441 15580
Average Annual Change -1.56% -0.93% -1.26%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	5419	6573	11992	67434				
2010	5266	6341	11607	64210	-2.8%	-3.5%	-3.2%	-4.8%
2017	5554	5866	11420	63790	5.5%	-7.5%	-1.6%	-0.7%

Regression Estimate 2009 5336 6502 11838
Regression Estimate 2017 5542 5856 11398
Average Annual Change 0.48% -1.30% -0.47%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	6164	7630	13794	67434				
2010	5120	8675	13795	64210	-16.9%	13.7%	0.0%	-4.8%
2017	7097	7246	14343	63790	38.6%	-16.5%	4.0%	-0.7%

Regression Estimate 2009 5594 8167 13761
Regression Estimate 2017 7016 7323 14338
Average Annual Change 2.87% -1.35% 0.52%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	12118	11486	23604	67434				
2010	10830	11859	22689	64210	-10.6%	3.2%	-3.9%	-4.8%
2017	11578	10755	22333	63790	6.9%	-9.3%	-1.6%	-0.7%

Regression Estimate 2009 11518 11714 23233
Regression Estimate 2017 11492 10788 22280
Average Annual Change -0.03% -1.02% -0.52%

Ogilvie/St Laurent
AM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2009	Friday 15 May	1020	971	1354	1508	1320	539	259	935	7906
2010	Thursday 19 August	1039	893	1170	1512	1126	456	283	757	7236
2017	Thursday June 1	948	861	1419	1466	1243	734	319	868	7858

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	971	1020	1991	7906				
2010	893	1039	1932	7236	-8.0%	1.9%	-3.0%	-8.5%
2017	861	948	1809	7858	-3.6%	-8.8%	-6.4%	8.6%

Regression Estimate 2009 939 1034 1973
Regression Estimate 2017 856 950 1806
Average Annual Change -1.15% -1.05% -1.10%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	259	935	1194	7906				
2010	283	757	1040	7236	9.3%	-19.0%	-12.9%	-8.5%
2017	319	868	1187	7858	12.7%	14.7%	14.1%	8.6%

Regression Estimate 2009 267 852 1119
Regression Estimate 2017 320 856 1176
Average Annual Change 2.29% 0.06% 0.63%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	539	1320	1859	7906				
2010	456	1126	1582	7236	-15.4%	-14.7%	-14.9%	-8.5%
2017	734	1243	1977	7858	61.0%	10.4%	25.0%	8.6%

Regression Estimate 2009 486 1229 1716
Regression Estimate 2017 726 1230 1957
Average Annual Change 5.15% 0.01% 1.66%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	1354	1508	2862	7906				
2010	1170	1512	2682	7236	-13.6%	0.3%	-6.3%	-8.5%
2017	1419	1466	2885	7858	21.3%	-3.0%	7.6%	8.6%

Regression Estimate 2009 1260 1513 2772
Regression Estimate 2017 1406 1467 2872
Average Annual Change 1.38% -0.38% 0.44%

Ogilvie/St Laurent
PM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2009	Friday 15 May	1133	1610	1935	1586	1032	1128	1097	873	10394
2010	Thursday 19 August	810	1556	1768	1401	1233	939	1057	972	9736
2017	Thursday June 1	1021	1178	1638	1430	863	1254	1081	741	9206

North Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	1610	1133	2743	10394				
2010	1556	810	2366	9736	-3.4%	-28.5%	-13.7%	-6.3%
2017	1178	1021	2199	9206	-24.3%	26.0%	-7.1%	-5.4%

Regression Estimate 2009 1610 981 2591
Regression Estimate 2017 1178 999 2177
Average Annual Change -3.83% 0.23% -2.15%

West Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	1097	873	1970	10394				
2010	1057	972	2029	9736	-3.6%	11.3%	3.0%	-6.3%
2017	1081	741	1822	9206	2.3%	-23.8%	-10.2%	-5.4%

Regression Estimate 2009 1078 930 2008
Regression Estimate 2017 1078 749 1827
Average Annual Change 0.00% -2.66% -1.17%

East Leg

Year	Counts				% Change			
	EB	WB	EB+WB	INT	EB	WB	EB+WB	INT
2009	1128	1032	2160	10394				
2010	939	1233	2172	9736	-16.8%	19.5%	0.6%	-6.3%
2017	1254	863	2117	9206	33.5%	-30.0%	-2.5%	-5.4%

Regression Estimate 2009 1027 1141 2169
Regression Estimate 2017 1240 879 2118
Average Annual Change 2.37% -3.22% -0.29%

South Leg

Year	Counts				% Change			
	NB	SB	NB+SB	INT	NB	SB	NB+SB	INT
2009	1935	1586	3521	10394				
2010	1768	1401	3169	9736	-8.6%	-11.7%	-10.0%	-6.3%
2017	1638	1430	3068	9206	-7.4%	2.1%	-3.2%	-5.4%

Regression Estimate 2009 1871 1505 3376
Regression Estimate 2017 1629 1418 3047
Average Annual Change -1.72% -0.74% -1.27%

Appendix F

Existing Traffic SYNCHRO Analysis

1: St. Laurent & Coventry/Ogilvie

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	194	58	625	594	24	141	771	507	33	783	132
Future Volume (vph)	66	194	58	625	594	24	141	771	507	33	783	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4490	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3270	3390	1380	3166	3390	1464	1660	4490	0	1686	4871	1395
Satd. Flow (RTOR)			195			140		117				196
Lane Group Flow (vph)	73	216	64	694	660	27	157	1420	0	37	870	147
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	18.5	22.7	22.7	29.4	36.2	36.2	14.7	48.4		8.3	36.9	36.9
Actuated g/C Ratio	0.14	0.17	0.17	0.23	0.28	0.28	0.11	0.37		0.06	0.28	0.28
v/c Ratio	0.16	0.36	0.16	0.93	0.70	0.05	0.82	0.90dr		0.34	0.63	0.27
Control Delay	47.6	47.2	0.8	70.4	40.9	0.2	81.0	34.8		66.1	45.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	47.6	47.2	0.8	70.4	40.9	0.2	81.0	34.8		66.1	45.0	3.1
LOS	D	D	A	E	D	A	F	C		E	D	A
Approach Delay		38.9			55.0			39.4			39.9	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.7	23.9	0.0	87.2	89.7	0.0	39.8	~139.8		9.3	78.1	0.0
Queue Length 95th (m)	15.6	35.3	0.0	#128.7	87.1	m0.0	#69.7	#179.9		20.2	94.3	6.4
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	479	795	473	750	1342	664	203	1746		203	1384	536
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.15	0.27	0.14	0.93	0.49	0.04	0.77	0.81		0.18	0.63	0.27

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 44.4

Intersection Capacity Utilization 94.8%

Intersection LOS: D

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

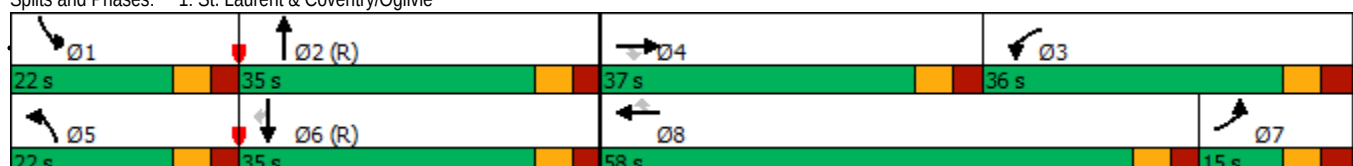
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	532	227	25	984	166	165	234	12	47	152	45
Future Volume (vph)	0	532	227	25	984	166	165	234	12	47	152	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1770	0	1695	1716	0
Flt Permitted				0.415			0.482			0.380		
Satd. Flow (perm)	0	3390	1422	731	3390	1380	855	1770	0	676	1716	0
Satd. Flow (RTOR)			252			155		2			12	
Lane Group Flow (vph)	0	591	252	28	1093	184	183	273	0	52	219	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effct Green (s)		86.6	86.6	86.6	86.6	86.6	30.1	30.1		30.1	30.1	
Actuated g/C Ratio		0.67	0.67	0.67	0.67	0.67	0.23	0.23		0.23	0.23	
v/c Ratio		0.26	0.24	0.06	0.48	0.19	0.92	0.66		0.33	0.54	
Control Delay		6.8	1.9	6.4	7.7	1.2	94.8	51.8		44.2	44.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		6.8	1.9	6.4	7.7	1.2	94.8	51.8		44.2	44.7	
LOS		A	A	A	A	A	F	D		D	D	
Approach Delay		5.4			6.7			69.0			44.6	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		24.5	2.8	2.0	45.8	2.9	46.2	63.6		11.2	46.9	
Queue Length 95th (m)		6.2	m0.0	m1.3	20.3	m0.0	68.3	81.6		21.0	63.2	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2258	1031	487	2258	970	282	585		223	574	
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		0.26	0.24	0.06	0.48	0.19	0.65	0.47		0.23	0.38	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.92												
Intersection Signal Delay: 19.8						Intersection LOS: B						
Intersection Capacity Utilization 72.0%						ICU Level of Service C						
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Splits and Phases: 2: Cyrville & Ogilvie



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	556	11	163	1076	170	18	11	63	138	116	112
Future Volume (vph)	48	556	11	163	1076	170	18	11	63	138	116	112
Satd. Flow (prot)	1695	3375	0	1695	3291	0	1695	1784	1517	1695	1637	0
Flt Permitted	0.110			0.360			0.602			0.617		
Satd. Flow (perm)	196	3375	0	632	3291	0	1069	1784	1397	1033	1637	0
Satd. Flow (RTOR)		2			19				98		39	
Lane Group Flow (vph)	53	630	0	181	1385	0	20	12	70	153	253	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	79.9	72.6		82.3	75.5		22.0	22.0	22.0	35.5	33.2	
Actuated g/C Ratio	0.61	0.56		0.63	0.58		0.17	0.17	0.17	0.27	0.26	
v/c Ratio	0.27	0.33		0.40	0.72		0.11	0.04	0.22	0.46	0.57	
Control Delay	18.5	18.5		11.8	20.0		42.3	39.7	4.7	40.5	38.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	18.5	18.5		11.8	20.0		42.3	39.7	4.7	40.5	38.7	
LOS	B	B		B	C		D	D	A	D	D	
Approach Delay		18.5			19.1			16.2			39.4	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	4.5	53.5		18.3	78.0		4.0	2.4	0.0	28.3	43.3	
Queue Length 95th (m)	14.7	59.6		m19.2	m83.2		11.1	7.7	6.1	46.3	69.3	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	196	1890		458	1923		249	417	401	334	549	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.27	0.33		0.40	0.72		0.08	0.03	0.17	0.46	0.46	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 21.8

Intersection LOS: C

Intersection Capacity Utilization 79.2%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 3: Cummings & Ogilvie



4: Aviation Parkway & Ogilvie

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	504	49	153	852	121	351	562	415	133	329	238
Future Volume (vph)	301	504	49	153	852	121	351	562	415	133	329	238
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3155	0	1695	3156	0
Flt Permitted	0.094			0.349			0.950			0.950		
Satd. Flow (perm)	168	3390	1474	619	3390	1492	1693	3155	0	1694	3156	0
Satd. Flow (RTOR)			164			164		147			123	
Lane Group Flow (vph)	334	560	54	170	947	134	390	1085	0	148	630	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effct Green (s)	58.9	42.5	42.5	54.0	39.9	39.9	28.1	39.5		12.5	23.9	
Actuated g/C Ratio	0.45	0.33	0.33	0.42	0.31	0.31	0.22	0.30		0.10	0.18	
v/c Ratio	1.31	0.51	0.09	0.47	0.91	0.23	1.07	1.02		0.91	0.93	
Control Delay	200.3	39.5	0.5	24.7	56.6	3.3	114.1	72.0		109.4	62.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	200.3	39.5	0.5	24.7	56.6	3.3	114.1	72.0		109.4	62.6	
LOS	F	D	A	C	E	A	F	E		F	E	
Approach Delay		94.0			46.6			83.2			71.5	
Approach LOS		F			D			F			E	
Queue Length 50th (m)	~96.7	51.4	0.2	24.6	121.3	0.0	~113.5	~142.5		38.3	69.4	
Queue Length 95th (m)	#158.2	72.1	0.3	39.1	#156.5	8.5	#174.7	#184.6		#79.4	#104.0	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	255	1108	592	395	1066	581	366	1061		162	680	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.31	0.51	0.09	0.43	0.89	0.23	1.07	1.02		0.91	0.93	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.31

Intersection Signal Delay: 73.1

Intersection Capacity Utilization 99.9%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service F

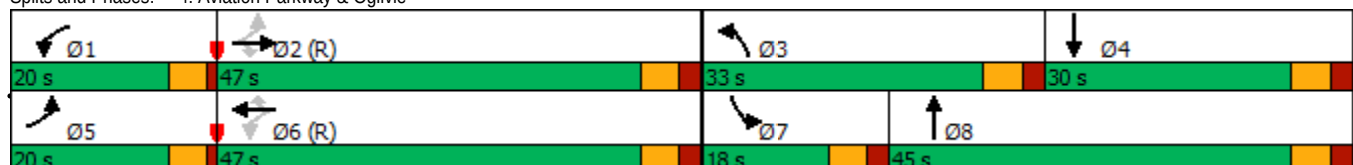
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	148	215	124	192	104
Future Volume (vph)	42	148	215	124	192	104
Satd. Flow (prot)	1695	1517	1695	1784	1677	0
Flt Permitted	0.950		0.562			
Satd. Flow (perm)	1662	1447	993	1784	1677	0
Satd. Flow (RTOR)		164			68	
Lane Group Flow (vph)	47	164	239	138	329	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Efft Green (s)	16.3	16.3	16.4	16.4	16.4	
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	
v/c Ratio	0.08	0.26	0.67	0.22	0.51	
Control Delay	12.9	4.5	22.0	10.3	11.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.9	4.5	22.0	10.3	11.4	
LOS	B	A	C	B	B	
Approach Delay	6.4			17.7	11.4	
Approach LOS	A			B	B	
Queue Length 50th (m)	2.3	0.0	15.2	7.2	15.0	
Queue Length 95th (m)	9.5	10.7	32.3	15.0	29.8	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	601	619	726	1305	1245	
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	0.08	0.26	0.33	0.11	0.26	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 45.8						
Natural Cycle: 65						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.67						
Intersection Signal Delay: 12.8				Intersection LOS: B		
Intersection Capacity Utilization 61.6%				ICU Level of Service B		
Analysis Period (min) 15						

Splits and Phases: 5: Cummings & Donald

	
Ø2	Ø4
39.9 s	22 s
	
Ø6	
39.9 s	

Existing AM
6: Cyrville & Labelle/Cummings

Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	132	109	21	160	428	136	30	169	96
Future Volume (vph)	9	26	24	132	109	21	160	428	136	30	169	96
Satd. Flow (prot)	1695	1611	0	1695	1732	0	1695	1705	0	1695	1670	0
Flt Permitted	0.665			0.720			0.580			0.332		
Satd. Flow (perm)	1177	1611	0	1242	1732	0	1030	1705	0	590	1670	0
Satd. Flow (RTOR)		27			13			29			52	
Lane Group Flow (vph)	10	56	0	147	144	0	178	627	0	33	295	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)	13.6	13.6		13.6	13.6		38.8	38.8		38.8	38.8	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.60	0.60		0.60	0.60	
v/c Ratio	0.04	0.16		0.57	0.39		0.29	0.61		0.09	0.29	
Control Delay	19.2	13.2		31.1	22.1		9.9	13.0		9.0	7.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.2	13.2		31.1	22.1		9.9	13.0		9.0	7.5	
LOS	B	B		C	C		A	B		A	A	
Approach Delay		14.1			26.7			12.3			7.6	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.9	2.6		14.6	12.4		8.2	35.4		1.3	10.8	
Queue Length 95th (m)	4.2	10.6		31.8	27.4		29.0	105.5		7.3	35.8	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	410	579		433	612		612	1025		350	1014	
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	0.02	0.10		0.34	0.24		0.29	0.61		0.09	0.29	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 65.2												
Natural Cycle: 70												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.61												
Intersection Signal Delay: 14.2						Intersection LOS: B						
Intersection Capacity Utilization 71.3%						ICU Level of Service C						
Analysis Period (min) 15												

Splits and Phases: 6: Cyrville & Labelle/Cummings

								
42 s			5 s			28 s		
								
42 s			5 s			28 s		

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	589	153	1163	228	6	1369
Future Volume (vph)	589	153	1163	228	6	1369
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.179	
Satd. Flow (perm)	3288	1450	4871	1477	319	4871
Satd. Flow (RTOR)		52		253		
Lane Group Flow (vph)	654	170	1292	253	7	1521
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	32.0	32.0	86.4	86.4	86.4	86.4
Actuated g/C Ratio	0.25	0.25	0.66	0.66	0.66	0.66
v/c Ratio	0.81	0.43	0.40	0.24	0.03	0.47
Control Delay	54.1	30.5	10.9	1.8	3.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	30.5	10.9	1.8	3.5	4.7
LOS	D	C	B	A	A	A
Approach Delay	49.2		9.4			4.7
Approach LOS	D		A			A
Queue Length 50th (m)	81.4	25.2	51.6	0.0	0.4	30.6
Queue Length 95th (m)	95.3	43.1	71.5	10.1	m0.2	m33.5
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	524	3236	1066	212	3236
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	0.32	0.40	0.24	0.03	0.47

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 16.0
 Intersection Capacity Utilization 59.4%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 7: St. Laurent & Lemieux



Existing AM
11: 417/Lemieux & Labelle

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	125	133	615	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	125	133	615	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	0	0	0	132	140	647	46	0	0	187

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	604	-	-	-	-	324	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	604	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	382	0	0	0	0	672	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	452	0	0	0	0	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	307	-	-	-	-	672	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	363	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.1	11.7	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1
Capacity (veh/h)	-	-	307	672
HCM Lane V/C Ratio	-	-	0.103	0.196
HCM Control Delay (s)	-	-	18.1	11.7
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.3	0.7

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	574	205	466	367	30	182	846	609	71	758	192
Future Volume (vph)	302	574	205	466	367	30	182	846	609	71	758	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4472	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3222	3390	1457	1660	4472	0	1688	4871	1403
Satd. Flow (RTOR)			216			210		157				211
Lane Group Flow (vph)	318	604	216	491	386	32	192	1532	0	75	798	202
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	23.1	27.7	27.7	19.9	24.5	24.5	16.5	40.6		8.2	29.7	29.7
Actuated g/C Ratio	0.19	0.23	0.23	0.17	0.20	0.20	0.14	0.34		0.07	0.25	0.25
v/c Ratio	0.50	0.77	0.44	0.90	0.56	0.07	0.83	1.06dr		0.65	0.66	0.40
Control Delay	48.5	50.2	7.8	79.5	54.6	0.3	71.7	43.2		79.8	44.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.5	50.2	7.8	79.5	54.6	0.3	71.7	43.2		79.8	44.0	6.9
LOS	D	D	A	E	D	A	E	D		E	D	A
Approach Delay		41.7			66.1			46.3			39.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	37.1	68.2	0.0	~65.8	50.3	0.0	44.6	~130.2		17.5	63.0	0.0
Queue Length 95th (m)	52.3	88.3	18.6	#99.4	66.8	m0.0	#76.0	#139.7		#37.9	77.7	16.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	632	861	514	544	861	526	248	1617		121	1206	506
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.70	0.42	0.90	0.45	0.06	0.77	0.95		0.62	0.66	0.40
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												

1: St. Laurent & Coventry/Ogilvie

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 47.4

Intersection LOS: D

Intersection Capacity Utilization 96.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

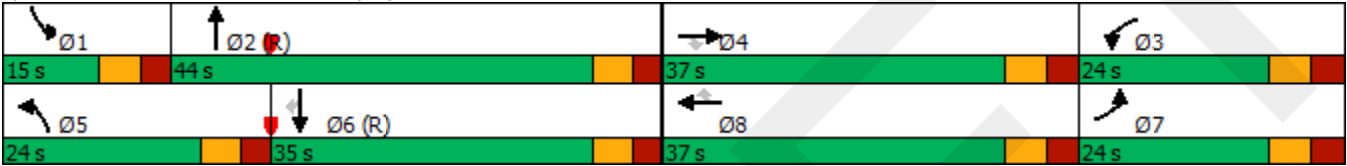
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗↗	↗	↖	↗↗	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	984	257	40	641	124	117	210	32	134	213	80
Future Volume (vph)	0	984	257	40	641	124	117	210	32	134	213	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1745	0	1695	1702	0
Flt Permitted				0.236			0.322			0.422		
Satd. Flow (perm)	0	3390	1424	419	3390	1388	572	1745	0	751	1702	0
Satd. Flow (RTOR)			271			131		7			18	
Lane Group Flow (vph)	0	1036	271	42	675	131	123	255	0	141	308	0
Number of Detectors		2	1	1	2	1	1	2		1	2	
Detector Template		Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)		30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases			2	6		6	8			4		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effct Green (s)		79.3	79.3	79.3	79.3	79.3	27.4	27.4		27.4	27.4	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.46	0.26	0.15	0.30	0.14	0.95	0.63		0.82	0.76	
Control Delay		11.3	3.5	25.5	24.2	13.2	109.8	46.4		76.8	52.4	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.7	3.5	25.5	24.2	13.2	109.8	46.4		76.8	52.4	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		10.0			22.6			67.0			60.0	
Approach LOS		A			C			E			E	
Queue Length 50th (m)		52.7	11.9	7.1	75.0	12.4	29.0	53.6		32.1	65.2	
Queue Length 95th (m)		m21.2	m0.2	m13.3	95.4	m25.7	#51.8	69.2		49.6	82.9	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2239	1032	276	2239	961	204	628		268	620	
Starvation Cap Reductn		593	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		0.63	0.26	0.15	0.30	0.14	0.60	0.41		0.53	0.50	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												

Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 28.3

Intersection LOS: C

Intersection Capacity Utilization 81.4%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1082	23	109	729	209	36	162	216	258	163	84
Future Volume (vph)	110	1082	23	109	729	209	36	162	216	258	163	84
Satd. Flow (prot)	1695	3374	0	1695	3231	0	1695	1784	1517	1695	1683	0
Flt Permitted	0.159			0.097			0.599			0.462		
Satd. Flow (perm)	284	3374	0	173	3231	0	1064	1784	1405	788	1683	0
Satd. Flow (RTOR)		2			33				164		28	
Lane Group Flow (vph)	116	1163	0	115	987	0	38	171	227	272	260	0
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	61.1	50.2		60.9	50.1		23.0	23.0	23.0	45.3	43.0	
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.45	0.82		0.54	0.72		0.19	0.50	0.57	0.65	0.42	
Control Delay	19.2	39.0		36.7	30.2		39.1	46.8	17.7	34.6	26.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.2	39.0		36.7	30.2		39.1	46.8	17.7	34.6	26.6	
LOS	B	D		D	C		D	D	B	C	C	
Approach Delay		37.2			30.9			31.0			30.7	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	14.8	144.4		13.7	114.5		7.0	33.6	11.7	42.2	36.7	
Queue Length 95th (m)	14.4	#195.3		m36.9	#145.0		16.4	54.0	35.0	63.6	57.7	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	278	1412		231	1368		296	496	509	416	764	
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	0.42	0.82		0.50	0.72		0.13	0.34	0.45	0.65	0.34	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												

Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 33.3

Intersection LOS: C

Intersection Capacity Utilization 93.8%

ICU Level of Service F

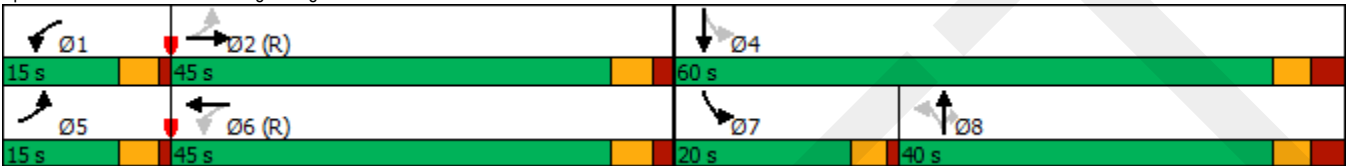
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Cummings & Ogilvie



4: Aviation Parkway & Ogilvie

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	720	83	136	578	112	124	205	180	112	239	168
Future Volume (vph)	183	720	83	136	578	112	124	205	180	112	239	168
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3133	0	1695	3160	0
Flt Permitted	0.349			0.290			0.950			0.950		
Satd. Flow (perm)	622	3390	1476	516	3390	1493	1692	3133	0	1694	3160	0
Satd. Flow (RTOR)			125			125		165			133	
Lane Group Flow (vph)	193	758	87	143	608	118	131	405	0	118	429	0
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effct Green (s)	68.5	55.3	55.3	65.5	53.9	53.9	14.2	18.3		13.3	17.4	
Actuated g/C Ratio	0.57	0.46	0.46	0.55	0.45	0.45	0.12	0.15		0.11	0.14	
v/c Ratio	0.42	0.48	0.12	0.37	0.40	0.16	0.66	0.66		0.63	0.75	
Control Delay	21.0	31.8	7.7	15.4	25.2	4.6	65.7	32.7		65.4	41.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.0	31.8	7.7	15.4	25.2	4.6	65.7	32.7		65.4	41.8	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		27.8			20.8			40.8			46.9	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	32.7	79.7	3.4	14.1	49.7	0.0	29.7	28.1		26.9	35.8	
Queue Length 95th (m)	m35.0	74.7	m3.8	28.3	77.4	11.1	49.5	42.2		45.0	50.0	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	503	1578	754	450	1543	747	212	756		205	735	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.48	0.12	0.32	0.39	0.16	0.62	0.54		0.58	0.58	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												

4: Aviation Parkway & Ogilvie

Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.6

Intersection LOS: C

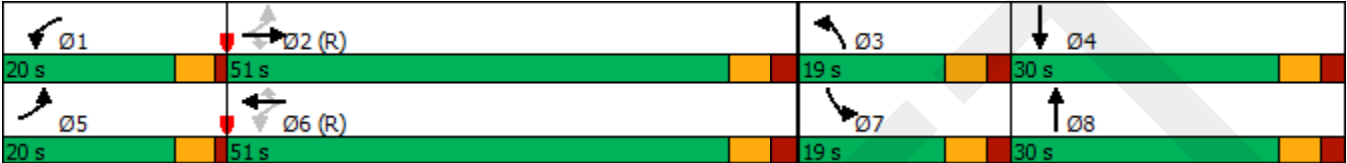
Intersection Capacity Utilization 73.5%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	306	244	238	238	90
Future Volume (vph)	88	306	244	238	238	90
Satd. Flow (prot)	1695	1517	1695	1784	1700	0
Flt Permitted	0.950		0.496			
Satd. Flow (perm)	1658	1442	876	1784	1700	0
Satd. Flow (RTOR)		322			36	
Lane Group Flow (vph)	93	322	257	251	346	0
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	6.1	6.1	6.1	30.5	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	6.1	6.1	1.8	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effct Green (s)	25.4	25.4	21.4	21.4	21.4	
Actuated g/C Ratio	0.42	0.42	0.36	0.36	0.36	
v/c Ratio	0.13	0.40	0.82	0.39	0.55	
Control Delay	14.0	3.9	38.6	15.5	16.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.0	3.9	38.6	15.5	16.4	
LOS	B	A	D	B	B	
Approach Delay	6.2			27.2	16.4	
Approach LOS	A			C	B	
Queue Length 50th (m)	6.1	0.0	24.5	19.7	25.7	
Queue Length 95th (m)	17.5	14.8	49.8	34.0	44.8	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	718	796	490	998	966	
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	0.13	0.40	0.52	0.25	0.36	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 60						

Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Cummings & Donald

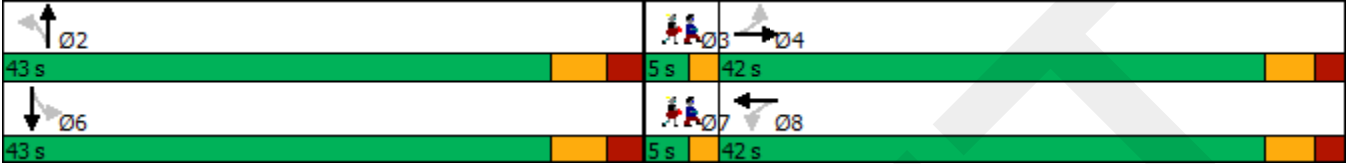
 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	198	32	26	46	286	234	59	467	17
Future Volume (vph)	25	79	104	198	32	26	46	286	234	59	467	17
Satd. Flow (prot)	1695	1574	0	1695	1642	0	1695	1635	0	1695	1773	0
Flt Permitted	0.717			0.613			0.392			0.363		
Satd. Flow (perm)	1265	1574	0	1059	1642	0	697	1635	0	644	1773	0
Satd. Flow (RTOR)		88			27			55			2	
Lane Group Flow (vph)	26	192	0	208	61	0	48	547	0	62	510	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)	18.2	18.2		18.2	18.2		37.4	37.4		37.4	37.4	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.55	0.55		0.55	0.55	
v/c Ratio	0.08	0.40		0.74	0.13		0.13	0.60		0.18	0.53	
Control Delay	18.4	13.4		38.9	12.3		11.7	14.7		12.5	14.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.4	13.4		38.9	12.3		11.7	14.7		12.5	14.4	
LOS	B	B		D	B		B	B		B	B	
Approach Delay		14.0			32.8			14.5			14.2	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	2.4	10.0		23.3	3.1		2.6	35.7		3.4	35.4	
Queue Length 95th (m)	7.8	26.1		47.7	11.1		11.3	100.8		14.3	94.1	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	684	892		573	901		380	918		351	969	
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	0.04	0.22		0.36	0.07		0.13	0.60		0.18	0.53	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 68.4												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Cyrville & Labelle/Cummings



						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	496	156	1528	246	9	1700
Future Volume (vph)	496	156	1528	246	9	1700
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.123	
Satd. Flow (perm)	3288	1454	4871	1477	219	4871
Satd. Flow (RTOR)		36		259		
Lane Group Flow (vph)	522	164	1608	259	9	1789
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	25.1	25.1	83.3	83.3	83.3	83.3
Actuated g/C Ratio	0.21	0.21	0.69	0.69	0.69	0.69
v/c Ratio	0.76	0.49	0.48	0.23	0.06	0.53
Control Delay	51.9	36.7	9.4	1.5	5.9	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	36.7	9.4	1.5	5.9	11.9
LOS	D	D	A	A	A	B
Approach Delay	48.2		8.3			11.9
Approach LOS	D		A			B
Queue Length 50th (m)	60.5	26.8	55.5	0.0	0.8	68.6
Queue Length 95th (m)	74.2	45.2	78.0	8.6	m0.5	23.0
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	412	3382	1104	152	3382
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	0.60	0.40	0.48	0.23	0.06	0.53
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						

Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 16.1

Intersection LOS: B

Intersection Capacity Utilization 65.0%

ICU Level of Service C

Analysis Period (min) 15

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

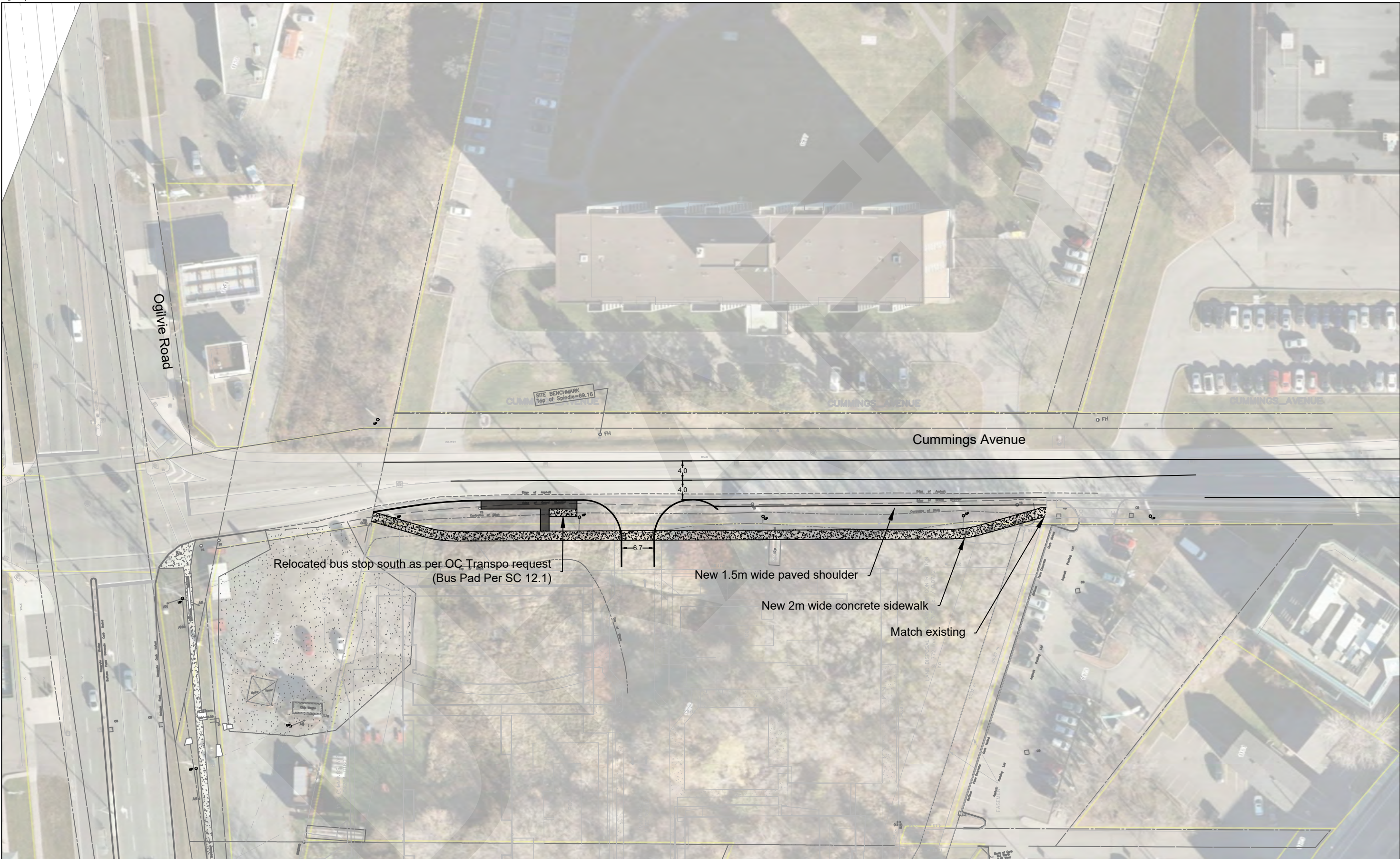
Splits and Phases: 7: St. Laurent & Lemieux

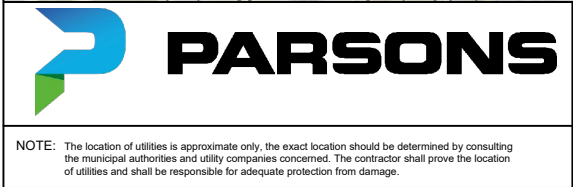


Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	0	0	0	0	204	112	410	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	204	112	410	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	179	0	0	0	0	215	118	432	28	0	0	294
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	452	-	-	-	-	216	0	0	-	-	-	-
Stage 1	0	-	-	-	-	-	-	-	-	-	-	-
Stage 2	452	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	491	0	0	0	0	789	-	-	0	-	-	-
Stage 1	-	0	0	0	0	-	-	-	0	-	-	-
Stage 2	557	0	0	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	357	-	-	-	-	789	-	-	-	-	-	-
Mov Cap-2 Maneuver	357	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	405	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB					
HCM Control Delay, s	24.8			11.3								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL			NBT			EBLn1			WBLn1		
Capacity (veh/h)	-			-			357			789		
HCM Lane V/C Ratio	-			-			0.501			0.272		
HCM Control Delay (s)	-			-			24.8			11.3		
HCM Lane LOS	-			-			C			B		
HCM 95th %tile Q(veh)	-			-			2.7			1.1		

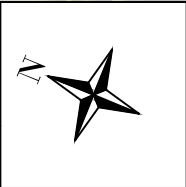
Appendix G

Functional Sidewalk Sketch & Surface Concept Plan





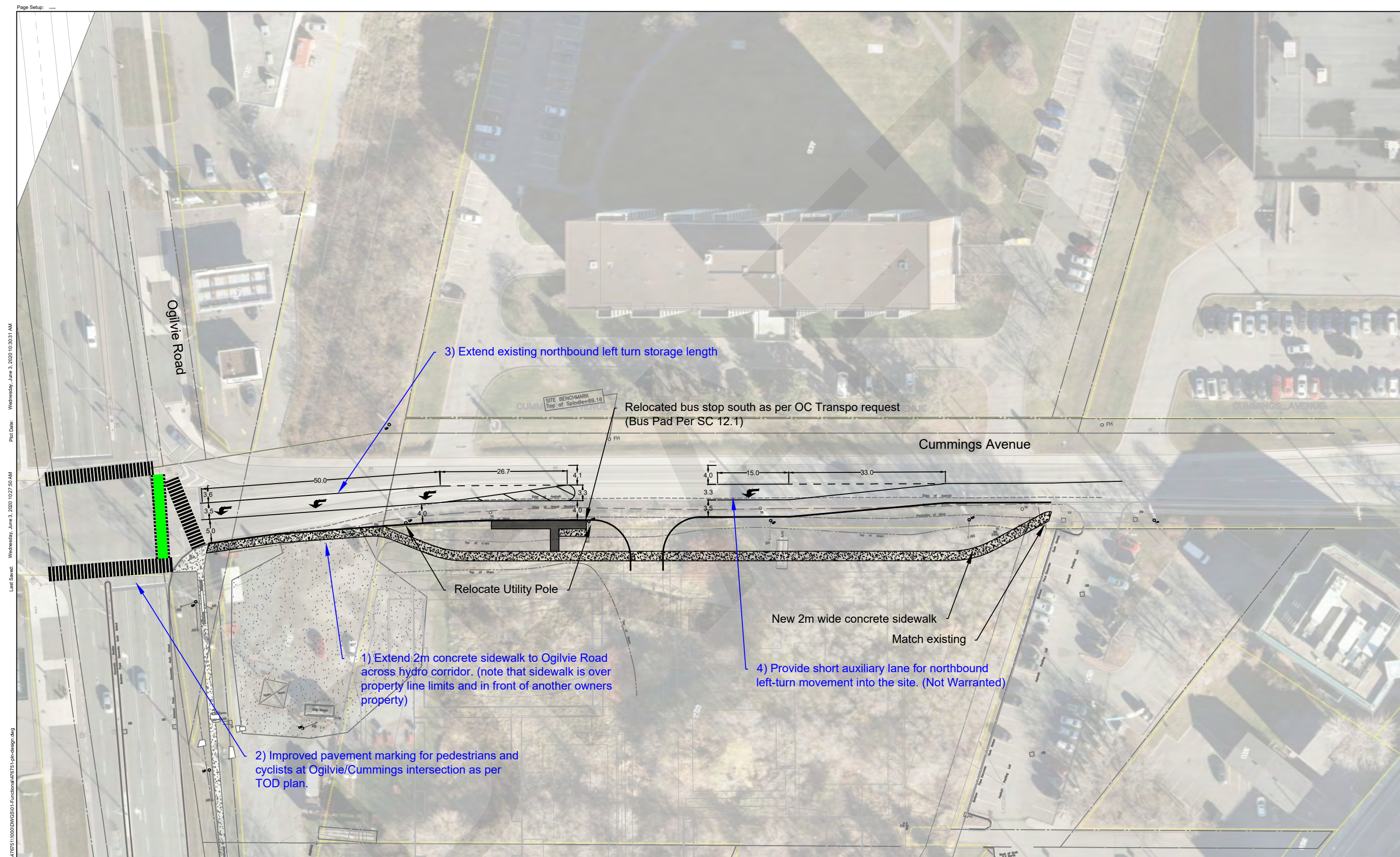
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.



