St. Laurent/Donald **Shopping Centre Expansion**

TRANSPORTATION BRIEF •

November 30, 2012



St. Laurent/Donald, Ottawa -Shopping Centre Expansion Transportation Brief



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1. INTRODUCTION

It is our understanding that the existing Zellers, Metro and small multi-tenant building, located at the southeast quadrant of the St. Laurent/Donald intersection and at the north end of the retail plaza, are to be demolished and replaced by a new larger Target and Metro retail stores. The approximate total gross floor area of the proposed Target retail store is 152,745 ft² and the proposed Metro retail food store is 42,100 ft². This equates to an approximate net increase in total gross floor area of 72,547 ft². The site's local context is depicted in Figure 1 and the preliminary Site Plan is depicted in Figure 2.



Figure 1: Local Context

As part of the Site Plan Approval process, the City of Ottawa requires submission of a Transportation Impact Assessment (TIA) consistent with their Guidelines dated October 2006. Based on the ensuing trip generation for the proposed change in land use/floor area, a Transportation Brief (TB) is the appropriate level of study for the subject application.

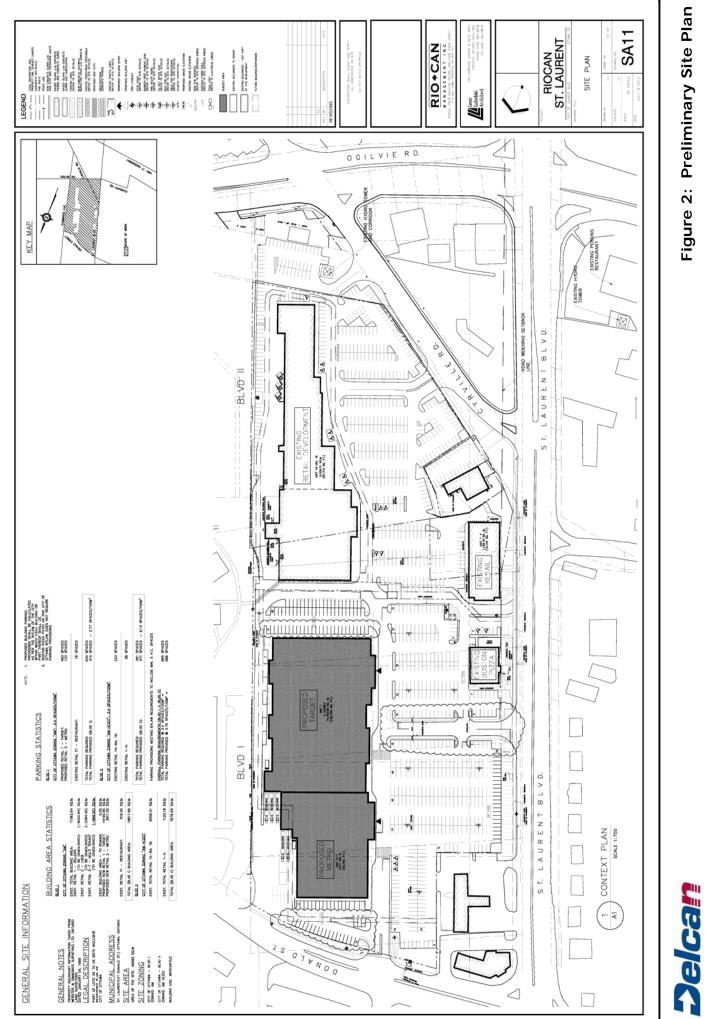


Figure 2: Preliminary Site Plan

2. EXISTING CONDITIONS

St. Laurent Boulevard is an arterial roadway on the site's western boundary and has a six-lane cross-section south of Cyrville Road and a four-lane 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.

Donald Street is a major collector roadway on the site's northern boundary and has a twolane cross-section. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 50 km/h.

Cyrville Road is local roadway on the site's southern boundary and it has a two-lane crosssection. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 60 km/h.

Ogilvie Road is an arterial roadway within the study area and it has a four-lane crosssection. Auxiliary turn lanes are provided at major intersections and it has a posted speed limit of 60 km/h.

McArthur Avenue is an arterial roadway with a four-lane cross-section. Auxiliary turn lanes are provided at major intersections and its unposted speed limit is understood to be 50 km/h.

Cummings Avenue is a major collector roadway within the study area and it has a twolane cross-section. Auxiliary turn lanes are provided at major intersections and its unposted is understood to be 50 km/h.

Illustrated in Figure 3, are the most recent weekday morning and afternoon peak hour traffic volumes obtained from the City of Ottawa for the St. Laurent/McArthur, St. Laurent/Donald, St. Laurent/Cyrville, St. Laurent/Ogilvie, Donald/Shopping Centre and Donald/Cummings intersections. Peak hour traffic volumes are included as Appendix A.



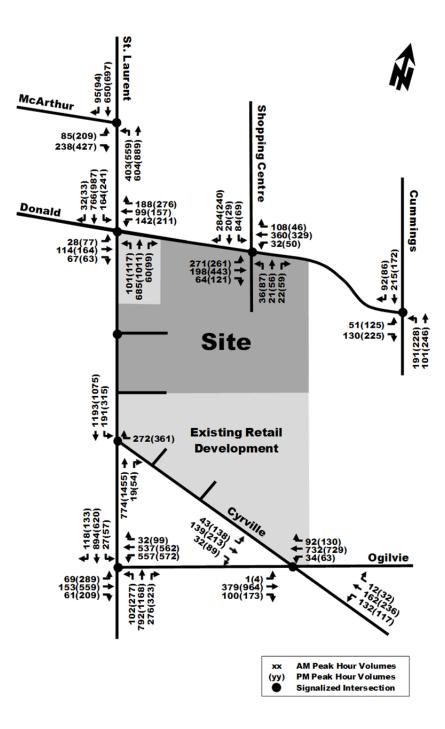


Figure 3: Existing Peak Hour Traffic Volumes

The ensuing Table 1 provides a summary of existing traffic operations at key study area intersections, based on the Synchro (V8) 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 intersections 'as a whole' were assessed based on a weighted v/c ratio and the Synchro model output of existing conditions is provided within Appendix B.

	Weekday AM Peak (PM Peak)								
		Critical Mov	vement	Intersection					
Intersection	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c			
St. Laurent/McArthur	C(E)	0.77(0.98)	NBL(NBL)	13.5(20.4)	A(B)	0.55(0.69)			
St. Laurent/Donald	C(E)	0.76(0.92)	WBL(WBL)	19.4(29.9)	A(C)	0.46(0.73)			
St. Laurent/Cyrville	C(C)	0.71(0.77)	SBL(SBL)	12.6(14.7)	A(A)	0.39(0.57)			
St. Laurent/Ogilvie	D(F)	0.81(1.18)	WBL(NBL)	33.8(55.2)	B(D)	0.63(0.83)			
Cyrville/Ogilvie	A(A)	0.41(0.59)	NBL(EBT)	19.3(23.9)	A(A)	0.34(0.55)			
Donald/Shopping Centre	B(B)	0.65(0.68)	SBR(SBT)	12.1(14.0)	A(A)	0.39(0.34)			
Donald/Cummings	A(A)	0.33(0.47)	EBR(EBR)	7.8(9.5)	A(A)	0.31(0.39)			
Note: Analysis of signalized int	ersectior	ns assumes a PH	IF of 0.95 and a s	aturation flow ra	ate of 180	00 veh/h/lane.			

As shown in Table 1, study area intersections 'as a whole' are currently operating at an acceptable LoS 'D' or better during the weekday morning and afternoon peak hours, with respect to the City of Ottawa operating standards of LoS 'D' or better (0.90 > v/c > 0.00).

With regard to 'critical movements' at study area intersections, the northbound left-turn at the St. Laurent/McArthur is currently failing during the afternoon peak hour. The northbound left-turn and westbound left-turn movements at the St. Laurent/Ogilvie and St. Laurent/Donald intersections are currently operating at capacity (LoS 'E') during the afternoon peak hours, respectively. All other 'critical movements' at study area intersections are currently operating at an acceptable LoS 'D' or better during peak hours.

3. DEMAND FORECASTING

3.1 Background Traffic Growth

Summarized in Table 2, is the percent rate of growth in traffic volumes at the St. Laurent/Ogilvie intersection from 2008 to 2010, which is the busiest intersection in the vicinity of the proposed development and it is the study area intersection where historic volume data is available.



5											
Time		Percent Annual Change 2008 to 2010									
Period	North Leg South Leg East Leg West Leg Ov										
8 hrs	-6.40%	-2.70%	-7.69%	-12.87%	-6.48%						
AM Peak	-8.28%	-7.97%	-19.83%	-28.05%	-13.34%						
PM Peak	-5.13%	-3.02%	0.39%	-1.64%	-2.51%						

As shown in Table 2, the total traffic volumes have historically decreased over the threeyear period at the St. Laurent/Ogilvie intersection. Therefore, for the purpose of this assessment, the subsequent analysis will assume existing traffic volumes as baseline traffic volumes.

3.2 Site Vehicle Trip Generation

It is noteworthy that this section of the report only focuses on the portion of the existing plaza/site that is being redeveloped and not the whole site. So when we refer to existing land uses and existing/proposed trip generation, the resultant values are only for the portion to be redeveloped.

Summarized in Table 3, are the appropriate vehicle trip generation rates for the proposed land uses obtained from the 8th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. The vehicle trip generation rates for the existing land uses, which are to be replaced by the proposed land uses, were also obtained from the 8th Edition of the ITE Trip Generation Manuel and are summarized in Table 3.

Land Use	Data	Trip Rates				
Land Use	Source	AM Peak	PM Peak			
Supermarket	ITE	T = 3.59(X);	T = 10.50(X);			
Supermarket	850		ln(T) = 0.61 ln(X) + 3.95			
Specialty Retail ¹	ITE	T = 1.36(X);	T = 2.71(X);			
Specially Relati	814	T = 1.20(X) + 10.74	T = 2.40(X) + 21.48			
Notes: $T = Average Vehicle Trip Ends$ $X = 1000 ft^2 Gross Floor Area$						
x = 1000 ft ⁻ Gross Floor Area 1. Rates for specialty retail during the AM Peak is assumed to be 50% of the PM Peak						

Table 3: ITE Trip Generation Rates

As ITE trip generation surveys only record vehicle trips and typically reflect highly suburban locations (with little to no access by travel modes other than private automobiles), adjustment factors appropriate to the more urban study area context were applied to attain estimates of person trips for the proposed development. This approach is considered appropriate within the industry for urban infill developments.

To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and combined



transit and non-motorized modal shares of less than 10%. As such, the person trip generation for the proposed land uses is summarized in Table 4.

Land Use	Data	Area	AM Pe	ak (pe	rsons)	PM Peak (persons)		
Land Use	Source	Alea	In	Out	Total	In	Out	Total
Supermarket	ITE	42,100 ft ²	119	77	196	337	324	661
Supermarket	850	42,100 11	117	,,	170	007	524	001
Specialty Retail	ITE	152,754 ft ²	141	111	252	222	283	505
Specially Relati	814							
Proposed Site Persons Trips 260 188 448 559 607 1,166								
Note: 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and								
combined transit and non-motorized modal shares of less than 10%								

 Table 4: Modified Person Trip Generation for Proposed Land Uses

Summarized in Table 5 is the person trip generation for the existing land uses to be replaced.

Table 5:	Modified	Person	Trip	Generation	for	Fxistina	Land Uses
	wouncu	1 01 3011	1110	ocheration	101	EXISTING	Luna 0303

Land Use	Data Area		AM Pe	ak (pe	rsons)	PM Peak (persons)		
Lanu Use	Source	Alea	In	Out	Total	In	Out	Total
Supermarket	ITE 850	25,769 ft ²	73	47	120	249	241	490
Specialty Retail	ITE 814	96,538 ft ²	92	73	165	144	185	329
Existin	165	120	285	393	426	819		
Note: 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%								

The person trips shown in Table 4 and 5 for the proposed and existing land uses were then reduced by modal share values based on the 2005 TRANS O-D survey to reflect the site's location and proximity to adjacent communities, employment, other shopping uses and transit availability. Modal share and 'pass-by' values for the existing and proposed uses are summarized in Tables 6 and 7, respectively.

Table 6:	Proposed Site Person Trip Breakdown
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Travel Mode	Mode Share	AM Pea	ak (Perso	ons/hr)	PM Peak (Persons/hr)			
Traver Mode	wode share	In	Out	Total	In	Out	Total	
Auto Driver	60%	157	114	271	337	365	702	
Auto Passenger	10%	25	18	43	55	60	115	
Transit	20%	52	38	90	112	122	234	
Non-motorized	10%	26	18	44	55	60	115	
Total Person Trips	erson Trips 100%		188	448	559	607	1,166	
Less Pass-By (30%)		-41	-41	-82	-106	-106	-212	
Total Proposed 'New'	116	73	189	231	259	490		



Travel Mode	Mode Share	AM Pea	ak (Perso	ons/hr)	PM Peak (Persons/hr)			
Traver Mode		In	Out	Total	In	Out	Total	
Auto Driver	60%	100	73	173	237	256	493	
Auto Passenger	10%		11	27	38	42	80	
Transit	20%	33	24	57	79	85	164	
Non-motorized	10%	16	12	28	39	43	82	
Total Person Trips	erson Trips 100%		120	285	393	426	819	
Less Pass-By (30%)		-26	-26	-52	-74	-74	-148	
Total Existing 'New	74	47	121	163	182	345		

Table 7: Existing Site Person Trip Breakdown	Table 7:	Existina	Site Person	Trip	Breakdown
--	----------	----------	-------------	------	-----------

The existing site vehicle trips (Table 7) were then removed from the proposed site vehicle trips (Table 6). The resulting total 'net' change in vehicle trips are summarized in Table 8.