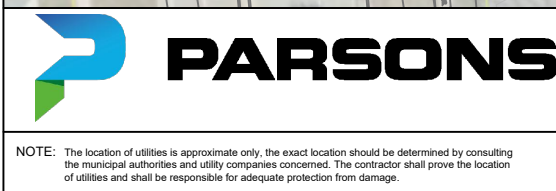
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Not to Scale

Drawing Description1098 Ogilvie, Cummings Road - Option A (new sidewalk along site frontage)			
Client6770967 Canada inc		DateJune 3, 2020	Figure Number001
Project Number476751		Project Description1098 Ogilvie Road Development	

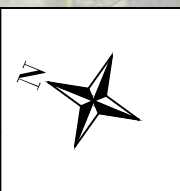


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NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

Legend



Not to Scale



Drawing Description 1098 Ogilvie, Cummings Road - Option B (additional Items for consideration)			
Client 6770967 Canada inc		Date June 3, 2020	Figure Number 002
Project Number 476751		Project Description 1098 Ogilvie Road Development	

Appendix H

MMLOS Road Segment Analysis

Multi-Modal Level of Service - Segments Form

Consultant

Scenario

Comments

Parsons

1098 Ogilvie, Lux Place

Project

Date

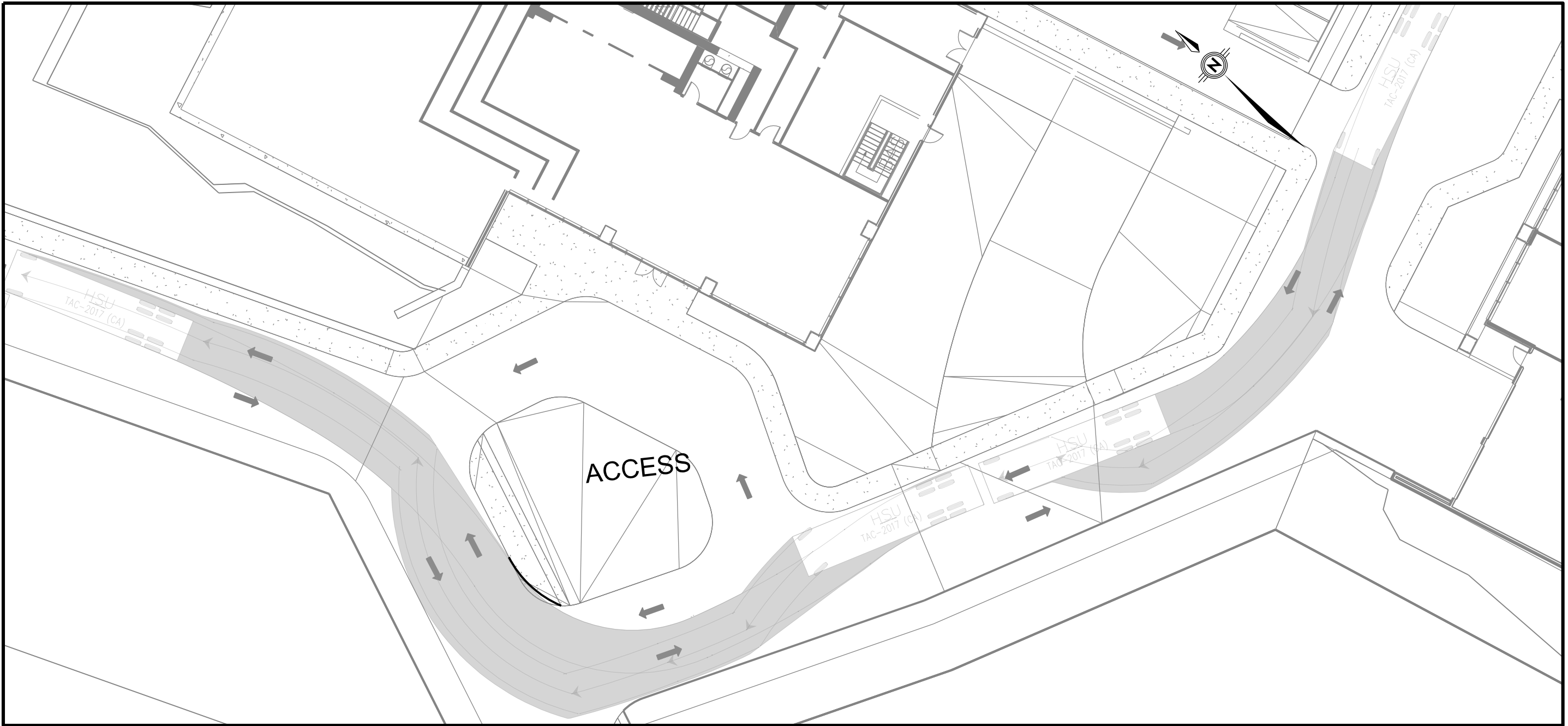
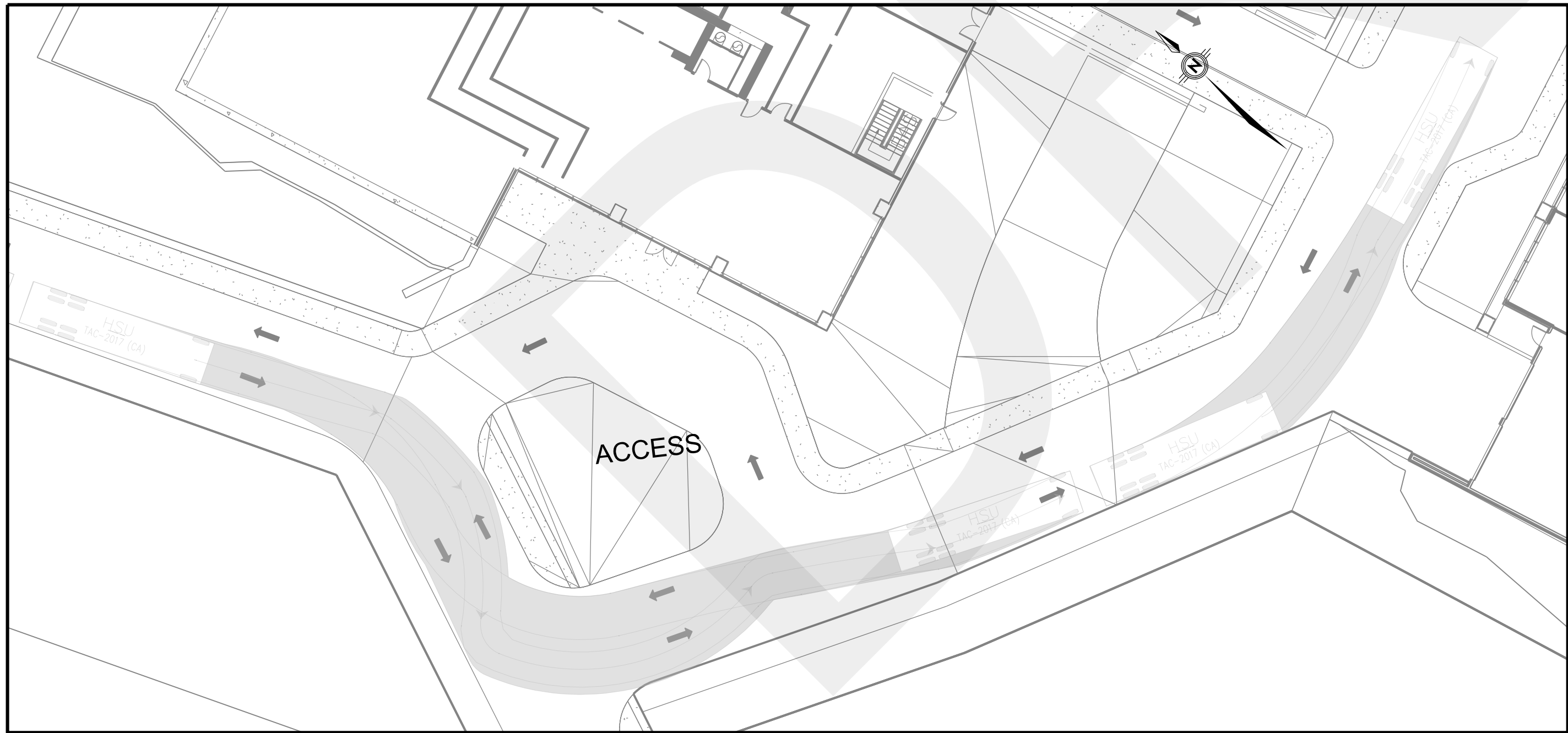
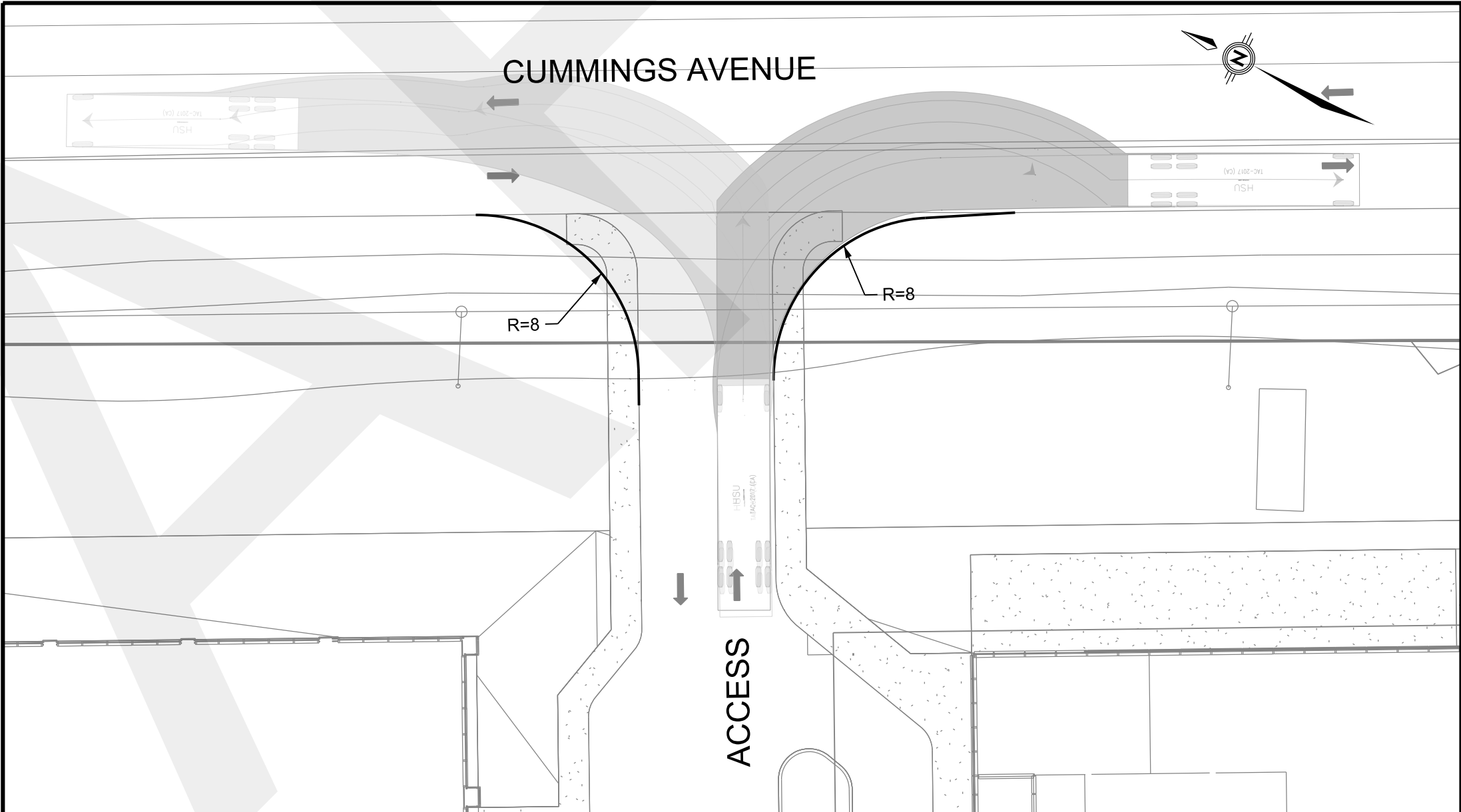
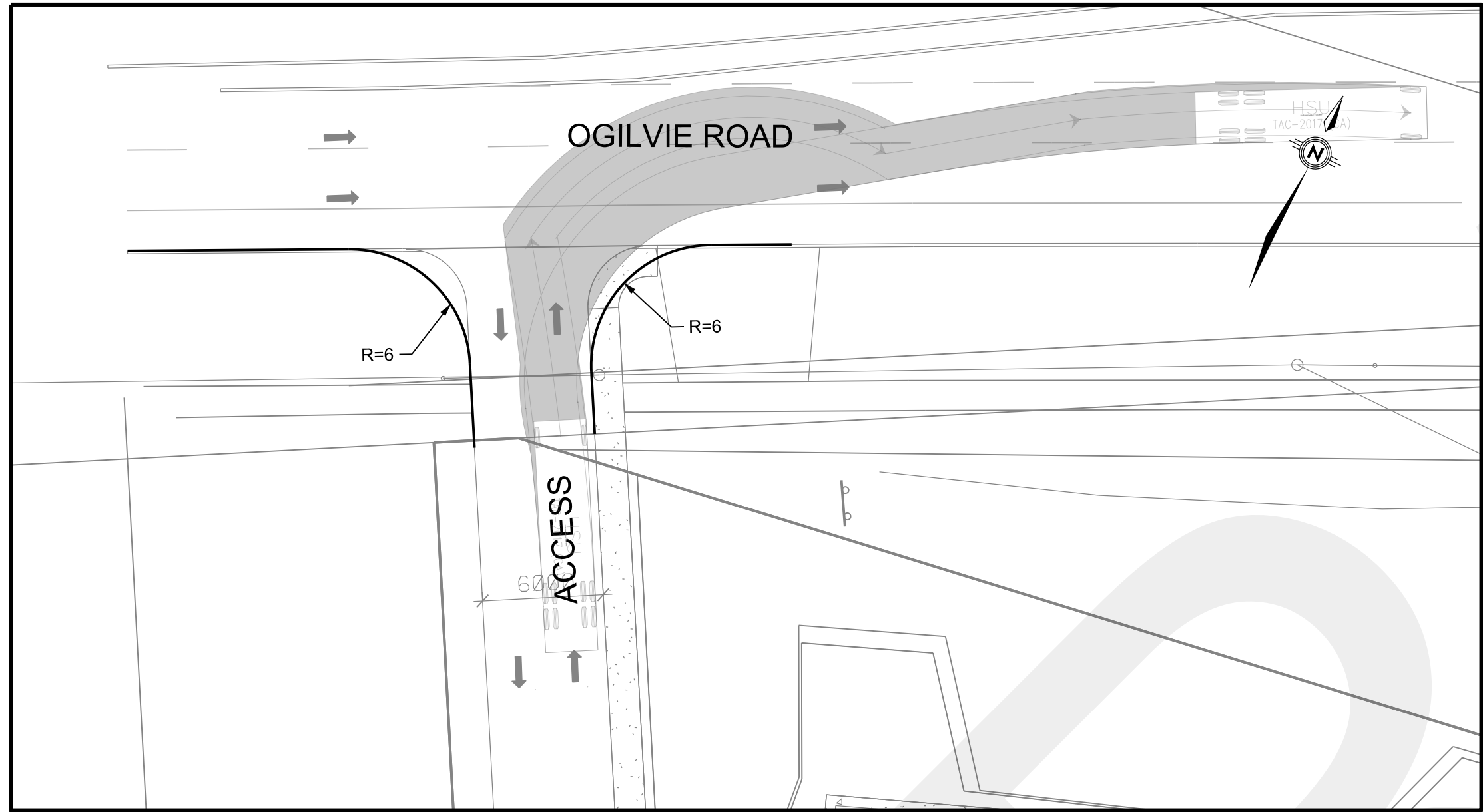
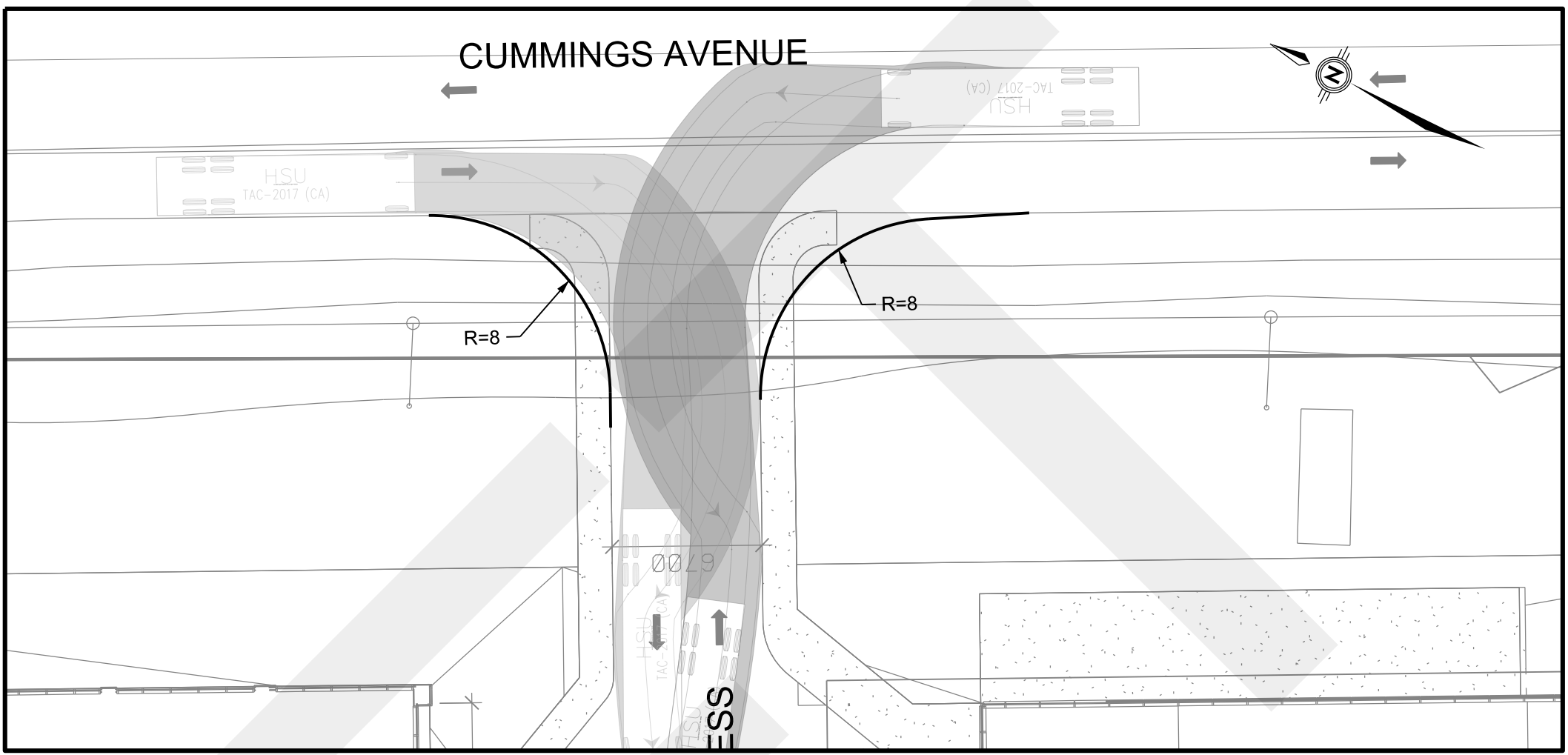
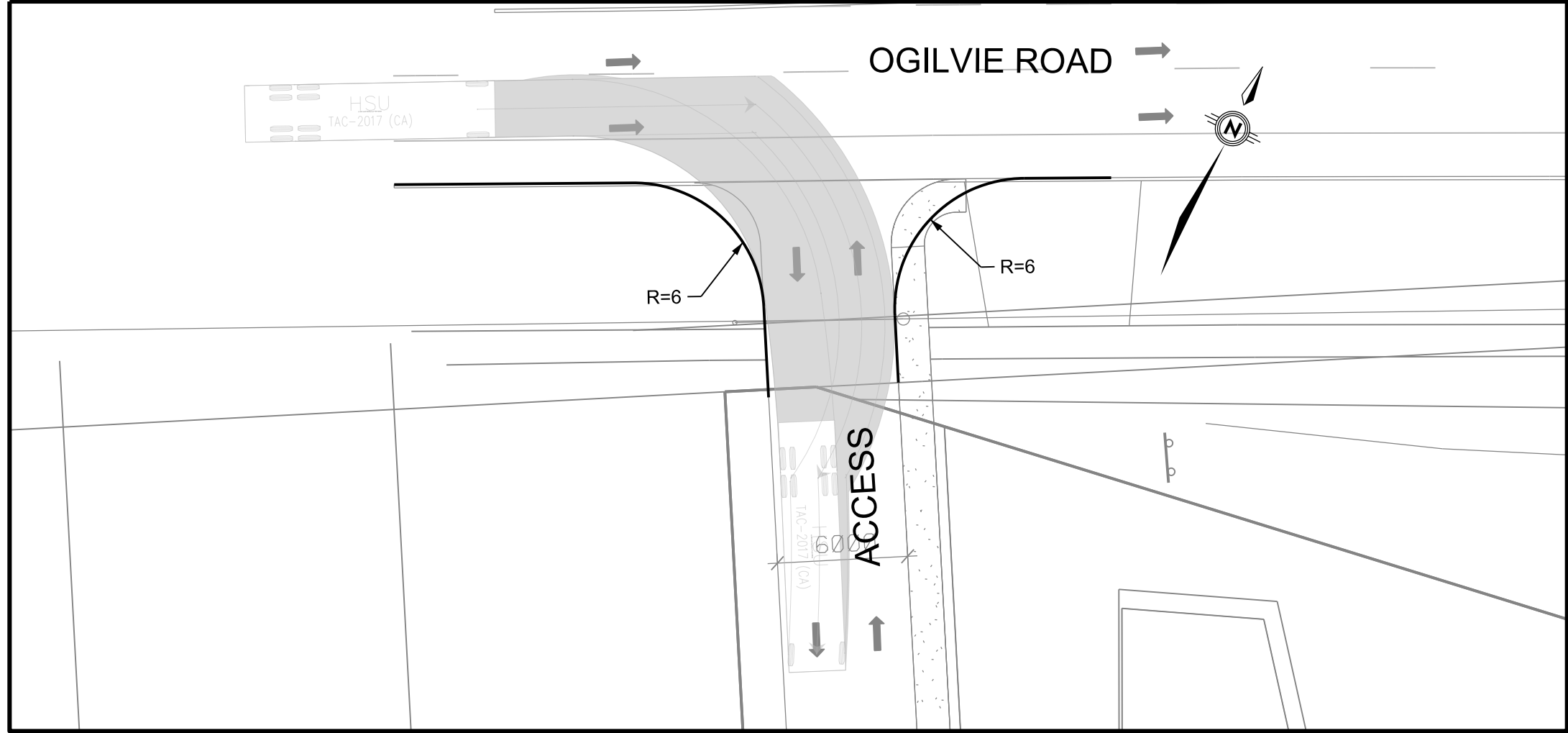
476751

29-May-20

SEGMENTS		Street A	Section Ogilvie	EXISTING Cummings W	Section Cummings E	PROPOSED Cummings W	Proposed Cummings W (to Ogilvie)	Section	Section 7	Section 8	Section 9
Pedestrian	Sidewalk Width	D	1.8 m	no sidewalk	1.8 m	≥ 2 m	≥ 2 m				
	Boulevard Width		> 2 m	n/a	< 0.5 m	> 2 m	< 0.5				
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	> 3000	> 3000	> 3000				
	Operating Speed		> 50 to 60 km/h	> 30 to 50 km/h	> 30 to 50 km/h	> 30 to 50 km/h	> 30 to 50 km/h				
	On-Street Parking		no	no	no	no	no				
	Exposure to Traffic PLoS		D	F	D	B	C	-	-	-	-
	Effective Sidewalk Width		1.5 m		1.5 m	2.0 m	2.0 m				
	Pedestrian Volume		250 ped/hr		250 ped/hr	500 ped /hr	500 ped /hr				
Bicycle		C									
	Type of Cycling Facility		Curbside Bike Lane	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic				
	Number of Travel Lanes		2 ea. dir. (w median)	≤ 2 (no centreline)	≤ 2 (no centreline)	≤ 2 (no centreline)	≤ 2 (no centreline)				
	Operating Speed		>50 to 70 km/h	>40 to <50 km/h	>40 to <50 km/h	>40 to <50 km/h	>40 to <50 km/h				
	# of Lanes & Operating Speed LoS		C	B	B	B	B	-	-	-	-
	Bike Lane (+ Parking Lane) Width		≥1.5 to <1.8 m								
	Bike Lane Width LoS		B	-	-	-	-	-	-	-	-
	Bike Lane Blockages		Rare								
	Blockage LoS		A	-	-	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge	< 1.8 m refuge				
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes	≤ 3 lanes				
	Sidestreet Operating Speed		>40 to 50 km/h	>40 to 50 km/h	>40 to 50 km/h	>40 to 50 km/h	>40 to 50 km/h				
	Unsignalized Crossing - Lowest LoS		B	B	B	B	B	-	-	-	-
Transit		D									
	Facility Type		Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic				
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8				
Truck		D									
	Truck Lane Width		≤ 3.3 m	≤ 3.3 m	≤ 3.3 m	≤ 3.3 m	≤ 3.3 m				
	Travel Lanes per Direction		> 1	1	1	1	1				
Level of Service			C	D	D	D	D	-	-	-	-

Appendix I

Turning Templates



1098 OGILVIE ROAD

EMERGENCY VEHICLES
TURNING MOVEMENTS



Contract No.
476751

Dwg. No.
001

Sheet 1 of

Asset No.

Project Manager

Asset Group

PARSONS

Des. MPM Chk'd. MJM

Dwn. MPM Chk'd. MJM

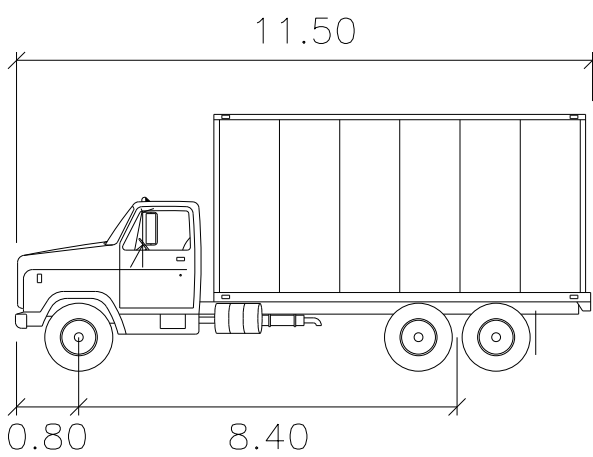
Utility Circ. No. Index No.

Const. Inspector

Scale: HORIZONTAL
0m 2.5 5 10

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

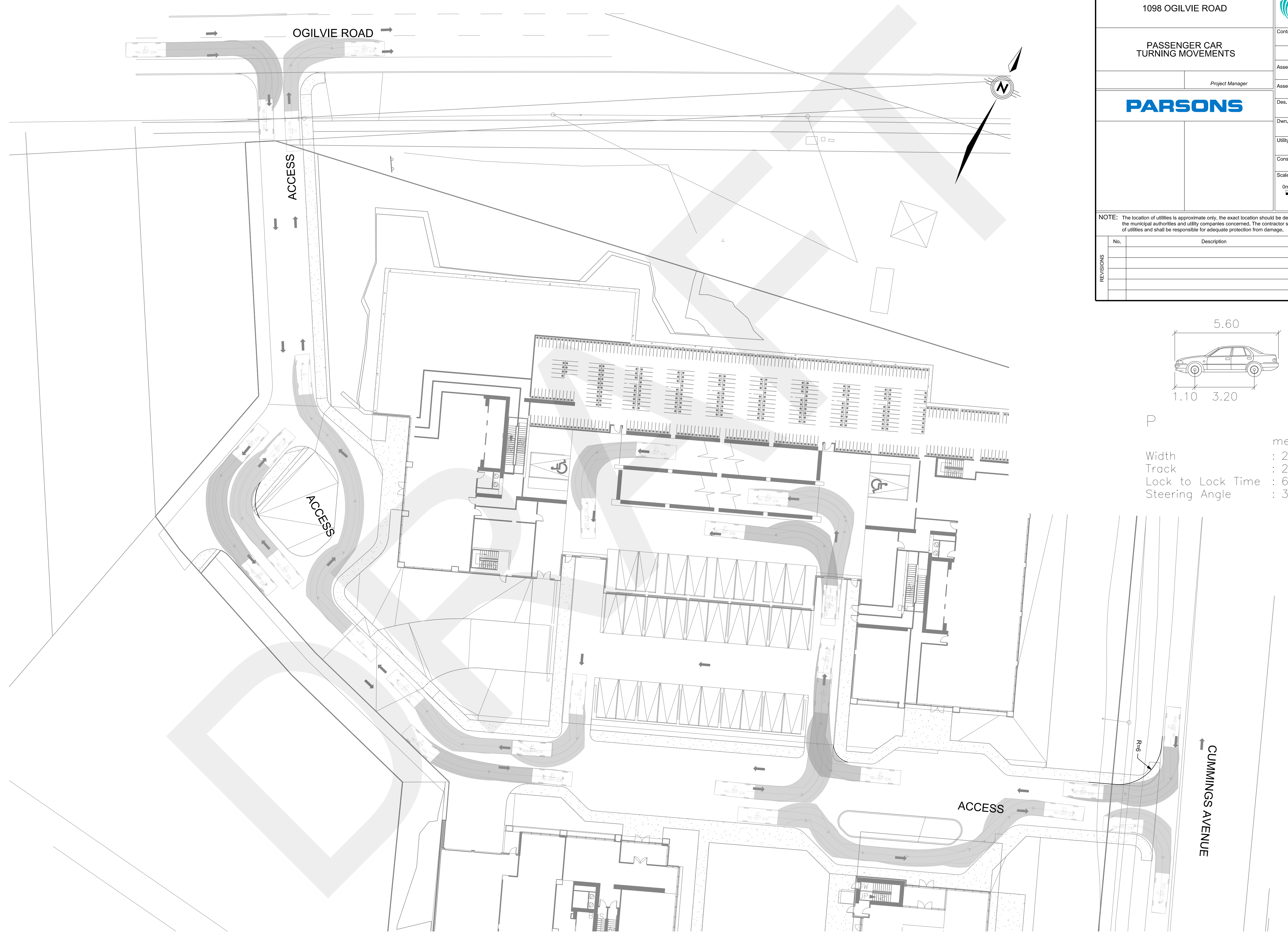
No.	Description	By	Date (dd/mm/yy)



HSU

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

meters



1098 OGILVIE ROAD



Contract No. 476751	Dwg. No. 002
Sheet 2 of	

Asset No.

Project Manager



Des. MPM	Chk'd. MJM
Dwn. MPM	Chk'd. MJM
Utility Circ. No.	Index No.

Const. Inspector	
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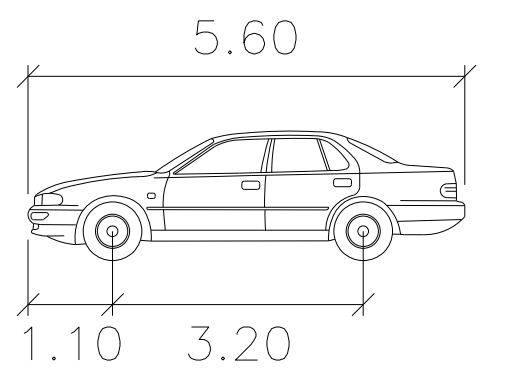
HORIZONTAL

0m 2.5 5 10



NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS	No.	Description	By	Date (dd/mm/yy)



P

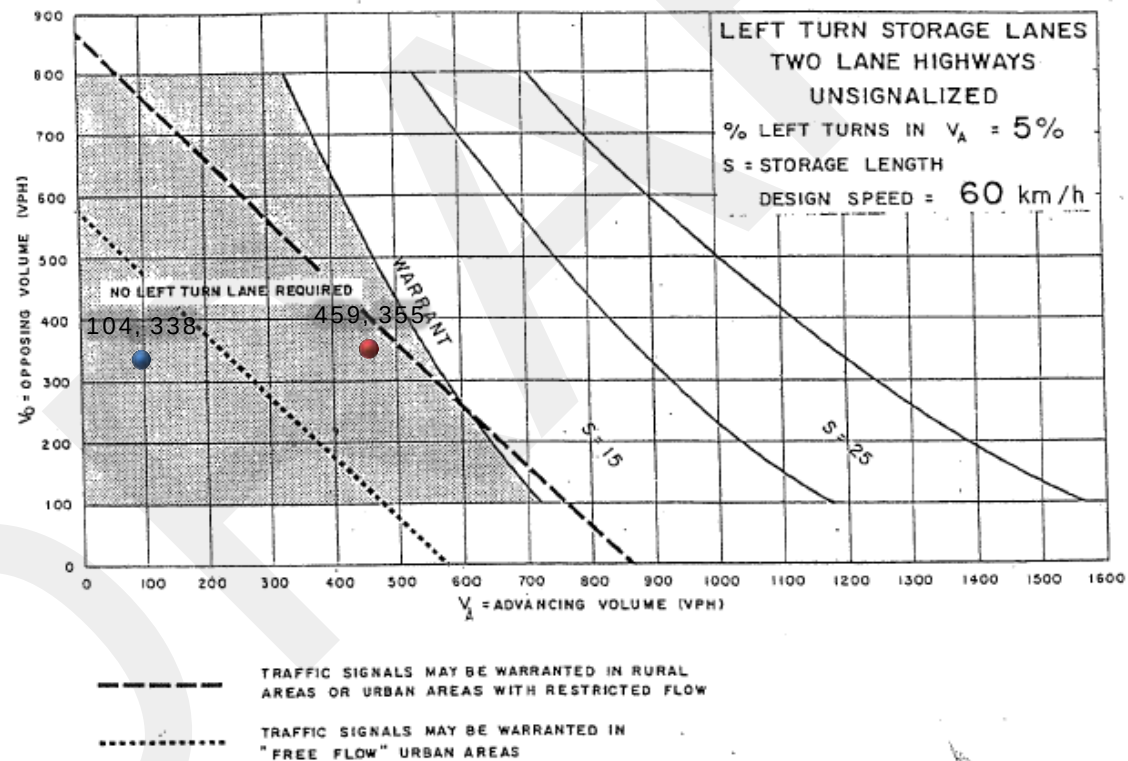
	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

Appendix J

Auxiliary Turn Lane Warrants

	Design Speed	Advancing Traffic Volume (V_A)		Opposing Traffic Volume (V_O)		Left Turn Traffic Volume (V_L)		% of Left Turning Traffic		Warrant Left Turn Lane
		AM	PM	AM	PM	AM	PM	AM	PM	
Existing										
Cummings/Site	50	104	459	338	355	3	6	3%	1%	No

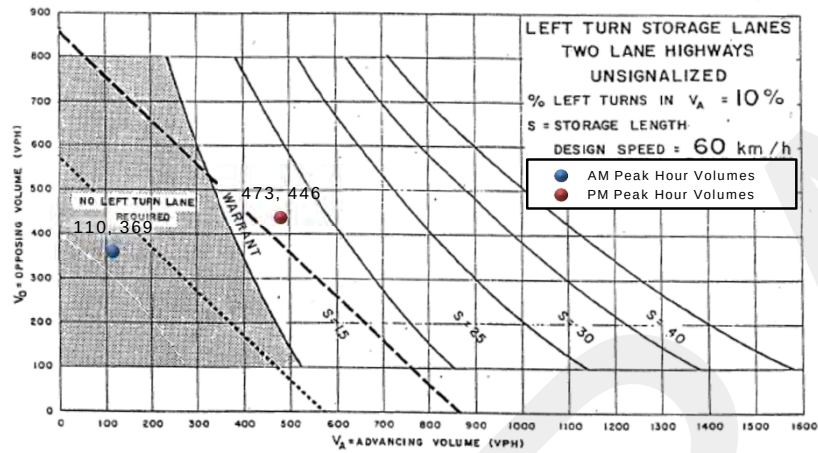
Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	Warrant?											
AM	3	101			317	21	92		20			
PM	6	453			323	32	55		12			



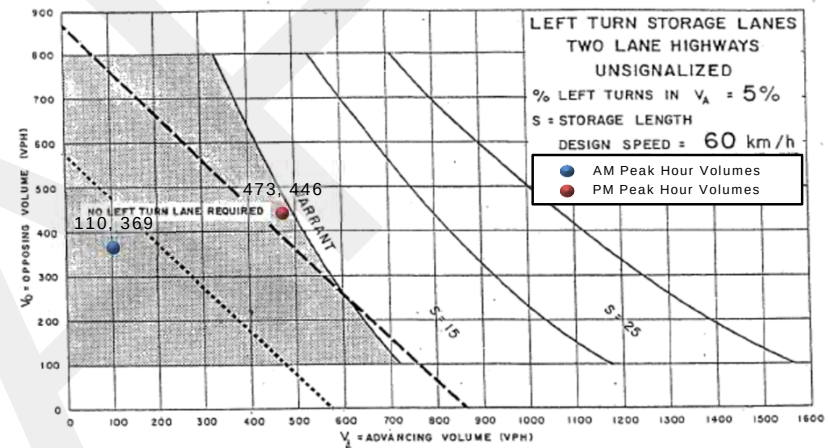
	Design Speed	Advancing Traffic Volume (V_A)		Opposing Traffic Volume (V_O)		Left Turn Traffic Volume (V_L)		% of Left Turning Traffic		Warrant Left Turn Lane
		AM	PM	AM	PM	AM	PM	AM	PM	
Existing										
Cummings/Site	50	110	473	369	446	9	20	8%	4%	No

Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Warrant?												
AM	9	101			317	52	249		199			
PM	20	453			323	123	199		46			

VOLUMES IF TOD TARGETS NOT MET AM



VOLUMES IF TOD TARGETS NOT MET PM

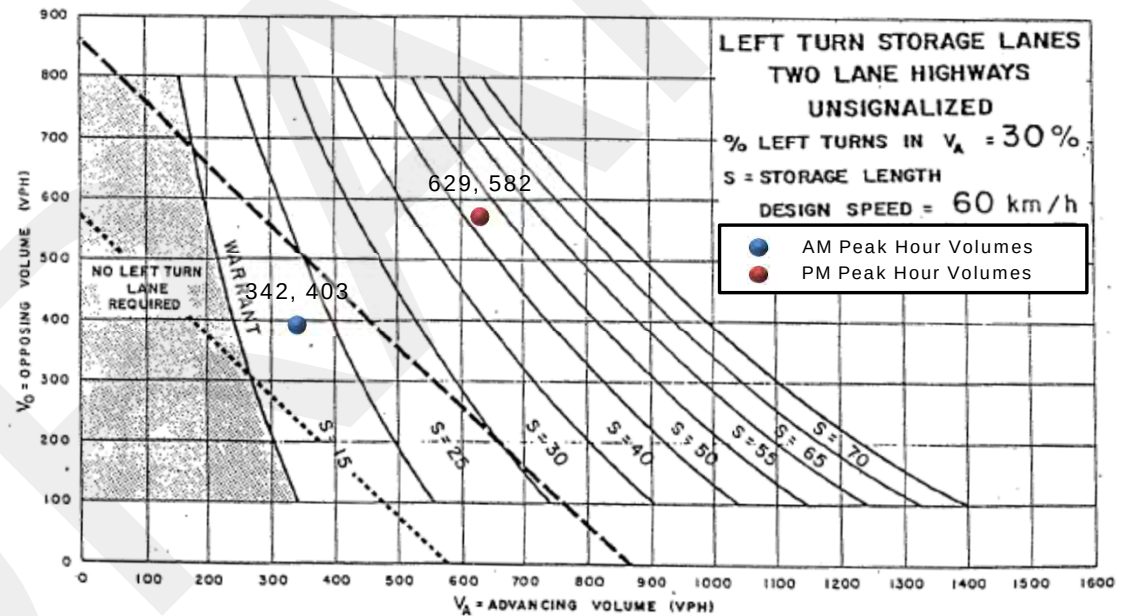


----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
 TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

	Design Speed	Advancing Traffic Volume (V_A)		Opposing Traffic Volume (V_O)		Left Turn Traffic Volume (V_L)		% of Left Turning Traffic		Warrant Left Turn Lane
		AM	PM	AM	PM	AM	PM	AM	PM	
Existing										
Ogilvie/Cummings	50	342	629	403	582	190	174	56%	28%	Yes

	←	↑	→	↙	↓	↘	↗	→	↘	↙	←	↗
Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM	Warrant?	69	83	138	153	112	48	684	11	189	1177	170
PM	190	223	232	258	240	84	110	1245	23	170	797	209

VOLUMES IF TOD TARGETS NOT MET AM & PM



Appendix K

TDM Checklist

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

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
1. WALKING & CYCLING: ROUTES		
1.1 Building location & access points		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	☒ Parking proposed underground
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☒ Refer to site plan
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☒ Yes, modern design building with plenty of windows
1.2 Facilities for walking & cycling		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (<i>see Official Plan policy 4.3.3</i>)	☒ Internal pathways proposed which connect to existing sidewalks such as Ogilvie on the north west side of the site or future proposed sidewalk which will connect to existing sidewalk at southern edge of the site, providing access to Cyrville LRT Station
REQUIRED	1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (<i>see Official Plan policy 4.3.12</i>)	☒ proposed pathways through public park or through the front of adjoining buildings, near proposed swimming pool amenities

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (<i>see Official Plan policy 4.3.10</i>)	☒ proposed sidewalk which would connect the development to the new sidewalk located at the southern edge of the property on Cummings Avenue. Sidewalk provides connectivity to Cyrville LRT Station
REQUIRED	1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (<i>see Official Plan policy 4.3.10</i>)	☒ sidewalk to be built to City standards
REQUIRED	1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (<i>see Official Plan policy 4.3.11</i>)	☐ facilities to the south proposed, including the addition of a new sidewalk connecting to existing sidewalk on south quadrant of site. Current conversations about connecting the proposed sidewalk to Ogilvie Road as well
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐ Current conversations about connecting the proposed sidewalk to Ogilvie Road as well
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☒ sidewalk to be built to City standards
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	☒ Development built with ROW to allow for cycle facilities as per the Cyrville TOD Plan
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	☒ Proposed public park on the south quadrant of development
BASIC	1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

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

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

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

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: <i>Non-residential developments</i>		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	☐ No
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	☒ We will put information on our website
2.2 Bicycle skills training		
<i>Commuter travel</i>		
BETTER ★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐ no
2.3 Valet bike parking		
<i>Visitor travel</i>		
BETTER	2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐ no

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
3. TRANSIT		
3.1 Transit information		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances	☒ On our wesite
BASIC	3.1.2 Provide online links to OC Transpo and STO information	☒ On our website
BETTER	3.1.3 Provide real-time arrival information display at entrances	☐ no
3.2 Transit fare incentives		
<i>Commuter travel</i>		
BETTER	3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	☐ if necessary
BETTER ★	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	☐ no
<i>Visitor travel</i>		
BETTER	3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐ no
3.3 Enhanced public transit service		
<i>Commuter travel</i>		
BETTER	3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐ if necessary
<i>Visitor travel</i>		
BETTER	3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐ if necessary
3.4 Private transit service		
<i>Commuter travel</i>		
BETTER	3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☒ on demand for the hotel
<i>Visitor travel</i>		
BETTER	3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☒ on demande for the hotel

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
4. RIDESHARING		
4.1 Ridematching service		
<i>Commuter travel</i>		
BASIC	4.1.1 Provide a dedicated ridematching portal at OttawaRideMatch.com	☒ on our website
4.2 Carpool parking price incentives		
<i>Commuter travel</i>		
BETTER	4.2.1 Provide discounts on parking costs for registered carpools	☐ no
4.3 Vanpool service		
<i>Commuter travel</i>		
BETTER	4.3.1 Provide a vanpooling service for long-distance commuters	☐ no
5. CARSHARING & BIKESHARING		
5.1 Bikeshare stations & memberships		
BETTER	5.1.1 Contract with provider to install on-site bikeshare station for use by commuters and visitors	☒ we will try to have a bikeshare station
<i>Commuter travel</i>		
BETTER	5.1.2 Provide employees with bikeshare memberships for local business travel	☐ no
5.2 Carshare vehicles & memberships		
<i>Commuter travel</i>		
BETTER	5.2.1 Contract with provider to install on-site carshare vehicles and promote their use by tenants	☒ we will try to have a contract with a carshare company
BETTER	5.2.2 Provide employees with carshare memberships for local business travel	☐
6. PARKING		
6.1 Priced parking		
<i>Commuter travel</i>		
BASIC	6.1.1 Charge for long-term parking (daily, weekly, monthly)	☒
BASIC	6.1.2 Unbundle parking cost from lease rates at multi-tenant sites	☒ we will separate parking price from room rates
<i>Visitor travel</i>		
BETTER	6.1.3 Charge for short-term parking (hourly)	☐ no

TDM measures: <i>Non-residential developments</i>			Check if proposed & add descriptions
7. TDM MARKETING & COMMUNICATIONS			
7.1 Multimodal travel information			
<i>Commuter travel</i>			
BASIC	★	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☒ on our website
<i>Visitor travel</i>			
BETTER	★	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☒ on our website
7.2 Personalized trip planning			
<i>Commuter travel</i>			
BETTER	★	7.2.1 Offer personalized trip planning to new/relocating employees	☐ no
7.3 Promotions			
<i>Commuter travel</i>			
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☒
8. OTHER INCENTIVES & AMENITIES			
8.1 Emergency ride home			
<i>Commuter travel</i>			
BETTER	★	8.1.1 Provide emergency ride home service to non-driving commuters	☐ no
8.2 Alternative work arrangements			
<i>Commuter travel</i>			
BASIC	★	8.2.1 Encourage flexible work hours	☒
BETTER		8.2.2 Encourage compressed workweeks	☒
BETTER	★	8.2.3 Encourage telework	☒
8.3 Local business travel options			
<i>Commuter travel</i>			
BASIC	★	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☒
8.4 Commuter incentives			
<i>Commuter travel</i>			
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐ no
8.5 On-site amenities			
<i>Commuter travel</i>			
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☒

TDM-Supportive Development Design and Infrastructure Checklist: *Non-Residential Developments (office, institutional, retail or industrial)*

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

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
1. WALKING & CYCLING: ROUTES		
1.1 Building location & access points		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	☒ Parking proposed underground
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☒ Refer to site plan
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☒ Yes, modern design building with plenty of windows
1.2 Facilities for walking & cycling		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (<i>see Official Plan policy 4.3.3</i>)	☒ Internal pathways proposed which connect to existing sidewalks such as Ogilvie on the north west side of the site or future proposed sidewalk which will connect to existing sidewalk at southern edge of the site, providing access to Cyrville LRT Station
REQUIRED	1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (<i>see Official Plan policy 4.3.12</i>)	☒ proposed pathways through public park or through the front of adjoining buildings, near proposed swimming pool amenities

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (<i>see Official Plan policy 4.3.10</i>)	☒ proposed sidewalk which would connect the development to the new sidewalk located at the southern edge of the property on Cummings Avenue. Sidewalk provides connectivity to Cyrville LRT Station
REQUIRED	1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (<i>see Official Plan policy 4.3.10</i>)	☒ sidewalk to be built to City standards
REQUIRED	1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (<i>see Official Plan policy 4.3.11</i>)	☐ facilities to the south proposed, including the addition of a new sidewalk connecting to existing sidewalk on south quadrant of site. Current conversations about connecting the proposed sidewalk to Ogilvie Road as well
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐ Current conversations about connecting the proposed sidewalk to Ogilvie Road as well
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☒ sidewalk to be built to City standards
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	☒ Development built with ROW to allow for cycle facilities as per the Cyrville TOD Plan
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	☒ Proposed public park on the south quadrant of development
BASIC	1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☒

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
2. WALKING & CYCLING: END-OF-TRIP FACILITIES		
2.1 Bicycle parking		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (<i>see Official Plan policy 4.3.6</i>)	☒ Bike parking proposed indoors, with some outdoors for guests
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 (<i>see Zoning By-law Section 111</i>)	☒ Bike parking meets parking by-law. Bicycle storage proposed on ground floor
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 (<i>see Zoning By-law Section 111</i>)	☒ Noted
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
2.2 Secure bicycle parking		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (<i>see Zoning By-law Section 111</i>)	☒ The majority of bicycle parking is indoors at ground level
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
2.3 Shower & change facilities		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
2.4 Bicycle repair station		
BETTER	2.4.1 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)	☐

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
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	☐
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	☒ Pick up-drop off bays
4.2 Carpool parking		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
5. CARSHARING & BIKESHARING		
5.1 Carshare parking spaces		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces (<i>see Zoning By-law Section 94</i>)	☐
5.2 Bikeshare station location		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
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	☒ minimum and maximum parking by-laws respected
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	☒ residential and visitor parking separated. Potential overflow parking north of site on gravel pit
BASIC	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>)	☒ residential visitor parking and hotel parking treated as one (visitor parking)
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 (<i>see Zoning By-law Section 111</i>)	☐
6.2 Separate long-term & short-term parking areas		
BETTER	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
7. OTHER		
7.1 On-site amenities to minimize off-site trips		
BETTER	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	☐

Appendix L

MMLOS Intersection Analysis

Multi-Modal Level of Service - Intersections Form

Consultant
Scenario
Comments

Parsons

1098 Ogilvie, Lux Place

Project
Date

476751

5-Jun-19

Unlocked Rows for Replicating

INTERSECTIONS		Ogilvie/Cummings				Cummings/Cyrville				Intersection C			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	3	4	6	5	3	3	3	3				
	Median	No Median - 2.4 m	Median > 2.4 m	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	Permissive	Protected/ Permissive	Protected/ Permissive	Permissive	Permissive	Permissive	Permissive	Permissive				
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control				
	Right Turns on Red (RTor) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed				
	Ped Signal Leading Interval?	No	No	No	No	Yes	Yes	No	No				
	Right Turn Channel	No Channel	Conv'tl without Receiving Lane	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel				
	Corner Radius	10-15m	15-25m	10-15m	10-15m	10-15m	15-25m	10-15m	10-15m				
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings				
	PETSI Score	70	57	25	37	72	70	70	70				
	Ped. Exposure to Traffic LoS	C	D	F	E	C	C	C	C	-	-	-	-
	Cycle Length	61	61	36	48	28	28	42	42				
Effective Walk Time	19	19	30	30	22	22	28	28					
Average Pedestrian Delay	14	14	1	3	1	1	2	2					
Pedestrian Delay LoS	B	B	A	A	A	A	A	A	-	-	-	-	
Level of Service	C	D	F	E	C	C	C	C	-	-	-	-	
	F				C				-				
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	Mixed Traffic	Pocket Bike Lane	Pocket Bike Lane				
	Right Turn Lane Configuration	≤ 50 m	≤ 50 m	≤ 50 m Introduced right turn lane	≤ 50 m Introduced right turn lane	≤ 50 m	≤ 50 m	≤ 50 m Introduced right turn lane	≤ 50 m Introduced right turn lane				
	Right Turning Speed	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h				
	Cyclist relative to RT motorists	D	D	B	B	D	D	B	B	-	-	-	-
	Separated or Mixed Traffic	Mixed Traffic	Mixed Traffic	Separated	Separated	Mixed Traffic	Mixed Traffic	Separated	Separated	-	-	-	-
	Left Turn Approach	No lane crossed	No lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	No lane crossed	1 lane crossed	1 lane crossed				
	Operating Speed	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h				
	Left Turning Cyclist	B	B	F	F	B	B	C	C				
Level of Service	D	D	F	F	D	D	C	C	-	-	-	-	
	F				D				-				
Transit	Average Signal Delay	≤ 30 sec	≤ 30 sec	> 40 sec	≤ 40 sec	≤ 20 sec	≤ 10 sec	≤ 30 sec	≤ 20 sec				
	Level of Service	D	D	F	E	C	B	D	C	-	-	-	-
		F				D				-			
Truck	Effective Corner Radius	10 - 15 m	> 15 m	10 - 15 m	10 - 15 m	10 - 15 m	> 15 m	10 - 15 m	10 - 15 m				
	Number of Receiving Lanes on Departure from Intersection	1	1	≥ 2	≥ 2	1	1	1	1				
	Level of Service	E	C	B	B	E	C	E	E	-	-	-	-
		E				E				-			
Auto	Volume to Capacity Ratio												
	Level of Service	-				-				-			

Appendix M

Future Background Traffic SYNCHRO Analysis

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

AM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	202	58	625	618	24	141	802	507	33	815	132
Future Volume (vph)	66	202	58	625	618	24	141	802	507	33	815	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4497	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3269	3390	1380	3163	3390	1464	1658	4497	0	1685	4871	1395
Satd. Flow (RTOR)			195			140		112				196
Lane Group Flow (vph)	66	202	58	625	618	24	141	1309	0	33	815	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.8	22.6	22.6	27.7	34.1	34.1	14.2	50.4		8.0	39.2	39.2
Actuated g/C Ratio	0.14	0.17	0.17	0.21	0.26	0.26	0.11	0.39		0.06	0.30	0.30
v/c Ratio	0.14	0.34	0.14	0.89	0.70	0.05	0.76	0.72		0.32	0.55	0.24
Control Delay	46.4	46.9	0.8	64.2	43.9	0.2	72.8	31.8		65.5	42.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.4	46.9	0.8	64.2	43.9	0.2	72.8	31.8		65.5	42.4	1.8
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		38.6			53.1			35.8			37.7	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.0	22.3	0.0	65.1	80.8	0.0	35.3	114.7		8.3	72.1	0.0
Queue Length 95th (m)	14.0	33.3	0.0	#109.0	89.6	m0.0	#63.1	#157.1		18.8	87.8	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	487	795	473	736	1342	664	203	1812		203	1469	557
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.14	0.25	0.12	0.85	0.46	0.04	0.69	0.72		0.16	0.55	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 41.9

Intersection LOS: D

Intersection Capacity Utilization 95.4%

ICU Level of Service F

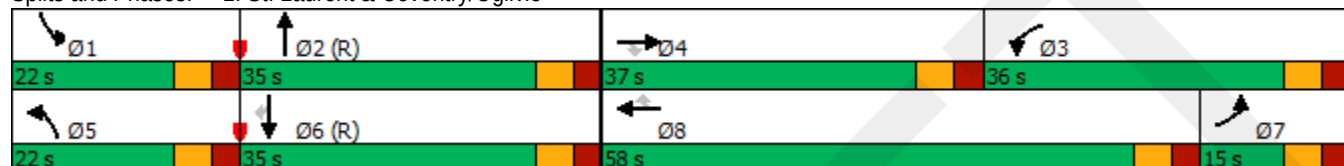
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

AM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	554	227	25	1024	166	165	244	12	47	158	45
Future Volume (vph)	0	554	227	25	1024	166	165	244	12	47	158	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1770	0	1695	1718	0
Flt Permitted				0.436			0.493			0.382		
Satd. Flow (perm)	0	3390	1422	767	3390	1380	875	1770	0	680	1718	0
Satd. Flow (RTOR)			227			150		2			12	
Lane Group Flow (vph)	0	554	227	25	1024	166	165	256	0	47	203	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.4	89.4	89.4	89.4	89.4	27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.69	0.69	0.69	0.69	0.69	0.21	0.21		0.21	0.21	
v/c Ratio		0.24	0.22	0.05	0.44	0.17	0.90	0.69		0.33	0.55	
Control Delay		7.3	2.7	6.8	8.1	1.6	93.3	55.5		46.7	47.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.3	2.7	6.8	8.1	1.6	93.3	55.5		46.7	47.2	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		6.0			7.1			70.3			47.1	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		23.4	1.4	2.0	46.8	3.5	41.8	61.0		10.4	44.3	
Queue Length 95th (m)		7.5	m0.0	m1.5	24.1	m0.0	61.4	78.6		19.6	59.9	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2332	1049	527	2332	996	288	585		224	574	
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	0.22	0.05	0.44	0.17	0.57	0.44		0.21	0.35	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

AM Background 2022

05/29/2020

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 20.5

Intersection LOS: C

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

AM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	579	11	163	1120	170	18	11	63	138	121	112
Future Volume (vph)	48	579	11	163	1120	170	18	11	63	138	121	112
Satd. Flow (prot)	1695	3375	0	1695	3292	0	1695	1784	1517	1695	1641	0
Flt Permitted	0.130			0.378			0.613			0.618		
Satd. Flow (perm)	232	3375	0	662	3292	0	1089	1784	1397	1035	1641	0
Satd. Flow (RTOR)		2			19				98		38	
Lane Group Flow (vph)	48	590	0	163	1290	0	18	11	63	138	233	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	79.0	71.6		81.2	74.4		22.0	22.0	22.0	36.6	34.3	
Actuated g/C Ratio	0.61	0.55		0.62	0.57		0.17	0.17	0.17	0.28	0.26	
v/c Ratio	0.23	0.32		0.35	0.68		0.10	0.04	0.20	0.40	0.51	
Control Delay	16.8	19.9		12.0	19.9		41.8	39.7	3.8	37.9	35.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.8	19.9		12.0	19.9		41.8	39.7	3.8	37.9	35.8	
LOS	B	B		B	B		D	D	A	D	D	
Approach Delay		19.6			19.0			15.5			36.6	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	5.3	58.5		16.8	73.3		3.6	2.2	0.0	23.3	35.7	
Queue Length 95th (m)	12.7	54.8		m18.3	m78.3		10.4	7.3	4.2	42.2	63.2	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	215	1905		469	1935		254	417	401	348	567	
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	0.22	0.31		0.35	0.67		0.07	0.03	0.16	0.40	0.41	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

AM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	524	49	153	887	121	351	585	415	133	342	238
Future Volume (vph)	301	524	49	153	887	121	351	585	415	133	342	238
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3162	0	1695	3160	0
Flt Permitted	0.096			0.404			0.950			0.950		
Satd. Flow (perm)	171	3390	1474	716	3390	1492	1693	3162	0	1694	3160	0
Satd. Flow (RTOR)			164			164		140			119	
Lane Group Flow (vph)	301	524	49	153	887	121	351	1000	0	133	580	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	60.1	43.8	43.8	52.4	38.9	38.9	28.4	38.9		12.4	22.9	
Actuated g/C Ratio	0.46	0.34	0.34	0.40	0.30	0.30	0.22	0.30		0.10	0.18	
v/c Ratio	1.08	0.46	0.08	0.40	0.87	0.22	0.95	0.96		0.83	0.89	
Control Delay	120.5	37.2	0.4	23.4	53.7	2.5	85.7	58.0		93.8	57.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	120.5	37.2	0.4	23.4	53.7	2.5	85.7	58.0		93.8	57.8	
LOS	F	D	A	C	D	A	F	E		F	E	
Approach Delay		63.8			44.3			65.2			64.5	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~77.1	45.7	0.3	21.9	110.9	0.0	90.6	117.6		34.1	61.8	
Queue Length 95th (m)	#136.9	65.9	0.0	35.4	136.8	5.4	#151.9	#161.3		#69.8	#89.7	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	278	1142	605	421	1066	581	370	1044		164	678	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.08	0.46	0.08	0.36	0.83	0.21	0.95	0.96		0.81	0.86	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 58.9

Intersection LOS: E

Intersection Capacity Utilization 101.4%

ICU Level of Service G

Analysis Period (min) 15

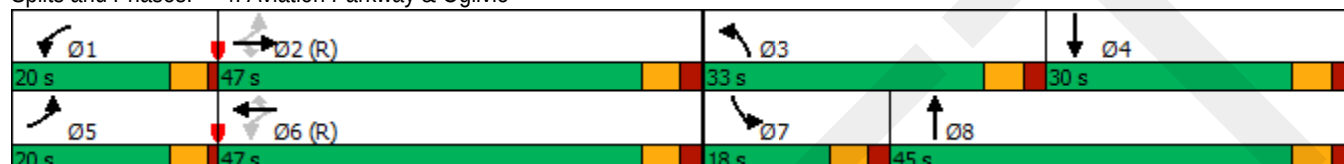
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

AM Background 2022

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	148	215	129	200	104
Future Volume (vph)	42	148	215	129	200	104
Satd. Flow (prot)	1695	1517	1695	1784	1681	0
Flt Permitted	0.950		0.575			
Satd. Flow (perm)	1662	1447	1016	1784	1681	0
Satd. Flow (RTOR)		148			65	
Lane Group Flow (vph)	42	148	215	129	304	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.2	16.2	15.2	15.2	15.2	
Actuated g/C Ratio	0.36	0.36	0.34	0.34	0.34	
v/c Ratio	0.07	0.24	0.62	0.21	0.49	
Control Delay	12.1	4.4	20.4	10.6	11.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.1	4.4	20.4	10.6	11.4	
LOS	B	A	C	B	B	
Approach Delay	6.1			16.7	11.4	
Approach LOS	A			B	B	
Queue Length 50th (m)	1.9	0.0	13.2	6.8	13.5	
Queue Length 95th (m)	8.6	10.0	28.0	14.2	27.1	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	618	622	764	1343	1281	
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	0.07	0.24	0.28	0.10	0.24	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 44.5						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.62						

Lanes, Volumes, Timings

5: Cummings & Donald

AM Background 2022

05/29/2020

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 61.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2		 Ø4	
39.9 s		22 s	
 Ø6			
39.9 s			

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

AM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	132	113	21	160	445	136	30	176	96
Future Volume (vph)	9	26	24	132	113	21	160	445	136	30	176	96
Satd. Flow (prot)	1695	1611	0	1695	1733	0	1695	1707	0	1695	1673	0
Flt Permitted	0.671			0.724			0.592			0.327		
Satd. Flow (perm)	1187	1611	0	1249	1733	0	1052	1707	0	580	1673	0
Satd. Flow (RTOR)		24			13			28			50	
Lane Group Flow (vph)	9	50	0	132	134	0	160	581	0	30	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	12.9	12.9		12.9	12.9		24.8	24.8		24.8	24.8	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.49	0.49		0.49	0.49	
v/c Ratio	0.03	0.12		0.42	0.30		0.31	0.69		0.11	0.32	
Control Delay	16.8	11.7		21.5	16.9		11.1	15.5		9.7	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.8	11.7		21.5	16.9		11.1	15.5		9.7	8.4	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.5			19.2			14.5			8.5	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		8.1	7.2		6.5	28.3		1.1	8.8	
Queue Length 95th (m)	4.0	9.8		28.7	25.6		25.8	93.2		6.8	32.8	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	553	764		582	815		778	1271		429	1251	
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	0.02	0.07		0.23	0.16		0.21	0.46		0.07	0.22	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 50.9												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.69												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle/Cummings

AM Background 2022
05/29/2020

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings

 Ø2 42 s	 Ø3 5 s	 Ø4 28 s
 Ø6 42 s	 Ø7 5 s	 Ø8 28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

AM Background 2022

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	589	153	1210	228	6	1425
Future Volume (vph)	589	153	1210	228	6	1425
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.201	
Satd. Flow (perm)	3288	1450	4871	1477	358	4871
Satd. Flow (RTOR)		64		228		
Lane Group Flow (vph)	589	153	1210	228	6	1425
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.3	29.3	89.1	89.1	89.1	89.1
Actuated g/C Ratio	0.23	0.23	0.69	0.69	0.69	0.69
v/c Ratio	0.79	0.41	0.36	0.21	0.02	0.43
Control Delay	55.6	26.7	9.4	1.6	6.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	26.7	9.4	1.6	6.2	6.3
LOS	E	C	A	A	A	A
Approach Delay	49.7		8.1			6.3
Approach LOS	D		A			A
Queue Length 50th (m)	73.6	18.9	43.9	0.0	0.5	42.9
Queue Length 95th (m)	87.9	36.7	60.8	9.0	m0.2	12.9
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	532	3338	1084	245	3338
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	0.53	0.29	0.36	0.21	0.02	0.43
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 60.6%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	125	133	640	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	125	133	640	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	125	133	640	44	0	0	178
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	586	-	-	-	-	320	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	586	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	394	0	0	0	0	676	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	463	0	0	0	0	-	-	-	0			
Platoon blocked, %									-			
Mov Cap-1 Maneuver	321	-	-	-	-	676	-	-	-			
Mov Cap-2 Maneuver	321	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	377	-	-	-	-	-	-	-	-			
Approach	EB			WB			NB					
HCM Control Delay, s	17.4			11.5								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1								
Capacity (veh/h)	-	-	321	676								
HCM Lane V/C Ratio	-	-	0.093	0.185								
HCM Control Delay (s)	-	-	17.4	11.5								
HCM Lane LOS	-	-	C	B								
HCM 95th %tile Q(veh)	-	-	0.3	0.7								

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

PM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	597	205	466	382	30	182	880	609	71	789	192
Future Volume (vph)	302	597	205	466	382	30	182	880	609	71	789	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4484	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3222	3390	1457	1659	4484	0	1688	4871	1403
Satd. Flow (RTOR)			210			210		151				211
Lane Group Flow (vph)	302	597	205	466	382	30	182	1489	0	71	789	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.2	27.5	27.5	19.2	24.5	24.5	16.1	41.5		8.2	31.0	31.0
Actuated g/C Ratio	0.18	0.23	0.23	0.16	0.20	0.20	0.13	0.35		0.07	0.26	0.26
v/c Ratio	0.50	0.77	0.43	0.89	0.55	0.06	0.80	0.99dr		0.62	0.63	0.37
Control Delay	48.7	50.3	7.4	81.1	54.8	0.3	68.3	38.3		77.3	42.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.7	50.3	7.4	81.1	54.8	0.3	68.3	38.3		77.3	42.7	5.8
LOS	D	D	A	F	D	A	E	D		E	D	A
Approach Delay		41.9			66.9			41.6			38.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	67.2	0.0	58.7	49.1	0.0	41.8	118.4		16.5	62.1	0.0
Queue Length 95th (m)	49.8	87.1	17.2	#91.7	66.3	m0.0	#70.6	#152.4		#34.9	76.7	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	608	861	509	526	861	526	248	1650		121	1257	518
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.69	0.40	0.89	0.44	0.06	0.73	0.90		0.59	0.63	0.37
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 110												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 45.6

Intersection LOS: D

Intersection Capacity Utilization 97.0%

ICU Level of Service F

Analysis Period (min) 15

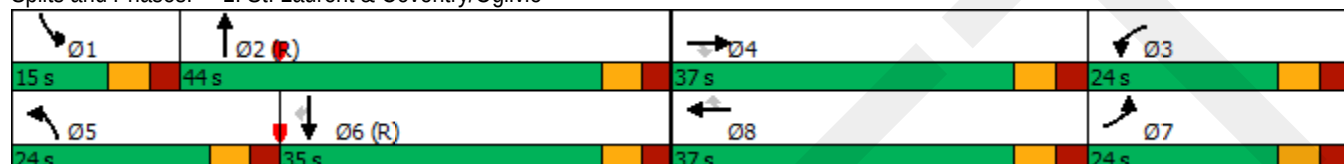
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

PM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1024	257	40	667	124	117	219	32	134	222	80
Future Volume (vph)	0	1024	257	40	667	124	117	219	32	134	222	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1747	0	1695	1704	0
Flt Permitted				0.241			0.329			0.426		
Satd. Flow (perm)	0	3390	1424	428	3390	1388	585	1747	0	758	1704	0
Satd. Flow (RTOR)			257			124		7			17	
Lane Group Flow (vph)	0	1024	257	40	667	124	117	251	0	134	302	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		79.6	79.6	79.6	79.6	79.6	27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.46	0.25	0.14	0.30	0.13	0.89	0.63		0.78	0.76	
Control Delay		11.9	3.8	25.4	24.2	13.4	96.6	46.5		71.6	52.3	
Queue Delay		0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		12.2	3.8	25.4	24.2	13.4	96.6	46.5		71.6	52.3	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		10.6			22.7			62.4			58.2	
Approach LOS		B			C			E			E	
Queue Length 50th (m)		57.4	13.5	6.4	73.4	11.2	27.2	52.9		30.2	64.1	
Queue Length 95th (m)		m22.5	m0.2	m13.3	97.6	m26.2	45.0	68.2		46.6	81.4	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2247	1030	283	2247	962	209	629		270	620	
Starvation Cap Reductn		614	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		0.63	0.25	0.14	0.30	0.13	0.56	0.40		0.50	0.49	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

PM Background 2022

05/29/2020

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 27.7

Intersection LOS: C

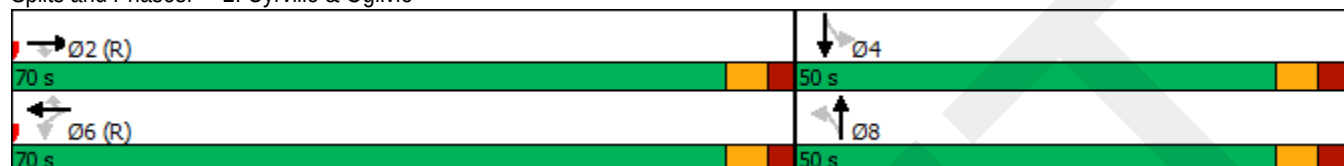
Intersection Capacity Utilization 81.8%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

PM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1126	23	109	759	209	36	169	216	258	170	84
Future Volume (vph)	110	1126	23	109	759	209	36	169	216	258	170	84
Satd. Flow (prot)	1695	3374	0	1695	3235	0	1695	1784	1517	1695	1685	0
Flt Permitted	0.168			0.102			0.602			0.466		
Satd. Flow (perm)	300	3374	0	182	3235	0	1070	1784	1405	795	1685	0
Satd. Flow (RTOR)		2			31				158		27	
Lane Group Flow (vph)	110	1149	0	109	968	0	36	169	216	258	254	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	61.1	50.4		61.1	50.4		23.0	23.0	23.0	45.2	42.9	
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.42	0.81		0.51	0.70		0.18	0.50	0.55	0.62	0.41	
Control Delay	18.1	38.7		33.7	30.0		38.8	46.6	17.1	33.3	26.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	18.1	38.7		33.7	30.0		38.8	46.6	17.1	33.3	26.5	
LOS	B	D		C	C		D	D	B	C	C	
Approach Delay		36.9			30.3			30.8			29.9	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	14.6	141.0		11.0	111.2		6.6	33.1	10.7	39.6	35.7	
Queue Length 95th (m)	13.2	#191.5		34.9	#117.1		15.5	53.3	32.8	60.2	56.4	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	285	1419		234	1377		297	496	505	417	764	
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	0.39	0.81		0.47	0.70		0.12	0.34	0.43	0.62	0.33	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 32.8

Intersection LOS: C

Intersection Capacity Utilization 95.1%

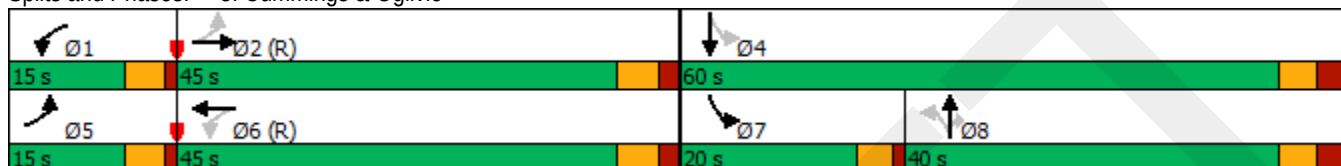
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

PM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	749	83	136	601	112	124	213	180	112	249	168
Future Volume (vph)	183	749	83	136	601	112	124	213	180	112	249	168
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3137	0	1695	3168	0
Flt Permitted	0.355			0.298			0.950			0.950		
Satd. Flow (perm)	633	3390	1476	530	3390	1493	1692	3137	0	1694	3168	0
Satd. Flow (RTOR)			125			125		161			123	
Lane Group Flow (vph)	183	749	83	136	601	112	124	393	0	112	417	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	69.1	56.3	56.3	66.3	54.9	54.9	13.8	17.9		13.0	17.1	
Actuated g/C Ratio	0.58	0.47	0.47	0.55	0.46	0.46	0.12	0.15		0.11	0.14	
v/c Ratio	0.39	0.47	0.11	0.35	0.39	0.15	0.64	0.65		0.61	0.75	
Control Delay	20.4	31.4	7.4	14.8	24.5	4.1	65.1	32.6		64.7	42.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	20.4	31.4	7.4	14.8	24.5	4.1	65.1	32.6		64.7	42.8	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		27.5			20.2			40.4			47.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	31.1	78.7	3.0	13.1	48.0	0.0	28.2	27.1		25.5	35.6	
Queue Length 95th (m)	m33.8	74.7	m3.9	27.3	77.1	9.8	46.8	41.1		42.7	49.4	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	512	1606	765	461	1574	760	210	753		203	729	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.47	0.11	0.30	0.38	0.15	0.59	0.52		0.55	0.57	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.3

Intersection LOS: C

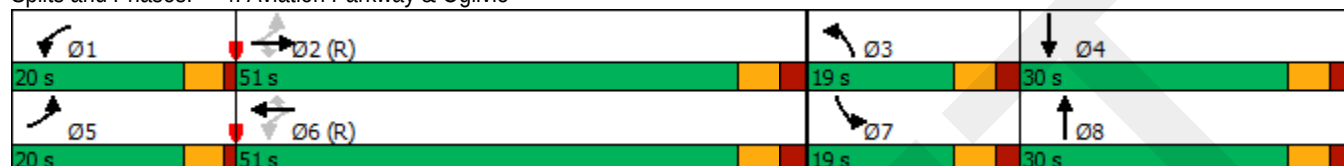
Intersection Capacity Utilization 73.8%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2022

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	306	244	248	248	90
Future Volume (vph)	88	306	244	248	248	90
Satd. Flow (prot)	1695	1517	1695	1784	1702	0
Flt Permitted	0.950		0.504			
Satd. Flow (perm)	1658	1442	890	1784	1702	0
Satd. Flow (RTOR)		306			34	
Lane Group Flow (vph)	88	306	244	248	338	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.4	25.4	20.4	20.4	20.4	
Actuated g/C Ratio	0.43	0.43	0.35	0.35	0.35	
v/c Ratio	0.12	0.38	0.79	0.40	0.55	
Control Delay	13.5	3.8	35.8	15.8	16.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.5	3.8	35.8	15.8	16.8	
LOS	B	A	D	B	B	
Approach Delay	6.0			25.7	16.8	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.5	0.0	22.7	19.4	25.0	
Queue Length 95th (m)	16.7	14.5	45.5	33.6	43.7	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	730	795	506	1014	982	
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	0.12	0.38	0.48	0.24	0.34	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 59						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.79						

Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2022

05/29/2020

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

PM Background 2022

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	198	33	26	46	298	234	59	486	17
Future Volume (vph)	25	79	104	198	33	26	46	298	234	59	486	17
Satd. Flow (prot)	1695	1574	0	1695	1642	0	1695	1638	0	1695	1774	0
Flt Permitted	0.719			0.642			0.352			0.321		
Satd. Flow (perm)	1268	1574	0	1108	1642	0	626	1638	0	569	1774	0
Satd. Flow (RTOR)		89			26			53			2	
Lane Group Flow (vph)	25	183	0	198	59	0	46	532	0	59	503	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	16.8	16.8		16.8	16.8		21.6	21.6		21.6	21.6	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.42	0.42		0.42	0.42	
v/c Ratio	0.06	0.32		0.55	0.11		0.18	0.75		0.25	0.68	
Control Delay	15.7	10.5		23.6	10.7		13.1	19.9		14.6	18.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	10.5		23.6	10.7		13.1	19.9		14.6	18.6	
LOS	B	B		C	B		B	B		B	B	
Approach Delay		11.2			20.7			19.3			18.2	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.4	5.6		13.5	1.9		2.2	30.9		3.0	31.5	
Queue Length 95th (m)	7.7	24.5		44.5	11.0		10.7	92.7		13.7	88.4	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	955	1207		834	1243		473	1251		430	1342	
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	0.03	0.15		0.24	0.05		0.10	0.43		0.14	0.37	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 52												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.75												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

PM Background 2022

05/29/2020

Intersection Signal Delay: 18.1

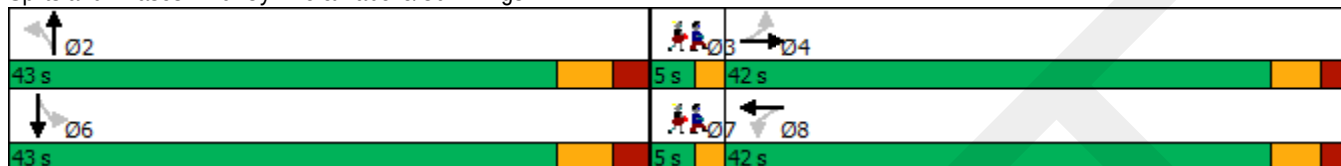
Intersection LOS: B

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

PM Background 2022

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		   			   
Traffic Volume (vph)	496	156	1590	246	9	1769
Future Volume (vph)	496	156	1590	246	9	1769
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.127	
Satd. Flow (perm)	3288	1454	4871	1477	226	4871
Satd. Flow (RTOR)		37		246		
Lane Group Flow (vph)	496	156	1590	246	9	1769
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.4	24.4	84.0	84.0	84.0	84.0
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.74	0.48	0.47	0.22	0.06	0.52
Control Delay	51.5	35.8	9.1	1.4	6.3	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	35.8	9.1	1.4	6.3	11.8
LOS	D	D	A	A	A	B
Approach Delay	47.7		8.1			11.7
Approach LOS	D		A			B
Queue Length 50th (m)	57.6	25.0	52.9	0.0	1.0	75.0
Queue Length 95th (m)	70.8	43.1	75.6	8.3	m0.5	24.2
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	413	3408	1107	158	3408
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	0.57	0.38	0.47	0.22	0.06	0.52
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 66.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	170	0	0	0	0	204	112	427	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	204	112	427	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	204	112	427	27	0	0	279

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	438	-	-	-	-	214	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	438	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	502	0	0	0	0	791	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	567	0	0	0	0	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	372	-	-	-	-	791	-	-	-
Mov Cap-2 Maneuver	372	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	421	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	22.6	11.1	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	372 791
HCM Lane V/C Ratio	-	-	0.457 0.258
HCM Control Delay (s)	-	-	22.6 11.1
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	2.3 1

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

AM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	206	58	625	631	24	141	818	507	33	831	132
Future Volume (vph)	66	206	58	625	631	24	141	818	507	33	831	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4503	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3269	3390	1380	3164	3390	1464	1658	4503	0	1685	4871	1395
Satd. Flow (RTOR)			195			140		110				196
Lane Group Flow (vph)	66	206	58	625	631	24	141	1325	0	33	831	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.5	22.6	22.6	27.7	34.4	34.4	14.2	50.4		8.0	39.2	39.2
Actuated g/C Ratio	0.14	0.17	0.17	0.21	0.26	0.26	0.11	0.39		0.06	0.30	0.30
v/c Ratio	0.14	0.35	0.14	0.89	0.70	0.05	0.76	0.73		0.32	0.57	0.24
Control Delay	46.8	47.0	0.8	64.8	44.1	0.2	72.6	32.0		65.5	42.7	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.8	47.0	0.8	64.8	44.1	0.2	72.6	32.0		65.5	42.7	1.8
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		38.8			53.4			35.9			38.0	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.0	22.7	0.0	65.1	83.1	0.0	35.6	116.8		8.3	73.9	0.0
Queue Length 95th (m)	14.1	33.7	0.0	#108.9	89.5	m0.0	#63.6	#160.4		18.8	89.7	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	479	795	473	736	1342	664	203	1813		203	1468	557
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.14	0.26	0.12	0.85	0.47	0.04	0.69	0.73		0.16	0.57	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 42.2

Intersection LOS: D

Intersection Capacity Utilization 95.7%

ICU Level of Service F

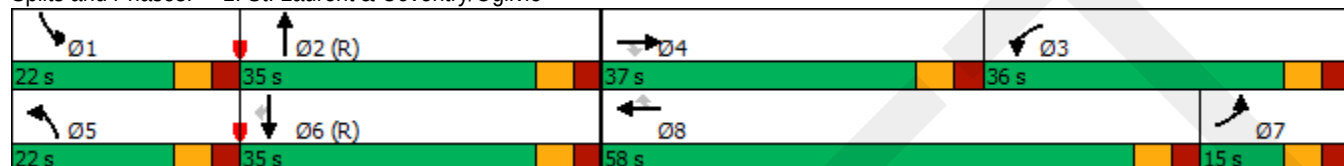
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

AM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↗	↑↑	↗	↗	↗		↗	↗	
Traffic Volume (vph)	0	565	227	25	1045	166	165	248	12	47	161	45
Future Volume (vph)	0	565	227	25	1045	166	165	248	12	47	161	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1770	0	1695	1718	0
Flt Permitted				0.431			0.487			0.374		
Satd. Flow (perm)	0	3390	1422	759	3390	1380	864	1770	0	666	1718	0
Satd. Flow (RTOR)			227			147		2			12	
Lane Group Flow (vph)	0	565	227	25	1045	166	165	260	0	47	206	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.4	89.4	89.4	89.4	89.4	27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.69	0.69	0.69	0.69	0.69	0.21	0.21		0.21	0.21	
v/c Ratio		0.24	0.22	0.05	0.45	0.17	0.91	0.70		0.34	0.56	
Control Delay		7.5	2.8	6.8	8.2	1.7	96.1	56.0		47.1	47.5	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.5	2.8	6.8	8.2	1.7	96.1	56.0		47.1	47.5	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		6.1			7.3			71.6			47.4	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		24.0	1.6	2.0	49.3	3.6	41.9	62.1		10.4	45.1	
Queue Length 95th (m)		7.7	m0.0	m1.4	23.7	m0.0	61.7	79.7		19.6	61.0	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2331	1048	521	2331	994	285	585		219	574	
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	0.22	0.05	0.45	0.17	0.58	0.44		0.21	0.36	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

AM Background 2024

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 20.8

Intersection LOS: C

Intersection Capacity Utilization 74.1%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

AM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	590	11	163	1142	170	18	12	63	138	123	112
Future Volume (vph)	48	590	11	163	1142	170	18	12	63	138	123	112
Satd. Flow (prot)	1695	3375	0	1695	3296	0	1695	1784	1517	1695	1643	0
Flt Permitted	0.127			0.373			0.612			0.617		
Satd. Flow (perm)	227	3375	0	654	3296	0	1087	1784	1397	1033	1643	0
Satd. Flow (RTOR)		2			18				98		37	
Lane Group Flow (vph)	48	601	0	163	1312	0	18	12	63	138	235	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	79.5	72.1		81.6	74.9		22.0	22.0	22.0	36.1	33.8	
Actuated g/C Ratio	0.61	0.55		0.63	0.58		0.17	0.17	0.17	0.28	0.26	
v/c Ratio	0.23	0.32		0.35	0.69		0.10	0.04	0.20	0.40	0.52	
Control Delay	16.2	19.0		11.7	19.4		41.8	39.8	3.8	38.5	36.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.2	19.0		11.7	19.4		41.8	39.8	3.8	38.5	36.7	
LOS	B	B		B	B		D	D	A	D	D	
Approach Delay		18.8			18.6			15.8			37.3	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	4.8	56.6		16.2	71.6		3.6	2.4	0.0	24.0	37.4	
Queue Length 95th (m)	12.7	56.1		m17.7	m78.9		10.4	7.7	4.2	42.2	63.9	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	213	1903		467	1935		254	417	401	341	560	
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	0.32		0.35	0.68		0.07	0.03	0.16	0.40	0.42	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 21.2

Intersection LOS: C

Intersection Capacity Utilization 81.1%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

AM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	535	49	153	904	121	351	597	415	133	349	238
Future Volume (vph)	301	535	49	153	904	121	351	597	415	133	349	238
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3162	0	1695	3164	0
Flt Permitted	0.092			0.391			0.950			0.950		
Satd. Flow (perm)	164	3390	1474	694	3390	1492	1693	3162	0	1694	3164	0
Satd. Flow (RTOR)			164			164		138			114	
Lane Group Flow (vph)	301	535	49	153	904	121	351	1012	0	133	587	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	60.0	43.7	43.7	52.7	39.2	39.2	28.3	39.1		12.3	23.1	
Actuated g/C Ratio	0.46	0.34	0.34	0.41	0.30	0.30	0.22	0.30		0.09	0.18	
v/c Ratio	1.11	0.47	0.08	0.41	0.88	0.21	0.95	0.97		0.83	0.90	
Control Delay	130.3	37.3	0.4	23.5	54.4	2.5	86.8	59.6		95.6	59.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	130.3	37.3	0.4	23.5	54.4	2.5	86.8	59.6		95.6	59.3	
LOS	F	D	A	C	D	A	F	E		F	E	
Approach Delay		66.9			45.1			66.6			66.0	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~78.4	47.2	0.2	21.9	113.8	0.0	90.6	120.2		34.1	63.6	
Queue Length 95th (m)	#137.7	67.3	0.0	35.4	140.0	5.4	#151.9	#164.8		#69.8	#93.1	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	271	1140	604	416	1066	581	369	1047		162	674	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.11	0.47	0.08	0.37	0.85	0.21	0.95	0.97		0.82	0.87	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 60.4

Intersection LOS: E

Intersection Capacity Utilization 102.3%

ICU Level of Service G

Analysis Period (min) 15

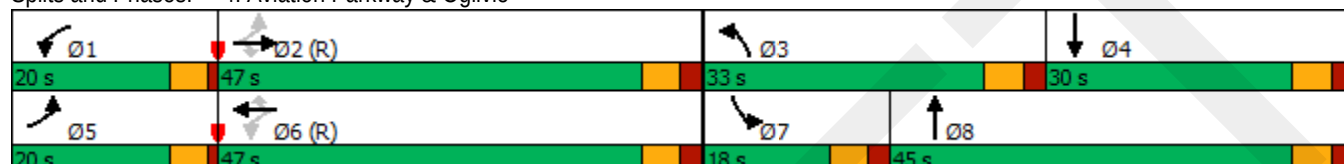
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

AM Background 2024

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	148	215	132	204	104
Future Volume (vph)	42	148	215	132	204	104
Satd. Flow (prot)	1695	1517	1695	1784	1681	0
Flt Permitted	0.950		0.573			
Satd. Flow (perm)	1662	1447	1012	1784	1681	0
Satd. Flow (RTOR)		148			64	
Lane Group Flow (vph)	42	148	215	132	308	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.2	16.2	15.2	15.2	15.2	
Actuated g/C Ratio	0.36	0.36	0.34	0.34	0.34	
v/c Ratio	0.07	0.24	0.62	0.22	0.50	
Control Delay	12.1	4.4	20.5	10.6	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.1	4.4	20.5	10.6	11.6	
LOS	B	A	C	B	B	
Approach Delay	6.1			16.7	11.6	
Approach LOS	A			B	B	
Queue Length 50th (m)	1.9	0.0	13.2	6.9	13.8	
Queue Length 95th (m)	8.6	10.0	28.1	14.5	27.8	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	618	622	761	1343	1281	
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	0.07	0.24	0.28	0.10	0.24	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 44.5						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.63						

Lanes, Volumes, Timings
5: Cummings & Donald

AM Background 2024

05/29/2020

Intersection Signal Delay: 12.5

Intersection LOS: B

Intersection Capacity Utilization 62.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	22 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

AM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	132	116	21	160	454	136	30	179	96
Future Volume (vph)	9	26	24	132	116	21	160	454	136	30	179	96
Satd. Flow (prot)	1695	1611	0	1695	1735	0	1695	1708	0	1695	1674	0
Flt Permitted	0.669			0.724			0.590			0.319		
Satd. Flow (perm)	1184	1611	0	1249	1735	0	1048	1708	0	566	1674	0
Satd. Flow (RTOR)		24			12			27			49	
Lane Group Flow (vph)	9	50	0	132	137	0	160	590	0	30	275	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	13.0	13.0		13.0	13.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.49	0.49		0.49	0.49	
v/c Ratio	0.03	0.12		0.42	0.31		0.31	0.69		0.11	0.33	
Control Delay	16.9	11.8		21.6	17.1		11.1	15.7		9.8	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.9	11.8		21.6	17.1		11.1	15.7		9.8	8.4	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.6			19.3			14.7			8.6	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		8.2	7.5		6.5	29.2		1.1	9.1	
Queue Length 95th (m)	4.0	9.8		28.7	26.3		25.9	95.6		6.8	33.4	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	549	760		579	811		771	1263		416	1244	
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	0.02	0.07		0.23	0.17		0.21	0.47		0.07	0.22	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 51.1												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.69												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle/Cummings

AM Background 2024

05/29/2020

Intersection Signal Delay: 14.2

Intersection LOS: B

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings

 Ø2 42 s	 Ø3 5 s	 Ø4 28 s
 Ø6 42 s	 Ø7 5 s	 Ø8 28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

AM Background 2024

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  		 	  
Traffic Volume (vph)	589	153	1235	228	6	1453
Future Volume (vph)	589	153	1235	228	6	1453
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.195	
Satd. Flow (perm)	3288	1450	4871	1477	348	4871
Satd. Flow (RTOR)		60		228		
Lane Group Flow (vph)	589	153	1235	228	6	1453
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.3	29.3	89.1	89.1	89.1	89.1
Actuated g/C Ratio	0.23	0.23	0.69	0.69	0.69	0.69
v/c Ratio	0.79	0.41	0.37	0.21	0.03	0.44
Control Delay	55.6	27.9	9.5	1.6	5.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	27.9	9.5	1.6	5.7	6.0
LOS	E	C	A	A	A	A
Approach Delay	49.9		8.2			6.0
Approach LOS	D		A			A
Queue Length 50th (m)	73.6	19.9	45.2	0.0	0.4	39.4
Queue Length 95th (m)	87.9	37.6	62.4	9.0	m0.2	12.3
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	529	3338	1084	238	3338
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	0.53	0.29	0.37	0.21	0.03	0.44
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.79
Intersection Signal Delay: 15.8
Intersection Capacity Utilization 61.1%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service B
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	125	133	653	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	125	133	653	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	125	133	653	44	0	0	178
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	593	-	-	-	-	327	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	593	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	389	0	0	0	0	669	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	459	0	0	0	0	-	-	-	0			
Platoon blocked, %									-			
Mov Cap-1 Maneuver	316	-	-	-	-	669	-	-	-			
Mov Cap-2 Maneuver	316	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	373	-	-	-	-	-	-	-	-			
Approach	EB			WB			NB					
HCM Control Delay, s	17.6			11.6								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1								
Capacity (veh/h)	-	-	316	669								
HCM Lane V/C Ratio	-	-	0.095	0.187								
HCM Control Delay (s)	-	-	17.6	11.6								
HCM Lane LOS	-	-	C	B								
HCM 95th %tile Q(veh)	-	-	0.3	0.7								

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

PM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	609	205	466	390	30	182	898	609	71	805	192
Future Volume (vph)	302	609	205	466	390	30	182	898	609	71	805	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4485	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3223	3390	1457	1659	4485	0	1688	4871	1403
Satd. Flow (RTOR)			210			210		149				211
Lane Group Flow (vph)	302	609	205	466	390	30	182	1507	0	71	805	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.2	27.6	27.6	19.1	24.6	24.6	16.1	41.4		8.2	30.9	30.9
Actuated g/C Ratio	0.18	0.23	0.23	0.16	0.20	0.20	0.13	0.34		0.07	0.26	0.26
v/c Ratio	0.50	0.78	0.43	0.89	0.56	0.06	0.80	1.00dr		0.62	0.64	0.37
Control Delay	48.7	50.7	7.4	81.6	54.7	0.3	69.1	39.3		77.3	43.0	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.7	50.7	7.4	81.6	54.7	0.3	69.1	39.3		77.3	43.0	5.8
LOS	D	D	A	F	D	A	E	D		E	D	A
Approach Delay		42.2			67.0			42.5			38.6	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	68.8	0.0	57.8	51.2	0.0	41.9	~121.0		16.5	63.6	0.0
Queue Length 95th (m)	49.8	89.0	17.2	#92.7	67.4	m0.0	#70.3	#156.1		#34.9	78.4	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	608	861	509	523	861	526	248	1646		121	1253	518
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.71	0.40	0.89	0.45	0.06	0.73	0.92		0.59	0.64	0.37

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 46.1

Intersection LOS: D

Intersection Capacity Utilization 97.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

PM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1045	257	40	680	124	117	223	32	134	226	80
Future Volume (vph)	0	1045	257	40	680	124	117	223	32	134	226	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1747	0	1695	1706	0
Flt Permitted				0.234			0.324			0.421		
Satd. Flow (perm)	0	3390	1424	416	3390	1388	576	1747	0	749	1706	0
Satd. Flow (RTOR)			257			124		7			17	
Lane Group Flow (vph)	0	1045	257	40	680	124	117	255	0	134	306	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		79.4	79.4	79.4	79.4	79.4	27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.47	0.25	0.15	0.30	0.13	0.89	0.63		0.79	0.76	
Control Delay		11.5	3.6	25.4	24.6	13.4	98.3	46.6		72.2	52.4	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.9	3.6	25.4	24.6	13.4	98.3	46.6		72.2	52.4	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		10.2			23.0			62.8			58.4	
Approach LOS		B			C			E			E	
Queue Length 50th (m)		54.0	11.5	6.9	76.5	12.1	27.2	53.7		30.3	65.0	
Queue Length 95th (m)		m22.0	m0.2	m12.5	94.9	m24.5	#45.7	69.1		46.8	82.8	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2241	1028	275	2241	959	205	629		267	620	
Starvation Cap Reductn		584	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		0.63	0.25	0.15	0.30	0.13	0.57	0.41		0.50	0.49	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

PM Background 2024

05/29/2020

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 27.7

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

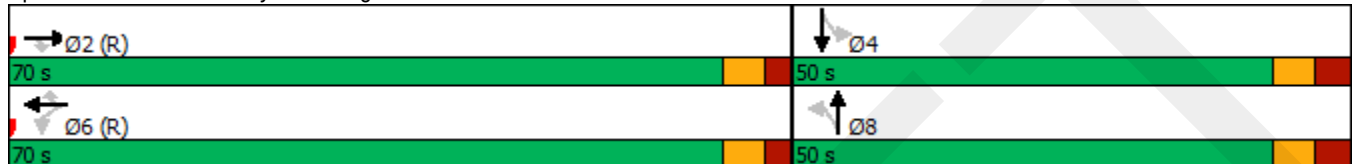
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

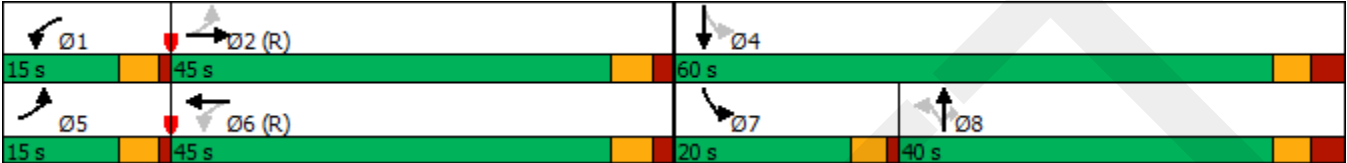
PM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1149	23	109	774	209	36	172	216	258	173	84
Future Volume (vph)	110	1149	23	109	774	209	36	172	216	258	173	84
Satd. Flow (prot)	1695	3375	0	1695	3236	0	1695	1784	1517	1695	1687	0
Flt Permitted	0.162			0.095			0.600			0.460		
Satd. Flow (perm)	289	3375	0	170	3236	0	1066	1784	1405	785	1687	0
Satd. Flow (RTOR)		2			30				155		26	
Lane Group Flow (vph)	110	1172	0	109	983	0	36	172	216	258	257	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	61.1	50.4		61.0	50.4		23.0	23.0	23.0	45.2	42.9	
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.42	0.83		0.52	0.71		0.18	0.50	0.55	0.62	0.41	
Control Delay	18.6	39.2		35.8	29.9		38.9	46.8	17.6	33.3	26.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	18.6	39.2		35.8	29.9		38.9	46.8	17.6	33.3	26.7	
LOS	B	D		D	C		D	D	B	C	C	
Approach Delay		37.5			30.5			31.3			30.0	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	14.0	145.8		12.4	113.6		6.6	33.8	11.3	39.6	36.4	
Queue Length 95th (m)	12.6	#197.5		35.4	#143.8		15.6	54.3	33.6	60.2	57.2	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	280	1418		229	1375		296	496	502	415	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	0.39	0.83		0.48	0.71		0.12	0.35	0.43	0.62	0.34	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

PM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	764	83	136	614	112	124	218	180	112	254	168
Future Volume (vph)	183	764	83	136	614	112	124	218	180	112	254	168
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3140	0	1695	3168	0
Flt Permitted	0.347			0.289			0.950			0.950		
Satd. Flow (perm)	618	3390	1476	514	3390	1493	1692	3140	0	1694	3168	0
Satd. Flow (RTOR)			125			125		157			117	
Lane Group Flow (vph)	183	764	83	136	614	112	124	398	0	112	422	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	68.7	55.8	55.8	65.8	54.4	54.4	13.7	18.5		12.9	17.6	
Actuated g/C Ratio	0.57	0.46	0.46	0.55	0.45	0.45	0.11	0.15		0.11	0.15	
v/c Ratio	0.40	0.48	0.11	0.36	0.40	0.15	0.64	0.65		0.62	0.75	
Control Delay	20.5	31.5	7.1	15.1	24.9	4.1	65.6	33.0		65.2	43.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	20.5	31.5	7.1	15.1	24.9	4.1	65.6	33.0		65.2	43.2	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		27.6			20.7			40.7			47.9	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	31.0	80.0	2.9	13.2	49.6	0.0	28.2	28.1		25.5	36.9	
Queue Length 95th (m)	m32.8	74.6	m3.6	27.0	78.3	9.8	47.1	42.3		42.9	51.0	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	503	1590	758	451	1558	753	208	751		202	724	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.48	0.11	0.30	0.39	0.15	0.60	0.53		0.55	0.58	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

PM Background 2024

05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.6

Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2024

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	306	244	253	253	90
Future Volume (vph)	88	306	244	253	253	90
Satd. Flow (prot)	1695	1517	1695	1784	1704	0
Flt Permitted	0.950		0.497			
Satd. Flow (perm)	1658	1442	877	1784	1704	0
Satd. Flow (RTOR)		306			34	
Lane Group Flow (vph)	88	306	244	253	343	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.4	25.4	20.4	20.4	20.4	
Actuated g/C Ratio	0.43	0.43	0.35	0.35	0.35	
v/c Ratio	0.12	0.38	0.81	0.41	0.56	
Control Delay	13.5	3.8	37.2	15.9	17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.5	3.8	37.2	15.9	17.0	
LOS	B	A	D	B	B	
Approach Delay	6.0			26.4	17.0	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.5	0.0	22.8	19.9	25.6	
Queue Length 95th (m)	16.7	14.5	46.1	34.1	44.4	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	730	795	499	1014	984	
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	0.12	0.38	0.49	0.25	0.35	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 59						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.81						

Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2024

05/29/2020

Intersection Signal Delay: 17.2

Intersection LOS: B

Intersection Capacity Utilization 64.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

PM Background 2024

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	198	34	26	46	304	234	59	496	17
Future Volume (vph)	25	79	104	198	34	26	46	304	234	59	496	17
Satd. Flow (prot)	1695	1574	0	1695	1644	0	1695	1640	0	1695	1774	0
Flt Permitted	0.718			0.642			0.343			0.317		
Satd. Flow (perm)	1267	1574	0	1108	1644	0	610	1640	0	562	1774	0
Satd. Flow (RTOR)		89			26			52			2	
Lane Group Flow (vph)	25	183	0	198	60	0	46	538	0	59	513	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	16.8	16.8		16.8	16.8		21.9	21.9		21.9	21.9	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.42	0.42		0.42	0.42	
v/c Ratio	0.06	0.32		0.56	0.11		0.18	0.75		0.25	0.69	
Control Delay	15.8	10.6		23.9	10.9		13.2	20.0		14.6	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.8	10.6		23.9	10.9		13.2	20.0		14.6	18.8	
LOS	B	B		C	B		B	B		B	B	
Approach Delay		11.2			20.8			19.4			18.3	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.5	5.7		13.7	2.0		2.3	31.7		3.0	32.5	
Queue Length 95th (m)	7.7	24.5		44.5	11.3		10.7	94.4		13.7	91.0	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	948	1201		829	1237		458	1246		422	1334	
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	0.03	0.15		0.24	0.05		0.10	0.43		0.14	0.38	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 52.3												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.75												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle/Cummings

PM Background 2024
05/29/2020

Intersection Signal Delay: 18.2

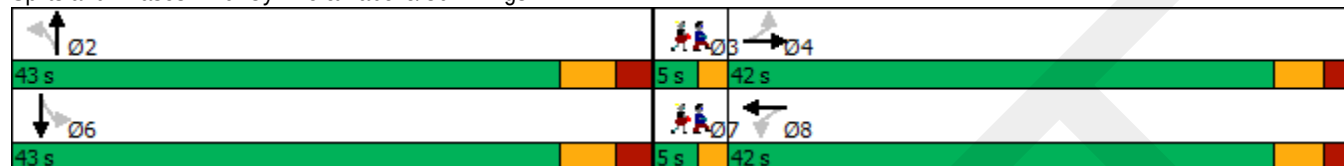
Intersection LOS: B

Intersection Capacity Utilization 87.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

PM Background 2024

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↔↔↔	↔	↔	↔↔↔
Traffic Volume (vph)	496	156	1622	246	9	1805
Future Volume (vph)	496	156	1622	246	9	1805
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.122	
Satd. Flow (perm)	3288	1454	4871	1477	218	4871
Satd. Flow (RTOR)		35		246		
Lane Group Flow (vph)	496	156	1622	246	9	1805
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.4	24.4	84.0	84.0	84.0	84.0
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.74	0.48	0.48	0.22	0.06	0.53
Control Delay	51.5	36.5	9.2	1.4	5.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	36.5	9.2	1.4	5.7	11.4
LOS	D	D	A	A	A	B
Approach Delay	47.9		8.2			11.4
Approach LOS	D		A			B
Queue Length 50th (m)	57.6	25.5	54.6	0.0	0.9	71.6
Queue Length 95th (m)	70.8	43.5	77.8	8.3	m0.5	23.4
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	412	3408	1107	152	3408
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	0.57	0.38	0.48	0.22	0.06	0.53
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.5

Intersection LOS: B

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	170	0	0	0	0	204	112	435	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	204	112	435	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	204	112	435	27	0	0	279

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	442	-	-	-	-	218	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	442	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	499	0	0	0	0	786	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	564	0	0	0	0	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	369	-	-	-	-	786	-	-	-
Mov Cap-2 Maneuver	369	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	418	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	22.8	11.2	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	369 786
HCM Lane V/C Ratio	-	-	0.461 0.26
HCM Control Delay (s)	-	-	22.8 11.2
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	2.3 1

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

AM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	216	58	625	663	24	141	860	507	33	874	132
Future Volume (vph)	66	216	58	625	663	24	141	860	507	33	874	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4510	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3270	3390	1380	3166	3390	1464	1658	4510	0	1686	4871	1395
Satd. Flow (RTOR)			195			140		105				196
Lane Group Flow (vph)	66	216	58	625	663	24	141	1367	0	33	874	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	17.6	22.7	22.7	27.7	35.4	35.4	14.2	50.3		8.0	39.1	39.1
Actuated g/C Ratio	0.14	0.17	0.17	0.21	0.27	0.27	0.11	0.39		0.06	0.30	0.30
v/c Ratio	0.15	0.36	0.14	0.89	0.72	0.05	0.76	0.76		0.32	0.60	0.24
Control Delay	48.0	47.2	0.8	67.0	43.3	0.2	72.6	32.7		65.5	43.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.0	47.2	0.8	67.0	43.3	0.2	72.6	32.7		65.5	43.3	1.9
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		39.5			53.8			36.5			38.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.0	23.9	0.0	68.6	88.7	0.0	35.4	~129.4		8.3	78.5	0.0
Queue Length 95th (m)	14.4	35.3	0.0	#108.7	88.8	m0.0	#59.3	#148.4		18.8	94.7	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	455	795	473	736	1342	664	203	1810		203	1465	556
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.15	0.27	0.12	0.85	0.49	0.04	0.69	0.76		0.16	0.60	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 42.7

Intersection LOS: D

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

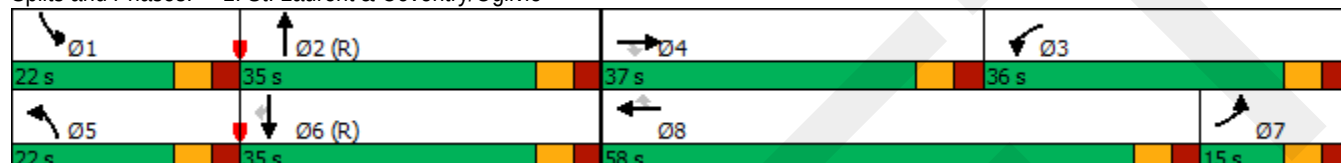
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

AM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	594	227	25	1098	166	165	261	12	47	170	45
Future Volume (vph)	0	594	227	25	1098	166	165	261	12	47	170	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1771	0	1695	1722	0
Flt Permitted				0.416			0.471			0.353		
Satd. Flow (perm)	0	3390	1422	733	3390	1380	836	1771	0	628	1722	0
Satd. Flow (RTOR)			227			139		2			11	
Lane Group Flow (vph)	0	594	227	25	1098	166	165	273	0	47	215	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.0	89.0	89.0	89.0	89.0	27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.68	0.68	0.68	0.68	0.68	0.21	0.21		0.21	0.21	
v/c Ratio		0.26	0.22	0.05	0.47	0.17	0.93	0.72		0.35	0.57	
Control Delay		7.1	2.3	6.4	7.9	1.6	99.8	57.1		47.8	48.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.1	2.3	6.4	7.9	1.6	99.8	57.1		47.8	48.0	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		5.8			7.0			73.1			48.0	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		26.1	2.4	1.9	51.9	4.1	42.1	65.6		10.4	47.6	
Queue Length 95th (m)		8.0	m0.0	m1.2	21.3	m0.0	62.6	83.6		19.9	64.0	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2320	1044	501	2320	988	275	585		207	575	
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		0.26	0.22	0.05	0.47	0.17	0.60	0.47		0.23	0.37	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

AM Background 2029

05/29/2020

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 20.8

Intersection LOS: C

Intersection Capacity Utilization 76.1%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

AM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	620	11	163	1200	170	18	12	63	138	129	112
Future Volume (vph)	48	620	11	163	1200	170	18	12	63	138	129	112
Satd. Flow (prot)	1695	3375	0	1695	3297	0	1695	1784	1517	1695	1645	0
Flt Permitted	0.114			0.359			0.609			0.617		
Satd. Flow (perm)	203	3375	0	630	3297	0	1082	1784	1397	1033	1645	0
Satd. Flow (RTOR)		2			17				98		35	
Lane Group Flow (vph)	48	631	0	163	1370	0	18	12	63	138	241	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	80.2	72.9		82.4	75.6		22.0	22.0	22.0	35.4	33.1	
Actuated g/C Ratio	0.62	0.56		0.63	0.58		0.17	0.17	0.17	0.27	0.25	
v/c Ratio	0.24	0.33		0.36	0.71		0.10	0.04	0.20	0.42	0.54	
Control Delay	16.3	18.4		11.1	19.0		41.8	39.8	3.8	39.3	38.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.3	18.4		11.1	19.0		41.8	39.8	3.8	39.3	38.4	
LOS	B	B		B	B		D	D	A	D	D	
Approach Delay		18.3			18.1			15.8			38.8	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	4.0	55.0		15.3	72.4		3.6	2.4	0.0	25.1	40.9	
Queue Length 95th (m)	12.7	59.0		m16.5	m79.5		10.4	7.7	4.2	42.2	66.3	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	200	1901		456	1934		253	417	401	332	550	
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	0.33		0.36	0.71		0.07	0.03	0.16	0.42	0.44	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 105												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 21.0

Intersection LOS: C

Intersection Capacity Utilization 82.8%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

AM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	562	49	153	951	121	351	627	415	133	367	238
Future Volume (vph)	301	562	49	153	951	121	351	627	415	133	367	238
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3170	0	1695	3171	0
Flt Permitted	0.093			0.355			0.950			0.950		
Satd. Flow (perm)	166	3390	1474	630	3390	1492	1693	3170	0	1694	3171	0
Satd. Flow (RTOR)			164			164		123			101	
Lane Group Flow (vph)	301	562	49	153	951	121	351	1042	0	133	605	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	59.5	43.2	43.2	53.5	40.0	40.0	27.9	40.0		11.9	24.0	
Actuated g/C Ratio	0.46	0.33	0.33	0.41	0.31	0.31	0.21	0.31		0.09	0.18	
v/c Ratio	1.18	0.50	0.08	0.43	0.91	0.21	0.96	0.98		0.86	0.91	
Control Delay	154.2	37.9	0.4	23.9	57.0	2.4	89.8	63.4		100.8	61.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	154.2	37.9	0.4	23.9	57.0	2.4	89.8	63.4		100.8	61.5	
LOS	F	D	A	C	E	A	F	E		F	E	
Approach Delay		74.3			47.4			70.0			68.6	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~78.3	50.8	0.2	21.9	122.1	0.0	90.6	~129.8		34.1	68.4	
Queue Length 95th (m)	#138.0	71.3	0.0	35.4	#157.6	5.4	#151.9	#176.3		#69.8	#101.3	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	255	1125	599	399	1066	581	364	1060		157	667	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.18	0.50	0.08	0.38	0.89	0.21	0.96	0.98		0.85	0.91	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 64.2

Intersection LOS: E

Intersection Capacity Utilization 104.5%

ICU Level of Service G

Analysis Period (min) 15

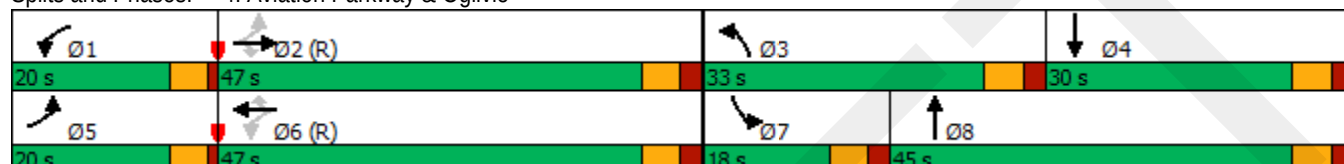
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

AM Background 2029

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	148	215	138	214	104
Future Volume (vph)	42	148	215	138	214	104
Satd. Flow (prot)	1695	1517	1695	1784	1685	0
Flt Permitted	0.950		0.568			
Satd. Flow (perm)	1662	1447	1003	1784	1685	0
Satd. Flow (RTOR)		148			61	
Lane Group Flow (vph)	42	148	215	138	318	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.2	16.2	15.2	15.2	15.2	
Actuated g/C Ratio	0.36	0.36	0.34	0.34	0.34	
v/c Ratio	0.07	0.24	0.63	0.23	0.52	
Control Delay	12.1	4.4	20.7	10.7	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.1	4.4	20.7	10.7	12.0	
LOS	B	A	C	B	B	
Approach Delay	6.1			16.8	12.0	
Approach LOS	A			B	B	
Queue Length 50th (m)	1.9	0.0	13.2	7.2	14.7	
Queue Length 95th (m)	8.6	10.0	28.3	15.1	29.2	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	618	621	754	1341	1282	
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	0.07	0.24	0.29	0.10	0.25	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 44.5						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.63						

Lanes, Volumes, Timings

5: Cummings & Donald

AM Background 2029

05/29/2020

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	22 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

AM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	132	122	21	160	478	136	30	189	96
Future Volume (vph)	9	26	24	132	122	21	160	478	136	30	189	96
Satd. Flow (prot)	1695	1611	0	1695	1737	0	1695	1712	0	1695	1677	0
Flt Permitted	0.666			0.724			0.585			0.302		
Satd. Flow (perm)	1178	1611	0	1249	1737	0	1039	1712	0	536	1677	0
Satd. Flow (RTOR)		24			12			26			47	
Lane Group Flow (vph)	9	50	0	132	143	0	160	614	0	30	285	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	13.0	13.0		13.0	13.0		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.50	0.50		0.50	0.50	
v/c Ratio	0.03	0.12		0.42	0.32		0.31	0.71		0.11	0.33	
Control Delay	17.1	12.0		22.1	17.6		11.0	16.2		9.9	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.1	12.0		22.1	17.6		11.0	16.2		9.9	8.6	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.8			19.7			15.2			8.7	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		8.6	8.2		6.6	31.5		1.1	9.7	
Queue Length 95th (m)	4.0	9.8		28.7	27.4		25.9	101.7		6.9	34.9	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	536	747		569	797		751	1244		387	1225	
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	0.02	0.07		0.23	0.18		0.21	0.49		0.08	0.23	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 51.9												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.71												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle/Cummings

AM Background 2029
05/29/2020

Intersection Signal Delay: 14.5

Intersection LOS: B

Intersection Capacity Utilization 74.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings

 42 s	 5 s	 28 s
 42 s	 5 s	 28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