Table 8:	'Net' Change	in Site-Generated	Vehicle Trip Generation
	net onange		

Land Use	AM P	eak (ver	n/hr)	PM Peak (veh/hr)			
Land Use	In	Out	Total	In	Out	Total	
Proposed Site Vehicle Trips	157	114	271	337	365	702	
Existing Site Vehicle Trips	-100	-73	-173	-237	-256	-493	
'Net' New Auto Trips	57	41	98	100	109	209	

The 'pass-by' trips generated by the existing land uses were also removed from the projected 'pass-by' trips generated by the proposed land uses. The resulting 'net' change in 'pass-by' trips are summarized in Table 9.

Land Use	AM P	eak (ver	n/hr)	PM Peak (veh/hr)			
Land Ose	In	Out	Total	In	Out	Total	
Proposed 'Pass-By' Trip Generation	-41	-41	-82	-106	-106	-212	
Existing 'Pass-By' Trip Generation	26	26	52	74	74	148	
'Net' Pass-By Trips	-15	-15	-30	-32	-32	-64	

Table 9: 'Net' Site-Generated 'Pass-By' Vehicle Trip Generation

In addition, a reduction of 5% has also been assumed to address the likelihood of shared trips between individual stores within the RioCan complex. The resulting total increase in 'new' site-generated vehicle trips are summarized in Table 10 and total approximately 65 and 138 veh/h more during the weekday morning and afternoon peak hours, respectively, compared to what is being generated now. This amount of 'new' traffic equates to approximately 1 to 2 new vehicles per minute divided five (5) site driveway connections. As such, the resultant impact on traffic operations is likely negligible.

Land Use	AM F	eak (veł	n/hr)	PM Peak (veh/hr)			
Land Use	In	Out	Total	In	Out	Total	
'Net' Site-Generated Vehicle Trips	57	41	98	100	109	209	
'Net' Site-Generated 'Pass-By' Trips	-15	-15	-30	-32	-32	-64	
Multi-Purpose Trips (5%)	-2	-1	-3	-3	-4	-7	
Total 'New' Vehicle Trips	40	25	65	65	73	138	

Table 10: Total 'New' Vehicle Trips



3.3 Traffic Distribution and Assignment

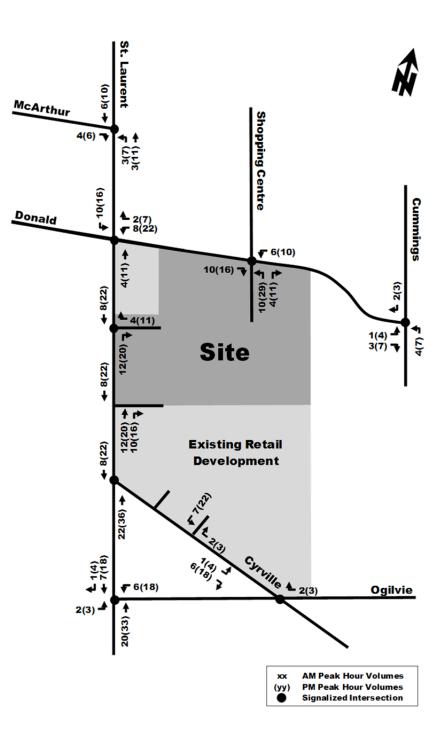
The distribution and assignment of the projected 'net' increase in peak hour vehicle trip generation was based on the site's connectivity to the existing road network and our knowledge of the surrounding area. The resultant distribution is outlined as follows, with the 'New' site-generated trips are illustrated in Figure 4 and the site-generated 'pass-by' trips are illustrated in Figure 5.

- 20% to/from the north;
- 50% to/from the south;
- 15% to/from the east; and
- <u>15%</u> to/from the west. 100%

4. FUTURE TRAFFIC OPERATIONS

Total projected traffic volumes associated with the proposed redevelopment are illustrated in Figure 6. They were derived by superimposing 'net' site-generated 'new' traffic volumes (Figure 4) and 'net' site-generated 'pass-by' volumes (Figure 5) onto existing volumes (Figure 3). Table 11 provides a summary of projected performance of the study area intersections and the Synchro model output of projected conditions is provided within Appendix B.







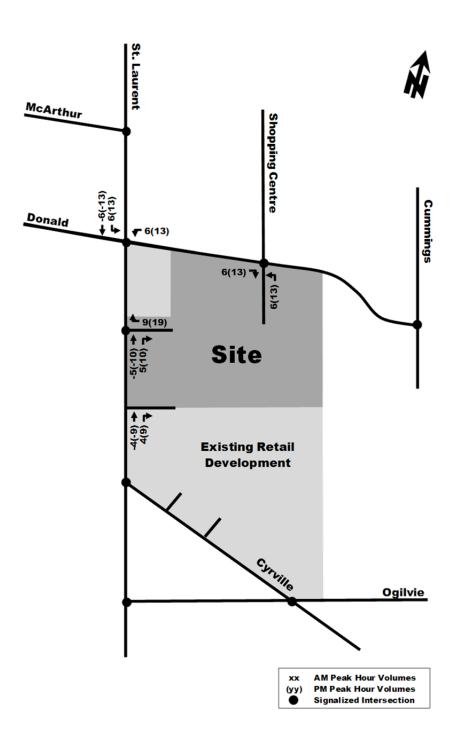
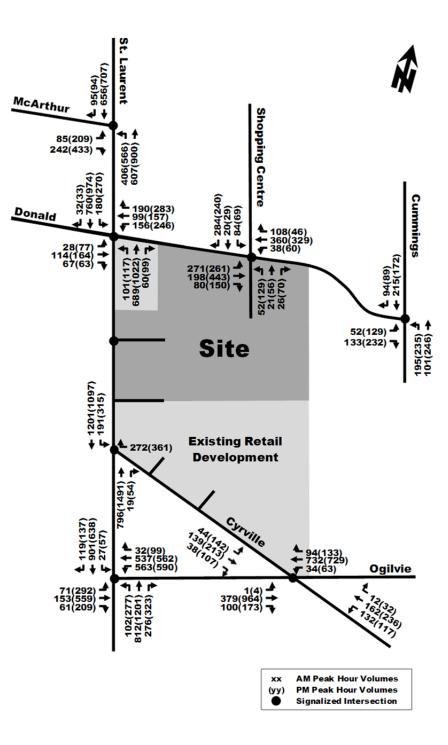


Figure 5: 'Net' Site-Generated 'Pass-by' Traffic Volumes

Figure 6: Projected Traffic Volumes



		We	ekday AM Po	eak (PM Pea	ak)	
		Critical Mov	vement	Int	ersect	ion
Intersection	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
St. Laurent/McArthur	C(E)	0.78(0.92)	NBL(NBL)	13.7(18.6)	A(B)	0.55(0.69)
St. Laurent/Donald	D(F)	0.84(1.03)	WBL(WBL)	20.4(31.3)	A(C)	0.47(0.80)
St. Laurent/Cyrville	C(C)	0.71(0.77)	SBL(SBL)	12.4(14.5)	A(A)	0.40(0.58)
St. Laurent/Ogilvie	D(F)	0.81(1.18)	WBL(NBL)	31.6(55.8)	B(D)	0.63(0.84)
Cyrville/Ogilvie	A(A)	0.41(0.59)	NBL(EBT)	20.6(25.2)	A(A)	0.35(0.56)
Donald/Shopping Centre	B(C)	0.66(0.73)	SBR(NBL)	12.6(15.1)	A(A)	0.40(0.37)
Donald/Cummings	A(A)	0.34(0.48)	EBR(EBR)	7.9(9.6)	A(A)	0.32(0.41)
Note: Analysis of signalized in	tersectior	ns assumes a PH	IF of 0.95 and a s	aturation flow ra	ate of 180	00 veh/h/lane.

Table 11: Projected Performance at Study	Area Intersections
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As shown in Table 11, with no signal timing plan modifications, the signalized study area intersections 'as a whole', are projected to operate similar to existing conditions summarized in Table 1.

As the proposed development only contributes a 1% to 5% in increased traffic volumes at study area intersections, it has no off-site transportation impacts or requirements.

With regard to existing site driveways, the proposed redevelopment is projected to add in the range of an additional 10 to 70 veh/h in two-way volumes at the site's driveway connections, which equates to approximately 1 additional vehicle every 1 to 6 minutes. This amount of additional traffic at the site's five (5) driveway connections does not warrant additional traffic control/auxiliary turn lanes and it will not impact the adjacent transportation network.

5. SITE PLAN REVIEW

This section provides an overview of site access, parking requirements, pedestrian circulation and transit accessibility. The proposed Site Plan was previously illustrated in Figure 2.

Parking

A total of 515 parking spaces are proposed to serve the subject site. This amount of parking is sufficient with respect to the City's Zoning By-Law requirements for Area B, identified in Schedule 1 of the City's Zoning By-Law.



Site Circulation

The proposed changes to the existing parking lot will not affect on-site circulation. As such, the site is currently laid out to efficiently accommodate two-way traffic.

Access Requirements

Based on projected the 'net' increase in peak hour traffic volumes and proximity to adjacent intersections, additional traffic control/auxiliary turn lanes are not warranted or required at the proposed driveway connections. Heavy trucks will access the site via the existing most easterly driveway connection to Donald Street where adequate turning radii for trucks should be provided.

Pedestrians/Transit

As summarized in Tables 6 and 7, the 'net' increase in transit ridership due to the proposed redevelopment is estimated to be in the 30 to 70 persons per peak hour, which should be easily accommodated by existing transit service.

To connect pedestrians to transit service and adjacent residential communities, other nearby employment, shopping and recreation opportunities, sidewalks are currently provided along both sides of all study area roadways with the exception of the south side of Cyrville Road. A multi-use pathway is also currently provided along the site's eastern frontage with a connection to the site provided just south of the proposed Target, connecting pedestrians and cyclist to the residential community east of the site.

Transit service is currently provided by OC Transpo regular (Black) Routes #5, 7 and 14 on St. Laurent Boulevard and by regular (Black) Route #5 on Donald Street, which provides frequent all-day service. Stops for these transit routes are currently provided along the frontage of the site on St. Laurent Boulevard and Donald Street.

Bicycles

The location of bicycle parking is not identified on the attached Site Plan. However, 73 bicycle parking spaces should be located in well-lit areas, close to the main building entrances to satisfy the City's By-Law requirements.

According to the City's 2008 Official Cycling Plan (OCP), St. Laurent Boulevard, Ogilvie Road and Cyrville Road are classified as "Spine or City-wide" cycling routes and Donald Street and Cummings Avenue are classified as "Community" cycling routes. Ogilvie Road has existing bicycle lanes and St. Laurent Boulevard and Cyrville Road have proposed bicycle lanes. Shared use lanes are proposed for Donald Street and Cummings Avenue.

6. FINDINGS AND RECOMMENDATIONS

Based on the foregoing analysis of the proposed site, the following transportation-related conclusions are offered:

• Study area intersections are currently operating at acceptable Levels of Service during the weekday morning and afternoon peak hours;



- With regard to 'critical movements' at study area intersections, the northbound leftturn at the St. Laurent/McArthur is currently failing during the afternoon peak hour. The northbound left-turn and westbound left-turn movements at the St. Laurent/Ogilvie and St. Laurent/Donald intersections are currently operating at capacity (LoS 'E') during the afternoon peak hours, respectively. All other 'critical movements' at study area intersections are currently operating at an acceptable LoS 'D' or better during peak hours;
- The proposed redevelopment is projected to generate a 'net' increase in 'new' twoway vehicle trips of approximately 65 and 138 veh/h during the weekday morning and afternoon peak hours, respectively. When including 'pass-by' trips, the increase in vehicle trips is approximately 100 and 200 veh/h divided by the five (5) site driveway connections;
- As the proposed development only contributes a 1% to 5% in increased traffic volumes (approximately 1 to 2 'new' vehicle a minute during peak hours) at study area intersections, it has no off-site transportation impacts or requirements;
- The proposed changes to the existing parking lot will not affect on-site circulation and the parking supply meets By-Law requirements; and
- The proposed change in land use/area fits well into the context of the surrounding area, and its location and design serves to promote use of walking, cycling, and transit modes, thus supporting City of Ottawa policies, goals and objectives with respect to redevelopment, intensification and modal share.