AM Background 2029

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	589	153	1298	228	6	1527
Future Volume (vph)	589	153	1298	228	6	1527
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.180	
Satd. Flow (perm)	3288	1450	4871	1477	321	4871
Satd. Flow (RTOR)		52		228		
Lane Group Flow (vph)	589	153	1298	228	6	1527
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.3	29.3	89.1	89.1	89.1	89.1
Actuated g/C Ratio	0.23	0.23	0.69	0.69	0.69	0.69
v/c Ratio	0.79	0.42	0.39	0.21	0.03	0.46
Control Delay	55.6	30.4	9.6	1.6	3.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	30.4	9.6	1.6	3.5	4.7
LOS	E	C	A	A	A	A
Approach Delay	50.4		8.4			4.7
Approach LOS	D		A			A
Queue Length 50th (m)	73.6	21.8	48.4	0.0	0.4	35.9
Queue Length 95th (m)	87.9	39.5	66.5	9.0	m0.0	3.7
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	524	3338	1084	220	3338
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	0.53	0.29	0.39	0.21	0.03	0.46
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 15.1

Intersection LOS: B

Intersection Capacity Utilization 62.7%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	30	0	0	0	0	125	133	686	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	125	133	686	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	125	133	686	44	0	0	178
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	609	-	-	-	-	343	0	0	-	-	-	-
Stage 1	0	-	-	-	-	-	-	-	-	-	-	-
Stage 2	609	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	379	0	0	0	0	653	-	-	0	-	-	-
Stage 1	-	0	0	0	0	-	-	-	0	-	-	-
Stage 2	449	0	0	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	307	-	-	-	-	653	-	-	-	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	363	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB					
HCM Control Delay, s	18			11.8								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL			NBT			EBLn1WBLn1					
Capacity (veh/h)	-			-			307 653					
HCM Lane V/C Ratio	-			-			0.098 0.191					
HCM Control Delay (s)	-			-			18 11.8					
HCM Lane LOS	-			-			C B					
HCM 95th %tile Q(veh)	-			-			0.3 0.7					

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

PM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	640	205	466	409	30	182	944	609	71	846	192
Future Volume (vph)	302	640	205	466	409	30	182	944	609	71	846	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4497	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3226	3390	1457	1660	4497	0	1688	4871	1403
Satd. Flow (RTOR)			210			210		142				211
Lane Group Flow (vph)	302	640	205	466	409	30	182	1553	0	71	846	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.1	28.2	28.2	18.8	24.8	24.8	16.1	41.3		8.2	30.7	30.7
Actuated g/C Ratio	0.18	0.24	0.24	0.16	0.21	0.21	0.13	0.34		0.07	0.26	0.26
v/c Ratio	0.50	0.81	0.42	0.91	0.58	0.06	0.80	1.01dr		0.62	0.68	0.37
Control Delay	48.8	51.7	7.3	83.8	53.6	0.3	72.4	42.7		77.3	44.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.8	51.7	7.3	83.8	53.6	0.3	72.4	42.7		77.3	44.0	5.9
LOS	D	D	A	F	D	A	E	D		E	D	A
Approach Delay		43.0			67.4			45.8			39.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	73.2	0.0	57.5	54.1	0.0	41.9	~135.1		16.5	67.6	0.0
Queue Length 95th (m)	49.8	94.1	17.2	#94.1	70.6	m0.0	#70.8	#157.5		#34.9	82.8	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	606	861	509	514	861	526	248	1639		121	1246	516
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.50	0.74	0.40	0.91	0.48	0.06	0.73	0.95		0.59	0.68	0.37

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 47.7

Intersection LOS: D

Intersection Capacity Utilization 98.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

PM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1098	257	40	715	124	117	234	32	134	238	80
Future Volume (vph)	0	1098	257	40	715	124	117	234	32	134	238	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1749	0	1695	1708	0
Flt Permitted				0.216			0.311			0.407		
Satd. Flow (perm)	0	3390	1424	384	3390	1388	553	1749	0	725	1708	0
Satd. Flow (RTOR)			257			124		6			16	
Lane Group Flow (vph)	0	1098	257	40	715	124	117	266	0	134	318	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		78.7	78.7	78.7	78.7	78.7	28.0	28.0		28.0	28.0	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.49	0.25	0.16	0.32	0.13	0.91	0.65		0.79	0.78	
Control Delay		11.4	3.2	26.2	25.6	13.4	102.3	46.8		73.0	53.0	
Queue Delay		0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.7	3.2	26.2	25.6	13.4	102.3	46.8		73.0	53.0	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		10.1			23.9			63.8			58.9	
Approach LOS		B			C			E			E	
Queue Length 50th (m)		54.0	10.1	7.7	82.2	12.8	27.2	56.1		30.2	67.9	
Queue Length 95th (m)		m30.1	m0.5	m11.3	90.6	m21.2	#49.4	72.6		47.5	86.4	
Internal Link Dist (m)		135.6			311.6			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2223	1022	251	2223	953	197	629		259	620	
Starvation Cap Reductn		533	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.65	0.25	0.16	0.32	0.13	0.59	0.42		0.52	0.51	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 27.9

Intersection LOS: C

Intersection Capacity Utilization 82.4%

ICU Level of Service E

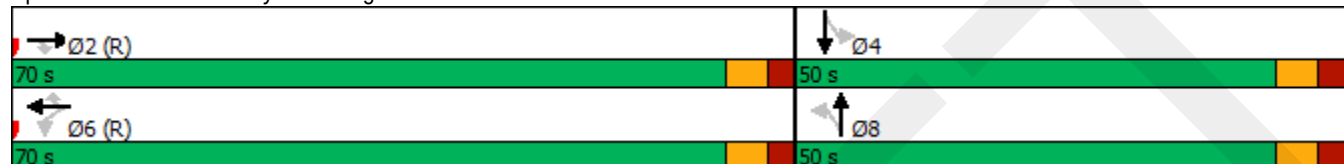
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Cummings & Ogilvie

PM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1207	23	109	813	209	36	181	216	258	182	84
Future Volume (vph)	110	1207	23	109	813	209	36	181	216	258	182	84
Satd. Flow (prot)	1695	3375	0	1695	3241	0	1695	1784	1517	1695	1691	0
Flt Permitted	0.146			0.080			0.595			0.444		
Satd. Flow (perm)	261	3375	0	143	3241	0	1057	1784	1405	759	1691	0
Satd. Flow (RTOR)		2			28				148		25	
Lane Group Flow (vph)	110	1230	0	109	1022	0	36	181	216	258	266	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	60.9	50.2		60.9	50.2		23.2	23.2	23.2	45.4	43.1	
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.44	0.87		0.55	0.75		0.18	0.52	0.55	0.63	0.43	
Control Delay	19.4	41.0		40.2	30.3		38.8	47.4	18.9	33.6	27.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	41.0		40.2	30.3		38.8	47.4	18.9	33.6	27.1	
LOS	B	D		D	C		D	D	B	C	C	
Approach Delay		39.2			31.2			32.5			30.3	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	13.8	~158.3		15.6	119.8		6.6	35.7	12.7	39.6	38.3	
Queue Length 95th (m)	14.1	#213.0		m35.8	#154.5		15.6	56.9	35.2	60.2	59.7	
Internal Link Dist (m)		311.6			386.5			299.5			235.7	
Turn Bay Length (m)	75.0			90.0			40.0		15.0	150.0		
Base Capacity (vph)	268	1413		217	1371		294	496	497	409	766	
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	0.41	0.87		0.50	0.75		0.12	0.36	0.43	0.63	0.35	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 34.4

Intersection LOS: C

Intersection Capacity Utilization 97.6%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

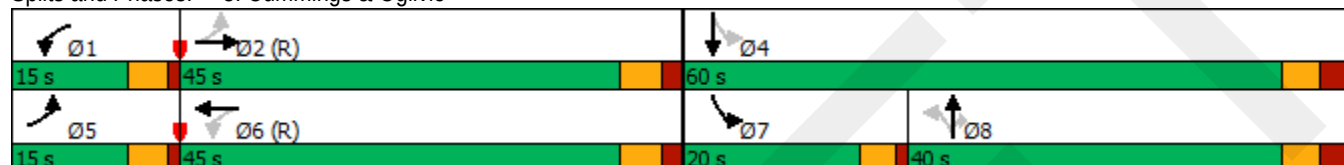
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Cummings & Ogilvie



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

PM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	803	83	136	645	112	124	229	180	112	267	168
Future Volume (vph)	183	803	83	136	645	112	124	229	180	112	267	168
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3148	0	1695	3175	0
Flt Permitted	0.328			0.269			0.950			0.950		
Satd. Flow (perm)	584	3390	1476	478	3390	1493	1692	3148	0	1694	3175	0
Satd. Flow (RTOR)			125			125		150			103	
Lane Group Flow (vph)	183	803	83	136	645	112	124	409	0	112	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	68.4	55.5	55.5	65.3	54.0	54.0	13.4	19.2		12.5	18.4	
Actuated g/C Ratio	0.57	0.46	0.46	0.54	0.45	0.45	0.11	0.16		0.10	0.15	
v/c Ratio	0.42	0.51	0.11	0.38	0.42	0.15	0.66	0.65		0.63	0.76	
Control Delay	20.7	30.9	6.1	15.4	25.4	4.0	67.6	34.1		67.3	45.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	20.7	30.9	6.1	15.4	25.4	4.0	67.6	34.1		67.3	45.5	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		27.3			21.2			41.9			49.9	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	29.5	80.9	2.6	13.5	53.7	0.0	28.2	30.2		25.5	40.2	
Queue Length 95th (m)	m29.3	m71.4	m2.9	26.1	80.8	9.5	48.0	44.8		43.7	54.8	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	486	1569	750	433	1535	744	203	747		197	714	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.51	0.11	0.31	0.42	0.15	0.61	0.55		0.57	0.61	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 32.1

Intersection LOS: C

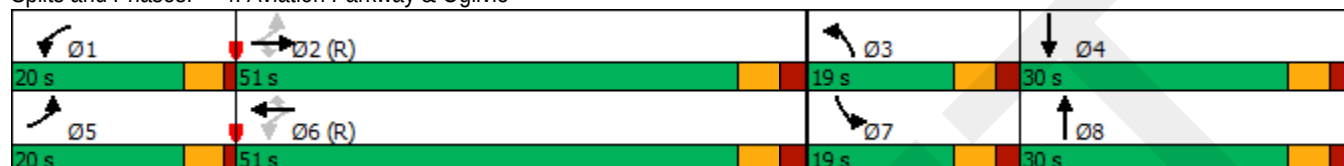
Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2029

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	306	244	266	266	90
Future Volume (vph)	88	306	244	266	266	90
Satd. Flow (prot)	1695	1517	1695	1784	1707	0
Flt Permitted	0.950		0.480			
Satd. Flow (perm)	1658	1442	847	1784	1707	0
Satd. Flow (RTOR)		306			32	
Lane Group Flow (vph)	88	306	244	266	356	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.5	25.5	20.6	20.6	20.6	
Actuated g/C Ratio	0.43	0.43	0.35	0.35	0.35	
v/c Ratio	0.12	0.39	0.83	0.43	0.58	
Control Delay	13.6	3.9	40.5	16.2	17.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.6	3.9	40.5	16.2	17.5	
LOS	B	A	D	B	B	
Approach Delay	6.0			27.8	17.5	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.5	0.0	23.1	21.1	27.1	
Queue Length 95th (m)	16.7	14.5	47.3	36.0	46.6	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	729	794	481	1013	983	
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	0.12	0.39	0.51	0.26	0.36	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 59.2						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.83						

Lanes, Volumes, Timings
5: Cummings & Donald

PM Background 2029

05/29/2020

Intersection Signal Delay: 18.1

Intersection LOS: B

Intersection Capacity Utilization 65.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

PM Background 2029

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	198	36	26	46	319	234	59	521	17
Future Volume (vph)	25	79	104	198	36	26	46	319	234	59	521	17
Satd. Flow (prot)	1695	1574	0	1695	1648	0	1695	1644	0	1695	1774	0
Flt Permitted	0.717			0.642			0.322			0.306		
Satd. Flow (perm)	1265	1574	0	1108	1648	0	573	1644	0	543	1774	0
Satd. Flow (RTOR)		89			26			50			2	
Lane Group Flow (vph)	25	183	0	198	62	0	46	553	0	59	538	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	16.9	16.9		16.9	16.9		22.7	22.7		22.7	22.7	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.43	0.43		0.43	0.43	
v/c Ratio	0.06	0.33		0.56	0.11		0.19	0.76		0.26	0.71	
Control Delay	16.0	10.8		24.4	11.1		13.4	20.2		14.7	19.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	10.8		24.4	11.1		13.4	20.2		14.7	19.3	
LOS	B	B		C	B		B	C		B	B	
Approach Delay		11.4			21.3			19.7			18.9	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.5	5.9		14.2	2.2		2.3	34.0		3.0	35.4	
Queue Length 95th (m)	7.7	24.5		44.5	11.5		10.9	98.6		13.9	97.1	
Internal Link Dist (m)		133.5			299.5			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	932	1183		816	1221		423	1229		401	1313	
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	0.03	0.15		0.24	0.05		0.11	0.45		0.15	0.41	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 53.2												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.76												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle/Cummings

PM Background 2029

05/29/2020

Intersection Signal Delay: 18.6

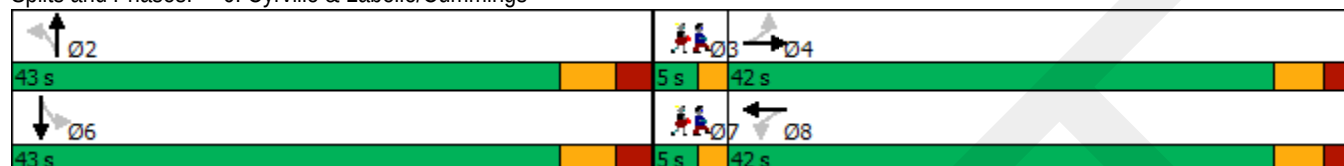
Intersection LOS: B

Intersection Capacity Utilization 88.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle/Cummings



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

PM Background 2029

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	496	156	1705	246	9	1897
Future Volume (vph)	496	156	1705	246	9	1897
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.109	
Satd. Flow (perm)	3288	1454	4871	1477	194	4871
Satd. Flow (RTOR)		29		246		
Lane Group Flow (vph)	496	156	1705	246	9	1897
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.4	24.4	84.0	84.0	84.0	84.0
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.74	0.49	0.50	0.22	0.07	0.56
Control Delay	51.5	38.5	9.5	1.4	5.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	38.5	9.5	1.4	5.3	10.3
LOS	D	D	A	A	A	B
Approach Delay	48.4		8.5			10.3
Approach LOS	D		A			B
Queue Length 50th (m)	57.6	26.8	58.8	0.0	0.7	64.1
Queue Length 95th (m)	70.8	44.9	83.4	8.3	m0.5	78.0
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	407	3408	1107	135	3408
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	0.57	0.38	0.50	0.22	0.07	0.56
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	0	0	0	0	204	112	457	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	204	112	457	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	204	112	457	27	0	0	279
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	453	-	-	-	-	229	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	453	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	490	0	0	0	0	774	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	556	0	0	0	0	-	-	-	0			
Platoon blocked, %									-			
Mov Cap-1 Maneuver	361	-	-	-	-	774	-	-	-			
Mov Cap-2 Maneuver	361	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	409	-	-	-	-	-	-	-	-			
Approach	EB			WB			NB					
HCM Control Delay, s	23.5			11.3								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1								
Capacity (veh/h)	-	-	361	774								
HCM Lane V/C Ratio	-	-	0.471	0.264								
HCM Control Delay (s)	-	-	23.5	11.3								
HCM Lane LOS	-	-	C	B								
HCM 95th %tile Q(veh)	-	-	2.4	1.1								

Appendix N

Future Projected Traffic SYNCHRO Analysis

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2022 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	203	58	641	620	24	141	802	521	33	815	132
Future Volume (vph)	66	203	58	641	620	24	141	802	521	33	815	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4490	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3269	3390	1380	3164	3390	1464	1657	4490	0	1685	4871	1395
Satd. Flow (RTOR)			195			140		116				196
Lane Group Flow (vph)	66	203	58	641	620	24	141	1323	0	33	815	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.9	22.6	22.6	28.0	34.3	34.3	14.2	50.1		8.0	38.9	38.9
Actuated g/C Ratio	0.15	0.17	0.17	0.22	0.26	0.26	0.11	0.39		0.06	0.30	0.30
v/c Ratio	0.14	0.34	0.14	0.91	0.69	0.05	0.76	0.73		0.32	0.56	0.24
Control Delay	46.4	46.9	0.8	70.0	46.8	0.2	72.8	32.0		65.5	42.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.4	46.9	0.8	70.0	46.8	0.2	72.8	32.0		65.5	42.6	1.9
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		38.6			57.5			35.9			37.9	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	7.0	22.4	0.0	72.0	81.4	0.0	35.4	116.1		8.3	72.1	0.0
Queue Length 95th (m)	14.1	33.3	0.0	#113.4	90.8	m0.0	#63.2	#159.4		18.8	87.8	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	489	795	473	736	1342	664	203	1803		203	1458	555
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.13	0.26	0.12	0.87	0.46	0.04	0.69	0.73		0.16	0.56	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2022 AM
05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 43.5

Intersection LOS: D

Intersection Capacity Utilization 96.2%

ICU Level of Service F

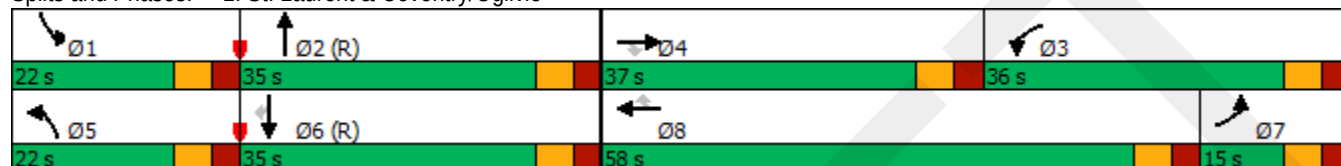
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2022 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	569	227	25	1042	166	165	244	12	47	158	45
Future Volume (vph)	0	569	227	25	1042	166	165	244	12	47	158	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1770	0	1695	1718	0
Flt Permitted				0.429			0.492			0.381		
Satd. Flow (perm)	0	3390	1422	755	3390	1380	873	1770	0	678	1718	0
Satd. Flow (RTOR)			227			147		2			12	
Lane Group Flow (vph)	0	569	227	25	1042	166	165	256	0	47	203	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.5	89.5	89.5	89.5	89.5	27.2	27.2		27.2	27.2	
Actuated g/C Ratio		0.69	0.69	0.69	0.69	0.69	0.21	0.21		0.21	0.21	
v/c Ratio		0.24	0.22	0.05	0.45	0.17	0.91	0.69		0.33	0.55	
Control Delay		7.3	2.7	6.1	7.3	1.1	94.7	55.7		46.9	47.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		7.3	2.7	6.1	7.3	1.1	94.7	55.7		46.9	47.3	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		5.9			6.5			71.0			47.2	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		23.6	1.2	1.5	37.0	1.2	41.8	61.1		10.4	44.4	
Queue Length 95th (m)		7.5	m0.0	m1.6	24.9	0.4	61.5	78.6		19.6	59.9	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2334	1049	519	2334	996	288	585		223	574	
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	0.22	0.05	0.45	0.17	0.57	0.44		0.21	0.35	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2022 AM

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 20.1

Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2022 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	587	11	167	1120	170	36	16	65	138	124	112
Future Volume (vph)	48	587	11	167	1120	170	36	16	65	138	124	112
Satd. Flow (prot)	1695	3380	0	1695	3292	0	1695	1784	1517	1695	1643	0
Flt Permitted	0.156			0.371			0.612			0.527		
Satd. Flow (perm)	278	3380	0	662	3292	0	1092	1784	1517	883	1643	0
Satd. Flow (RTOR)		2			19				98		37	
Lane Group Flow (vph)	48	598	0	167	1290	0	36	16	65	138	236	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		11.0	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	84.4	76.7		91.4	81.9		12.3	12.3	12.3	28.7	26.4	
Actuated g/C Ratio	0.65	0.59		0.70	0.63		0.09	0.09	0.09	0.22	0.20	
v/c Ratio	0.19	0.30		0.31	0.62		0.35	0.10	0.28	0.50	0.65	
Control Delay	13.0	18.6		8.1	16.9		63.4	53.2	6.1	48.5	47.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	13.0	18.6		8.1	16.9		63.4	53.2	6.1	48.5	47.7	
LOS	B	B		A	B		E	D	A	D	D	
Approach Delay		18.2			15.9			30.2			48.0	
Approach LOS		B			B			C			D	
Queue Length 50th (m)	6.1	49.9		13.4	92.2		8.8	3.8	0.0	29.1	45.6	
Queue Length 95th (m)	11.2	55.7		m14.8	m78.4		19.0	10.5	5.4	47.9	72.8	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	255	1994		544	2081		255	417	429	277	548	
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		0.31	0.62		0.14	0.04	0.15	0.50	0.43	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2022 AM

05/29/2020

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 21.7

Intersection LOS: C

Intersection Capacity Utilization 86.9%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2022 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	530	53	153	888	121	354	585	415	133	342	238
Future Volume (vph)	301	530	53	153	888	121	354	585	415	133	342	238
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3162	0	1695	3160	0
Flt Permitted	0.095			0.377			0.950			0.950		
Satd. Flow (perm)	169	3247	1341	669	3390	1492	1693	3162	0	1694	3160	0
Satd. Flow (RTOR)			164			164		140			119	
Lane Group Flow (vph)	301	530	53	153	888	121	354	1000	0	133	580	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	59.8	43.6	43.6	52.4	38.9	38.9	28.7	39.1		12.4	22.9	
Actuated g/C Ratio	0.46	0.34	0.34	0.40	0.30	0.30	0.22	0.30		0.10	0.18	
v/c Ratio	1.10	0.49	0.09	0.42	0.88	0.22	0.95	0.95		0.83	0.89	
Control Delay	127.2	29.6	0.3	23.8	53.7	2.5	85.6	57.1		93.8	57.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	127.2	29.6	0.3	23.8	53.7	2.5	85.6	57.1		93.8	57.8	
LOS	F	C	A	C	D	A	F	E		F	E	
Approach Delay		61.1			44.5			64.6			64.5	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~77.6	30.0	0.0	21.9	111.1	0.0	~91.8	117.6		34.1	61.8	
Queue Length 95th (m)	#136.3	60.0	0.0	35.4	136.8	5.4	#153.5	#161.3		#69.8	#89.7	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	274	1088	558	407	1066	581	373	1049		164	678	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.10	0.49	0.09	0.38	0.83	0.21	0.95	0.95		0.81	0.86	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2022 AM

05/29/2020

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 58.1

Intersection LOS: E

Intersection Capacity Utilization 101.5%

ICU Level of Service G

Analysis Period (min) 15

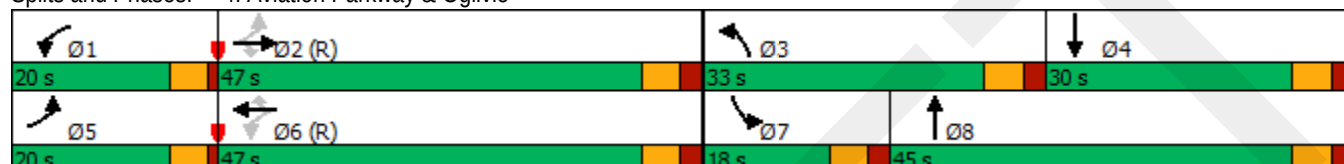
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2022 AM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	151	220	129	200	104
Future Volume (vph)	42	151	220	129	200	104
Satd. Flow (prot)	1695	1517	1695	1784	1681	0
Flt Permitted	0.950		0.575			
Satd. Flow (perm)	1662	1447	1016	1784	1681	0
Satd. Flow (RTOR)		151			65	
Lane Group Flow (vph)	42	151	220	129	304	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.2	16.2	15.3	15.3	15.3	
Actuated g/C Ratio	0.36	0.36	0.34	0.34	0.34	
v/c Ratio	0.07	0.24	0.63	0.21	0.49	
Control Delay	12.1	4.4	20.7	10.5	11.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.1	4.4	20.7	10.5	11.3	
LOS	B	A	C	B	B	
Approach Delay	6.1			16.9	11.3	
Approach LOS	A			B	B	
Queue Length 50th (m)	1.9	0.0	13.6	6.8	13.5	
Queue Length 95th (m)	8.6	10.2	28.9	14.2	27.1	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	616	622	762	1338	1277	
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	0.07	0.24	0.29	0.10	0.24	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 44.6						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.63						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2022 AM
05/29/2020

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2		 Ø4	
39.9 s		22 s	
 Ø6			
39.9 s			

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2022 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	134	117	21	160	445	137	30	176	96
Future Volume (vph)	9	26	24	134	117	21	160	445	137	30	176	96
Satd. Flow (prot)	1695	1611	0	1695	1743	0	1695	1722	0	1695	1673	0
Flt Permitted	0.669			0.724			0.592			0.325		
Satd. Flow (perm)	1184	1611	0	1292	1743	0	1051	1722	0	580	1673	0
Satd. Flow (RTOR)		24			12			28			50	
Lane Group Flow (vph)	9	50	0	134	138	0	160	582	0	30	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	12.9	12.9		12.9	12.9		24.7	24.7		24.7	24.7	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.49	0.49		0.49	0.49	
v/c Ratio	0.03	0.12		0.41	0.31		0.31	0.68		0.11	0.32	
Control Delay	16.7	11.7		21.1	17.0		11.1	15.3		9.7	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.7	11.7		21.1	17.0		11.1	15.3		9.7	8.4	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.5			19.0			14.4			8.5	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		8.2	7.4		6.4	28.0		1.1	8.8	
Queue Length 95th (m)	4.0	9.8		28.8	26.4		25.8	92.8		6.8	32.8	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	555	768		605	823		781	1287		431	1257	
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	0.02	0.07		0.22	0.17		0.20	0.45		0.07	0.22	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 50.7												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.68												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle

Projected 2022 AM

05/29/2020

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle

 Ø2 42 s	 Ø3 5 s	 Ø4 28 s
 Ø6 42 s	 Ø7 5 s	 Ø8 28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2022 AM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	593	153	1224	228	6	1441
Future Volume (vph)	593	153	1224	228	6	1441
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.197	
Satd. Flow (perm)	3288	1450	4871	1477	351	4871
Satd. Flow (RTOR)		62		228		
Lane Group Flow (vph)	593	153	1224	228	6	1441
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.4	29.4	89.0	89.0	89.0	89.0
Actuated g/C Ratio	0.23	0.23	0.68	0.68	0.68	0.68
v/c Ratio	0.80	0.41	0.37	0.21	0.03	0.43
Control Delay	55.6	27.2	9.5	1.6	5.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	27.2	9.5	1.6	5.5	6.0
LOS	E	C	A	A	A	A
Approach Delay	49.8		8.2			6.0
Approach LOS	D		A			A
Queue Length 50th (m)	74.1	19.4	44.9	0.0	0.4	41.5
Queue Length 95th (m)	88.6	37.1	61.9	9.0	m0.2	11.2
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	530	3333	1082	239	3333
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	0.53	0.29	0.37	0.21	0.03	0.43
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2022 AM
05/29/2020

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	615	15	0	1273	0	8
Future Vol, veh/h	615	15	0	1273	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	615	15	0	1273	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	315
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	681
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	681
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	681		-	-	-	
HCM Lane V/C Ratio	0.012		-	-	-	
HCM Control Delay (s)	10.3		-	-	-	
HCM Lane LOS	B		-	-	-	
HCM 95th %tile O(veh)	0		-	-	-	

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	6	1	96	302	7
Future Vol, veh/h	25	6	1	96	302	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	6	1	96	302	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	404	306	309	0	-	0
Stage 1	306	-	-	-	-	-
Stage 2	98	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	603	734	1252	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	602	734	1252	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.1	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1252	-	624	-	-	
HCM Lane V/C Ratio	0.001	-	0.05	-	-	
HCM Control Delay (s)	7.9	0	11.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	30	0	0	0	0	129	133	640	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	129	133	640	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	129	133	640	44	0	0	178

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	586	-	-	-	-	320	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	586	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	394	0	0	0	0	676	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	463	0	0	0	0	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	319	-	-	-	-	676	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	375	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	17.5	11.6	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	319 676
HCM Lane V/C Ratio	-	-	0.094 0.191
HCM Control Delay (s)	-	-	17.5 11.6
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	0.3 0.7

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2022 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	598	205	476	383	30	182	880	628	71	789	192
Future Volume (vph)	302	598	205	476	383	30	182	880	628	71	789	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4478	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3222	3390	1457	1658	4478	0	1688	4871	1403
Satd. Flow (RTOR)			210			210		156				211
Lane Group Flow (vph)	302	598	205	476	383	30	182	1508	0	71	789	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.6	27.5	27.5	19.6	24.5	24.5	16.1	41.2		8.2	30.6	30.6
Actuated g/C Ratio	0.19	0.23	0.23	0.16	0.20	0.20	0.13	0.34		0.07	0.26	0.26
v/c Ratio	0.49	0.77	0.43	0.89	0.55	0.06	0.80	1.03dr		0.62	0.64	0.37
Control Delay	48.4	50.3	7.4	79.8	54.4	0.3	68.5	39.9		77.3	43.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.4	50.3	7.4	79.8	54.4	0.3	68.5	39.9		77.3	43.0	5.9
LOS	D	D	A	E	D	A	E	D		E	D	A
Approach Delay		41.8			66.2			43.0			38.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	67.3	0.0	~62.1	49.6	0.0	41.9	120.6		16.5	62.1	0.0
Queue Length 95th (m)	49.8	87.2	17.2	#96.2	66.2	m0.0	#70.6	#155.6		#34.9	76.7	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	618	861	509	535	861	526	248	1638		121	1242	515
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.69	0.40	0.89	0.44	0.06	0.73	0.92		0.59	0.64	0.37
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 120												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2022 PM

05/29/2020

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 46.1

Intersection LOS: D

Intersection Capacity Utilization 97.8%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2022 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1044	257	40	679	124	117	219	32	134	222	80
Future Volume (vph)	0	1044	257	40	679	124	117	219	32	134	222	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1747	0	1695	1704	0
Flt Permitted				0.235			0.329			0.426		
Satd. Flow (perm)	0	3390	1424	417	3390	1388	585	1747	0	758	1704	0
Satd. Flow (RTOR)			257			124		7			17	
Lane Group Flow (vph)	0	1044	257	40	679	124	117	251	0	134	302	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		79.6	79.6	79.6	79.6	79.6	27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.46	0.25	0.14	0.30	0.13	0.89	0.63		0.78	0.76	
Control Delay		11.3	3.6	24.8	23.8	12.9	96.6	46.5		71.6	52.3	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		11.6	3.6	24.8	23.8	12.9	96.6	46.5		71.6	52.3	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		10.0			22.2			62.4			58.2	
Approach LOS		B			C			E			E	
Queue Length 50th (m)		56.3	12.5	6.3	73.8	11.3	27.2	52.9		30.2	64.1	
Queue Length 95th (m)		m19.9	m0.1	m12.5	94.8	m24.4	45.0	68.2		46.6	81.4	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2247	1030	276	2247	962	209	629		270	620	
Starvation Cap Reductn		590	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		0.63	0.25	0.14	0.30	0.13	0.56	0.40		0.50	0.49	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2022 PM

05/29/2020

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 27.2

Intersection LOS: C

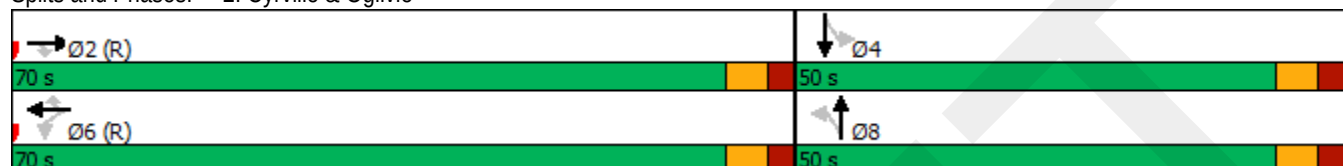
Intersection Capacity Utilization 81.8%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2022 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1132	23	114	759	209	48	173	218	258	175	84
Future Volume (vph)	110	1132	23	114	759	209	48	173	218	258	175	84
Satd. Flow (prot)	1695	3376	0	1695	3235	0	1695	1784	1517	1695	1687	0
Flt Permitted	0.168			0.100			0.599			0.458		
Satd. Flow (perm)	300	3376	0	178	3235	0	1064	1784	1406	782	1687	0
Satd. Flow (RTOR)		2			31				163		26	
Lane Group Flow (vph)	110	1155	0	114	968	0	48	173	218	258	259	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	61.0	50.3		61.2	50.4		23.0	23.0	23.0	45.2	42.9	
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.42	0.82		0.53	0.70		0.24	0.51	0.54	0.62	0.42	
Control Delay	18.1	38.8		35.7	29.7		40.4	46.9	16.5	33.4	26.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	18.1	38.8		35.7	29.7		40.4	46.9	16.5	33.4	26.8	
LOS	B	D		D	C		D	D	B	C	C	
Approach Delay		37.0			30.3			31.1			30.1	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	14.3	142.3		12.9	111.2		8.9	34.0	10.2	39.6	36.8	
Queue Length 95th (m)	12.0	#193.1		m36.4	#117.1		19.4	54.7	32.4	60.2	57.8	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	285	1415		233	1375		296	496	508	414	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	0.39	0.82		0.49	0.70		0.16	0.35	0.43	0.62	0.34	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2022 PM

05/29/2020

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 33.0

Intersection LOS: C

Intersection Capacity Utilization 95.6%

ICU Level of Service F

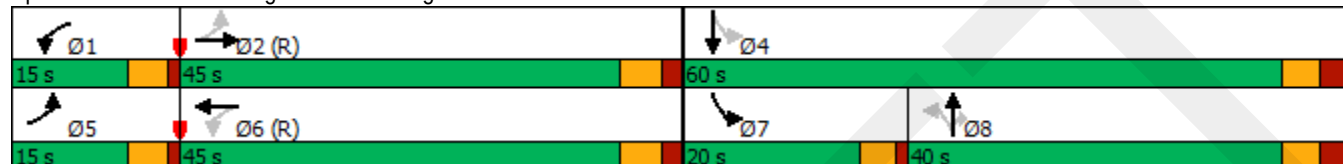
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2022 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	753	86	136	603	112	127	213	180	112	249	168
Future Volume (vph)	183	753	86	136	603	112	127	213	180	112	249	168
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3137	0	1695	3168	0
Flt Permitted	0.354			0.281			0.950			0.950		
Satd. Flow (perm)	631	3247	1343	500	3390	1493	1692	3137	0	1694	3168	0
Satd. Flow (RTOR)			125			125		161			123	
Lane Group Flow (vph)	183	753	86	136	603	112	127	393	0	112	417	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	69.2	56.4	56.4	66.2	54.9	54.9	13.8	18.2		12.7	17.1	
Actuated g/C Ratio	0.58	0.47	0.47	0.55	0.46	0.46	0.12	0.15		0.11	0.14	
v/c Ratio	0.39	0.49	0.12	0.36	0.39	0.15	0.65	0.64		0.62	0.75	
Control Delay	19.8	30.8	7.4	14.9	24.4	4.0	66.4	32.3		66.1	42.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.8	30.8	7.4	14.9	24.4	4.0	66.4	32.3		66.1	42.8	
LOS	B	C	A	B	C	A	E	C		E	D	
Approach Delay		26.9			20.2			40.6			47.7	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	30.5	81.2	3.6	13.1	48.4	0.0	28.8	27.0		25.5	35.6	
Queue Length 95th (m)	m32.1	75.3	m4.0	26.6	76.0	9.7	48.5	41.1		43.3	49.4	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	512	1532	700	447	1567	757	208	753		200	729	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.49	0.12	0.30	0.38	0.15	0.61	0.52		0.56	0.57	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2022 PM

05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.1

Intersection LOS: C

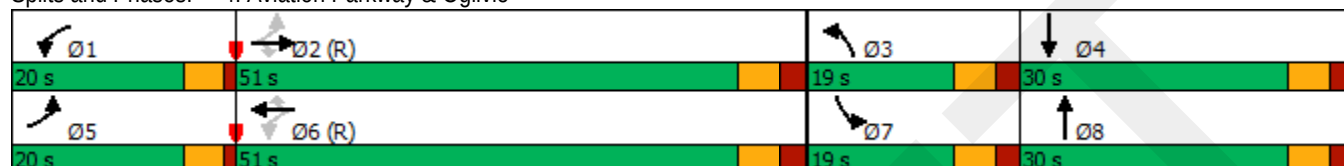
Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2022 PM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	311	248	248	248	90
Future Volume (vph)	88	311	248	248	248	90
Satd. Flow (prot)	1695	1517	1695	1784	1702	0
Flt Permitted	0.950		0.504			
Satd. Flow (perm)	1658	1442	890	1784	1702	0
Satd. Flow (RTOR)		311			34	
Lane Group Flow (vph)	88	311	248	248	338	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.5	25.5	20.6	20.6	20.6	
Actuated g/C Ratio	0.43	0.43	0.35	0.35	0.35	
v/c Ratio	0.12	0.39	0.80	0.40	0.55	
Control Delay	13.6	3.9	36.7	15.7	16.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.6	3.9	36.7	15.7	16.7	
LOS	B	A	D	B	B	
Approach Delay	6.0			26.2	16.7	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.5	0.0	23.2	19.4	25.0	
Queue Length 95th (m)	16.7	14.6	46.7	33.6	43.7	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	729	797	505	1012	981	
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	0.12	0.39	0.49	0.25	0.34	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 59.2						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.80						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2022 PM

05/29/2020

Intersection Signal Delay: 17.1

Intersection LOS: B

Intersection Capacity Utilization 64.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2022 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	199	36	26	46	298	236	59	486	17
Future Volume (vph)	25	79	104	199	36	26	46	298	236	59	486	17
Satd. Flow (prot)	1695	1574	0	1695	1649	0	1695	1639	0	1695	1774	0
Flt Permitted	0.717			0.642			0.353			0.320		
Satd. Flow (perm)	1265	1574	0	1108	1649	0	628	1639	0	568	1774	0
Satd. Flow (RTOR)		89			26			53			2	
Lane Group Flow (vph)	25	183	0	199	62	0	46	534	0	59	503	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	16.9	16.9		16.9	16.9		21.7	21.7		21.7	21.7	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.42	0.42		0.42	0.42	
v/c Ratio	0.06	0.32		0.56	0.11		0.18	0.75		0.25	0.68	
Control Delay	15.7	10.6		23.7	10.9		13.1	20.0		14.6	18.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	10.6		23.7	10.9		13.1	20.0		14.6	18.6	
LOS	B	B		C	B		B	B		B	B	
Approach Delay		11.2			20.7			19.4			18.2	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.4	5.6		13.7	2.1		2.3	31.3		3.0	31.7	
Queue Length 95th (m)	7.7	24.5		44.8	11.5		10.7	93.4		13.7	88.7	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	949	1204		832	1244		473	1249		428	1338	
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	0.03	0.15		0.24	0.05		0.10	0.43		0.14	0.38	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 52.2												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.75												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2022 PM