Based on the foregoing, approval of the proposed shopping centre redevelopment to accommodate the proposed Target and Metro stores is recommended from a transportation perspective.

Please call if you have any questions.

Prepared By:

dre Sponder

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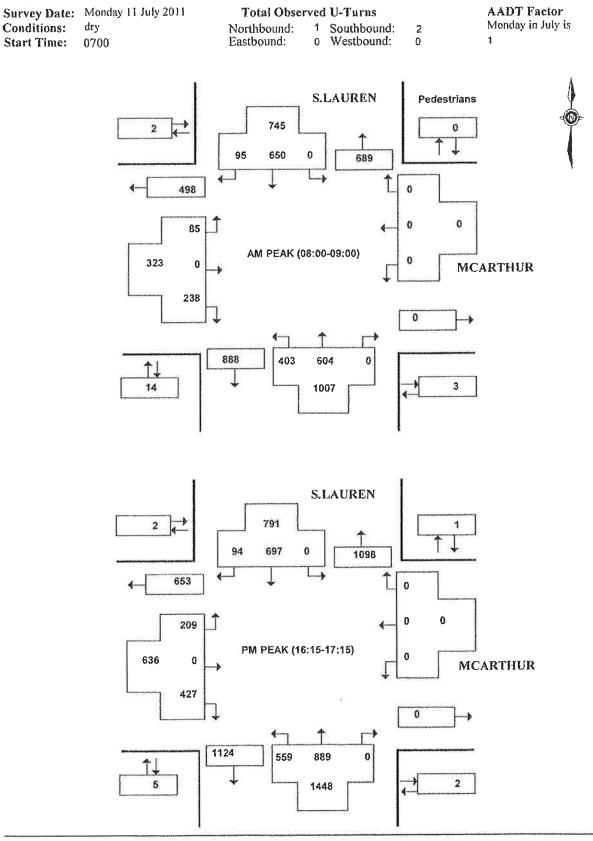
Appendix A Current Peak Hour Volumes



Count ID 2867

MCARTHUR AVE and ST. LAURENT BLVD

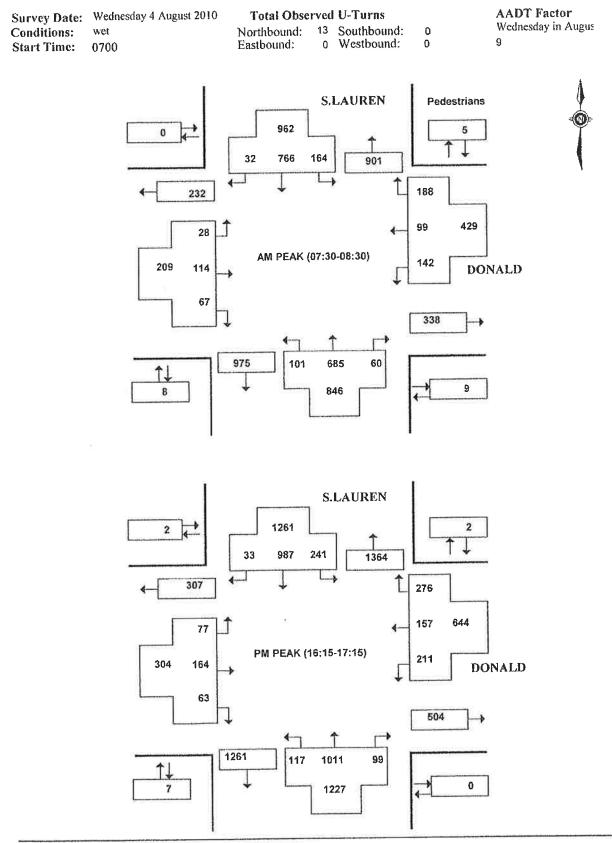
(ULRS Listing MCARTHUR & S.LAUREN)





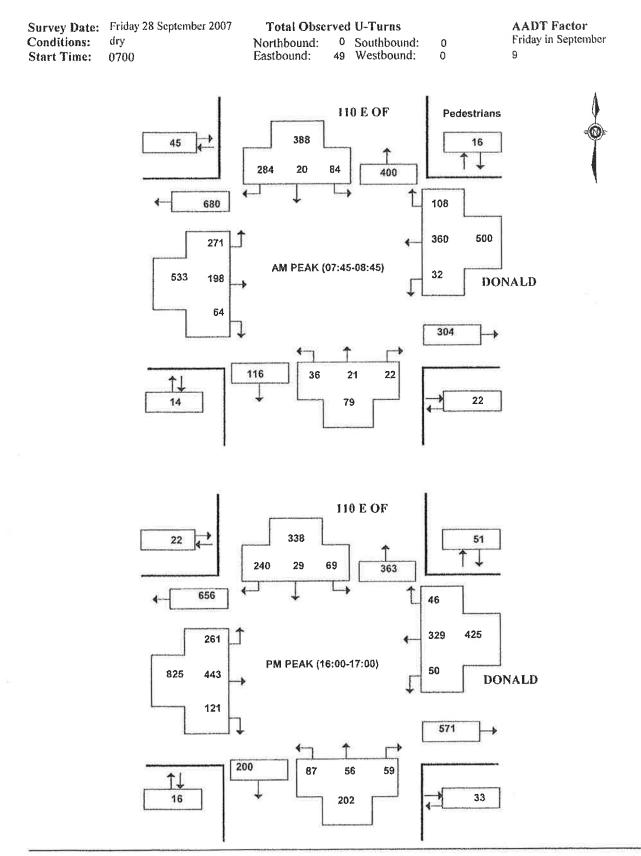
DONALD ST and ST. LAURENT BLVD

(ULRS Listing DONALD & S.LAUREN)



DONALD ST and 110 E OF ST. LAURENT

(ULRS Listing DONALD & 110 E OF)

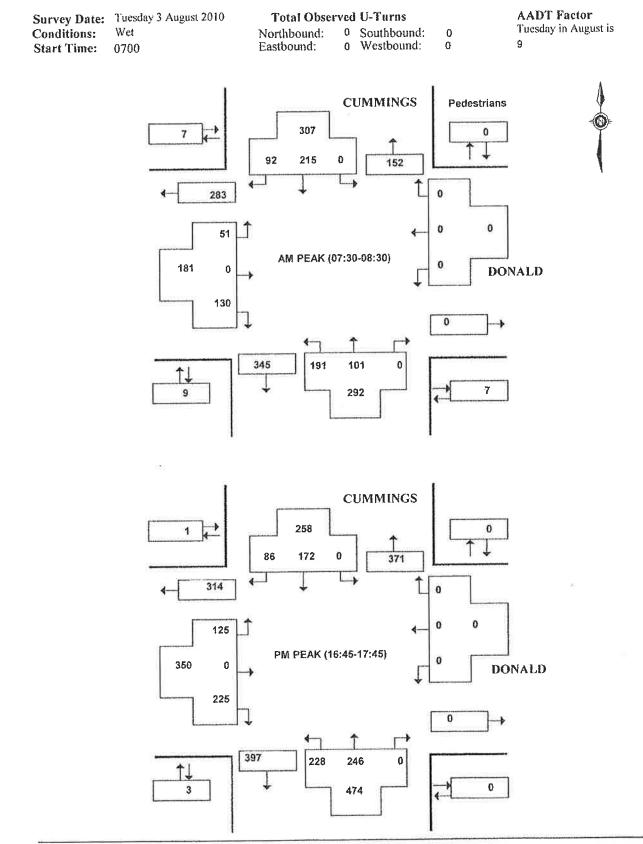


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CUMMINGS AVE and DONALD ST

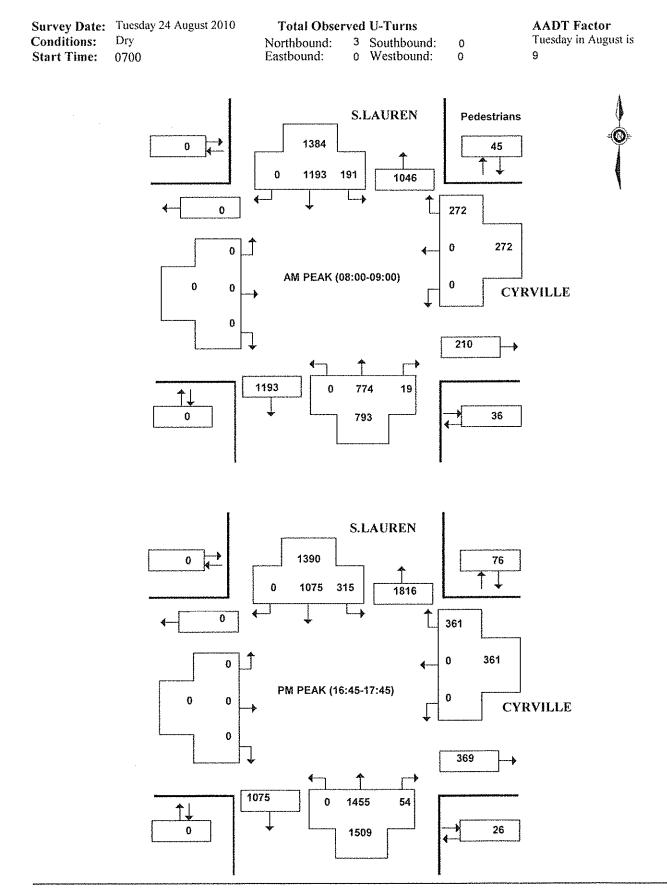
(ULRS Listing CUMMINGS & DONALD)





CYRVILLE RD and ST. LAURENT BLVD

(ULRS Listing CYRVILLE & S.LAUREN)

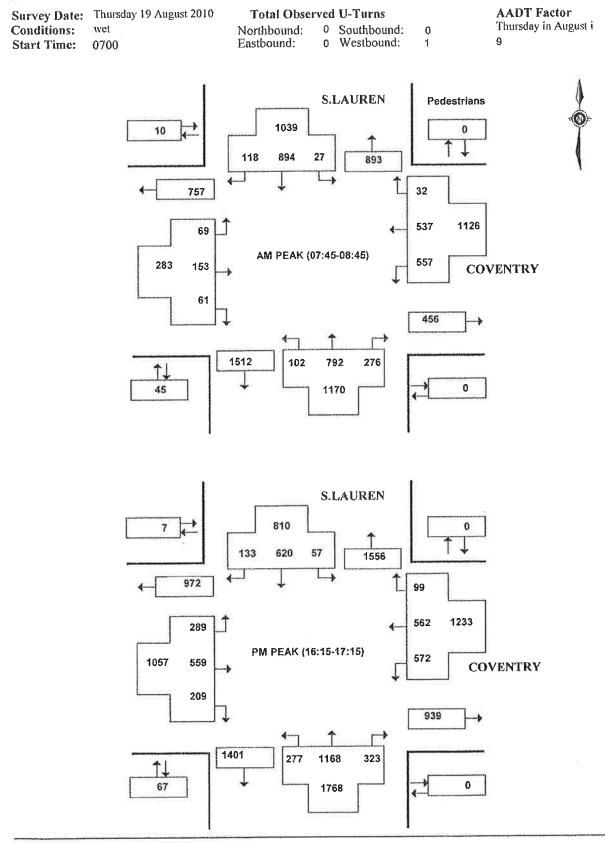




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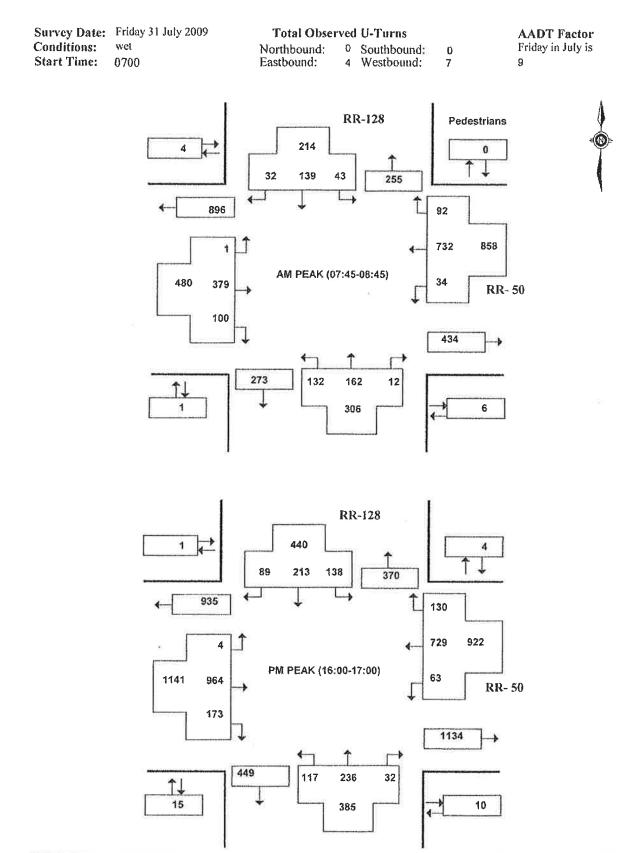
COVENTRY RD and ST. LAURENT BLVD

(ULRS Listing COVENTRY & S.LAUREN)



OGILVIE RD and CYRVILLE RD

(ULRS Listing RR- 50 & RR-128)



Appendix B SYNCHRO Capacity Analysis: Existing Conditions

AM Existing 1: St. Laurent & McArthur

	۶	\mathbf{r}	1	1	Ļ	~
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
ane Configurations	5	1	7	**	**	1
Volume (vph)	85	238	403	604	650	95
Lane Group Flow (vph)	89	251	424	636	684	100
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	10.5	15.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	75.0	50.0	50.0
Total Split (%)	25.0%	25.0%	25.0%	75.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.5	5.5	5.5	5.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes	0.11	Yes	Yes
Recall Mode	Max	Max	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.2	19.2	69.5	69.5	48.4	48.4
Actuated g/C Ratio	0.19	0.19	0.70	0.70	0.48	0.48
v/c Ratio	0.27	0.51	0.77	0.27	0.42	0.13
Control Delay	37.2	8.7	17.5	6.1	18.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	8.7	17.5	6.1	18.2	3.8
LOS Approach Dolou	D 14 1	А	В	A	B	А
Approach Delay	16.1 P			10.6	16.4	
Approach LOS	B 14.8	0.0	20.2	B 21.3	B	0.0
Queue Length 50th (m)	14.8 28.7	0.0 19.9	29.2 49.7	21.3	43.5 62.2	0.0 8.8
Queue Length 95th (m)		19.9	49.7	28.3 418.0		δ.δ
Internal Link Dist (m)	260.9		85.0	418.0	58.4	50.0
Turn Bay Length (m)	275	489	85.0 594	2356	1640	50.0 741
Base Capacity (vph)	325 0	489	594 0	2356	1640 0	/41 0
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn				0		
Storage Cap Reductn Reduced v/c Ratio	0 0.27	0 0.51	0 0.71	0.27	0 0.42	0 0.13
	0.27	0.51	U.71	0.27	0.42	0.13
Intersection Summary						
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 62 (62%), Referenced to pha	ase 2:NBTL a	nd 6:SBT, S	Start of Gree	en		
Natural Cycle: 75						
Control Type: Actuated-Coordinated	1					
Maximum v/c Ratio: 0.77						
Intersection Signal Delay: 13.6					tersection L	
Intersection Capacity Utilization 74.9	9%			IC	U Level of S	Service D
Analysis Period (min) 15						
Splits and Phases: 1: St. Laurent	& McArthur					
At						
Ø2(R)						
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25 s

50 s

AM Existing 2: St. Laurent & Donald

are Group EH FBI WBI WBI NBI NBI NBI NBI SBI		۶	-	∢	+	•	1	1	1	1	Ļ	~	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
$\begin{aligned} \text{bilme} (\psi_{P}) & 28 & 113 & 142 & 99 & 188 & 101 & 685 & 60 & 164 & 766 & 32 \\ \text{arm Type } & \text{Perm } & \text{Perm } & \text{NA} & \text{pri, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{pri, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{prin, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{Prin, pt} & \text{NA} & \text{Perm } & \text{Prin, pt} & \text{NA} & \text{Perm } \\ \text{prin, pt} & \text{NA} & \text{Perm } & \text{Prin, pt} & \text{NA} & \text{Perm } & \text{Prin, pt} & \text{NA} & \text{Prin, pt} & \text{NA} & \text{Perm } & \text{Prin, pt} & \text{NA} & $	ane Configurations	5	A 1.	N	**	1	N	**	1	5	**	*	
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Alimnum Spill (s) 30.3 30.3 11.3 30.3 30.1 11.3 30.1 30		10.0	10.0	5.0	10.0	10.0	F 0	10.0	10.0	5.0	10.0	10.0	
iolal Split (k) 35.0 35.0 13.0 44.0 17.0 55.0 17.0 55.0 155.0 455.0 cell Split (k) 29.2% 29.2% 29.2% 40.0% 40.0% 40.0% 42.8% 45.8%													
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ukled Time (s) 3.0 3.0 2.6 3.0 3.0 2.6 2.4 2.4 2.6 2.4 2.4 otal Time (s) 6.3 6.3 6.3 6.3 6.3 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 6.1 6.3 6.1 <t< td=""><td>otal Split (%)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	otal Split (%)												
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Otal List Time (s) 6.3 6.6 0.6 0.6 0.5 0.66 0.5 0.66 0.58 0.58 0.66 0.58 0.58 0.66 0.58 0.58 0.66 0.58 0.52 0.1 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.00 <	II-Red Time (s)	3.0	3.0	2.6	3.0	3.0	2.6	2.4	2.4	2.6	2.4	2.4	
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eadl ag of intervent of the second of the se													
ead-Lag Optimize? Yes Yes <thyes< th=""> Yes Yes<td></td><td></td><td></td><td></td><td>0.0</td><td>0.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thyes<>					0.0	0.5							
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ic Rato 0.26 0.54 0.76 0.15 0.43 0.25 0.38 0.07 0.37 0.41 0.04 Control Delay 56.0 38.0 65.3 37.4 7.1 7.5 16.1 1.1 8.8 15.2 0.1 Queue Delay 56.0 38.0 65.3 37.4 7.1 7.5 16.1 1.1 8.8 15.2 0.1 Queue Delay 56.0 38.0 65.3 37.4 7.1 7.5 16.1 1.1 8.8 15.2 0.1 QUEU Dength Folh (m) 65.0 38.0 65.3 37.4 7.1 7.5 16.1 1.1 8.8 15.2 0.1 Local Log MD E D E D A B A B A B A B A B A B A B A B A B A B A B A B A B A A B A A B A A B A <td>.,</td> <td></td>	.,												
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otal Delay 56.0 38.0 65.3 37.4 7.1 7.5 16.1 1.1 8.8 15.2 0.1 OS E D E D A A B A A B A A B D </td <td>Control Delay</td> <td></td> <td>38.0</td> <td></td> <td></td> <td></td> <td>7.5</td> <td></td> <td></td> <td>8.8</td> <td></td> <td></td> <td></td>	Control Delay		38.0				7.5			8.8			
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Description Description </td <td></td> <td>0.10</td> <td>0.24</td> <td>0.76</td> <td>0.09</td> <td>0.30</td> <td>0.23</td> <td>0.38</td> <td>0.07</td> <td>0.35</td> <td>0.41</td> <td>0.04</td> <td></td>		0.10	0.24	0.76	0.09	0.30	0.23	0.38	0.07	0.35	0.41	0.04	
Exploit Length: 120 cutuated Cycle Length: 120 offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green latural Cycle: 85 control Type: Actuated-Coordinated laximum v/c Ratio: 0.76 tersection Signal Delay: 19.5 intersection Capacity Utilization 70.1% ICU Level of Service C nalysis Period (min) 15 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.											•		_
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Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.76 Intersection Signal Delay: 19.5 Intersection LOS: B Intersection Capacity Utilization 70.1% 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: 2: St. Laurent & Donald # 1 # 22 (R) 17 \$ 55 \$ 4 13 \$ 35 \$ 35 \$ 4 13 \$ 16 35 \$ 10 10 10 10 10 10 10 10 10 10 10 10 10	Offset: 50 (42%), Referenced to pha	ise 2:NBTL a	nd 6:SBTL,	Start of Gre	een								
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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: 2: St. Laurent & Donald 1 1 2 2 (R) 13 2 35 2 4 4 13 2 35 2 4 4 14 2 5 2 2 1 1 2 2 2 1 1 1 2 2 2 1 1 1 2 2 2 1	/laximum v/c Ratio: 0.76												
ICU Level of Service C nalysis Period (min) 15 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 2: St. Laurent & Donald 2 01 0 02 (R) 13 s 0 35 s 13 s 0 35 s	ntersection Signal Delay: 19.5				Int	ersection L	DS: B						
nalysis Period (min) 15 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. iplits and Phases: 2: St. Laurent & Donald 1 1 2 2 (R) 1 3 2 3 3 2 4 4 1 3 2 3 5 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2 2		1%			IC	U Level of S	Service C						
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Queue shown is maximum after two cycles. iplits and Phases: 2: St. Laurent & Donald interval interval interva		canacity due	elle may be	longer									
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17 s 55 s 13 s 35 s 4	plits and Phases: 2: St. Laurent	& Donald											
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AM Existing 3: Site/Shopping Centre & Donald

Lane Group Lane Configurations Volume (vph) Lane Group Flow (vph) Turn Type Protected Phases	EBL * 271	EBT	EBR								
Volume (vph) Lane Group Flow (vph) Turn Type			LDIX	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
ane Group Flow (vph) Furn Type	271	♦	1	1	A 12	7	ĥ		ل اً	1	
Turn Type	2/1	198	64	32	360	36	21	84	20	284	
	285	208	67	34	493	38	45	0	109	299	
Protected Phases	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	
		2			6		8		4		
Permitted Phases	2		2	6		8		4		4	
Detector Phase	2	2	2	6	6	8	8	4	4	4	
Switch Phase											
Vinimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
/linimum Split (s)	38.3	38.3	38.3	38.3	38.3	30.3	30.3	30.3	30.3	30.3	
Fotal Split (s)	80.0	80.0	80.0	80.0	80.0	40.0	40.0	40.0	40.0	40.0	
Fotal Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	
fellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
₋ost 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)	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	
_ead/Lag											
_ead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	91.3	91.3	91.3	91.3	91.3	16.1	16.1		16.1	16.1	
Actuated g/C Ratio	0.76	0.76	0.76	0.76	0.76	0.13	0.13		0.13	0.13	
//c Ratio	0.46	0.15	0.06	0.04	0.20	0.24	0.19		0.63	0.66	
Control Delay	7.8	4.0	0.9	4.7	4.1	48.0	27.1		64.3	12.2	
Queue Delay	0.6	0.5	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.5	4.6	0.9	4.7	4.1	48.0	27.1		64.3	12.2	
LOS	А	А	А	А	А	D	С		E	В	
Approach Delay		6.1			4.2		36.7		26.2		
Approach LOS		А			А		D		С		
Queue Length 50th (m)	16.0	8.9	0.0	1.7	12.2	8.2	4.6		24.8	0.0	
Queue Length 95th (m)	34.9	19.1	2.6	5.3	22.6	17.6	14.5		40.9	24.3	
nternal Link Dist (m)		90.8			403.7		54.5		52.0		
Turn Bay Length (m)				27.0		20.0					
Base Capacity (vph)	614	1357	1100	826	2444	329	470		362	627	
Starvation Cap Reductn	109	802	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	0.56	0.37	0.06	0.04	0.20	0.12	0.10		0.30	0.48	
ntersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 100 (83%), Referenced to phase	e 2:EBTL	and 6:WBT	L, Start of G	Green							
Natural Cycle: 70											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.66											
ntersection Signal Delay: 12.3					tersection L(
ntersection Capacity Utilization 75.6%				IC	U Level of S	Service D					
Analysis Period (min) 15											
Splits and Phases: 3: Site/Shopping	Centre &	Donald									
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AM Existing 4: St. Laurent & Cyrville

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Lane Group	WBR	NBT	SBL	SBT	ø4
Lane Configurations	1	ተተ ጌ	5	<u> </u>	
Volume (vph)	272	774	191	1193	
Lane Group Flow (vph)	286	835	201	1256	
Turn Type	Over	NA	Prot	NA	
Protected Phases	8	2	8	6	4
Permitted Phases					
Detector Phase	8	2	8	6	
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	31.8	25.8	31.8	25.8	16.5
Total Split (s)	65.0	40.0	65.0	40.0	15.0
Total Split (%)	54.2%	33.3%	54.2%	33.3%	13%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.1	2.1	2.1	2.1	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.8	5.8	5.8	5.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None	C-Max	None
Act Effct Green (s)	20.1	88.3	20.1	88.3	
Actuated g/C Ratio	0.17	0.74	0.17	0.74	
v/c Ratio	0.64	0.23	0.71	0.35	
Control Delay	26.7	0.6	51.7	11.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	26.7	0.6	51.7	11.2	
LOS	C	A	D	B	
Approach Delay	5	0.6	U	16.8	
Approach LOS		A		B	
Queue Length 50th (m)	35.1	1.8	36.9	58.1	
Queue Length 95th (m)	58.9	2.5	m46.3	77.4	
Internal Link Dist (m)	50.7	166.6	11110.0	332.0	
Turn Bay Length (m)		100.0	130.0	552.0	
Base Capacity (vph)	876	3556	836	3583	
Starvation Cap Reductn	0/0	0	030	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.33		0.24	0.35	
Reduced MC Kallo	0.33	0.23	0.24	0.35	
Intersection Summary					
Cycle Length: 120					
Actuated Cycle Length: 120					
Offset: 10 (8%), Referenced to pha	ase 2:NBT and	6:SBT. Sta	rt of Green		
Natural Cycle: 75					
Control Type: Actuated-Coordinate	ed				
Maximum v/c Ratio: 0.71					
Intersection Signal Delay: 12.6				Int	ersection LOS: B
Intersection Capacity Utilization 44	1 1%				U Level of Service A
Analysis Period (min) 15	т. 170			iC.	O LEVEL OF SELVICE A
m Volume for 95th percentile qu	aue is matered	hy upstrop	n signal		
in volume for your percentile qu	eue is metereu	by upstied	ni siyildi.		
Splits and Phases: 4: St. Laurer	nt & Curvillo				
Splits and Phases: 4: St. Laurer	n a cyrville				•
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40 s	15 s	65 s
●		
40 s		