05/29/2020

Intersection Signal Delay: 18.1

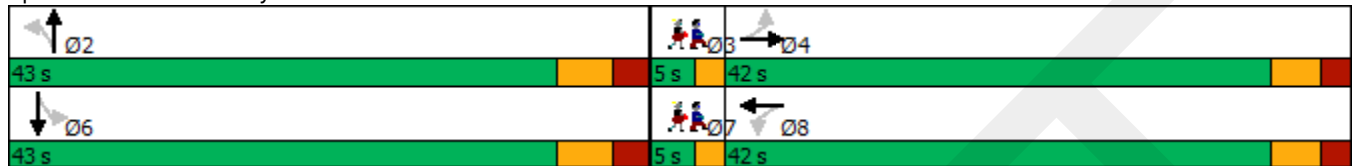
Intersection LOS: B

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2022 PM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		   			   
Traffic Volume (vph)	499	156	1609	246	9	1779
Future Volume (vph)	499	156	1609	246	9	1779
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.124	
Satd. Flow (perm)	3288	1454	4871	1477	221	4871
Satd. Flow (RTOR)		36		246		
Lane Group Flow (vph)	499	156	1609	246	9	1779
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.5	24.5	83.9	83.9	83.9	83.9
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.74	0.48	0.47	0.22	0.06	0.52
Control Delay	51.6	36.1	9.2	1.4	5.8	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	36.1	9.2	1.4	5.8	11.5
LOS	D	D	A	A	A	B
Approach Delay	47.9		8.2			11.5
Approach LOS	D		A			B
Queue Length 50th (m)	57.9	25.2	54.0	0.0	0.9	70.6
Queue Length 95th (m)	71.2	43.3	76.8	8.3	m0.5	23.8
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	412	3405	1106	154	3405
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	0.57	0.38	0.47	0.22	0.06	0.52
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2022 PM
05/29/2020

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 66.6%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1197	20	0	895	0	5
Future Vol, veh/h	1197	20	0	895	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1197	20	0	895	0	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	609
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	438
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	438
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		13.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	438	-	-	-		
HCM Lane V/C Ratio	0.011	-	-	-		
HCM Control Delay (s)	13.3	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	4	2	431	307	10
Future Vol, veh/h	17	4	2	431	307	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	4	2	431	307	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	747	312	317	0	-	0
Stage 1	312	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	381	728	1243	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	728	1243	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1243	-	418	-	-	
HCM Lane V/C Ratio	0.002	-	0.05	-	-	
HCM Control Delay (s)	7.9	0	14.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱		↰↱				↱
Traffic Vol, veh/h	170	0	0	0	0	207	112	427	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	207	112	427	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	207	112	427	27	0	0	279
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	438	-	-	-	-	214	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	438	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	502	0	0	0	0	791	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	567	0	0	0	0	-	-	-	0			
Platoon blocked, %									-			
Mov Cap-1 Maneuver	370	-	-	-	-	791	-	-	-			
Mov Cap-2 Maneuver	370	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	419	-	-	-	-	-	-	-	-			
Approach	EB			WB			NB					
HCM Control Delay, s	22.7			11.2								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL		NBT		EBLn1WBLn1							
Capacity (veh/h)	-		-		370 791							
HCM Lane V/C Ratio	-		-		0.459 0.262							
HCM Control Delay (s)	-		-		22.7 11.2							
HCM Lane LOS	-		-		C B							
HCM 95th %tile Q(veh)	-		-		2.3 1							

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2024 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	209	58	682	638	24	141	818	549	33	831	132
Future Volume (vph)	66	209	58	682	638	24	141	818	549	33	831	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4484	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3269	3390	1380	3165	3390	1464	1658	4484	0	1686	4871	1395
Satd. Flow (RTOR)			195			140		120				196
Lane Group Flow (vph)	66	209	58	682	638	24	141	1367	0	33	831	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.9	22.7	22.7	29.0	35.4	35.4	14.2	49.1		8.0	37.9	37.9
Actuated g/C Ratio	0.15	0.17	0.17	0.22	0.27	0.27	0.11	0.38		0.06	0.29	0.29
v/c Ratio	0.14	0.35	0.14	0.93	0.69	0.05	0.76	0.86dr		0.32	0.59	0.24
Control Delay	46.8	47.1	0.8	71.5	44.0	0.2	73.0	33.2		65.5	43.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.8	47.1	0.8	71.5	44.0	0.2	73.0	33.2		65.5	43.6	1.9
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		39.0			57.2			36.9			38.8	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	7.0	23.1	0.0	75.1	85.4	0.0	35.4	~127.9		8.3	73.9	0.0
Queue Length 95th (m)	14.3	34.3	0.0	#125.1	90.8	m0.0	#59.1	#147.5		18.8	89.7	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	488	795	473	745	1342	664	203	1768		203	1420	545
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.14	0.26	0.12	0.92	0.48	0.04	0.69	0.77		0.16	0.59	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2024 AM

05/29/2020

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 44.0

Intersection LOS: D

Intersection Capacity Utilization 98.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

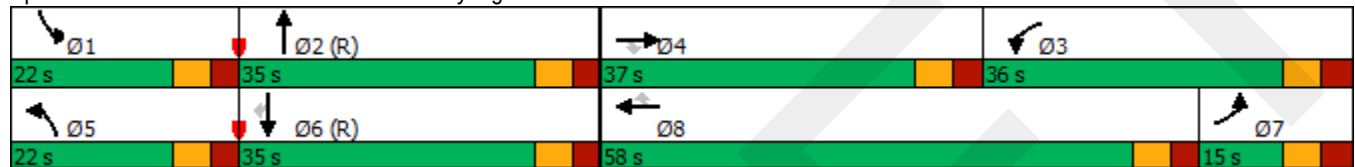
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2024 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	610	227	25	1109	166	165	248	12	47	161	45
Future Volume (vph)	0	610	227	25	1109	166	165	248	12	47	161	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1770	0	1695	1718	0
Flt Permitted				0.409			0.487			0.374		
Satd. Flow (perm)	0	3390	1422	721	3390	1380	864	1770	0	666	1718	0
Satd. Flow (RTOR)			227			138		2			12	
Lane Group Flow (vph)	0	610	227	25	1109	166	165	260	0	47	206	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.4	89.4	89.4	89.4	89.4	27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.69	0.69	0.69	0.69	0.69	0.21	0.21		0.21	0.21	
v/c Ratio		0.26	0.22	0.05	0.48	0.17	0.91	0.70		0.34	0.56	
Control Delay		6.7	2.1	5.6	6.4	1.0	96.1	56.0		47.1	47.5	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		6.7	2.1	5.6	6.4	1.0	96.1	56.0		47.1	47.5	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		5.4			5.7			71.6			47.4	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		25.1	1.6	1.5	44.1	1.4	41.9	62.1		10.4	45.1	
Queue Length 95th (m)		7.1	m0.0	m1.6	26.6	m1.8	61.7	79.7		19.6	61.0	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2331	1048	496	2331	991	285	585		219	574	
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		0.26	0.22	0.05	0.48	0.17	0.58	0.44		0.21	0.36	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2024 AM

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 19.3

Intersection LOS: B

Intersection Capacity Utilization 76.0%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2024 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	618	11	174	1142	170	82	32	71	138	133	112
Future Volume (vph)	48	618	11	174	1142	170	82	32	71	138	133	112
Satd. Flow (prot)	1695	3380	0	1695	3296	0	1695	1784	1517	1695	1647	0
Flt Permitted	0.141			0.345			0.607			0.576		
Satd. Flow (perm)	252	3380	0	616	3296	0	1083	1784	1517	966	1647	0
Satd. Flow (RTOR)		2			18				98		34	
Lane Group Flow (vph)	48	629	0	174	1312	0	82	32	71	138	245	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		11.0	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	78.5	70.7		86.4	76.5		15.5	15.5	15.5	34.0	31.7	
Actuated g/C Ratio	0.60	0.54		0.66	0.59		0.12	0.12	0.12	0.26	0.24	
v/c Ratio	0.21	0.34		0.35	0.67		0.64	0.15	0.27	0.43	0.57	
Control Delay	15.3	21.7		9.7	18.7		75.4	50.5	6.3	42.6	42.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.3	21.7		9.7	18.7		75.4	50.5	6.3	42.6	42.0	
LOS	B	C		A	B		E	D	A	D	D	
Approach Delay		21.2			17.6			44.6			42.2	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	6.2	49.8		15.2	88.9		20.4	7.5	0.0	28.0	46.9	
Queue Length 95th (m)	11.5	58.5		m16.4	m79.1		35.7	16.4	7.0	46.2	74.0	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	230	1856		497	1947		253	417	429	319	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	0.21	0.34		0.35	0.67		0.32	0.08	0.17	0.43	0.45	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2024 AM

05/29/2020

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2024 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	556	64	153	907	121	359	597	415	133	349	238
Future Volume (vph)	301	556	64	153	907	121	359	597	415	133	349	238
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3162	0	1695	3164	0
Flt Permitted	0.092			0.350			0.950			0.950		
Satd. Flow (perm)	164	3247	1341	621	3390	1492	1693	3162	0	1694	3164	0
Satd. Flow (RTOR)			164			164		138			114	
Lane Group Flow (vph)	301	556	64	153	907	121	359	1012	0	133	587	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	59.7	43.4	43.4	52.7	39.2	39.2	28.8	39.5		12.3	23.0	
Actuated g/C Ratio	0.46	0.33	0.33	0.41	0.30	0.30	0.22	0.30		0.09	0.18	
v/c Ratio	1.13	0.51	0.12	0.44	0.89	0.21	0.96	0.96		0.84	0.90	
Control Delay	140.2	33.5	0.7	24.1	54.6	2.5	87.6	58.0		96.0	59.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	140.2	33.5	0.7	24.1	54.6	2.5	87.6	58.0		96.0	59.9	
LOS	F	C	A	C	D	A	F	E		F	E	
Approach Delay		66.1			45.3			65.8			66.6	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~78.8	33.2	0.0	21.9	114.3	0.0	~95.1	120.2		34.1	63.6	
Queue Length 95th (m)	#137.3	72.4	0.9	35.4	140.6	5.4	#156.7	#164.8		#69.8	#93.1	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	266	1083	556	393	1066	581	375	1055		161	674	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.13	0.51	0.12	0.39	0.85	0.21	0.96	0.96		0.83	0.87	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2024 AM

05/29/2020

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 60.2

Intersection LOS: E

Intersection Capacity Utilization 102.5%

ICU Level of Service G

Analysis Period (min) 15

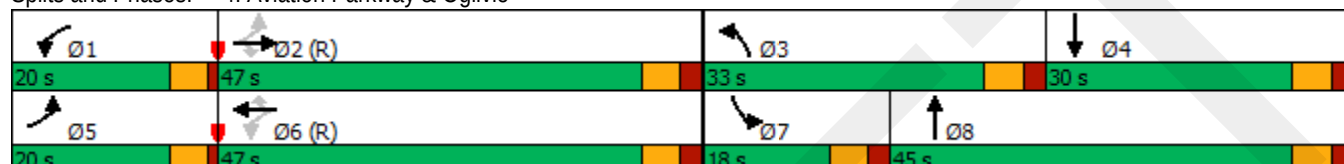
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2024 AM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	158	235	132	204	104
Future Volume (vph)	42	158	235	132	204	104
Satd. Flow (prot)	1695	1517	1695	1784	1681	0
Flt Permitted	0.950		0.573			
Satd. Flow (perm)	1662	1447	1012	1784	1681	0
Satd. Flow (RTOR)		158			64	
Lane Group Flow (vph)	42	158	235	132	308	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.2	16.2	15.8	15.8	15.8	
Actuated g/C Ratio	0.36	0.36	0.35	0.35	0.35	
v/c Ratio	0.07	0.25	0.66	0.21	0.49	
Control Delay	12.4	4.4	21.8	10.4	11.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.4	4.4	21.8	10.4	11.2	
LOS	B	A	C	B	B	
Approach Delay	6.1			17.7	11.2	
Approach LOS	A			B	B	
Queue Length 50th (m)	2.0	0.0	14.8	6.9	13.8	
Queue Length 95th (m)	8.6	10.4	31.4	14.5	27.8	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	609	621	750	1323	1263	
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	0.07	0.25	0.31	0.10	0.24	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 45.1						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.66						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2024 AM

05/29/2020

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 63.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	22 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2024 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	139	130	21	160	454	139	30	179	96
Future Volume (vph)	9	26	24	139	130	21	160	454	139	30	179	96
Satd. Flow (prot)	1695	1611	0	1695	1747	0	1695	1722	0	1695	1674	0
Flt Permitted	0.661			0.724			0.590			0.316		
Satd. Flow (perm)	1169	1611	0	1292	1747	0	1048	1722	0	564	1674	0
Satd. Flow (RTOR)		24			11			28			49	
Lane Group Flow (vph)	9	50	0	139	151	0	160	593	0	30	275	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	13.0	13.0		13.0	13.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.49	0.49		0.49	0.49	
v/c Ratio	0.03	0.12		0.42	0.33		0.31	0.69		0.11	0.33	
Control Delay	16.8	11.8		21.5	17.6		11.1	15.6		9.8	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.8	11.8		21.5	17.6		11.1	15.6		9.8	8.5	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.5			19.5			14.7			8.6	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		8.7	8.5		6.6	29.4		1.1	9.1	
Queue Length 95th (m)	4.0	9.8		30.0	29.0		25.9	95.4		6.8	33.4	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	541	759		599	815		770	1273		414	1243	
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	0.02	0.07		0.23	0.19		0.21	0.47		0.07	0.22	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 51.2												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.69												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2024 AM
05/29/2020

Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Cyrville & Labelle

 Ø2	 Ø3	 Ø4
42 s	5 s	28 s
 Ø6	 Ø7	 Ø8
42 s	5 s	28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2024 AM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	603	153	1277	228	6	1510
Future Volume (vph)	603	153	1277	228	6	1510
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.184	
Satd. Flow (perm)	3288	1450	4871	1477	328	4871
Satd. Flow (RTOR)		54		228		
Lane Group Flow (vph)	603	153	1277	228	6	1510
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.9	29.9	88.5	88.5	88.5	88.5
Actuated g/C Ratio	0.23	0.23	0.68	0.68	0.68	0.68
v/c Ratio	0.80	0.41	0.38	0.21	0.03	0.46
Control Delay	55.4	29.3	9.8	1.6	3.3	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	29.3	9.8	1.6	3.3	4.6
LOS	E	C	A	A	A	A
Approach Delay	50.1		8.6			4.6
Approach LOS	D		A			A
Queue Length 50th (m)	75.3	21.2	48.0	0.0	0.4	35.0
Queue Length 95th (m)	89.8	38.8	66.0	9.1	m0.0	m2.3
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	525	3317	1078	223	3317
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	0.54	0.29	0.38	0.21	0.03	0.46
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2024 AM

05/29/2020

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 15.3

Intersection LOS: B

Intersection Capacity Utilization 62.5%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	627	45	0	1344	0	28
Future Vol, veh/h	627	45	0	1344	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	627	45	0	1344	0	28
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	336
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	660
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	660
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	660	-	-	-		
HCM Lane V/C Ratio	0.042	-	-	-		
HCM Control Delay (s)	10.7	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	RT			LT	RT	
Traffic Vol, veh/h	92	21	3	98	308	21
Future Vol, veh/h	92	21	3	98	308	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	21	3	98	308	21
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	423	319	329	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	588	722	1231	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	586	722	1231	-	-	-
Mov Cap-2 Maneuver	586	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.3	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1231	-	607	-	-	
HCM Lane V/C Ratio	0.002	-	0.186	-	-	
HCM Control Delay (s)	7.9	0	12.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.7	-	-	

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	0	0	0	139	133	653	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	139	133	653	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	139	133	653	44	0	0	178
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	593	-	-	-	-	327	0	0	-			
Stage 1	0	-	-	-	-	-	-	-	-			
Stage 2	593	-	-	-	-	-	-	-	-			
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-			
Pot Cap-1 Maneuver	389	0	0	0	0	669	-	-	0			
Stage 1	-	0	0	0	0	-	-	-	0			
Stage 2	459	0	0	0	0	-	-	-	0			
Platoon blocked, %									-			
Mov Cap-1 Maneuver	308	-	-	-	-	669	-	-	-			
Mov Cap-2 Maneuver	308	-	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	364	-	-	-	-	-	-	-	-			
Approach	EB			WB			NB					
HCM Control Delay, s	17.9			11.8								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1								
Capacity (veh/h)	-	-	308	669								
HCM Lane V/C Ratio	-	-	0.097	0.208								
HCM Control Delay (s)	-	-	17.9	11.8								
HCM Lane LOS	-	-	C	B								
HCM 95th %tile Q(veh)	-	-	0.3	0.8								

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2024 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	613	205	499	394	30	182	898	672	71	805	192
Future Volume (vph)	302	613	205	499	394	30	182	898	672	71	805	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4466	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3223	3390	1457	1659	4466	0	1688	4871	1403
Satd. Flow (RTOR)			210			210		164				211
Lane Group Flow (vph)	302	613	205	499	394	30	182	1570	0	71	805	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	23.0	27.8	27.8	19.8	24.6	24.6	16.1	40.6		8.2	30.1	30.1
Actuated g/C Ratio	0.19	0.23	0.23	0.16	0.20	0.20	0.13	0.34		0.07	0.25	0.25
v/c Ratio	0.48	0.78	0.42	0.92	0.57	0.06	0.80	1.10dr		0.62	0.66	0.38
Control Delay	48.1	50.5	7.3	81.9	52.6	0.3	70.5	46.2		77.3	43.8	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.1	50.5	7.3	81.9	52.6	0.3	70.5	46.2		77.3	43.8	5.9
LOS	D	D	A	F	D	A	E	D		E	D	A
Approach Delay		42.0			66.7			48.7			39.2	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	69.4	0.0	~67.3	51.7	0.0	41.9	~136.3		16.5	63.6	0.0
Queue Length 95th (m)	49.8	89.6	17.2	#103.2	67.9	m0.0	#70.7	#166.3		#34.9	78.4	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	629	861	509	541	861	526	248	1619		121	1219	509
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.48	0.71	0.40	0.92	0.46	0.06	0.73	0.97		0.59	0.66	0.38

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2024 PM

05/29/2020

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 48.5

Intersection LOS: D

Intersection Capacity Utilization 100.1%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2024 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	1112	257	40	718	124	117	223	32	134	226	80
Future Volume (vph)	0	1112	257	40	718	124	117	223	32	134	226	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1747	0	1695	1706	0
Flt Permitted				0.213			0.324			0.421		
Satd. Flow (perm)	0	3390	1424	379	3390	1388	576	1747	0	749	1706	0
Satd. Flow (RTOR)			257			124		7			17	
Lane Group Flow (vph)	0	1112	257	40	718	124	117	255	0	134	306	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		79.4	79.4	79.4	79.4	79.4	27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.50	0.25	0.16	0.32	0.13	0.89	0.63		0.79	0.76	
Control Delay		10.5	2.8	24.7	23.6	12.1	98.3	46.6		72.2	52.4	
Queue Delay		0.3	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		10.8	2.8	24.7	23.6	12.1	98.3	46.6		72.2	52.4	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		9.3			22.1			62.8			58.4	
Approach LOS		A			C			E			E	
Queue Length 50th (m)		50.7	8.7	7.2	78.1	12.0	27.2	53.7		30.3	65.0	
Queue Length 95th (m)		m33.5	m1.0	m11.3	89.7	m20.3	#45.7	69.1		46.8	82.8	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2241	1028	250	2241	959	205	629		267	620	
Starvation Cap Reductn		522	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.65	0.25	0.16	0.32	0.13	0.57	0.41		0.50	0.49	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2024 PM

05/29/2020

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

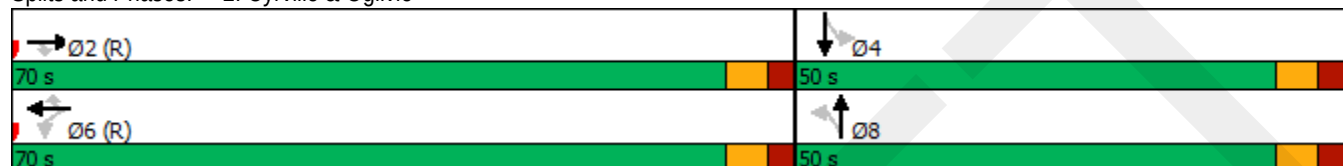
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2024 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1167	23	125	774	209	74	185	221	258	189	84
Future Volume (vph)	110	1167	23	125	774	209	74	185	221	258	189	84
Satd. Flow (prot)	1695	3376	0	1695	3236	0	1695	1784	1517	1695	1693	0
Flt Permitted	0.162			0.085			0.591			0.437		
Satd. Flow (perm)	289	3376	0	152	3236	0	1050	1784	1406	747	1693	0
Satd. Flow (RTOR)		2			30				154		24	
Lane Group Flow (vph)	110	1190	0	125	983	0	74	185	221	258	273	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	60.4	49.6		61.2	50.1		23.3	23.3	23.3	45.5	43.2	
Actuated g/C Ratio	0.50	0.41		0.51	0.42		0.19	0.19	0.19	0.38	0.36	
v/c Ratio	0.42	0.85		0.60	0.72		0.36	0.53	0.56	0.64	0.44	
Control Delay	17.8	39.3		42.6	29.7		44.4	47.7	18.4	33.7	27.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	17.8	39.3		42.6	29.7		44.4	47.7	18.4	33.7	27.5	
LOS	B	D		D	C		D	D	B	C	C	
Approach Delay		37.5			31.1			33.7			30.5	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	13.3	150.3		18.8	113.7		14.2	36.6	12.5	39.6	39.8	
Queue Length 95th (m)	12.2	#202.8		m40.6	#144.3		28.0	58.2	35.6	60.2	61.6	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	278	1397		224	1367		292	496	502	407	766	
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	0.40	0.85		0.56	0.72		0.25	0.37	0.44	0.63	0.36	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2024 PM

05/29/2020

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 33.8

Intersection LOS: C

Intersection Capacity Utilization 97.4%

ICU Level of Service F

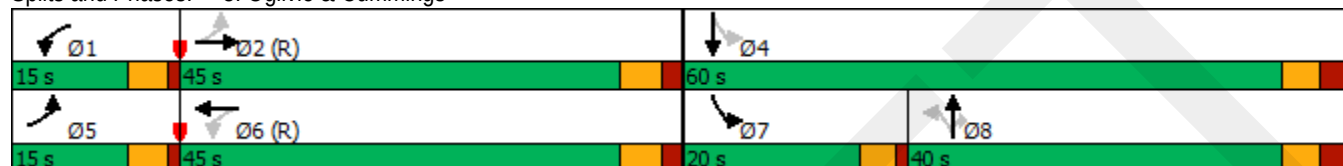
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2024 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	777	92	136	620	112	134	218	180	112	254	168
Future Volume (vph)	183	777	92	136	620	112	134	218	180	112	254	168
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3140	0	1695	3168	0
Flt Permitted	0.342			0.266			0.950			0.950		
Satd. Flow (perm)	609	3247	1343	473	3390	1493	1692	3140	0	1694	3168	0
Satd. Flow (RTOR)			125			125		157			117	
Lane Group Flow (vph)	183	777	92	136	620	112	134	398	0	112	422	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	68.5	55.6	55.6	65.4	54.1	54.1	14.0	19.2		12.5	17.6	
Actuated g/C Ratio	0.57	0.46	0.46	0.54	0.45	0.45	0.12	0.16		0.10	0.15	
v/c Ratio	0.41	0.52	0.13	0.38	0.41	0.15	0.68	0.63		0.64	0.75	
Control Delay	19.9	30.9	7.6	15.4	25.0	3.9	68.2	32.1		67.7	43.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.9	30.9	7.6	15.4	25.0	3.9	68.2	32.1		67.7	43.2	
LOS	B	C	A	B	C	A	E	C		E	D	
Approach Delay		27.0			20.8			41.2			48.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	29.4	81.8	4.0	13.5	51.1	0.0	30.3	27.8		25.5	36.9	
Queue Length 95th (m)	m29.5	m72.9	m3.9	25.9	76.8	9.5	#54.3	42.3		43.9	51.0	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	498	1504	689	431	1536	744	207	751		196	724	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.52	0.13	0.32	0.40	0.15	0.65	0.53		0.57	0.58	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2024 PM

05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 31.5

Intersection LOS: C

Intersection Capacity Utilization 74.5%

ICU Level of Service D

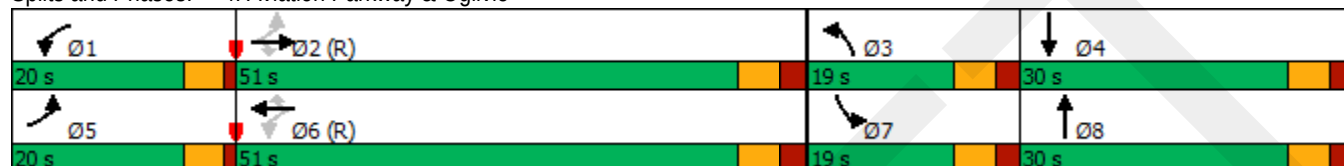
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2024 PM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	322	257	253	253	90
Future Volume (vph)	88	322	257	253	253	90
Satd. Flow (prot)	1695	1517	1695	1784	1704	0
Flt Permitted	0.950		0.499			
Satd. Flow (perm)	1658	1442	881	1784	1704	0
Satd. Flow (RTOR)		322			34	
Lane Group Flow (vph)	88	322	257	253	343	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.4	25.4	21.2	21.2	21.2	
Actuated g/C Ratio	0.42	0.42	0.35	0.35	0.35	
v/c Ratio	0.12	0.40	0.82	0.40	0.55	
Control Delay	13.9	3.9	38.7	15.6	16.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.9	3.9	38.7	15.6	16.5	
LOS	B	A	D	B	B	
Approach Delay	6.1			27.2	16.5	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.7	0.0	24.5	19.9	25.6	
Queue Length 95th (m)	16.7	14.8	49.6	34.1	44.4	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	720	798	494	1001	971	
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	0.12	0.40	0.52	0.25	0.35	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 59.8						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.82						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2024 PM

05/29/2020

Intersection Signal Delay: 17.5

Intersection LOS: B

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2024 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	202	43	26	46	304	240	59	496	17
Future Volume (vph)	25	79	104	202	43	26	46	304	240	59	496	17
Satd. Flow (prot)	1695	1574	0	1695	1662	0	1695	1639	0	1695	1774	0
Flt Permitted	0.712			0.642			0.343			0.311		
Satd. Flow (perm)	1256	1574	0	1108	1662	0	610	1639	0	552	1774	0
Satd. Flow (RTOR)		89			26			53			2	
Lane Group Flow (vph)	25	183	0	202	69	0	46	544	0	59	513	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	17.1	17.1		17.1	17.1		22.3	22.3		22.3	22.3	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.42	0.42		0.42	0.42	
v/c Ratio	0.06	0.32		0.57	0.12		0.18	0.76		0.26	0.69	
Control Delay	15.8	10.6		24.2	11.4		13.3	20.3		14.9	18.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.8	10.6		24.2	11.4		13.3	20.3		14.9	18.8	
LOS	B	B		C	B		B	C		B	B	
Approach Delay		11.3			20.9			19.7			18.4	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.5	5.8		14.4	2.6		2.3	32.9		3.0	33.1	
Queue Length 95th (m)	7.7	24.5		45.4	12.8		10.9	96.9		13.9	91.9	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	929	1188		820	1237		453	1231		410	1319	
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	0.03	0.15		0.25	0.06		0.10	0.44		0.14	0.39	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 53												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.76												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2024 PM

05/29/2020

Intersection Signal Delay: 18.4

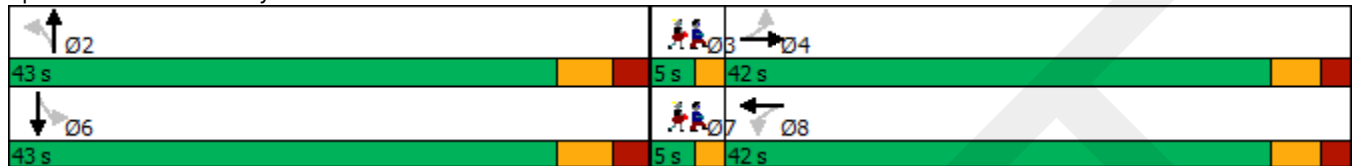
Intersection LOS: B

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2024 PM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	505	156	1685	246	9	1838
Future Volume (vph)	505	156	1685	246	9	1838
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.112	
Satd. Flow (perm)	3288	1454	4871	1477	200	4871
Satd. Flow (RTOR)		30		246		
Lane Group Flow (vph)	505	156	1685	246	9	1838
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.6	24.6	83.8	83.8	83.8	83.8
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.75	0.48	0.50	0.22	0.06	0.54
Control Delay	51.7	37.9	9.5	1.4	5.2	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	37.9	9.5	1.4	5.2	11.1
LOS	D	D	A	A	A	B
Approach Delay	48.5		8.5			11.1
Approach LOS	D		A			B
Queue Length 50th (m)	58.6	26.5	58.3	0.0	0.8	64.6
Queue Length 95th (m)	72.0	44.6	82.1	8.3	m0.5	m79.3
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	408	3400	1105	139	3400
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	0.38	0.50	0.22	0.06	0.54
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2024 PM
05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.5

Intersection LOS: B

Intersection Capacity Utilization 67.9%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1221	67	0	939	0	16
Future Vol, veh/h	1221	67	0	939	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1221	67	0	939	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	644
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	416
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	416
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		14	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	416		-	-	-	
HCM Lane V/C Ratio	0.038		-	-	-	
HCM Control Delay (s)	14		-	-	-	
HCM Lane LOS	B		-	-	-	
HCM 95th %tile O(veh)	0.1		-	-	-	

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	13	6	439	313	32
Future Vol, veh/h	54	13	6	439	313	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	13	6	439	313	32
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	780	329	345	0	-	0
Stage 1	329	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	364	712	1214	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	361	712	1214	-	-	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.8	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1214	-	399	-	-	
HCM Lane V/C Ratio	0.005	-	0.168	-	-	
HCM Control Delay (s)	8	0	15.8	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	170	0	0	0	0	213	112	435	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	213	112	435	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	213	112	435	27	0	0	279

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	442	-	-	-	-	218	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	442	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	499	0	0	0	0	786	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	564	0	0	0	0	-	-	-	0
Platoon blocked, %									-
Mov Cap-1 Maneuver	364	-	-	-	-	786	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	411	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	23.3	11.3	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	364 786
HCM Lane V/C Ratio	-	-	0.467 0.271
HCM Control Delay (s)	-	-	23.3 11.3
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	2.4 1.1

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	219	58	682	670	24	141	860	549	33	874	132
Future Volume (vph)	66	219	58	682	670	24	141	860	549	33	874	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4496	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3270	3390	1380	3166	3390	1464	1658	4496	0	1686	4871	1395
Satd. Flow (RTOR)			195			140		113				196
Lane Group Flow (vph)	66	219	58	682	670	24	141	1409	0	33	874	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.0	22.7	22.7	29.0	36.3	36.3	14.2	49.0		8.0	37.8	37.8
Actuated g/C Ratio	0.14	0.17	0.17	0.22	0.28	0.28	0.11	0.38		0.06	0.29	0.29
v/c Ratio	0.15	0.37	0.14	0.93	0.71	0.05	0.76	0.87dr		0.32	0.62	0.24
Control Delay	47.8	47.3	0.8	72.3	43.3	0.2	75.0	34.0		65.5	44.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	47.8	47.3	0.8	72.3	43.3	0.2	75.0	34.0		65.5	44.3	1.9
LOS	D	D	A	E	D	A	E	C		E	D	A
Approach Delay		39.6			56.9			37.7			39.6	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	7.0	24.3	0.0	80.7	91.6	0.0	35.4	~136.9		8.3	78.5	0.0
Queue Length 95th (m)	14.4	35.6	0.0	#125.1	95.7	m0.0	#59.7	#166.3		18.8	94.7	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	465	795	473	745	1342	664	203	1766		203	1417	544
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.14	0.28	0.12	0.92	0.50	0.04	0.69	0.80		0.16	0.62	0.24

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM

05/29/2020

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 44.4

Intersection LOS: D

Intersection Capacity Utilization 99.3%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

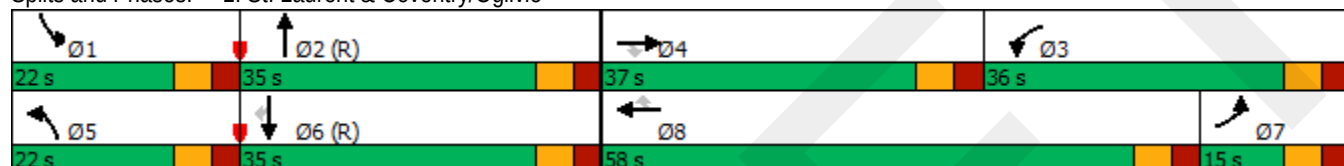
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	639	227	25	1162	166	165	261	12	47	170	45
Future Volume (vph)	0	639	227	25	1162	166	165	261	12	47	170	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1771	0	1695	1722	0
Flt Permitted				0.394			0.471			0.353		
Satd. Flow (perm)	0	3390	1422	695	3390	1380	836	1771	0	628	1722	0
Satd. Flow (RTOR)			227			132		2			11	
Lane Group Flow (vph)	0	639	227	25	1162	166	165	273	0	47	215	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		89.0	89.0	89.0	89.0	89.0	27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.68	0.68	0.68	0.68	0.68	0.21	0.21		0.21	0.21	
v/c Ratio		0.28	0.22	0.05	0.50	0.17	0.93	0.72		0.35	0.57	
Control Delay		6.3	1.8	6.0	6.8	1.1	99.8	57.1		47.8	48.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		6.3	1.8	6.0	6.8	1.1	99.8	57.1		47.8	48.0	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		5.1			6.1			73.1			48.0	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		27.1	2.4	1.5	45.9	1.6	42.1	65.6		10.4	47.6	
Queue Length 95th (m)		7.3	m0.0	m1.5	26.8	m1.1	62.6	83.6		19.9	64.0	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2320	1044	475	2320	986	275	585		207	575	
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	0.22	0.05	0.50	0.17	0.60	0.47		0.23	0.37	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2029 AM

05/29/2020

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 77.9%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	648	11	174	1200	170	82	32	71	138	139	112
Future Volume (vph)	48	648	11	174	1200	170	82	32	71	138	139	112
Satd. Flow (prot)	1695	3380	0	1695	3297	0	1695	1784	1517	1695	1651	0
Flt Permitted	0.128			0.333			0.603			0.576		
Satd. Flow (perm)	228	3380	0	594	3297	0	1076	1784	1517	966	1651	0
Satd. Flow (RTOR)		2			17				98		33	
Lane Group Flow (vph)	48	659	0	174	1370	0	82	32	71	138	251	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		11.0	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	79.3	71.6		87.2	77.3		15.5	15.5	15.5	33.2	30.9	
Actuated g/C Ratio	0.61	0.55		0.67	0.59		0.12	0.12	0.12	0.26	0.24	
v/c Ratio	0.22	0.35		0.36	0.70		0.64	0.15	0.27	0.45	0.60	
Control Delay	14.8	20.5		8.9	17.3		75.6	50.5	6.3	43.7	44.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.8	20.5		8.9	17.3		75.6	50.5	6.3	43.7	44.0	
LOS	B	C		A	B		E	D	A	D	D	
Approach Delay		20.1			16.4			44.7			43.9	
Approach LOS		C			B			D			D	
Queue Length 50th (m)	5.6	47.3		13.8	86.3		20.4	7.5	0.0	28.0	48.6	
Queue Length 95th (m)	11.6	62.0		m15.2	m79.5		35.7	16.3	7.0	46.1	76.1	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	218	1861		487	1967		251	417	429	309	548	
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	0.22	0.35		0.36	0.70		0.33	0.08	0.17	0.45	0.46	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 105												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 AM

05/29/2020

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 23.0

Intersection LOS: C

Intersection Capacity Utilization 89.9%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	583	64	153	954	121	359	627	415	133	367	238
Future Volume (vph)	301	583	64	153	954	121	359	627	415	133	367	238
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3170	0	1695	3171	0
Flt Permitted	0.093			0.322			0.950			0.950		
Satd. Flow (perm)	166	3247	1341	572	3390	1492	1693	3170	0	1694	3171	0
Satd. Flow (RTOR)			164			164		123			101	
Lane Group Flow (vph)	301	583	64	153	954	121	359	1042	0	133	605	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	59.5	43.2	43.2	53.5	40.0	40.0	28.0	40.0		11.9	23.9	
Actuated g/C Ratio	0.46	0.33	0.33	0.41	0.31	0.31	0.22	0.31		0.09	0.18	
v/c Ratio	1.18	0.54	0.12	0.45	0.92	0.21	0.98	0.98		0.86	0.91	
Control Delay	155.5	34.1	0.8	24.4	57.2	2.4	94.2	63.5		100.8	62.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	155.5	34.1	0.8	24.4	57.2	2.4	94.2	63.5		100.8	62.1	
LOS	F	C	A	C	E	A	F	E		F	E	
Approach Delay		70.4			47.7			71.3			69.0	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~78.6	37.0	0.0	21.9	122.5	0.0	~95.1	~129.8		34.1	68.4	
Queue Length 95th (m)	#137.5	76.7	0.9	35.4	#158.4	5.4	#156.7	#176.3		#69.8	#101.3	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	255	1078	554	381	1066	581	365	1060		157	665	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.18	0.54	0.12	0.40	0.89	0.21	0.98	0.98		0.85	0.91	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 AM