AM Existing 5: St. Laurent & Conventry/Ogilvie

Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay Augroup Approach LOS Queue Length 50th (m) Queue Length 95th (m) 15.5	EBT EBR ↑↑ ↑ 153 61 161 64 NA Perm 4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7	557 586 Prot 3	WBT 537 565 NA 8	WBR 7 32 34 Perm	NBL 102 107 Prot	NBT **15 792 1125	SBL	SBT ♠♠♠	SBR	
Volume (vph) 69 Lane Group Flow (vph) 73 Turn Type Prot Protected Phases 7 Permitted Phases 7 Switch Phase 7 Minimum Initial (s) 5.0 Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (%) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Lost Time Sant LOS D Approach Delay 53.1 Queue Delay 0.0 Total Delay 5.5 Internal Link Dist (m) 15.5 Internal Link Dist (m)	153 61 161 64 NA Perm 4 4 4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7	557 586 Prot 3	537 565 NA 8	32 34	102 107	792		***	_	
Lane Group Flow (vph) 73 Turn Type Prot Protected Phases 7 Permitted Phases 7 Detector Phase 7 Switch Phase 12.5 Ideated Fight System 2 Switch Phase 2.5 Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 <td< td=""><td>161 64 NA Perm 4 4 4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7</td><td>586 Prot 3</td><td>537 565 NA 8</td><td>34</td><td>107</td><td>792</td><td>27</td><td></td><td>1</td></td<>	161 64 NA Perm 4 4 4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7	586 Prot 3	537 565 NA 8	34	107	792	27		1	
Turn TypeProtProtected Phases7Permitted Phases7Detector Phase7Switch Phase7Minimum Initial (s)5.0Minimum Split (s)11.2Total Split (s)12.5%2 Yellow Time (s)2.5Lost Time (s)2.5Lost Time (s)6.2Lead/LagLagLead-Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1LOSDApproach Delay0.0Approach LOSDQueue Length 50th (m)8.4Queue Length 95th (m)10.5.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 1200.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 1200.05Control Type: Actuated-Coordinated5.16	NA Perm 4 4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7	Prot 3	NA 8			1125	21	894	118	
Turn TypeProtProtected Phases7Permitted Phases7Detector Phase7Switch Phase7Minimum Initial (s)5.0Minimum Split (s)11.2Total Split (s)12.5%2 Yellow Time (s)2.5Lost Time (s)2.5Lost Time (s)6.2Lead/LagLagLead-Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1LOSDApproach Delay0.0Approach LOSDQueue Length 50th (m)8.4Queue Length 95th (m)10.5.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 1200.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 1200.05Control Type: Actuated-Coordinated5.16	4 4 4 10.0 34.3 35.0 29.2% 29.2% 3.7 3.7	3	8	Perm	Prot	1120	28	941	124	
Protected Phases 7 Permitted Phases 7 Detector Phase 7 Switch Phase 7 Switch Phase 7 Minimum Initial (s) 5.0 Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (s) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach LOS D Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) <td< td=""><td>4 4 4 10.0 34.3 35.0 29.2% 29.2% 3.7 3.7</td><td></td><td></td><td></td><td></td><td>NA</td><td>Prot</td><td>NA</td><td>Perm</td></td<>	4 4 4 10.0 34.3 35.0 29.2% 29.2% 3.7 3.7					NA	Prot	NA	Perm	
Detector Phase 7 Switch Phase 7 Switch Phase 5.0 Minimum Initial (s) 5.0 Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (%) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay Approach Delay Approach Delay 5.5 Internal Link Dist (m) Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 25 Intersection Summary Cycle Length: 120 Actuated Cycle Length:	4 4 10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7		0		5	2	1	6		
Switch Phase Minimum Initial (s) 5.0 Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (s) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach LOS D Approach LOS D Queue Length 95th (m) 15.5 Internal Link Dist (m) Turn Bay Length (m) Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn <td>10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7</td> <td>3</td> <td>0</td> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td>6</td>	10.0 10.0 34.3 34.3 35.0 35.0 29.2% 29.2% 3.7 3.7	3	0	8					6	
Minimum Initial (s) 5.0 Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (s) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Split (c) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach LOS D Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) Total Delay Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0	34.334.335.035.029.2%29.2%3.73.7		0	8	5	2	1	6	6	
Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (s) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach LOS D Approach Delay 53.1 LOS D Approach LOS D Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn	34.334.335.035.029.2%29.2%3.73.7									
Minimum Split (s) 11.2 Total Split (s) 15.0 Total Split (s) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach LOS D Approach Delay 53.1 LOS D Approach LOS D Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Storage Cap Reductn <t< td=""><td>34.334.335.035.029.2%29.2%3.73.7</td><td>5.0</td><td>10.0</td><td>10.0</td><td>5.0</td><td>10.0</td><td>5.0</td><td>10.0</td><td>10.0</td></t<>	34.334.335.035.029.2%29.2%3.73.7	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	
Total Split (s) 15.0 Total Split (%) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lag Lead/Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 V/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Lost Delay 53.1 LOS D Approach Delay 53.1 LOS D Approach LOS D Approach Delay 53.1 LOS D Approach LOS D Approach LOS D Queue Length 95th (m) 15.5 Internal Link Dist (m) Total Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Spillback Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120	35.035.029.2%29.2%3.73.7		34.3	34.3	11.4	33.4	11.4	33.4	33.4	
Total Split (%) 12.5% 2 Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead/Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Lost Delay 53.1 LOS D Approach Delay 53.1 LOS D Approach LOS D Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Storage Cap Reductn 0 Cycle Length: 120 Actuated Cycle Length: 120 Actuated Cycle Length: 120 Actuated Cycle Length: 120	29.2%29.2%3.73.7		55.0	55.0	16.0	34.0	16.0	34.0	34.0	
Yellow Time (s) 3.7 All-Red Time (s) 2.5 Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 V/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay Approach Delay Approach LOS Queue Length 95th (m) 8.4 Queue Length 95th (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	3.7 3.7		45.8%	45.8%	13.3%	28.3%	13.3%	28.3%	28.3%	
All-Red Time (s)2.5Lost Time Adjust (s)0.0Total Lost Time (s)6.2Lead/LagLagLead-Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total LOSDApproach Delay53.1LOSDApproach Delay53.1Queue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 1200.25Intersection SummaryCycle Length: 120Offset: 0 (0%), Referenced to phase 2:NBT and 6:SENatural Cycle: 105Control Type: Actuated-Coordinated			3.7	3.7	3.7	3.7	3.7	3.7	3.7	
Lost Time Adjust (s) 0.0 Total Lost Time (s) 6.2 Lead/Lag Lag Lead-Lag Optimize? Yes Recall Mode None Act Effct Green (s) 10.1 Actuated g/C Ratio 0.08 v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay Approach Delay Approach LOS Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reduct	2.6 2.6		2.6	2.6	2.7	2.7	2.7	2.7	2.7	
Total Lost Time (s)6.2Lead/LagLagLead/Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayQueue Length 50th (m)Queue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)Queue Length 95th (m)Turn Bay Length (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 1200.25Intersection SummaryCycle Length: 120Offset: 0 (0%), Referenced to phase 2:NBT and 6:SENatural Cycle: 105Conditionated	0.0 0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lead/LagLagLead-Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach Delay0.0Queue Length 50th (m)8.4Queue Length 95th (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Reduced v/c Ratio0.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Control Ferenced to phase 2:NBT and 6:SENatural Cycle: 105Control Type: Actuated-Coordinated	6.3 6.3		6.3	6.3	6.4	6.4	6.4	6.4	6.4	
Lead-Lag Optimize?YesRecall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayDApproach LOSQueue Length 50th (m)Queue Length 95th (m)15.5Internal Link Dist (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 1200.25Intersection SummaryCycle Length: 120Offset: 0 (0%), Referenced to phase 2:NBT and 6:SENatural Cycle: 105Coordinated	Lead Lead		Lead	Lead	Lead	Lag	Lead	Lag	Lag	
Recall ModeNoneAct Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayDApproach Delay0.0Queue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Storage Cap Reductn0Cycle Length: 120Actuated Cycle Length: 120Offset: 0 (0%), Referenced to phase 2:NBT and 6:SENatural Cycle: 105Control Type: Actuated-Coordinated	Yes Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Act Effct Green (s)10.1Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayDApproach Delay0.0Queue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Reduced v/c Ratio0.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Conserverse and 6:SENatural Cycle: 105Conditionated	None None		None	None	None	C-Max	None	C-Max	C-Max	
Actuated g/C Ratio0.08v/c Ratio0.27Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayDApproach Delay0.0Queue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Reduced v/c Ratio0.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Consel Scient S	11.5 11.5		30.4	30.4	13.6	54.1	7.5	43.1	43.1	
v/c Ratio 0.27 Control Delay 53.1 Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay Approach Delay Approach Delay 8.4 Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 20 Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated 105	0.10 0.10		0.25	0.25	0.11	0.45	0.06	0.36	0.36	
Control Delay53.1Queue Delay0.0Total Delay53.1LOSDApproach DelayDApproach LOSDQueue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)TTurn Bay Length (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Reduced v/c Ratio0.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Constant of the second of	0.50 0.19		0.66	0.07	0.56	0.52	0.27	0.54	0.20	
Queue Delay 0.0 Total Delay 53.1 LOS D Approach Delay D Approach LOS D Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	56.6 1.3	44.9	36.5	0.3	60.8	25.6	79.5	22.6	5.1	
Total Delay53.1LOSDApproach DelayApproach LOSQueue Length 50th (m)8.4Queue Length 95th (m)15.5Internal Link Dist (m)Turn Bay Length (m)105.0Base Capacity (vph)291Starvation Cap Reductn0Spillback Cap Reductn0Storage Cap Reductn0Reduced v/c Ratio0.25Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Offset: 0 (0%), Referenced to phase 2:NBT and 6:SENatural Cycle: 105Control Type: Actuated-Coordinated	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LOS D Approach Delay Approach Delay Approach LOS Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	56.6 1.3		36.5	0.3	60.8	25.6	79.5	22.6	5.1	
Approach LOS Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 20 Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated 105	E A	D	D	А	E	С	E	С	А	
Approach LOS Queue Length 50th (m) 8.4 Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 20 Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated 105	43.9		39.6			28.7		22.1		
Queue Length 95th (m) 15.5 Internal Link Dist (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 20 Cycle Length: 120 20 Actuated Cycle Length: 120 00%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	D		D			С		С		
Internal Link Dist (m) Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	19.3 0.0	69.4	47.8	0.0	24.2	68.6	6.1	67.0	8.2	
Turn Bay Length (m) 105.0 Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 20 Cycle Length: 120 20 Actuated Cycle Length: 120 20 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE 20 Natural Cycle: 105 20 Control Type: Actuated-Coordinated 20	29.6 0.0	84.3	52.5	0.0	40.9	98.3	13.3	93.1	24.2	
Base Capacity (vph) 291 Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	157.6		126.0			62.8		166.6		
Starvation Cap Reductn 0 Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 0 Cycle Length: 120 120 Actuated Cycle Length: 120 0 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE 0 Natural Cycle: 105 0 Control Type: Actuated-Coordinated 0	60.0	80.0			50.0		75.0		55.0	
Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 0 Cycle Length: 120 0 Actuated Cycle Length: 120 0 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE 0 Natural Cycle: 105 0 Control Type: Actuated-Coordinated 0	810 517	811	1375	686	194	2148	136	1747	635	
Spillback Cap Reductn 0 Storage Cap Reductn 0 Reduced v/c Ratio 0.25 Intersection Summary 0 Cycle Length: 120 0 Actuated Cycle Length: 120 0 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE 0 Natural Cycle: 105 0 Control Type: Actuated-Coordinated 0	0 0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio 0.25 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	0 0	0	0	0	0	0	0	0	0	
Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	0 0		0	0	0	0	0	0	0	
Cycle Length: 120 Actuated Cycle Length: 120 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated	0.20 0.12	0.72	0.41	0.05	0.55	0.52	0.21	0.54	0.20	
Actuated Cycle Length: 120 Dffset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated										
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SE Natural Cycle: 105 Control Type: Actuated-Coordinated										
Natural Cycle: 105 Control Type: Actuated-Coordinated										
Control Type: Actuated-Coordinated	BT, Start of Green									
Maximum v/c Ratio: 0.81										
ntersection Signal Delay: 31.4	action Signal Delay: 31.4 Intersection LOS: C									
Intersection Capacity Utilization 74.7%		ICL	J Level of S	ervice D						
Analysis Period (min) 15										
Splits and Phases: 5: St. Laurent & Conventry/Ogi										
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▶ ø1	🛉 Tø2(R)	⊸ ►ø4	₹ ø3
16 s 🛛 👘	34 s	35 s	35 s
▲ ø5	• ↓ ø6 (R)	4 ≜	✓ ₀7
16 s 🛛 👘	34 s	55 s	15 s

AM Existing 6: Cyrville & Ogilvie

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT SBL SBT Lane Coufigurations 1 379 100 34 732 92 132 162 43 139 Lane Group Flow (vph) 0 400 105 36 771 97 139 184 45 180 Turn Type Perm NA Perm Perm NA Perm	
Volume (vph) 1 379 100 34 732 92 132 162 43 139 a.are Group Flow (vph) 0 400 105 36 771 97 139 184 45 180 Irun Type Perm NA Perm Perm NA NA A A A A A A A A A A A A	
ane Group Flow (vph) 0 400 105 36 771 97 139 184 45 180 urn Type Perm NA Perm Perm NA Perm Perm NA Perm NA Perm Perm NA Perm NA Perm NA Perm NA NA NA NA NA NA NA	
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Protected Phases 2 6 8 4 Permitted Phases 2 2 6 6 8 4 Detector Phase 2 2 2 6 6 8 8 4 4 Witch Phase 1 100 10.0 </td <td></td>	
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Detector Phase 2 2 2 6 6 6 8 8 4 4 wintch Phase 10.0	
Switch Phase Inimum Initial (s) 10.0 <th< td=""><td></td></th<>	
$\begin{array}{l linimum Initial (s) \\ linimum Split (s) \\ 27.2 \\ 38.1 \\ 38.$	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	
total Split (s) 75.0	
otal Split (%) 62.5% 62.5% 62.5% 62.5% 62.5% 37.5%	
ellow Time (s) 3.7	
II-Red Time (s) 2.5 2.5 2.5 2.5 2.5 2.5 3.4 3.4 3.4 3.4 ost Time Adjust (s) 0.0	
bst Time Adjust (s) 0.0<	
btal Lost Time (s) 6.2 6.2 6.2 6.2 7.1 7.1 7.1 7.1 7.1 ead/Lag ead-Lag Optimize? ecall Mode C-Max C-Max C-Max C-Max C-Max Max	
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ead/Lag C-Max C-Max C-Max C-Max C-Max Max Max <td></td>	
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ecall Mode C-Max C-Max C-Max C-Max C-Max C-Max C-Max Max Max <td></td>	
ct Effct Green (s) 68.8 68.8 68.8 68.8 68.8 37.9 3	
ctuated g/C Ratio 0.57 0.57 0.57 0.57 0.57 0.32 0.32 0.32 0.32 /c Ratio 0.22 0.12 0.07 0.40 0.11 0.41 0.33 0.13 0.33 ontrol Delay 16.3 7.7 11.9 14.9 2.5 36.6 32.9 40.8 42.9 ueue Delay 0.0 <t< td=""><td></td></t<>	
Incrementation 0.22 0.12 0.07 0.40 0.11 0.41 0.33 0.13 0.33 ontrol Delay 16.3 7.7 11.9 14.9 2.5 36.6 32.9 40.8 42.9 uueue Delay 0.0	
ontrol Delay 16.3 7.7 11.9 14.9 2.5 36.6 32.9 40.8 42.9 ueue Delay 0.0 <	
nueue Delay 0.0 D <td></td>	
total Delay 16.3 7.7 11.9 14.9 2.5 36.6 32.9 40.8 42.9 OS B A B B A D C D D opproach Delay 14.5 13.5 34.5 42.5 pproach LOS B B B C D pueue Length 50th (m) 30.8 5.3 3.6 50.1 0.0 25.6 32.4 10.7 40.8 pueue Length 95th (m) 42.6 17.3 8.5 63.3 7.0 44.6 51.7 23.3 64.8 thermal Link Dist (m) 126.0 312.1 56.0 216.6 urn Bay Length (m) 60.0 60.0 30.0 75.0 ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
OS B A B B A D C D D pproach Delay 14.5 13.5 34.5 42.5 42.5 42.5 42.5 42.5 13.5 53.4.5 42.5 10.0 25.6 32.4 10.7 40.8 40.8 40.9 42.6 17.3 8.5 63.3 7.0 44.6 51.7 23.3 64.8 41.8	
pproach Delay 14.5 13.5 34.5 42.5 pproach LOS B B C D ueue Length 50th (m) 30.8 5.3 3.6 50.1 0.0 25.6 32.4 10.7 40.8 ueue Length 95th (m) 42.6 17.3 8.5 63.3 7.0 44.6 51.7 23.3 64.8 uternal Link Dist (m) 126.0 312.1 56.0 216.6 urn Bay Length (m) 60.0 30.0 75.0 ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
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Jueue Length 50th (m) 30.8 5.3 3.6 50.1 0.0 25.6 32.4 10.7 40.8 Queue Length 95th (m) 42.6 17.3 8.5 63.3 7.0 44.6 51.7 23.3 64.8 Atternal Link Dist (m) 126.0 312.1 56.0 216.6 urn Bay Length (m) 60.0 30.0 75.0 ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
Aueue Length 95th (m) 42.6 17.3 8.5 63.3 7.0 44.6 51.7 23.3 64.8 Atternal Link Dist (m) 126.0 312.1 56.0 216.6 urn Bay Length (m) 60.0 60.0 30.0 75.0 ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
Iternal Link Dist (m) 126.0 312.1 56.0 216.6 urn Bay Length (m) 60.0 60.0 30.0 75.0 ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
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ase Capacity (vph) 1854 882 518 1943 883 342 559 339 553	
pillback Cap Reductn 0 0 0 0 0 0 0 0 0 0	
torage Cap Reductn 0 0 0 0 0 0 0 0 0 0	
educed v/c Ratio 0.22 0.12 0.07 0.40 0.11 0.41 0.33 0.13 0.33	
tersection Summary	
ycle Length: 120	
ctuated Cycle Length: 120	
offset: 36 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
atural Cycle: 70	
ontrol Type: Actuated-Coordinated	
aximum v/c Ratio: 0.41	
tersection Signal Delay: 20.5 Intersection LOS: C	
nalysis Period (min) 15	
plits and Phases: 6: Cyrville & Ogilvie	
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AM Existing 7: Cummings & Donald

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Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	5	1	5	•	
Volume (vph)	51	130	191	101	1 215
Lane Group Flow (vph)	54	137	201	106	323
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4	1 Onn	1 Onn	2	6
Permitted Phases		4	2	2	Ū
Detector Phase	4	4	2	2	6
Switch Phase	г	т	2	2	U
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	20.7	20.7	32.1	32.1	32.1
Total Split (s)	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.3	3.3 3.4	3.8	3.3 3.8	3.3 3.8
Lost Time Adjust (s)	0.0	0.0	3.0 0.0	3.0 0.0	3.8 0.0
, , ,	6.7	0.0 6.7	0.0 7.1	7.1	7.1
Total Lost Time (s)	0.7	0.7	7.1	1.1	1.1
Lead/Lag					
Lead-Lag Optimize?	Nama	Nama	Max	Mass	Mass
Recall Mode	None	None	Max	Max	Max
Act Effct Green (s)	10.0	10.0	31.1	31.1	31.1
Actuated g/C Ratio	0.20	0.20	0.62	0.62	0.62
v/c Ratio	0.16	0.34	0.32	0.10	0.30
Control Delay	17.6	6.7	8.9	6.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	6.7	8.9	6.5	6.6
LOS	В	А	А	А	A
Approach Delay	9.8			8.1	6.6
Approach LOS	А			А	А
Queue Length 50th (m)	3.9	0.0	9.5	4.2	12.4
Queue Length 95th (m)	10.8	10.3	21.3	9.8	24.7
Internal Link Dist (m)	403.7			123.9	126.8
Turn Bay Length (m)			55.0		
Base Capacity (vph)	623	627	623	1110	1074
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	0.09	0.22	0.32	0.10	0.30
Intersection Summary					
Cycle Length: 50					
Actuated Cycle Length: 49.9					
Natural Cycle: 55					
Control Type: Actuated-Uncoordina	atod				
Maximum v/c Ratio: 0.34	aleu				
				امل	torcoction L
Intersection Signal Delay: 7.9	40/				tersection L
Intersection Capacity Utilization 58	0.470			IC	U Level of S
Analysis Period (min) 15					
Splits and Phases: 7: Cummings	s & Donald				
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PM Existing 1: St. Laurent & McArthur

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	3	1	5	*	*	7
Volume (vph)	209	427	559	889	697	94
Lane Group Flow (vph)	220	449	588	936	734	99
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	10.5	15.5	22.5	22.5
Total Split (s)	25.0	25.0	40.0	95.0	55.0	55.0
Total Split (%)	20.8%	20.8%	33.3%	79.2%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.5	5.5	5.5	5.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max	Max	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.2	19.2	89.5	89.5	55.2	55.2
Actuated g/C Ratio	0.16	0.16	0.75	0.75	0.46	0.46
v/c Ratio	0.81	0.73	0.91	0.37	0.47	0.14
Control Delay	72.0	11.9	24.1	1.8	24.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	11.9	24.1	1.8	24.7	4.7
LOS	E	В	С	А	С	А
Approach Delay	31.7			10.4	22.3	
Approach LOS	С			В	С	
Queue Length 50th (m)	50.6	0.0	7.4	6.0	64.6	0.0
Queue Length 95th (m)	#89.9	32.2	#51.5	6.1	85.2	10.2
Internal Link Dist (m)	260.9			418.0	58.4	
Turn Bay Length (m)			85.0			50.0
Base Capacity (vph)	271	616	703	2528	1560	725
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	0.81	0.73	0.84	0.37	0.47	0.14
Interception Cummers						
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120			Charl - 5 C			
Offset: 98 (82%), Referenced to p	mase 2:NBTL a	na e:281, 5	Start of Gree	en		
Natural Cycle: 90 Central Type: Actuated Coordinat	lad					
Control Type: Actuated-Coordinat	led					
Maximum v/c Ratio: 0.91					Launa - 11 .	00. 0
Intersection Signal Delay: 18.4	=				tersection L	
Intersection Capacity Utilization 8	5.4%			IC	U Level of S	Service E
Analysis Period (min) 15	de ees Y		langer			
# 95th percentile volume exceed		eue may be	longer.			
Queue shown is maximum after	er two cycles.					
Splits and Phases: 1: St. Laure	nt & McArthur					
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PM Existing 2: St. Laurent & Donald

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u>م</u>	≜t s	5	*	1	5	* *	1	5	*	1	
Volume (vph)	77	164	211	157	276	117	1011	99	241	987	33	
Lane Group Flow (vph)	81	239	222	165	291	123	1064	104	254	1039	35	
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	
Protected Phases		4	3	8		5	2		1	6		
Permitted Phases	4		8		8	2		2	6		6	
Detector Phase	4	4	3	8	8	5	2	2	1	6	6	
Switch Phase												
Vinimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Vinimum Split (s)	30.3	30.3	11.3	30.3	30.3	11.3	30.1	30.1	11.3	30.1	30.1	
Total Split (s)	34.0	34.0	16.0	50.0	50.0	20.0	50.0	50.0	20.0	50.0	50.0	
Total Split (%)	28.3%	28.3%	13.3%	41.7%	41.7%	16.7%	41.7%	41.7%	16.7%	41.7%	41.7%	
Yellow Time (s)	3.3	3.3	3.7	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0	2.6	3.0	3.0	2.6	2.4	2.4	2.6	2.4	2.4	
ost 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)	6.3	6.3	6.3	6.3	6.3	6.3	6.1	6.1	6.3	6.1	6.1	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	14.5	14.5	30.5	30.5	30.5	59.4	49.8	49.8	76.8	61.1	61.1	
Actuated g/C Ratio	0.12	0.12	0.25	0.25	0.25	0.50	0.42	0.42	0.64	0.51	0.51	
v/c Ratio	0.58	0.56	0.88	0.19	0.50	0.40	0.76	0.15	0.65	0.60	0.04	
Control Delay	65.8	44.9	70.7	32.3	7.5	10.0	24.0	1.7	19.0	19.7	0.5	
Queue Delay	0.0	0.0	10.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	65.8	44.9	81.3	32.3	7.6	10.0	24.0	1.7	19.0	19.7	0.5	
LOS	E	D	F	С	А	А	С	А	В	В	А	
Approach Delay		50.2		37.8			20.9			19.0		
Approach LOS		D		D			С			В		
Queue Length 50th (m)	18.5	23.2	47.0	17.0	2.6	7.4	84.1	0.7	9.4	105.5	0.0	
Queue Length 95th (m)	32.8	33.8	#78.2	24.6	32.6	9.8	159.0	3.0	m42.6	137.4	m0.4	
nternal Link Dist (m)		320.4		90.8			332.0			418.0		
Turn Bay Length (m)	40.0				46.0	90.0			120.0		40.0	
Base Capacity (vph)	266	783	252	1234	718	365	1408	705	392	1726	826	
Starvation Cap Reductn	0	0	20	0	64	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	0.30	0.31	0.96	0.13	0.44	0.34	0.76	0.15	0.65	0.60	0.04	
ntersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 32 (27%), Referenced to pl Natural Cycle: 95		nd 6:SBTL,	Start of Gre	een								
Control Type: Actuated-Coordinate Maximum v/c Ratio: 0.88	ed											
Intersection Signal Delay: 26.0				Int	ersection L	DS: C						
Intersection Capacity Utilization 85	1%				U Level of S							
Analysis Period (min) 15				10								
 95th percentile volume exceed 	s canacity our	eue may be	longer									
Queue shown is maximum afte		cae may be	longer.									
m Volume for 95th percentile que		by upstrea	m signal.									
			Ū.									
	t & Danald											
Splits and Phases: 2: St. Laurer	nt & Donald					- 1		—				
	nt & Donald					•	Ø3	2	▶ @4			