05/29/2020

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 64.0

Intersection LOS: E

Intersection Capacity Utilization 104.6%

ICU Level of Service G

Analysis Period (min) 15

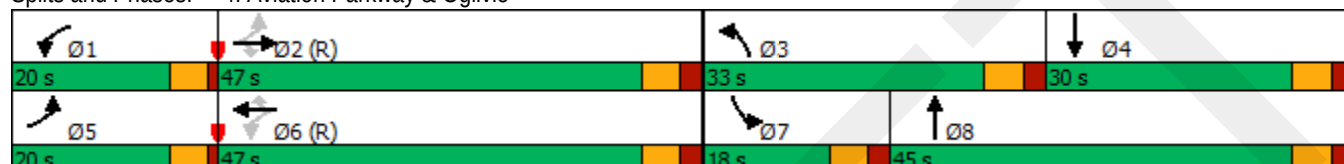
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 AM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	158	235	138	214	104
Future Volume (vph)	42	158	235	138	214	104
Satd. Flow (prot)	1695	1517	1695	1784	1685	0
Flt Permitted	0.950		0.568			
Satd. Flow (perm)	1662	1447	1003	1784	1685	0
Satd. Flow (RTOR)		158			61	
Lane Group Flow (vph)	42	158	235	138	318	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.3	16.3	16.0	16.0	16.0	
Actuated g/C Ratio	0.36	0.36	0.35	0.35	0.35	
v/c Ratio	0.07	0.26	0.66	0.22	0.50	
Control Delay	12.5	4.4	21.8	10.4	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.5	4.4	21.8	10.4	11.6	
LOS	B	A	C	B	B	
Approach Delay	6.2			17.6	11.6	
Approach LOS	A			B	B	
Queue Length 50th (m)	2.0	0.0	14.9	7.2	14.7	
Queue Length 95th (m)	8.6	10.4	31.6	15.1	29.2	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	607	619	740	1317	1260	
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	0.07	0.26	0.32	0.10	0.25	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 45.4						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.66						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 AM
05/29/2020

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald

 Ø2		 Ø4	
39.9 s		22 s	
 Ø6			
39.9 s			

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 AM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	139	136	21	160	478	139	30	189	96
Future Volume (vph)	9	26	24	139	136	21	160	478	139	30	189	96
Satd. Flow (prot)	1695	1611	0	1695	1749	0	1695	1724	0	1695	1677	0
Flt Permitted	0.657			0.724			0.585			0.298		
Satd. Flow (perm)	1163	1611	0	1292	1749	0	1039	1724	0	532	1677	0
Satd. Flow (RTOR)		24			11			27			47	
Lane Group Flow (vph)	9	50	0	139	157	0	160	617	0	30	285	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	13.1	13.1		13.1	13.1		25.7	25.7		25.7	25.7	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.50	0.50		0.50	0.50	
v/c Ratio	0.03	0.12		0.43	0.35		0.31	0.71		0.11	0.33	
Control Delay	17.1	11.9		22.0	18.1		11.0	16.2		9.9	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.1	11.9		22.0	18.1		11.0	16.2		9.9	8.6	
LOS	B	B		C	B		B	B		A	A	
Approach Delay		12.7			19.9			15.1			8.7	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	0.5	1.5		9.0	9.2		6.7	31.7		1.1	9.7	
Queue Length 95th (m)	4.0	9.8		30.0	29.9		25.9	102.1		6.9	34.9	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	529	746		588	802		750	1252		384	1224	
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	0.02	0.07		0.24	0.20		0.21	0.49		0.08	0.23	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 51.9												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.71												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle

Projected 2029 AM

05/29/2020

Intersection Signal Delay: 14.6

Intersection LOS: B

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle

 Ø2 42 s	 Ø3 5 s	 Ø4 28 s
 Ø6 42 s	 Ø7 5 s	 Ø8 28 s

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 AM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	603	153	1340	228	6	1584
Future Volume (vph)	603	153	1340	228	6	1584
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.170	
Satd. Flow (perm)	3288	1450	4871	1477	303	4871
Satd. Flow (RTOR)		47		228		
Lane Group Flow (vph)	603	153	1340	228	6	1584
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.9	29.9	88.5	88.5	88.5	88.5
Actuated g/C Ratio	0.23	0.23	0.68	0.68	0.68	0.68
v/c Ratio	0.80	0.41	0.40	0.21	0.03	0.48
Control Delay	55.4	31.5	10.0	1.6	2.5	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	31.5	10.0	1.6	2.5	3.9
LOS	E	C	B	A	A	A
Approach Delay	50.6		8.8			3.9
Approach LOS	D		A			A
Queue Length 50th (m)	75.3	22.8	51.3	0.0	0.3	27.7
Queue Length 95th (m)	89.8	40.4	70.4	9.1	m0.1	m26.3
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	520	3317	1078	206	3317
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	0.54	0.29	0.40	0.21	0.03	0.48
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 AM
05/29/2020

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 14.9

Intersection LOS: B

Intersection Capacity Utilization 64.0%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	659	45	0	1409	0	28
Future Vol, veh/h	659	45	0	1409	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	659	45	0	1409	0	28

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 352
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	-	-	0 - 0 644
Stage 1	-	-	0 - 0
Stage 2	-	-	0 - 0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 644
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	644	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-
HCM Control Delay (s)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	92	21	3	103	324	21
Future Vol, veh/h	92	21	3	103	324	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	21	3	103	324	21
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	444	335	345	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	571	707	1214	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	569	707	1214	-	-	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.5	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1214	-	590	-	-	
HCM Lane V/C Ratio	0.002	-	0.192	-	-	
HCM Control Delay (s)	8	0	12.5	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.7	-	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	30	0	0	0	0	139	133	686	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	139	133	686	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	139	133	686	44	0	0	178
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	609	-	-	-	-	343	0	0	-	-	-	-
Stage 1	0	-	-	-	-	-	-	-	-	-	-	-
Stage 2	609	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	379	0	0	0	0	653	-	-	0	-	-	-
Stage 1	-	0	0	0	0	-	-	-	0	-	-	-
Stage 2	449	0	0	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	298	-	-	-	-	653	-	-	-	-	-	-
Mov Cap-2 Maneuver	298	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	353	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB					
HCM Control Delay, s	18.4			12								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL			NBT EBLn1WBLn1								
Capacity (veh/h)	-	-	298	653								
HCM Lane V/C Ratio	-	-	0.101	0.213								
HCM Control Delay (s)	-	-	18.4	12								
HCM Lane LOS	-	-	C	B								
HCM 95th %tile Q(veh)	-	-	0.3	0.8								

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	219	58	682	670	24	141	860	549	33	874	132
Future Volume (vph)	66	219	58	682	670	24	141	860	549	33	874	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4493	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3269	3390	1375	3157	3390	1463	1658	4493	0	1685	4871	1387
Satd. Flow (RTOR)			231			180		119				231
Lane Group Flow (vph)	66	219	58	682	670	24	141	1409	0	33	874	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	13.7	39.5	39.5	39.0	64.8	64.8	22.0	50.0		11.5	39.5	39.5
Total Split (%)	9.8%	28.2%	28.2%	27.9%	46.3%	46.3%	15.7%	35.7%		8.2%	28.2%	28.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	19.7	23.2	23.2	32.6	38.7	38.7	14.6	54.8		5.6	43.4	43.4
Actuated g/C Ratio	0.14	0.17	0.17	0.23	0.28	0.28	0.10	0.39		0.04	0.31	0.31
v/c Ratio	0.14	0.39	0.14	0.89	0.72	0.04	0.80	0.77		0.49	0.58	0.22
Control Delay	50.8	52.4	0.7	66.9	50.8	0.2	91.9	39.6		89.9	44.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	50.8	52.4	0.7	66.9	50.9	0.2	91.9	39.6		89.9	44.9	0.9
LOS	D	D	A	E	D	A	F	D		F	D	A
Approach Delay		43.3			57.9			44.4			40.7	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	7.5	26.7	0.0	93.5	92.8	0.0	38.5	130.6		9.2	83.1	0.0
Queue Length 95th (m)	15.3	38.7	0.0	#118.7	104.8	0.0	#69.8	#161.6		#24.2	99.3	0.0
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	467	799	500	782	1411	714	188	1830		67	1509	589
Starvation Cap Reductn	0	0	0	0	44	0	0	0		0	0	0
Spillback Cap Reductn	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
Reduced v/c Ratio	0.14	0.27	0.12	0.87	0.49	0.03	0.75	0.77		0.49	0.58	0.22

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM Optimized
05/29/2020

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 47.7

Intersection LOS: D

Intersection Capacity Utilization 99.3%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
11.5 s	50 s	39.5 s	39 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
22 s	39.5 s	64.8 s	13.7 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 AM Optimized
05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	639	227	25	1162	166	165	261	12	47	170	45
Future Volume (vph)	0	639	227	25	1162	166	165	261	12	47	170	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1771	0	1695	1722	0
Flt Permitted				0.394			0.537			0.427		
Satd. Flow (perm)	0	3390	1429	697	3390	1404	954	1771	0	760	1722	0
Satd. Flow (RTOR)			227			139		3			16	
Lane Group Flow (vph)	0	639	227	25	1162	166	165	273	0	47	215	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		52.9	52.9	52.9	52.9	52.9	47.1	47.1		47.1	47.1	
Total Split (%)		52.9%	52.9%	52.9%	52.9%	52.9%	47.1%	47.1%		47.1%	47.1%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		63.1	63.1	63.1	63.1	63.1	23.6	23.6		23.6	23.6	
Actuated g/C Ratio		0.63	0.63	0.63	0.63	0.63	0.24	0.24		0.24	0.24	
v/c Ratio		0.30	0.23	0.06	0.54	0.18	0.73	0.65		0.26	0.51	
Control Delay		10.5	2.5	11.2	13.5	3.7	52.5	40.0		30.9	33.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		10.5	2.5	11.2	13.5	3.7	52.5	40.0		30.9	33.2	
LOS		B	A	B	B	A	D	D		C	C	
Approach Delay		8.4			12.2			44.7			32.8	
Approach LOS		A			B			D			C	
Queue Length 50th (m)		24.7	0.0	1.6	55.5	1.7	30.8	49.2		7.7	34.8	
Queue Length 95th (m)		55.0	12.0	7.4	117.6	13.7	41.4	56.9		13.8	43.0	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2139	985	439	2139	937	381	710		304	698	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.30	0.23	0.06	0.54	0.18	0.43	0.38		0.15	0.31	
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings 2: Cyrville & Ogilvie

Projected 2029 AM Optimized
05/29/2020

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 17.8

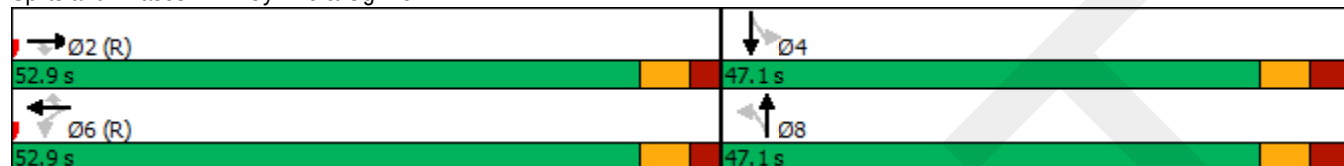
Intersection LOS: B

Intersection Capacity Utilization 77.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 AM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	648	11	174	1200	170	82	32	71	138	139	112
Future Volume (vph)	48	648	11	174	1200	170	82	32	71	138	139	112
Satd. Flow (prot)	1695	3380	0	1695	3297	0	1695	1784	1517	1695	1650	0
Flt Permitted	0.108			0.313			0.446			0.615		
Satd. Flow (perm)	193	3380	0	558	3297	0	796	1784	1517	1026	1650	0
Satd. Flow (RTOR)		2			17				152		29	
Lane Group Flow (vph)	48	659	0	174	1370	0	82	32	71	138	251	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		11.0	24.7		11.0	36.6	36.6	9.3	36.6	
Total Split (s)	10.0	64.7		17.0	71.7		11.0	37.3	37.3	11.0	37.3	
Total Split (%)	7.7%	49.8%		13.1%	55.2%		8.5%	28.7%	28.7%	8.5%	28.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		4.0	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.0	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	71.3	64.5		80.7	71.5		29.0	23.8	23.8	36.8	25.0	
Actuated g/C Ratio	0.55	0.50		0.62	0.55		0.22	0.18	0.18	0.28	0.19	
v/c Ratio	0.28	0.39		0.40	0.75		0.37	0.10	0.18	0.39	0.74	
Control Delay	15.8	22.5		14.0	27.2		39.4	40.9	1.0	37.3	56.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	22.5		14.0	27.2		39.4	40.9	1.0	37.3	56.0	
LOS	B	C		B	C		D	D	A	D	E	
Approach Delay		22.0			25.7			24.9			49.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	5.2	60.5		20.2	156.8		14.4	6.5	0.0	24.7	51.5	
Queue Length 95th (m)	10.2	74.6		30.3	179.7		27.2	15.0	0.0	41.9	79.5	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	172	1688		456	1837		223	421	474	357	411	
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	0.39		0.38	0.75		0.37	0.08	0.15	0.39	0.61	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 105												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 AM Optimized

05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 85.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 AM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	583	64	153	954	121	359	627	415	133	367	238
Future Volume (vph)	301	583	64	153	954	121	359	627	415	133	367	238
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3169	0	1695	3171	0
Flt Permitted	0.088			0.389			0.950			0.950		
Satd. Flow (perm)	157	3247	1340	689	3390	1492	1693	3169	0	1694	3171	0
Satd. Flow (RTOR)			153			189		116			93	
Lane Group Flow (vph)	301	583	64	153	954	121	359	1042	0	133	605	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	26.0	56.0	56.0	17.0	47.0	47.0	36.0	49.0		18.0	31.0	
Total Split (%)	18.6%	40.0%	40.0%	12.1%	33.6%	33.6%	25.7%	35.0%		12.9%	22.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	68.3	50.9	50.9	53.6	40.9	40.9	30.1	42.9		12.1	24.9	
Actuated g/C Ratio	0.49	0.36	0.36	0.38	0.29	0.29	0.22	0.31		0.09	0.18	
v/c Ratio	0.97	0.49	0.11	0.44	0.96	0.21	0.99	0.99		0.91	0.95	
Control Delay	84.4	36.5	0.4	25.5	69.8	1.1	98.2	68.5		116.6	72.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	84.4	36.5	0.4	25.5	69.8	1.1	98.2	68.5		116.6	72.3	
LOS	F	D	A	C	E	A	F	E		F	E	
Approach Delay		49.3			57.5			76.1			80.3	
Approach LOS		D			E			E			F	
Queue Length 50th (m)	68.1	69.3	0.0	23.3	137.4	0.0	99.9	138.5		37.1	75.9	
Queue Length 95th (m)	#126.3	87.9	0.0	36.9	#180.1	0.6	#162.4	#185.8		#76.3	#112.1	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	310	1180	584	357	990	569	364	1051		146	640	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.97	0.49	0.11	0.43	0.96	0.21	0.99	0.99		0.91	0.95	
Intersection Summary												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 105 (75%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 AM Optimized

05/29/2020

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 65.6

Intersection LOS: E

Intersection Capacity Utilization 104.6%

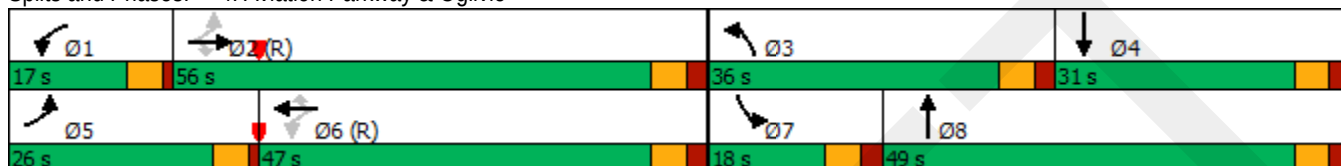
ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	644	205	499	413	30	182	944	672	71	846	192
Future Volume (vph)	302	644	205	499	413	30	182	944	672	71	846	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4478	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3264	3390	1389	3226	3390	1457	1660	4478	0	1689	4871	1403
Satd. Flow (RTOR)			210			210		156				211
Lane Group Flow (vph)	302	644	205	499	413	30	182	1616	0	71	846	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.7	28.2	28.2	19.4	24.9	24.9	16.1	40.6		8.2	30.1	30.1
Actuated g/C Ratio	0.19	0.24	0.24	0.16	0.21	0.21	0.13	0.34		0.07	0.25	0.25
v/c Ratio	0.49	0.81	0.42	0.94	0.59	0.06	0.80	1.11dr		0.62	0.69	0.38
Control Delay	48.3	51.9	7.3	84.4	51.6	0.2	74.4	52.2		77.3	44.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.3	51.9	7.3	84.4	51.6	0.2	74.4	52.2		77.3	44.7	5.9
LOS	D	D	A	F	D	A	E	D		E	D	A
Approach Delay		43.0			67.3			54.4			40.1	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.1	73.7	0.0	~67.0	54.4	0.0	41.8	~145.4		16.5	67.6	0.0
Queue Length 95th (m)	49.8	95.0	17.2	#99.0	71.0	m0.0	#70.8	#175.3		#34.9	82.8	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	622	861	509	531	861	526	248	1618		121	1219	509
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.75	0.40	0.94	0.48	0.06	0.73	1.00		0.59	0.69	0.38
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 120												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM

05/29/2020

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 51.0

Intersection LOS: D

Intersection Capacity Utilization 101.2%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1165	257	40	753	124	117	234	32	134	238	80
Future Volume (vph)	0	1165	257	40	753	124	117	234	32	134	238	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1749	0	1695	1708	0
Flt Permitted				0.196			0.311			0.407		
Satd. Flow (perm)	0	3390	1424	349	3390	1388	553	1749	0	725	1708	0
Satd. Flow (RTOR)			257			124		6			16	
Lane Group Flow (vph)	0	1165	257	40	753	124	117	266	0	134	318	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		78.7	78.7	78.7	78.7	78.7	28.0	28.0		28.0	28.0	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.52	0.25	0.18	0.34	0.13	0.91	0.65		0.79	0.78	
Control Delay		10.5	2.4	25.5	24.4	12.0	102.3	46.8		73.0	53.0	
Queue Delay		0.4	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		10.9	2.4	25.5	24.4	12.0	102.3	46.8		73.0	53.0	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		9.4			22.8			63.8			58.9	
Approach LOS		A			C			E			E	
Queue Length 50th (m)		47.0	6.4	7.9	82.6	13.0	27.2	56.1		30.2	67.9	
Queue Length 95th (m)		m50.2	m2.5	m10.0	84.7	m16.9	#49.4	72.6		47.5	86.4	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2223	1022	228	2223	953	197	629		259	620	
Starvation Cap Reductn		516	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		0.68	0.25	0.18	0.34	0.13	0.59	0.42		0.52	0.51	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2029 PM

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 26.9

Intersection LOS: C

Intersection Capacity Utilization 82.4%

ICU Level of Service E

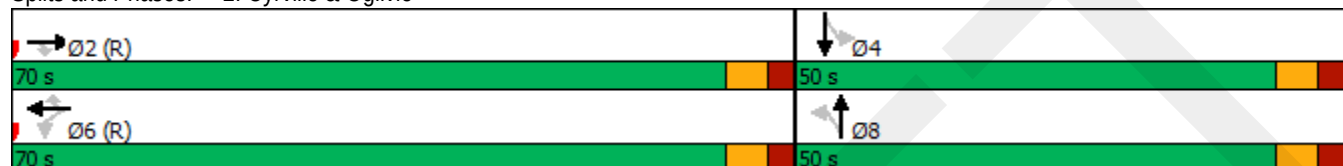
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1225	23	125	813	209	74	194	221	258	198	84
Future Volume (vph)	110	1225	23	125	813	209	74	194	221	258	198	84
Satd. Flow (prot)	1695	3376	0	1695	3241	0	1695	1784	1517	1695	1695	0
Flt Permitted	0.146			0.080			0.587			0.422		
Satd. Flow (perm)	261	3376	0	143	3241	0	1043	1784	1406	722	1695	0
Satd. Flow (RTOR)		2			28				147		23	
Lane Group Flow (vph)	110	1248	0	125	1022	0	74	194	221	258	282	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	60.2	49.5		61.1	49.9		23.5	23.5	23.5	45.7	43.4	
Actuated g/C Ratio	0.50	0.41		0.51	0.42		0.20	0.20	0.20	0.38	0.36	
v/c Ratio	0.45	0.90		0.61	0.75		0.36	0.56	0.56	0.65	0.45	
Control Delay	20.7	41.1		43.9	31.6		44.4	48.3	19.7	34.0	27.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	20.7	41.1		43.9	31.6		44.4	48.3	19.7	34.0	27.9	
LOS	C	D		D	C		D	D	B	C	C	
Approach Delay		39.5			33.0			34.8			30.8	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	12.7	~168.4		20.1	120.2		14.2	38.6	13.9	39.6	41.7	
Queue Length 95th (m)	17.2	#218.2		m40.6	#155.2		28.0	60.7	37.4	60.2	64.0	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	266	1392		220	1364		290	496	497	401	767	
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	0.41	0.90		0.57	0.75		0.26	0.39	0.44	0.64	0.37	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 PM

05/29/2020

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 35.4

Intersection LOS: D

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

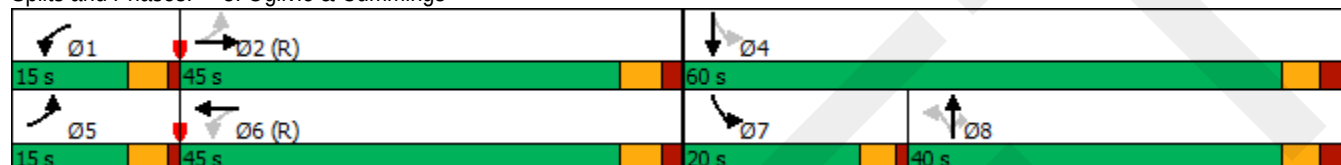
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	816	92	136	651	112	134	229	180	112	267	168
Future Volume (vph)	183	816	92	136	651	112	134	229	180	112	267	168
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3148	0	1695	3175	0
Flt Permitted	0.323			0.246			0.950			0.950		
Satd. Flow (perm)	576	3247	1343	438	3390	1493	1692	3148	0	1694	3175	0
Satd. Flow (RTOR)			125			125		150			103	
Lane Group Flow (vph)	183	816	92	136	651	112	134	409	0	112	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	68.1	55.2	55.2	64.9	53.6	53.6	13.7	19.9		12.2	18.4	
Actuated g/C Ratio	0.57	0.46	0.46	0.54	0.45	0.45	0.11	0.17		0.10	0.15	
v/c Ratio	0.42	0.55	0.13	0.40	0.43	0.15	0.69	0.63		0.65	0.76	
Control Delay	20.1	30.2	6.4	15.9	25.5	3.8	70.0	33.2		69.6	45.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	20.1	30.2	6.4	15.9	25.5	3.8	70.0	33.2		69.6	45.5	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		26.5			21.4			42.3			50.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	28.3	83.5	3.8	13.8	55.2	0.0	30.3	29.8		25.5	40.2	
Queue Length 95th (m)	m26.8	m69.5	m3.2	25.0	79.5	9.3	#59.5	44.8		#44.8	54.8	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	480	1492	685	414	1514	736	203	747		191	714	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.55	0.13	0.33	0.43	0.15	0.66	0.55		0.59	0.61	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 PM

05/29/2020

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D

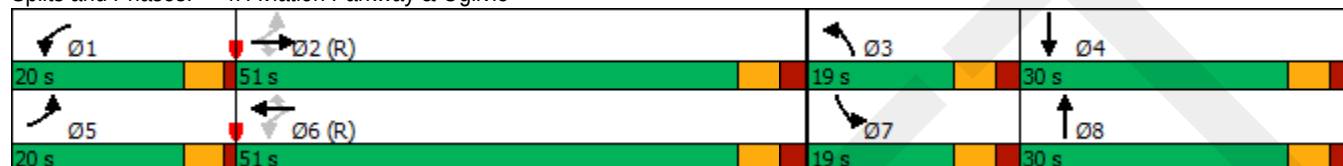
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 PM

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	322	257	266	266	90
Future Volume (vph)	88	322	257	266	266	90
Satd. Flow (prot)	1695	1517	1695	1784	1707	0
Flt Permitted	0.950		0.483			
Satd. Flow (perm)	1658	1442	853	1784	1707	0
Satd. Flow (RTOR)		322			32	
Lane Group Flow (vph)	88	322	257	266	356	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.5	25.5	21.4	21.4	21.4	
Actuated g/C Ratio	0.42	0.42	0.36	0.36	0.36	
v/c Ratio	0.12	0.40	0.85	0.42	0.57	
Control Delay	13.9	3.9	42.0	15.8	17.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.9	3.9	42.0	15.8	17.0	
LOS	B	A	D	B	B	
Approach Delay	6.1			28.7	17.0	
Approach LOS	A			C	B	
Queue Length 50th (m)	5.7	0.0	24.8	21.1	27.1	
Queue Length 95th (m)	16.7	14.8	#52.0	36.0	46.6	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	718	796	477	999	970	
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	0.12	0.40	0.54	0.27	0.37	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 60						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.85						

Lanes, Volumes, Timings

5: Cummings & Donald

Projected 2029 PM

05/29/2020

Intersection Signal Delay: 18.3

Intersection LOS: B

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: Cummings & Donald

 Ø2	 Ø4
39.9 s	31 s
 Ø6	
39.9 s	

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 PM

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	202	45	26	46	319	240	59	521	17
Future Volume (vph)	25	79	104	202	45	26	46	319	240	59	521	17
Satd. Flow (prot)	1695	1574	0	1695	1666	0	1695	1643	0	1695	1774	0
Flt Permitted	0.711			0.642			0.323			0.302		
Satd. Flow (perm)	1255	1574	0	1108	1666	0	575	1643	0	536	1774	0
Satd. Flow (RTOR)		89			26			51			2	
Lane Group Flow (vph)	25	183	0	202	71	0	46	559	0	59	538	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	17.2	17.2		17.2	17.2		23.3	23.3		23.3	23.3	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.43	0.43		0.43	0.43	
v/c Ratio	0.06	0.33		0.57	0.13		0.19	0.76		0.26	0.70	
Control Delay	16.2	10.9		25.0	11.8		13.4	20.4		14.9	19.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.2	10.9		25.0	11.8		13.4	20.4		14.9	19.2	
LOS	B	B		C	B		B	C		B	B	
Approach Delay		11.6			21.6			19.9			18.8	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.5	6.0		14.9	2.8		2.4	35.2		3.1	36.1	
Queue Length 95th (m)	7.7	24.5		45.4	13.1		11.0	101.3		14.1	98.2	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	912	1168		805	1218		419	1213		391	1296	
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	0.03	0.16		0.25	0.06		0.11	0.46		0.15	0.42	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 54.1												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.76												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 PM

05/29/2020

Intersection Signal Delay: 18.7

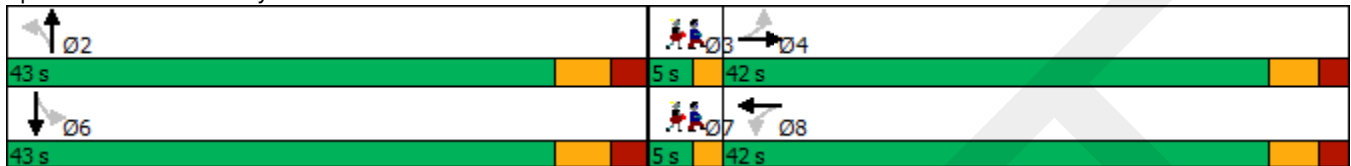
Intersection LOS: B

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 PM

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	505	156	1768	246	9	1930
Future Volume (vph)	505	156	1768	246	9	1930
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.100	
Satd. Flow (perm)	3288	1454	4871	1477	178	4871
Satd. Flow (RTOR)		25		246		
Lane Group Flow (vph)	505	156	1768	246	9	1930
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.6	24.6	83.8	83.8	83.8	83.8
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.75	0.49	0.52	0.22	0.07	0.57
Control Delay	51.7	39.6	9.8	1.4	5.3	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	39.6	9.8	1.4	5.3	10.0
LOS	D	D	A	A	A	B
Approach Delay	48.8		8.8			10.0
Approach LOS	D		A			A
Queue Length 50th (m)	58.6	27.7	62.9	0.0	0.6	57.1
Queue Length 95th (m)	72.0	45.8	88.2	8.3	m0.7	m78.3
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	404	3400	1105	124	3400
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	0.52	0.22	0.07	0.57
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 PM
05/29/2020

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1283	67	0	985	0	16
Future Vol, veh/h	1283	67	0	985	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1283	67	0	985	0	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 675
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	-	-	0 - 0 396
Stage 1	-	-	0 - 0
Stage 2	-	-	0 - 0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 396
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	396	-	-	-
HCM Lane V/C Ratio	0.04	-	-	-
HCM Control Delay (s)	14.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	13	6	462	329	32
Future Vol, veh/h	54	13	6	462	329	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	13	6	462	329	32
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	819	345	361	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	345	698	1198	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	698	1198	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	712	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.5	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1198	-	381	-	-	
HCM Lane V/C Ratio	0.005	-	0.176	-	-	
HCM Control Delay (s)	8	0	16.5	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	170	0	0	0	0	213	112	457	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	213	112	457	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	213	112	457	27	0	0	279

Major/Minor	Minor2	Minor1		Major1	
Conflicting Flow All	453	-	-	-	229
Stage 1	0	-	-	-	-
Stage 2	453	-	-	-	-
Critical Hdwy	7.54	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	3.32
Pot Cap-1 Maneuver	490	0	0	0	774
Stage 1	-	0	0	0	-
Stage 2	556	0	0	0	-
Platoon blocked, %					-
Mov Cap-1 Maneuver	355	-	-	-	774
Mov Cap-2 Maneuver	355	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	403	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	24.1	11.4	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	355 774
HCM Lane V/C Ratio	-	-	0.479 0.275
HCM Control Delay (s)	-	-	24.1 11.4
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	2.5 1.1

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	644	205	499	413	30	182	944	672	71	846	192
Future Volume (vph)	302	644	205	499	413	30	182	944	672	71	846	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4473	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3263	3390	1380	3221	3390	1456	1659	4473	0	1688	4871	1395
Satd. Flow (RTOR)			205			194		152				195
Lane Group Flow (vph)	302	644	205	499	413	30	182	1616	0	71	846	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	25.6	37.0	37.0	28.3	39.7	39.7	24.8	51.5		13.2	39.9	39.9
Total Split (%)	19.7%	28.5%	28.5%	21.8%	30.5%	30.5%	19.1%	39.6%		10.2%	30.7%	30.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	24.9	29.0	29.0	21.6	25.6	25.6	17.0	46.3		7.0	36.3	36.3
Actuated g/C Ratio	0.19	0.22	0.22	0.17	0.20	0.20	0.13	0.36		0.05	0.28	0.28
v/c Ratio	0.48	0.85	0.44	0.92	0.62	0.07	0.82	1.07dr		0.79	0.62	0.36
Control Delay	50.8	60.3	8.5	75.9	51.2	0.3	82.9	50.9		109.4	44.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	50.8	60.3	8.5	75.9	51.2	0.3	82.9	50.9		109.4	44.0	6.9
LOS	D	E	A	E	D	A	F	D		F	D	A
Approach Delay		48.5			62.7			54.2			41.8	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	37.3	82.6	0.0	65.6	48.6	0.0	45.5	138.7		18.3	71.6	0.0
Queue Length 95th (m)	52.1	104.8	19.6	#96.6	64.9	0.0	#79.3	#174.1		#45.6	86.7	17.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	630	795	480	549	865	516	239	1691		90	1358	529
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.48	0.81	0.43	0.91	0.48	0.06	0.76	0.96		0.79	0.62	0.36

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM Optimized
05/29/2020

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 51.7

Intersection LOS: D

Intersection Capacity Utilization 101.2%

ICU Level of Service G

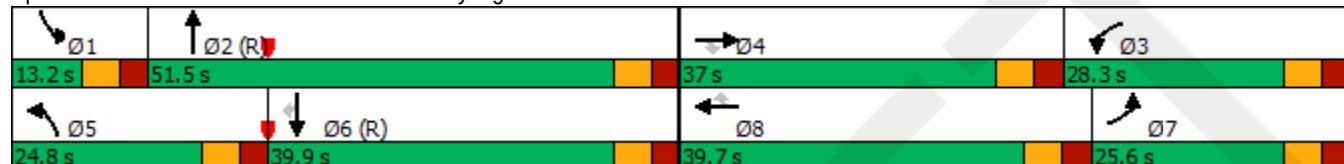
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 PM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1165	257	40	753	124	117	234	32	134	238	80
Future Volume (vph)	0	1165	257	40	753	124	117	234	32	134	238	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1749	0	1695	1709	0
Flt Permitted				0.189			0.366			0.457		
Satd. Flow (perm)	0	3390	1429	336	3390	1404	651	1749	0	814	1709	0
Satd. Flow (RTOR)			257			124		8			20	
Lane Group Flow (vph)	0	1165	257	40	753	124	117	266	0	134	318	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		52.9	52.9	52.9	52.9	52.9	47.1	47.1		47.1	47.1	
Total Split (%)		52.9%	52.9%	52.9%	52.9%	52.9%	47.1%	47.1%		47.1%	47.1%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		61.5	61.5	61.5	61.5	61.5	25.2	25.2		25.2	25.2	
Actuated g/C Ratio		0.62	0.62	0.62	0.62	0.62	0.25	0.25		0.25	0.25	
v/c Ratio		0.56	0.26	0.19	0.36	0.14	0.72	0.60		0.66	0.71	
Control Delay		14.4	2.5	15.2	11.7	2.9	55.8	36.1		46.9	39.9	
Queue Delay		0.5	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		14.9	2.5	15.2	11.7	2.9	55.8	36.1		46.9	39.9	
LOS		B	A	B	B	A	E	D		D	D	
Approach Delay		12.7			10.6			42.1			42.0	
Approach LOS		B			B			D			D	
Queue Length 50th (m)		60.6	0.0	2.9	33.0	0.0	21.3	45.2		23.9	54.3	
Queue Length 95th (m)		118.3	12.7	12.7	66.6	9.3	33.4	54.8		35.1	65.2	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2086	978	206	2086	911	260	704		325	695	
Starvation Cap Reductn		473	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		0.72	0.26	0.19	0.36	0.14	0.45	0.38		0.41	0.46	
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 20 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings 2: Cyrville & Ogilvie

Projected 2029 PM Optimized
05/29/2020

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 19.8

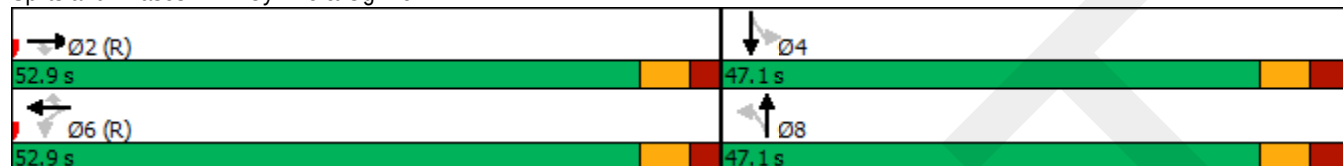
Intersection LOS: B

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 PM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1225	23	125	813	209	74	194	221	258	198	84
Future Volume (vph)	110	1225	23	125	813	209	74	194	221	258	198	84
Satd. Flow (prot)	1695	3376	0	1695	3241	0	1695	1784	1517	1695	1695	0
Flt Permitted	0.165			0.083			0.509			0.434		
Satd. Flow (perm)	294	3376	0	148	3241	0	905	1784	1406	743	1695	0
Satd. Flow (RTOR)		2			33				142		18	
Lane Group Flow (vph)	110	1248	0	125	1022	0	74	194	221	258	282	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		11.0	36.6	36.6	9.3	36.6	
Total Split (s)	12.0	55.2		13.0	56.2		11.0	36.8	36.8	15.0	40.8	
Total Split (%)	10.0%	46.0%		10.8%	46.8%		9.2%	30.7%	30.7%	12.5%	34.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		4.0	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.0	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	62.4	54.0		64.2	54.9		29.9	23.5	23.5	42.8	31.3	
Actuated g/C Ratio	0.52	0.45		0.54	0.46		0.25	0.20	0.20	0.36	0.26	
v/c Ratio	0.46	0.82		0.68	0.68		0.28	0.56	0.57	0.70	0.62	
Control Delay	20.0	35.4		48.2	21.8		29.3	48.3	20.6	40.7	42.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	20.0	35.4		48.2	21.8		29.3	48.3	20.6	40.7	42.8	
LOS	C	D		D	C		C	D	C	D	D	
Approach Delay		34.2			24.6			32.9			41.8	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	12.5	141.6		16.4	111.4		11.2	38.6	14.9	42.9	53.2	
Queue Length 95th (m)	21.9	#176.6		#44.5	82.5		21.5	60.7	38.6	65.1	81.3	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	241	1520		189	1502		264	448	460	367	495	
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	0.46	0.82		0.66	0.68		0.28	0.43	0.48	0.70	0.57	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 PM Optimized

05/29/2020

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 32.1

Intersection LOS: C

Intersection Capacity Utilization 99.2%

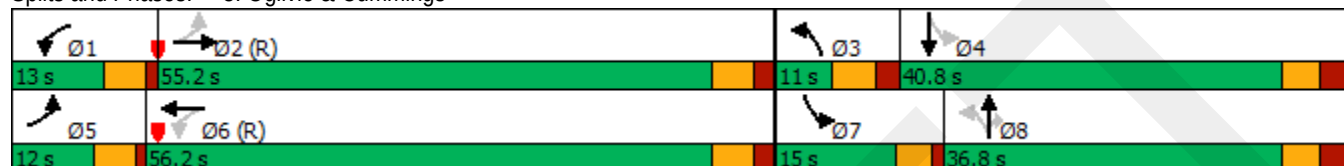
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 PM Optimized