™ ø1	🕴 🗋 🖉 🖉 🖉	🖌 ø3	<u>→₀</u> 4	
20 s	50 s	16 s 👘 👘	34 s	
▲ ₀5	∎ ∰ ∞6 (R)	₽ _{Ø8}		
20 s	50 s	50 s		

PM Existing 3: Site/Shopping Centre & Donald

	۶	-	\mathbf{F}	4	-	1	Ť	1	Ŧ	-	
ane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
ane Configurations	5	•	1	N	≜1 5	5	î,		ۍ ۲	1	
/olume (vph)	261	443	121	50	329	87	56	69	29	240	
ane Group Flow (vph)	275	466	127	53	394	92	121	0	104	253	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases		2			6		8		4		
Permitted Phases	2	-	2	6	Ū	8	Ū	4		4	
Detector Phase	2	2	2	6	6	8	8	4	4	4	
witch Phase	Z	2	2	0	0	U	0	7	7	т	
finimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
	38.3	38.3	38.3	38.3	38.3	30.3	30.3	30.3	30.3	30.3	
1inimum Split (s)											
otal Split (s)	80.0	80.0	80.0	80.0	80.0	40.0	40.0	40.0	40.0	40.0	
otal Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	
ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
II-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	
ead/Lag											
ead-Lag Optimize?											
ecall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
ct Effct Green (s)	91.5	91.5	91.5	91.5	91.5	15.9	15.9		15.9	15.9	
ctuated g/C Ratio	0.76	0.76	0.76	0.76	0.76	0.13	0.13		0.13	0.13	
/c Ratio	0.40	0.34	0.12	0.08	0.16	0.58	0.49		0.70	0.61	
ontrol Delay	6.3	5.0	0.6	4.9	4.2	62.4	36.0		72.3	12.1	
ueue Delay	0.3	0.7	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
otal Delay	6.7	5.7	0.6	4.9	4.2	62.4	36.0		72.3	12.1	
OS	A	A	A	A	A	E	D		E	В	
pproach Delay		5.3			4.3	-	47.4		29.6	-	
pproach LOS		A			A		D		C		
ueue Length 50th (m)	15.7	25.3	0.0	2.6	10.2	20.7	16.9		23.9	0.0	
ueue Length 95th (m)	28.6	41.9	m2.7	7.8	19.2	35.4	33.1		39.9	21.8	
iternal Link Dist (m)	20.0	90.8	1112.7	7.0	407.4	55.4	54.5		52.0	21.0	
urn Bay Length (m)		70.0		27.0	407.4	20.0	J4.J		JZ.0		
ase Capacity (vph)	689	1360	1092	629	2524	336	473		316	592	
tarvation Cap Reductn	113	556	1092	029	2324	550 0	473		0	0	
pillback Cap Reductn	0	0	0	0	0	0	0		0	0	
torage Cap Reductn	0	0	0	0	0	0	0		0	0	
educed v/c Ratio	0.48	0.58	0.12	0.08	0.16	0.27	0.26		0.33	0.43	
tersection Summary											
ycle Length: 120											
ctuated Cycle Length: 120											
iffset: 80 (67%), Referenced to phase	2.FBTL a	nd 6·WRTI	Start of Gr	een							
atural Cycle: 70	D I _ 0			0011							
ontrol Type: Actuated-Coordinated											
laximum v/c Ratio: 0.70											
itersection Signal Delay: 14.4				In	tersection L	nc. d					
tersection Capacity Utilization 78.8%				IC	U Level of S	Dervice D					
nalysis Period (min) 15 Volume for 95th percentile queue	is metered	l by upstrea	m signal.								
plits and Phases: 3: Site/Shopping	Centre &	Donald									
· · · · ·								<u>الم</u>			
🜩ø2 (R)							Ľ	♦ ø4			
(C)											
ທ 🔬 👘								n			
30 s							4	0.5			

80 s

PM Existing 4: St. Laurent & Cyrville

	•	1	1	Ŧ	
Lane Group	WBR	NBT	SBL	SBT	ø4
Lane Configurations	1	##%	5	##%	
Volume (vph)	361	1455	315	1075	
Lane Group Flow (vph)	380	1589	332	1132	
Turn Type	Over	NA	Prot	NA	
Protected Phases	8	2	8	6	4
Permitted Phases					
Detector Phase	8	2	8	6	
Switch Phase					
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.8	25.8	31.8	25.8	16.5
Total Split (s)	68.0	37.0	68.0	37.0	15.0
Total Split (%)	56.7%	30.8%	56.7%	30.8%	13%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.1	2.1	2.1	2.1	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.8	5.8	5.8	5.8	
Lead/Lag	0.0	0.0	0.0	0.0	
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None	C-Max	None
Act Effct Green (s)	30.7	77.7	30.7	77.7	
Actuated g/C Ratio	0.26	0.65	0.26	0.65	
v/c Ratio	0.28	0.65	0.20	0.85	
Control Delay	30.9	2.1	35.7	20.8	
Queue Delay	30.9 0.0	2.1	35.7 0.0	20.8	
	30.9	2.1	35.7	20.8	
Total Delay LOS	30.9 C	2.1 A	35.7 D	20.8 C	
	C	A 2.1	Ŭ	24.2	
Approach Delay					
Approach LOS	FF 0	A	77 1	C	
Queue Length 50th (m)	55.0	5.6	77.1	59.3	
Queue Length 95th (m)	83.7	m36.1	m52.2	m102.9	
Internal Link Dist (m)		166.6	100.0	332.0	
Turn Bay Length (m)	040	0440	130.0	0454	
Base Capacity (vph)	912	3112	878	3154	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.42	0.51	0.38	0.36	
Intersection Summary					
Cycle Length: 120					
Actuated Cycle Length: 120					
Offset: 13 (11%), Referenced to ph	naso 2·NRT an	d 6.SBT SI	art of Gree	n	
Natural Cycle: 80	IDI TON.2 SERVICE	u u.JDT, SI		11	
	d				
Control Type: Actuated-Coordinate Maximum v/c Ratio: 0.77	u				
				1	propertion LOC. D
Intersection Signal Delay: 14.7	40/				ersection LOS: B
Intersection Capacity Utilization 64	.4%			ICI	J Level of Service C
Analysis Period (min) 15		have a second second	a alaural		
m Volume for 95th percentile que	eue is metered	by upstrea	m signal.		
Splits and Phases: 4: St. Lauren	it & Cyrville				
				14	
▶ T ø2(R)		- 4	•ø4	۶.	18
37 s		15 s		68 s	
01.0		105		00 5	

ø6 (R)

PM Existing 5: St. Laurent & Conventry/Ogilvie

Volume (vph) 289 559 209 572 562 99 277 11.68 57 Lane Group Flow (vph) 304 588 20 602 592 104 292 1569 60 Tum Type Prot NA Perm NA Perm NA Perm Protected Phases 7 4 3 8 5 2 1 Detector Phase 7 4 4 3 8 5 2 1 Switch Phase 7 4 4 3 8 8 5 2 1 Minimum Split (s) 11.2 34.3 34.3 11.4 33.4 11.4 Total Split (s) 21.7% 29.2% 21.7% 29.2% 20.0% 35.0 35.0 24.0 44.0 15.0 Total Split (s) 21.7% 29.2% 21.7% 29.2% 20.0% 36.7% 12.5% 2 26 2.6 2.6 <td< th=""><th>+ `+ `< + '</th><th>* *</th><th>↑ ≻ ↓ イ</th></td<>	+ `+ `< + '	* *	↑ ≻ ↓ イ
Volume (vph) 289 559 209 572 562 99 277 1168 57 Lare Group Flow (vph) 304 558 220 602 592 104 292 1569 60 Turn Type Prot NA Perm Na Perm Prot NA Perm Na Perm Na Na Prot NA Prot Na Perm Na Na Prot Na Perm Na Na Perm Na Na Prot Na Na Prot Na Na Prot Na Na Perm Na Na Na Prot Na Na Perm Na Na Na Prot Na Na Perm Na Na Na Prot Na	EBT EBR WBL WBT V	WBR NBL	NBT SBL SBT SBR
Tokume (ph) 289 559 209 572 562 99 277 1168 57 ane Group Flow (ph) 304 588 220 602 592 104 292 1569 600 tran Type Prot NA Perm Prot NA NA Tot Tot Tot Tot Tot Tot Tot Sold	ቀቀ ፖ ካካ ቀቀ	7 3 4	ላኈ ኻላላላ ፖ
Unit Type: Prot NA Perm Prot NA Perm Prot NA Prot rolected Phases 7 4 3 8 5 2 1 rolected Phases 7 4 4 3 8 5 2 1 rolected Phases 7 4 4 3 8 5 2 1 rolected Phases 7 4 4 3 8 8 5 2 1 witch Phase 112 343 313 114 334 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 114 134 124 124 242 24			
Totacká Phases 7 4 3 8 5 2 1 emitted Phases 7 4 4 8 5 2 1 witch Phase 7 4 4 3 8 8 5 2 1 witch Phase 7 4 4 3 8 8 5 2 1 hinhum Split (s) 11.2 34.3 34.3 11.4 33.4 11.4 otal Split (s) 21.7% 29.2% 28.4 6.4	588 220 602 592	104 292	1569 60 653 140
rolecical phases 7 4 3 8 5 2 1 emitted Phases 7 4 4 3 8 8 5 2 1 witch Phase 50 10.0 50.0 10.0 50.0 10.0 50.0 10.0 50.0 10.0 50.0 10.0 10.0 50.0 10.0 11.4 33.4 11.4 0.0 15.0 50.0 50.0 50.0 36.0 36.0 10.0 10.0 15.0 10.0 10.0 15.0 10.0 10.0 15.0 10.0 10.0 10.0 15.0 10.0 10.0 15.0 10.0<	NA Perm Prot NA P	Perm Prot	NA Prot NA Perm
emilted Phases 4 8 elector Phase 7 4 4 3 8 5 2 1 linimum Initial (s) 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0	4 3 8	5	
elector Phase 7 4 4 3 8 8 5 2 1 witch Phase 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 10.0 5.0 10.0 1	4	8	6
Inimum Initial (s) 5.0 10.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 10.0 5.0 20.0 5.0 20.0 5.0 20.0 3.3.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.4 33.4 11.1 13.4 13.1	4 4 3 8		2 1 6 6
Inimum Spitt (s) 11.2 34.3 34.3 11.2 34.3 34.3 11.4 33.4 11.4 total Spitt (s) 26.0 35.0 35.0 35.0 35.0 35.0 35.0 36.0 36.0 36.0 36.0 36.0 36.0 36.0 36.0 36.0 37.0 3.7 <td></td> <td></td> <td></td>			
lininum Spitt (s) 11.2 34.3 34.3 11.2 34.3 34.3 11.4 33.4 11.4 ctal Spitt (s) 26.0 35.0 35.0 26.0 35.0 25.0 20.0% 44.0 15.0 ctal Spitt (%) 21.7% 29.2% 29.2% 20.7% 20.0% 67.7% 17.3 37	10.0 10.0 5.0 10.0	10.0 5.0	10.0 5.0 10.0 10.0
total Split (s) 26.0 35.0 25.0 24.0 44.0 15.0 total Split (s) 21.7% 29.2% 21.7% 29.2% 29.2% 20.0% 36.7% 12.5% 2 total Split (s) 2.5 2.6 2.			
total Spift (%) 21.7% 29.2% 29.2% 29.2% 20.0% 36.7% 12.5% 2 ellow Time (s) 3.7 3.6 3.6 3.6 3.6 3.6 3.6 3.6 7.7 7 45.8 1.1 15.8 5.2 9.4.			
ellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7			
II. Red Time (s) 2.5 2.6 2.6 2.6 2.7 2.7 2.7 ost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ost Time Adjust (s) 0.2 6.3 6.3 6.3 6.4 6.4 6.4 aadLag Optimize? Yes			
six Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			
blal Lost Time (s) 6.2 6.3 6.3 6.4 6.4 6.4 aad/Lag Lead Lead Lag Lead Lead </td <td></td> <td></td> <td></td>			
bad/Lag Lag Lead Ad-Lag Ves Yes Yes </td <td></td> <td></td> <td></td>			
aad-Lag Optimize? Yes Yes <td></td> <td></td> <td></td>			
ecall Mode None None None None None C-Max None C ct Effct Green (s) 22.6 26.3 26.3 22.2 25.9 17.6 40.7 8.0 ct Effct Green (s) 0.19 0.22 0.22 0.18 0.22 0.22 0.15 0.34 0.07 c Ratio 0.49 0.79 0.44 0.99 0.81 0.22 1.18 0.96 0.54 ontrol Delay 47.6 52.5 8.5 77.7 45.8 1.1 158.4 52.6 94.1 ueue Delay 47.6 53.6 8.5 77.7 45.8 1.1 158.4 52.6 94.1 DS D D A E D F D F pproach LOS D E E E E E E E E E E E E E E E E E E E			
ct Effct Green (s) 22.6 26.3 26.3 22.2 25.9 25.9 17.6 40.7 8.0 ctuated g/C Ratio 0.19 0.22 0.22 0.18 0.22 0.22 0.15 0.34 0.07 c Ratio 0.49 0.79 0.44 0.99 0.81 0.22 1.18 0.96 0.54 ontrol Delay 47.6 52.5 8.5 77.7 45.8 1.1 158.4 52.6 94.1 ueue Delay 0.0 1.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 total Delay 47.6 53.6 8.5 77.7 45.8 1.1 158.4 52.6 94.1 D D A E D A F D F pproach Delay 43.0 57.0 69.2 pproach LOS D A E E E ueue Length 50th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 -82.2 -141.6 10.8 ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 ternal Link Dist (m) 15.6 126.0 62.8 Total Delay 157.6 50.0 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0 75 0 0 0 0 0 0 0 0 ol 0 0 0 0 0 0 0 ol 0 0 0 0 ol 0 0 0 0 tarvation Zap Reductn 0 0.0 0 0 0 0 0 torage Cap Reductn 0 0.49 0.80 0.2 0.0 ternal Link Dist (m) 0.50 1524 607 810 510 248 1637 121 tarvation Cap Reductn 0 0.0 0 0 0 0 0 0 0 tarvation Cap Reductn 0 0.0 0 0 0 0 0 0 torage Cap Reductn 0 0.0 0 0 0 0 0 0 torage Cap Reductn 0 0.0 0 0 0 0 0 0 tersection Sumany ycle Length: 120 ttersection Signal Delay: 53.8 Intersection LOS: D tersection Signal Delay: 53.8 Intersection LOS: D Volume exceeds capacity, queue may be longer.			
ctuated g/C Ratio 0.19 0.22 0.22 0.18 0.22 0.15 0.34 0.07 c Ratio 0.49 0.79 0.44 0.99 0.81 0.22 1.18 0.96 0.54 ontrol Delay 47.6 52.5 8.5 77.7 45.8 1.1 158.4 52.6 94.1 ueue Delay 0.0 1.1 0.0 0.0 0.0 0.0 0.0 0.0 otal Delay 47.6 53.6 8.5 77.7 45.8 1.1 158.4 52.6 94.1 OS D D A E D A F D F F oproach LOS D A E D A F D F F ueue Length S0th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 #17.1 62.8 75.0 ueue Length S0th (m) 105.0 60.0 80.0 50.0 75.0 62.8 75.0 urm Bay Length (m) 105.0 67.5 60.0 80			
c Ratio 0.49 0.79 0.44 0.99 0.81 0.22 1.18 0.96 0.54 ontrol Delay 47.6 52.5 8.5 77.7 45.8 1.1 158.4 52.6 94.1 ueue Delay 0.0 1.1 0.0 0.			
ontrol Delay 47.6 52.5 8.5 77.7 45.8 1.1 158.4 52.6 94.1 ueue Delay 0.0 1.1 0.0			
bueue Delay 0.0 1.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 total Delay 47.6 53.6 8.5 77.7 45.8 1.1 158.4 52.6 94.1 OS D D A E D A F D F pproach Delay 43.0 57.0 69.2 E E Useue Length 50th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 -82.2 -141.6 10.8 ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 urn Bay Length (m) 105.0 60.0 80.0 510 248 1637 121 tarvation Cap Reductn 0			
bial Delay 47.6 53.6 8.5 77.7 45.8 1.1 158.4 52.6 94.1 OS D D A E D A F D F pproach Delay 43.0 57.0 69.2 E E D D D A F D F D D D D D A F D F D D D D A F D D F D D D D D A D D A D <td< td=""><td></td><td></td><td></td></td<>			
D D A E D A F D F pproach Delay 43.0 57.0 69.2 9000000000000000000000000000000000000			
approach Delay 43.0 57.0 69.2 oproach LOS D E E ueue Length 50th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 -82.2 -141.6 10.8 ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 arm Bay Length (m) 105.0 60.0 80.0 50.0 62.8 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 aravation Cap Reductn 0			
Deproach LOS D E E ueue Length 50th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 -82.2 -141.6 10.8 ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 ternal Link Dist (m) 157.6 126.0 62.8		A F	
ueue Length 50th (m) 33.9 67.7 1.3 -83.0 47.2 0.0 -82.2 -141.6 10.8 ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 ternal Link Dist (m) 157.6 126.0 62.8 - 62.8 - urn Bay Length (m) 105.0 60.0 80.0 50.0 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0 75 0 <t< td=""><td></td><td></td><td></td></t<>			
ueue Length 95th (m) 48.6 87.4 20.8 #120.0 64.0 0.0 #135.6 #171.6 29.7 ternal Link Dist (m) 105.0 60.0 80.0 50.0 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0 118 0 0 0 0 118 118 118 118 118 118 118 118			
ternal Link Dist (m) 157.6 126.0 62.8 7 urn Bay Length (m) 105.0 60.0 80.0 50.0 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0 </td <td></td> <td></td> <td></td>			
urn Bay Length (m) 105.0 60.0 80.0 50.0 75.0 ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0		0.0 #135.6 #	
ase Capacity (vph) 618 810 524 607 810 510 248 1637 121 tarvation Cap Reductn 0<			
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PM Existing 6: Cyrville & Ogilvie