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	816	92	136	651	112	134	229	180	112	267	168
Future Volume (vph)	183	816	92	136	651	112	134	229	180	112	267	168
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3148	0	1695	3175	0
Flt Permitted	0.324			0.245			0.950			0.950		
Satd. Flow (perm)	577	3247	1343	436	3390	1493	1692	3148	0	1694	3175	0
Satd. Flow (RTOR)			125			125		152			103	
Lane Group Flow (vph)	183	816	92	136	651	112	134	409	0	112	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	18.0	49.7	49.7	17.0	48.7	48.7	23.2	31.3		22.0	30.1	
Total Split (%)	15.0%	41.4%	41.4%	14.2%	40.6%	40.6%	19.3%	26.1%		18.3%	25.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	67.5	55.0	55.0	64.7	53.6	53.6	14.1	19.7		12.8	18.4	
Actuated g/C Ratio	0.56	0.46	0.46	0.54	0.45	0.45	0.12	0.16		0.11	0.15	
v/c Ratio	0.43	0.55	0.13	0.40	0.43	0.15	0.67	0.64		0.62	0.76	
Control Delay	21.6	34.0	8.2	16.6	25.7	4.0	67.1	33.0		66.0	45.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.6	34.0	8.2	16.6	25.7	4.0	67.1	33.0		66.0	45.4	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		29.8			21.6			41.4			49.6	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	29.9	92.5	3.9	13.6	54.7	0.0	30.5	29.7		25.5	40.2	
Queue Length 95th (m)	m34.5	89.8	m5.1	27.3	82.1	9.6	50.0	43.8		43.2	54.7	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	457	1486	683	373	1513	735	244	781		227	717	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.40	0.55	0.13	0.36	0.43	0.15	0.55	0.52		0.49	0.61	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 PM Optimized
05/29/2020

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 33.0

Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Aviation Parkway & Ogilvie

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	49.7 s	23.2 s	30.1 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
18 s	48.7 s	22 s	31.3 s

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	224	58	760	680	24	141	860	598	33	874	132
Future Volume (vph)	66	224	58	760	680	24	141	860	598	33	874	132
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4472	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3271	3390	1380	3167	3390	1464	1661	4472	0	1687	4871	1395
Satd. Flow (RTOR)			195			140		123				196
Lane Group Flow (vph)	66	224	58	760	680	24	141	1458	0	33	874	132
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	15.0	37.0	37.0	36.0	58.0	58.0	22.0	35.0		22.0	35.0	35.0
Total Split (%)	11.5%	28.5%	28.5%	27.7%	44.6%	44.6%	16.9%	26.9%		16.9%	26.9%	26.9%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	18.9	22.8	22.8	32.7	39.2	39.2	14.2	45.3		8.0	34.1	34.1
Actuated g/C Ratio	0.15	0.18	0.18	0.25	0.30	0.30	0.11	0.35		0.06	0.26	0.26
v/c Ratio	0.14	0.38	0.14	0.92	0.67	0.04	0.76	1.00dr		0.32	0.68	0.26
Control Delay	47.4	47.4	0.8	64.8	36.8	0.1	78.3	39.3		65.5	47.6	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	47.4	47.4	0.8	64.8	36.8	0.1	78.3	39.3		65.5	47.6	2.1
LOS	D	D	A	E	D	A	E	D		E	D	A
Approach Delay		39.7			50.8			42.7			42.4	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	7.1	24.9	0.0	~102.6	91.6	0.0	35.6	~145.7		8.3	78.5	0.0
Queue Length 95th (m)	14.5	36.6	0.0	#148.1	92.6	m0.0	#60.2	#187.2		18.8	94.7	2.5
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	488	795	473	827	1362	672	203	1638		203	1276	510
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.14	0.28	0.12	0.92	0.50	0.04	0.69	0.89		0.16	0.68	0.26
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 120												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 45.1

Intersection LOS: D

Intersection Capacity Utilization 102.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

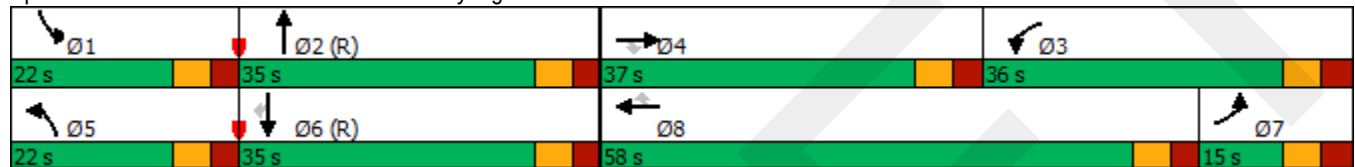
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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



Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	0	692	227	25	1250	166	165	261	12	47	170	45
Future Volume (vph)	0	692	227	25	1250	166	165	261	12	47	170	45
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1771	0	1695	1722	0
Flt Permitted				0.370			0.474			0.356		
Satd. Flow (perm)	0	3390	1422	653	3390	1380	841	1771	0	634	1722	0
Satd. Flow (RTOR)			227			122		2			11	
Lane Group Flow (vph)	0	692	227	25	1250	166	165	273	0	47	215	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		80.0	80.0	80.0	80.0	80.0	50.0	50.0		50.0	50.0	
Total Split (%)		61.5%	61.5%	61.5%	61.5%	61.5%	38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		88.7	88.7	88.7	88.7	88.7	28.0	28.0		28.0	28.0	
Actuated g/C Ratio		0.68	0.68	0.68	0.68	0.68	0.22	0.22		0.22	0.22	
v/c Ratio		0.30	0.22	0.06	0.54	0.17	0.91	0.71		0.35	0.57	
Control Delay		5.3	1.3	5.9	7.1	1.1	96.0	56.4		47.1	47.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		5.3	1.3	5.9	7.1	1.1	96.0	56.4		47.1	47.6	
LOS		A	A	A	A	A	F	E		D	D	
Approach Delay		4.3			6.4			71.3			47.5	
Approach LOS		A			A			E			D	
Queue Length 50th (m)		23.3	0.0	1.3	48.6	1.0	41.9	65.3		10.4	47.4	
Queue Length 95th (m)		m10.2	m0.0	m1.7	48.9	m2.0	62.4	83.6		19.8	64.0	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2313	1042	445	2313	980	277	585		209	575	
Starvation Cap Reductn		0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn		0	0	0	0	0	0	0		0	0	
Storage Cap Reductn		0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio		0.30	0.22	0.06	0.54	0.17	0.60	0.47		0.22	0.37	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 18.6

Intersection LOS: B

Intersection Capacity Utilization 80.5%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 AM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	688	11	186	1200	170	170	62	80	138	152	112
Future Volume (vph)	48	688	11	186	1200	170	170	62	80	138	152	112
Satd. Flow (prot)	1695	3383	0	1695	3297	0	1695	1784	1517	1695	1657	0
Flt Permitted	0.103			0.309			0.596			0.610		
Satd. Flow (perm)	184	3383	0	551	3297	0	1063	1784	1517	1026	1657	0
Satd. Flow (RTOR)		2			17				98		30	
Lane Group Flow (vph)	48	699	0	186	1370	0	170	62	80	138	264	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		11.0	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	11.0	71.0		11.0	71.0		37.0	37.0	37.0	11.0	48.0	
Total Split (%)	8.5%	54.6%		8.5%	54.6%		28.5%	28.5%	28.5%	8.5%	36.9%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	73.5	66.2		78.0	70.2		24.7	24.7	24.7	40.8	38.5	
Actuated g/C Ratio	0.57	0.51		0.60	0.54		0.19	0.19	0.19	0.31	0.30	
v/c Ratio	0.27	0.41		0.46	0.77		0.85	0.18	0.22	0.37	0.52	
Control Delay	19.3	22.9		12.5	20.1		83.2	43.3	6.2	35.8	36.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.3	22.9		12.5	20.1		83.2	43.3	6.2	35.8	36.8	
LOS	B	C		B	C		F	D	A	D	D	
Approach Delay		22.7			19.2			55.5			36.4	
Approach LOS		C			B			E			D	
Queue Length 50th (m)	5.2	65.2		16.7	73.7		42.0	13.3	0.0	25.2	47.7	
Queue Length 95th (m)	12.6	66.4		m19.1	m79.6		#69.6	24.7	8.8	42.0	74.4	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	180	1756		404	1795		248	417	429	370	550	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.27	0.40		0.46	0.76		0.69	0.15	0.19	0.37	0.48	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 110 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 105												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 AM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	613	83	153	959	121	366	627	415	133	367	238
Future Volume (vph)	301	613	83	153	959	121	366	627	415	133	367	238
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3170	0	1695	3171	0
Flt Permitted	0.093			0.300			0.950			0.950		
Satd. Flow (perm)	166	3247	1341	533	3390	1492	1693	3170	0	1694	3171	0
Satd. Flow (RTOR)			164			164		123			101	
Lane Group Flow (vph)	301	613	83	153	959	121	366	1042	0	133	605	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	33.0	45.0		18.0	30.0	
Total Split (%)	15.4%	36.2%	36.2%	15.4%	36.2%	36.2%	25.4%	34.6%		13.8%	23.1%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	59.5	43.2	43.2	53.5	40.0	40.0	28.0	40.0		11.9	23.9	
Actuated g/C Ratio	0.46	0.33	0.33	0.41	0.31	0.31	0.22	0.31		0.09	0.18	
v/c Ratio	1.18	0.57	0.15	0.47	0.92	0.21	1.01	0.98		0.86	0.91	
Control Delay	153.0	40.5	1.8	24.9	57.7	2.4	99.2	63.7		100.8	62.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	153.0	40.5	1.8	24.9	57.7	2.4	99.2	63.7		100.8	62.1	
LOS	F	D	A	C	E	A	F	E		F	E	
Approach Delay		71.3			48.2			72.9			69.0	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	~77.9	61.3	0.1	21.9	123.4	0.0	~100.8	~129.8		34.1	68.4	
Queue Length 95th (m)	#137.7	83.0	2.5	35.4	#159.8	5.4	#160.9	#176.3		#69.8	#101.3	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	255	1079	555	368	1066	581	364	1059		157	665	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.18	0.57	0.15	0.42	0.90	0.21	1.01	0.98		0.85	0.91	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 105 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 115												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 AM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 64.9

Intersection LOS: E

Intersection Capacity Utilization 104.9%

ICU Level of Service G

Analysis Period (min) 15

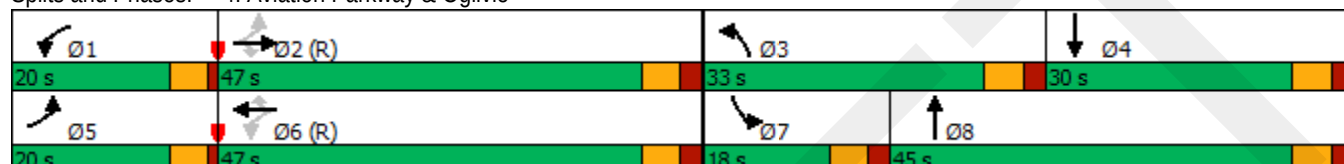
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 AM TOD NOT MET

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	170	265	138	214	104
Future Volume (vph)	42	170	265	138	214	104
Satd. Flow (prot)	1695	1517	1695	1784	1685	0
Flt Permitted	0.950		0.568			
Satd. Flow (perm)	1662	1447	1003	1784	1685	0
Satd. Flow (RTOR)		170			61	
Lane Group Flow (vph)	42	170	265	138	318	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	22.0	22.0	39.9	39.9	39.9	
Total Split (%)	35.5%	35.5%	64.5%	64.5%	64.5%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	16.3	16.3	17.8	17.8	17.8	
Actuated g/C Ratio	0.34	0.34	0.38	0.38	0.38	
v/c Ratio	0.07	0.28	0.70	0.21	0.47	
Control Delay	14.0	4.8	22.8	9.8	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.0	4.8	22.8	9.8	10.7	
LOS	B	A	C	A	B	
Approach Delay	6.6			18.3	10.7	
Approach LOS	A			B	B	
Queue Length 50th (m)	2.2	0.0	17.4	7.2	14.7	
Queue Length 95th (m)	9.5	11.6	36.0	14.8	28.3	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	585	611	714	1270	1217	
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	0.07	0.28	0.37	0.11	0.26	
Intersection Summary						
Cycle Length: 61.9						
Actuated Cycle Length: 47.3						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.70						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 AM TOD NOT MET

05/29/2020

Intersection Signal Delay: 13.1

Intersection LOS: B

Intersection Capacity Utilization 65.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Cummings & Donald



Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 AM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	24	149	156	21	160	478	144	30	189	96
Future Volume (vph)	9	26	24	149	156	21	160	478	144	30	189	96
Satd. Flow (prot)	1695	1611	0	1695	1752	0	1695	1722	0	1695	1677	0
Flt Permitted	0.646			0.724			0.585			0.287		
Satd. Flow (perm)	1143	1611	0	1292	1752	0	1039	1722	0	512	1677	0
Satd. Flow (RTOR)		24			9			28			47	
Lane Group Flow (vph)	9	50	0	149	177	0	160	622	0	30	285	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	28.0	28.0		28.0	28.0		42.0	42.0		42.0	42.0	
Total Split (%)	37.3%	37.3%		37.3%	37.3%		56.0%	56.0%		56.0%	56.0%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	13.3	13.3		13.3	13.3		24.8	24.8		24.8	24.8	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.48	0.48		0.48	0.48	
v/c Ratio	0.03	0.11		0.45	0.38		0.32	0.73		0.12	0.34	
Control Delay	17.2	12.0		22.4	19.0		11.2	17.1		10.2	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.2	12.0		22.4	19.0		11.2	17.1		10.2	8.7	
LOS	B	B		C	B		B	B		B	A	
Approach Delay		12.8			20.5			15.9			8.9	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	0.5	1.6		9.9	11.0		6.9	33.0		1.2	10.0	
Queue Length 95th (m)	4.0	9.8		32.0	33.8		25.9	103.2		7.0	34.9	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	529	758		598	816		763	1272		376	1244	
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	0.02	0.07		0.25	0.22		0.21	0.49		0.08	0.23	
Intersection Summary												
Cycle Length: 75												
Actuated Cycle Length: 51.2												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.73												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	7%	7%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings 6: Cyrville & Labelle

Projected 2029 AM TOD NOT MET

05/29/2020

Intersection Signal Delay: 15.3

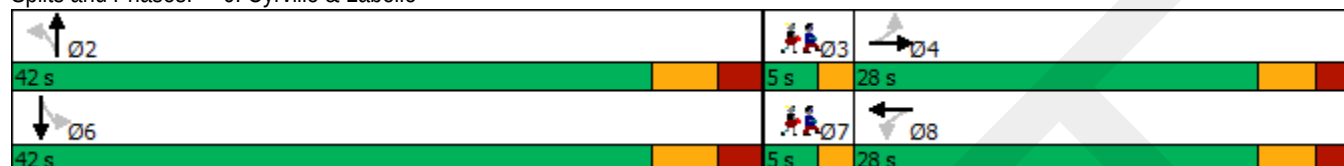
Intersection LOS: B

Intersection Capacity Utilization 74.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 AM TOD NOT MET

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	623	153	1389	228	6	1662
Future Volume (vph)	623	153	1389	228	6	1662
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.159	
Satd. Flow (perm)	3288	1450	4871	1477	284	4871
Satd. Flow (RTOR)		41		228		
Lane Group Flow (vph)	623	153	1389	228	6	1662
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	50.0	50.0	80.0	80.0	80.0	80.0
Total Split (%)	38.5%	38.5%	61.5%	61.5%	61.5%	61.5%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	30.8	30.8	87.6	87.6	87.6	87.6
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
v/c Ratio	0.80	0.41	0.42	0.21	0.03	0.51
Control Delay	54.5	32.5	10.7	1.7	2.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	32.5	10.7	1.7	2.3	3.7
LOS	D	C	B	A	A	A
Approach Delay	50.2		9.4			3.7
Approach LOS	D		A			A
Queue Length 50th (m)	77.7	24.0	55.1	0.0	0.1	16.9
Queue Length 95th (m)	91.4	41.1	76.4	9.4	m0.4	m85.0
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	1110	516	3281	1069	191	3281
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	0.56	0.30	0.42	0.21	0.03	0.51
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 14.9

Intersection LOS: B

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	659	99	0	1497	0	68
Future Vol, veh/h	659	99	0	1497	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	659	99	0	1497	0	68
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	379
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	619
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	619	-	-	-		
HCM Lane V/C Ratio	0.11	-	-	-		
HCM Control Delay (s)	11.5	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.4	-	-	-		

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	219	51	8	103	324	45
Future Vol, veh/h	219	51	8	103	324	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	219	51	8	103	324	45
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	466	347	369	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	119	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	555	696	1190	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	551	696	1190	-	-	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.7	0.6		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1190	-	574	-	-	
HCM Lane V/C Ratio	0.007	-	0.47	-	-	
HCM Control Delay (s)	8	0	16.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	2.5	-	-	

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	30	0	0	0	0	159	133	686	44	0	0	178
Future Vol, veh/h	30	0	0	0	0	159	133	686	44	0	0	178
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	0	0	0	159	133	686	44	0	0	178

Major/Minor	Minor2	Minor1				Major1			
Conflicting Flow All	609	-	-	-	-	343	0	0	-
Stage 1	0	-	-	-	-	-	-	-	-
Stage 2	609	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-
Pot Cap-1 Maneuver	379	0	0	0	0	653	-	-	0
Stage 1	-	0	0	0	0	-	-	-	0
Stage 2	449	0	0	0	0	-	-	-	0
Platoon blocked, %									
Mov Cap-1 Maneuver	287	-	-	-	-	653	-	-	-
Mov Cap-2 Maneuver	287	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	340	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	19	12.3	
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1WBLn1
Capacity (veh/h)	-	-	287 653
HCM Lane V/C Ratio	-	-	0.105 0.243
HCM Control Delay (s)	-	-	19 12.3
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	0.3 1

Lanes, Volumes, Timings
1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	652	205	540	418	30	182	944	755	71	846	192
Future Volume (vph)	302	652	205	540	418	30	182	944	755	71	846	192
Satd. Flow (prot)	3288	3390	1517	3288	3390	1517	1695	4448	0	1695	4871	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3265	3390	1389	3227	3390	1457	1662	4448	0	1690	4871	1403
Satd. Flow (RTOR)			210			210		175				211
Lane Group Flow (vph)	302	652	205	540	418	30	182	1699	0	71	846	192
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.9	37.5	37.5	11.9	37.5	37.5	11.4	35.4		11.4	35.4	35.4
Total Split (s)	24.0	37.0	37.0	24.0	37.0	37.0	24.0	44.0		15.0	35.0	35.0
Total Split (%)	20.0%	30.8%	30.8%	20.0%	30.8%	30.8%	20.0%	36.7%		12.5%	29.2%	29.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7
All-Red Time (s)	3.2	2.8	2.8	3.2	2.8	2.8	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
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
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	C-Min
Act Effect Green (s)	22.7	28.3	28.3	19.3	24.9	24.9	16.1	40.6		8.2	30.1	30.1
Actuated g/C Ratio	0.19	0.24	0.24	0.16	0.21	0.21	0.13	0.34		0.07	0.25	0.25
v/c Ratio	0.49	0.82	0.42	1.02	0.59	0.06	0.80	1.22dr		0.62	0.69	0.38
Control Delay	48.3	52.3	7.3	100.7	49.9	0.2	76.7	65.0		77.3	44.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.3	52.3	7.3	100.7	49.9	0.2	76.7	65.0		77.3	44.7	5.9
LOS	D	D	A	F	D	A	E	E		E	D	A
Approach Delay		43.3			76.2			66.1			40.1	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	35.1	74.9	0.0	~77.7	54.9	0.0	41.8	~159.0		16.5	67.6	0.0
Queue Length 95th (m)	49.8	96.2	17.2	#109.5	69.1	m0.0	#72.8	#91.5		#34.9	82.8	14.1
Internal Link Dist (m)		132.3			135.6			202.6			118.5	
Turn Bay Length (m)				160.0			60.0			60.0		45.0
Base Capacity (vph)	622	861	509	528	861	526	248	1620		121	1219	509
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.76	0.40	1.02	0.49	0.06	0.73	1.05		0.59	0.69	0.38
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 120												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

1: St. Laurent & Coventry/Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 57.3

Intersection LOS: E

Intersection Capacity Utilization 104.6%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

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

 Ø1	 Ø2 (R)	 Ø4	 Ø3
15 s	44 s	37 s	24 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
24 s	35 s	37 s	24 s

Lanes, Volumes, Timings
2: Cyrville & Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	0	1256	257	40	798	124	117	234	32	134	238	80
Future Volume (vph)	0	1256	257	40	798	124	117	234	32	134	238	80
Satd. Flow (prot)	0	3390	1517	1695	3390	1517	1695	1749	0	1695	1708	0
Flt Permitted				0.172			0.311			0.407		
Satd. Flow (perm)	0	3390	1424	307	3390	1388	553	1749	0	725	1708	0
Satd. Flow (RTOR)			257			124		6			16	
Lane Group Flow (vph)	0	1256	257	40	798	124	117	266	0	134	318	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		
Detector Phase		2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)		10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)		32.2	32.2	32.2	32.2	32.2	47.1	47.1		47.1	47.1	
Total Split (s)		70.0	70.0	70.0	70.0	70.0	50.0	50.0		50.0	50.0	
Total Split (%)		58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)		2.5	2.5	2.5	2.5	2.5	3.4	3.4		3.4	3.4	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1		7.1	7.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)		78.7	78.7	78.7	78.7	78.7	28.0	28.0		28.0	28.0	
Actuated g/C Ratio		0.66	0.66	0.66	0.66	0.66	0.23	0.23		0.23	0.23	
v/c Ratio		0.57	0.25	0.20	0.36	0.13	0.91	0.65		0.79	0.78	
Control Delay		9.5	1.7	24.4	22.8	10.5	102.3	46.8		73.0	53.0	
Queue Delay		0.5	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		10.0	1.7	24.4	22.8	10.5	102.3	46.8		73.0	53.0	
LOS		B	A	C	C	B	F	D		E	D	
Approach Delay		8.6			21.3			63.8			58.9	
Approach LOS		A			C			E			E	
Queue Length 50th (m)		38.1	2.7	7.9	85.0	13.6	27.2	56.1		30.2	67.9	
Queue Length 95th (m)		m83.3	m4.6	m8.8	78.3	m11.9	#49.4	72.6		47.5	86.4	
Internal Link Dist (m)		135.6			179.4			406.7			100.8	
Turn Bay Length (m)				50.0		50.0	50.0					
Base Capacity (vph)		2223	1022	201	2223	953	197	629		259	620	
Starvation Cap Reductn		504	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		0.73	0.25	0.20	0.36	0.13	0.59	0.42		0.52	0.51	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

2: Cyrville & Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 25.5

Intersection LOS: C

Intersection Capacity Utilization 84.0%

ICU Level of Service E

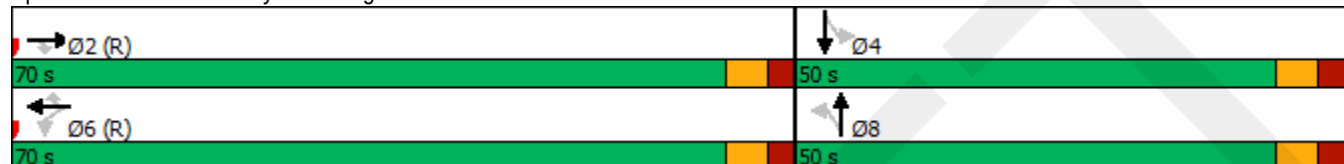
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Cyrville & Ogilvie



Lanes, Volumes, Timings
3: Ogilvie & Cummings

Projected 2029 PM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1244	23	145	813	209	119	208	226	258	219	84
Future Volume (vph)	110	1244	23	145	813	209	119	208	226	258	219	84
Satd. Flow (prot)	1695	3376	0	1695	3241	0	1695	1784	1517	1695	1701	0
Flt Permitted	0.147			0.081			0.575			0.398		
Satd. Flow (perm)	262	3376	0	145	3241	0	1022	1784	1406	682	1701	0
Satd. Flow (RTOR)		2			28				140		21	
Lane Group Flow (vph)	110	1267	0	145	1022	0	119	208	226	258	303	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2			6			8		8	4		
Detector Phase	5	2		1	6		8	8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	9.7	24.7		9.7	24.7		36.6	36.6	36.6	9.3	36.6	
Total Split (s)	15.0	45.0		15.0	45.0		40.0	40.0	40.0	20.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		33.3%	33.3%	33.3%	16.7%	50.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.0	2.0		1.0	2.0		3.3	3.3	3.3	1.0	3.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.7		4.7	5.7		6.6	6.6	6.6	4.3	6.6	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	58.9	48.2		61.7	49.6		23.8	23.8	23.8	46.0	43.7	
Actuated g/C Ratio	0.49	0.40		0.51	0.41		0.20	0.20	0.20	0.38	0.36	
v/c Ratio	0.45	0.93		0.67	0.75		0.59	0.59	0.58	0.66	0.48	
Control Delay	22.0	43.2		47.7	32.9		54.0	49.2	21.7	34.5	28.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	22.0	43.2		47.7	32.9		54.0	49.2	21.7	34.5	28.8	
LOS	C	D		D	C		D	D	C	C	C	
Approach Delay		41.5			34.7			39.0			31.4	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	11.4	~180.5		25.7	63.8		23.9	41.7	16.3	39.6	46.1	
Queue Length 95th (m)	21.0	#223.5		m47.1	#155.4		42.8	65.0	40.4	60.2	69.9	
Internal Link Dist (m)		108.2			386.5			96.6			235.7	
Turn Bay Length (m)	85.0			90.0			40.0		16.0	150.0		
Base Capacity (vph)	264	1356		229	1355		284	496	492	393	768	
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	0.42	0.93		0.63	0.75		0.42	0.42	0.46	0.66	0.39	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 95												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

3: Ogilvie & Cummings

Projected 2029 PM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.4

Intersection LOS: D

Intersection Capacity Utilization 101.0%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

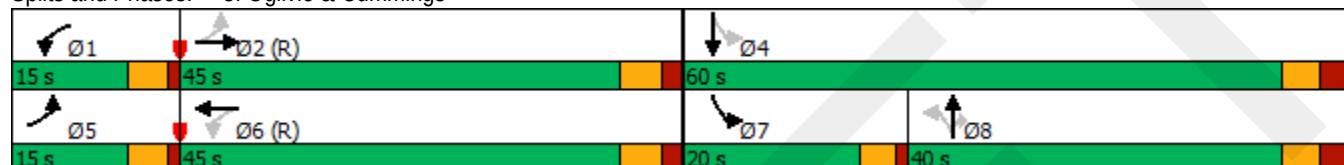
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Ogilvie & Cummings



Lanes, Volumes, Timings
4: Aviation Parkway & Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	831	102	136	657	112	148	229	180	112	267	168
Future Volume (vph)	183	831	102	136	657	112	148	229	180	112	267	168
Satd. Flow (prot)	1695	3247	1380	1695	3390	1517	1695	3148	0	1695	3175	0
Flt Permitted	0.316			0.235			0.950			0.950		
Satd. Flow (perm)	563	3247	1343	418	3390	1493	1692	3148	0	1694	3175	0
Satd. Flow (RTOR)			125			125		150			103	
Lane Group Flow (vph)	183	831	102	136	657	112	148	409	0	112	435	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	9.7	34.1	34.1	9.7	34.1	34.1	10.9	30.1		10.9	30.1	
Total Split (s)	20.0	51.0	51.0	20.0	51.0	51.0	19.0	30.0		19.0	30.0	
Total Split (%)	16.7%	42.5%	42.5%	16.7%	42.5%	42.5%	15.8%	25.0%		15.8%	25.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	2.2	2.4		2.2	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.1	6.1	4.7	6.1	6.1	5.9	6.1		5.9	6.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	
Act Effect Green (s)	67.0	53.9	53.9	63.8	52.3	52.3	14.8	21.0		12.2	18.4	
Actuated g/C Ratio	0.56	0.45	0.45	0.53	0.44	0.44	0.12	0.18		0.10	0.15	
v/c Ratio	0.43	0.57	0.15	0.41	0.44	0.16	0.71	0.61		0.65	0.76	
Control Delay	21.2	31.6	8.0	16.7	26.5	3.9	69.3	32.0		69.6	45.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.2	31.6	8.0	16.7	26.5	3.9	69.3	32.0		69.6	45.5	
LOS	C	C	A	B	C	A	E	C		E	D	
Approach Delay		27.8			22.2			41.9			50.4	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	28.5	85.3	5.2	14.3	57.4	0.0	33.3	29.3		25.5	40.2	
Queue Length 95th (m)	m25.8	m68.6	m3.7	25.0	80.3	9.3	#68.3	44.8		#44.8	54.8	
Internal Link Dist (m)		386.5			205.1			147.2			200.4	
Turn Bay Length (m)	75.0		60.0	55.0		70.0	110.0			110.0		
Base Capacity (vph)	469	1459	672	400	1489	725	215	752		191	714	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.57	0.15	0.34	0.44	0.15	0.69	0.54		0.59	0.61	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green												
Natural Cycle: 85												
Control Type: Actuated-Coordinated												

Lanes, Volumes, Timings

4: Aviation Parkway & Ogilvie

Projected 2029 PM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 32.6

Intersection LOS: C

Intersection Capacity Utilization 75.7%

ICU Level of Service D

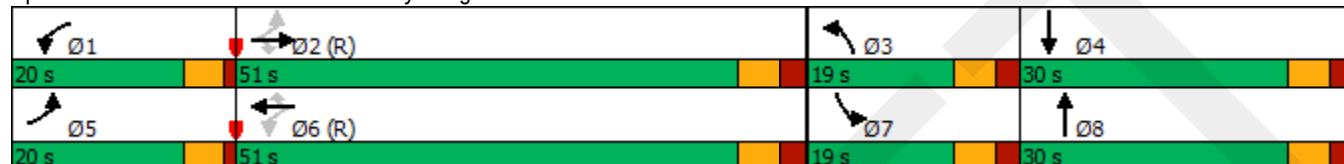
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Aviation Parkway & Ogilvie



Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 PM TOD NOT MET

05/29/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	343	271	266	266	90
Future Volume (vph)	88	343	271	266	266	90
Satd. Flow (prot)	1695	1517	1695	1784	1707	0
Flt Permitted	0.950		0.487			
Satd. Flow (perm)	1658	1442	860	1784	1707	0
Satd. Flow (RTOR)		343			32	
Lane Group Flow (vph)	88	343	271	266	356	0
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	22.0	22.0	24.9	24.9	32.9	
Total Split (s)	31.0	31.0	39.9	39.9	39.9	
Total Split (%)	43.7%	43.7%	56.3%	56.3%	56.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	3.6	3.6	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.9	6.9	6.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Min	Min	Min	
Act Effect Green (s)	25.4	25.4	22.9	22.9	22.9	
Actuated g/C Ratio	0.41	0.41	0.37	0.37	0.37	
v/c Ratio	0.13	0.43	0.85	0.40	0.54	
Control Delay	14.7	4.1	41.3	15.3	16.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.7	4.1	41.3	15.3	16.2	
LOS	B	A	D	B	B	
Approach Delay	6.3			28.4	16.2	
Approach LOS	A			C	B	
Queue Length 50th (m)	6.1	0.0	26.7	21.1	27.1	
Queue Length 95th (m)	16.7	15.3	#61.6	36.0	46.6	
Internal Link Dist (m)	138.1			235.7	73.1	
Turn Bay Length (m)		50.0	60.0			
Base Capacity (vph)	701	797	469	974	946	
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	0.13	0.43	0.58	0.27	0.38	
Intersection Summary						
Cycle Length: 70.9						
Actuated Cycle Length: 61.5						
Natural Cycle: 55						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.85						

Lanes, Volumes, Timings
5: Cummings & Donald

Projected 2029 PM TOD NOT MET

05/29/2020

Intersection Signal Delay: 17.9

Intersection LOS: B

Intersection Capacity Utilization 66.8%

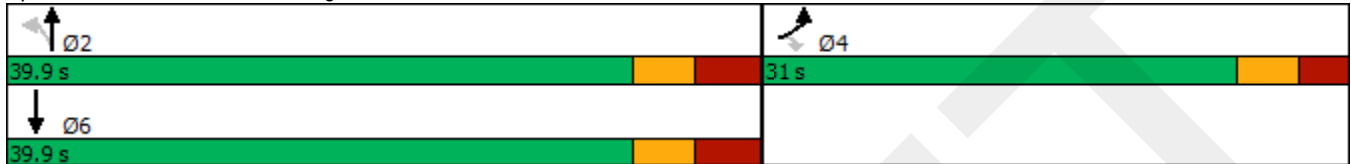
ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: Cummings & Donald



Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 PM TOD NOT MET

05/29/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	79	104	207	55	26	46	319	246	59	521	17
Future Volume (vph)	25	79	104	207	55	26	46	319	246	59	521	17
Satd. Flow (prot)	1695	1574	0	1695	1681	0	1695	1641	0	1695	1774	0
Flt Permitted	0.704			0.642			0.323			0.296		
Satd. Flow (perm)	1242	1574	0	1108	1681	0	575	1641	0	525	1774	0
Satd. Flow (RTOR)		89			26			52			2	
Lane Group Flow (vph)	25	183	0	207	81	0	46	565	0	59	538	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.5	27.5		27.5	27.5		34.3	34.3		34.3	34.3	
Total Split (s)	42.0	42.0		42.0	42.0		43.0	43.0		43.0	43.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		47.8%	47.8%		47.8%	47.8%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.2	2.2		2.2	2.2		2.6	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)	17.5	17.5		17.5	17.5		23.8	23.8		23.8	23.8	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.43	0.43		0.43	0.43	
v/c Ratio	0.06	0.33		0.59	0.15		0.19	0.76		0.26	0.70	
Control Delay	16.2	10.9		25.4	12.3		13.5	20.8		15.2	19.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.2	10.9		25.4	12.3		13.5	20.8		15.2	19.3	
LOS	B	B		C	B		B	C		B	B	
Approach Delay		11.6			21.8			20.3			18.9	
Approach LOS		B			C			C			B	
Queue Length 50th (m)	1.6	6.2		15.7	3.5		2.4	36.4		3.2	36.8	
Queue Length 95th (m)	7.5	24.3		46.5	14.7		11.2	104.7		14.3	99.7	
Internal Link Dist (m)		133.5			129.3			94.0			406.7	
Turn Bay Length (m)	30.0			40.0						55.0		
Base Capacity (vph)	924	1193		824	1257		414	1197		378	1278	
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	0.03	0.15		0.25	0.06		0.11	0.47		0.16	0.42	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 54.9												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.76												

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings
6: Cyrville & Labelle

Projected 2029 PM TOD NOT MET

05/29/2020

Intersection Signal Delay: 19.0

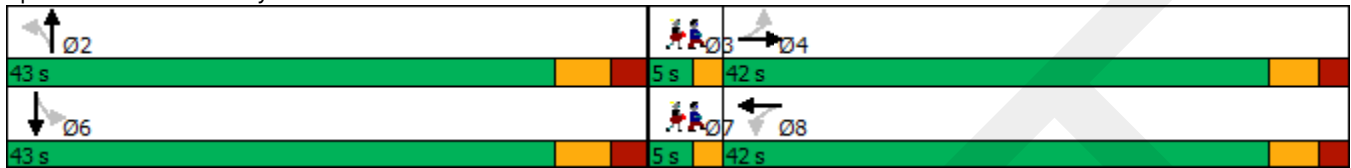
Intersection LOS: B

Intersection Capacity Utilization 89.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Cyrville & Labelle



Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 PM TOD NOT MET

05/29/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	515	156	1851	246	9	1971
Future Volume (vph)	515	156	1851	246	9	1971
Satd. Flow (prot)	3288	1517	4871	1517	1695	4871
Flt Permitted	0.950				0.089	
Satd. Flow (perm)	3288	1454	4871	1477	159	4871
Satd. Flow (RTOR)		21		246		
Lane Group Flow (vph)	515	156	1851	246	9	1971
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	36.1	36.1	37.5	37.5	24.0	24.0
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	1.8	1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	24.9	24.9	83.5	83.5	83.5	83.5
Actuated g/C Ratio	0.21	0.21	0.70	0.70	0.70	0.70
v/c Ratio	0.76	0.49	0.55	0.22	0.08	0.58
Control Delay	51.8	40.6	10.2	1.5	5.4	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	51.8	40.6	10.2	1.5	5.4	9.4
LOS	D	D	B	A	A	A
Approach Delay	49.2		9.2			9.3
Approach LOS	D		A			A
Queue Length 50th (m)	59.7	28.4	68.6	0.0	0.4	43.4
Queue Length 95th (m)	73.3	46.5	95.4	8.3	m1.0	m78.9
Internal Link Dist (m)	109.2		139.3			202.6
Turn Bay Length (m)		25.0		60.0	125.0	
Base Capacity (vph)	874	401	3390	1102	110	3390
Starvation Cap Reductn	0	0	0	0	0	396
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	0.55	0.22	0.08	0.66
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 99 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						

Lanes, Volumes, Timings
7: St. Laurent & Lemieux

Projected 2029 PM TOD NOT MET

05/29/2020

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 14.9

Intersection LOS: B

Intersection Capacity Utilization 70.7%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: St. Laurent & Lemieux



Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1283	158	0	1030	0	37
Future Vol, veh/h	1283	158	0	1030	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1283	158	0	1030	0	37
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	721
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	370
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	370
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		15.8	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	370	-	-	-		
HCM Lane V/C Ratio	0.1	-	-	-		
HCM Control Delay (s)	15.8	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	-		

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	RT			LT	LT	
Traffic Vol, veh/h	120	28	12	462	329	73
Future Vol, veh/h	120	28	12	462	329	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	28	12	462	329	73
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	852	366	402	0	-	0
Stage 1	366	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	330	679	1157	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	325	679	1157	-	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	21.7	0.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1157	-	361	-	-	
HCM Lane V/C Ratio	0.01	-	0.41	-	-	
HCM Control Delay (s)	8.1	0	21.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	1.9	-	-	

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰					↱	↰↱					↱
Traffic Vol, veh/h	170	0	0	0	0	223	112	457	27	0	0	279
Future Vol, veh/h	170	0	0	0	0	223	112	457	27	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	0	-	-	-	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	170	0	0	0	0	223	112	457	27	0	0	279
Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	453	-	-	-	-	229	0	0	-	-	-	-
Stage 1	0	-	-	-	-	-	-	-	-	-	-	-
Stage 2	453	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	-	-	-	-	6.94	4.14	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	-	-	-	3.32	2.22	-	-	-	-	-
Pot Cap-1 Maneuver	490	0	0	0	0	774	-	-	0	-	-	-
Stage 1	-	0	0	0	0	-	-	-	0	-	-	-
Stage 2	556	0	0	0	0	-	-	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	349	-	-	-	-	774	-	-	-	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	396	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB					
HCM Control Delay, s	24.7			11.5								
HCM LOS	C			B								
Minor Lane/Major Mvmt	NBL			NBT			EBLn1WBLn1					
Capacity (veh/h)	-			-			349			774		
HCM Lane V/C Ratio	-			-			0.487			0.288		
HCM Control Delay (s)	-			-			24.7			11.5		
HCM Lane LOS	-			-			C			B		
HCM 95th %tile Q(veh)	-			-			2.6			1.2		