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PM Existing 7: Cummings & Donald

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Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	5	1	5	•	
Volume (vph)	125	225	228	246	1 72
Lane Group Flow (vph)	132	237	240	259	272
Turn Type	NA	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)	20.7	20.7	32.1	32.1	32.1
Total Split (s)	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.4	3.4	3.8	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.1	7.1	7.1
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	Max	Max	Max
Act Effct Green (s)	10.8	10.8	27.7	27.7	27.7
Actuated g/C Ratio	0.21	0.21	0.53	0.53	0.53
v/c Ratio	0.38	0.47	0.43	0.27	0.30
Control Delay	20.3	6.4	11.1	8.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	6.4	11.1	8.2	6.8
LOS	С	А	В	А	А
Approach Delay	11.4			9.6	6.8
Approach LOS	В			А	А
Queue Length 50th (m)	9.9	0.0	11.7	11.4	9.3
Queue Length 95th (m)	21.4	13.0	29.0	24.8	22.3
Internal Link Dist (m)	407.4			123.9	126.8
Turn Bay Length (m)			55.0		
Base Capacity (vph)	597	688	557	943	920
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	0.22	0.34	0.43	0.27	0.30
Intersection Summary					
Cycle Length: 50					
Actuated Cycle Length: 52.4					
Natural Cycle: 55					
Control Type: Actuated-Uncoordina	hated				
Maximum v/c Ratio: 0.47	licu				
Intersection Signal Delay: 9.5				In	tersection L
Intersection Capacity Utilization 59	9%				CU Level of S
Analysis Period (min) 15				10	
Splits and Phases: 7: Cummings	& Donald				
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Appendix C SYNCHRO Capacity Analysis: Projected Conditions

AM Projected 1: St. Laurent & McArthur

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	5	1	5	**	**	1	
Volume (vph)	85	240	404	608	656	95	
Lane Group Flow (vph)	89	253	425	640	691	100	
Turn Type	NA	Perm	pm+pt	NA	NA	Perm	
Protected Phases	4		5	2	6		
Permitted Phases		4	2			6	
Detector Phase	4	4	5	2	6	6	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	27.8	27.8	10.5	15.5	22.5	22.5	
Total Split (s)	25.0	25.0	25.0	75.0	50.0	50.0	
Total Split (%)	25.0%	25.0%	25.0%	75.0%	50.0%	50.0%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.5	2.5	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.8	5.8	5.5	5.5	5.5	5.5	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?	Мак	Max	Yes	C May	Yes	Yes	
Recall Mode	Max	Max	None	C-Max	C-Max	C-Max	
Act Effct Green (s)	19.2	19.2 0.19	69.5	69.5 0.70	48.3 0.48	48.3 0.48	
Actuated g/C Ratio v/c Ratio	0.19 0.27	0.19	0.70 0.78	0.70	0.48	0.48	
Control Delay	0.27 37.2	0.52	0.78	0.27	0.42 18.3	0.14 3.8	
Queue Delay	37.2 0.0	8.7 0.0	18.1 0.0	0.1 0.0	0.0	3.8 0.0	
Total Delay	37.2	8.7	18.1	0.0 6.1	18.3	3.8	
LOS	57.2 D	0.7 A	10.1 B	0.1 A	10.3 B	3.0 A	
Approach Delay	16.1	A	D	10.9	ы 16.5	A	
Approach LOS	B			В	B		
Queue Length 50th (m)	14.8	0.0	29.4	21.4	44.2	0.0	
Queue Length 95th (m)	28.7	20.1	51.0	28.6	62.9	8.8	
Internal Link Dist (m)	260.9	20.1	0110	418.0	58.4	0.0	
Turn Bay Length (m)	200.7		85.0	. 10.0	50.1	50.0	
Base Capacity (vph)	325	490	590	2356	1638	740	
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	0.27	0.52	0.72	0.27	0.42	0.14	
Intersection Summary							
Cycle Length: 100							
Actuated Cycle Length: 100							
Offset: 62 (62%), Referenced to phase	se 2:NBTL a	ind 6:SBT. S	Start of Gree	en			
Natural Cycle: 75		. = . / •					
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.78							
Intersection Signal Delay: 13.7				In	tersection L	OS: B	
Intersection Capacity Utilization 75.1	%				U Level of S		
Analysis Period (min) 15				10			
Splits and Phases: 1: St. Laurent &	& McArthur						
▲							
Ø2(R)	Ţ						
/08							
↑ ø5	i ‡	ø6 (R)					
25 .	E0						

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AM Projected 2: St. Laurent & Donald

ane Group ane Configurations /olume (vph) ane Group Flow (vph) furn Type	EBL	EBT	WBL	WBT	WBR						
/olume (vph) .ane Group Flow (vph)	×.				WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Group Flow (vph)		≜1 ,	۲.	44	1	×	* *	1	٦ ۲	* *	1
	28	116	156	100	190	101	688	60	178	760	32
	29	193	164	105	200	106	724	63	187	800	34
	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1 Gilli	4	3	8	1 GIIII	5	2	1 Chin	1	6	1 cm
Permitted Phases	4	4	8	0	8	2	2	2	6	0	6
Detector Phase	4	4		0			2	2		1	
	4	4	3	8	8	5	2	Z	1	6	6
Switch Phase	10.0	10.0									
Ainimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
/linimum Split (s)	30.3	30.3	11.3	30.3	30.3	11.3	30.1	30.1	11.3	30.1	30.1
otal Split (s)	35.0	35.0	13.0	48.0	48.0	17.0	55.0	55.0	17.0	55.0	55.0
otal Split (%)	29.2%	29.2%	10.8%	40.0%	40.0%	14.2%	45.8%	45.8%	14.2%	45.8%	45.8%
'ellow Time (s)	3.3	3.3	3.7	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7
II-Red Time (s)	3.0	3.0	2.6	3.0	3.0	2.6	2.4	2.4	2.6	2.4	2.4
ost 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
otal Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.1	6.1	6.3	6.1	6.1
ead/Lag			Lead	0.5	0.5	Lead			Lead		
0	Lag	Lag					Lag	Lag		Lag	Lag
ead-Lag Optimize?	Yes	Yes	Yes	NL	NI.	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	11.1	11.1	24.1	24.1	24.1	74.8	67.0	67.0	79.2	69.2	69.2
Actuated g/C Ratio	0.09	0.09	0.20	0.20	0.20	0.62	0.56	0.56	0.66	0.58	0.58
/c Ratio	0.26	0.54	0.84	0.15	0.43	0.25	0.38	0.07	0.40	0.41	0.04
Control Delay	55.9	38.2	74.8	37.1	7.1	7.6	16.4	1.2	9.2	15.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Delay	55.9	38.2	74.8	37.1	7.1	7.6	16.4	1.2	9.2	15.2	0.1
.OS	E	D	E	D	A	A	В	A	A	B	A
pproach Delay	L	40.5	L	37.5	А	А	14.3	Л	А	13.6	7
Approach LOS		40.5 D		57.5 D			14.3 B			13.0 B	
	(5		25.5		0.0	2.7		1.0	10.0		0.0
Queue Length 50th (m)	6.5	14.6	35.5	11.2	0.0	2.7	66.4	1.0	13.2	50.7	0.0
Queue Length 95th (m)	15.7	25.7	#67.8	18.3	21.9	5.5	91.8	3.1	23.5	72.7	0.0
nternal Link Dist (m)		320.4		90.8			332.0			418.0	
urn Bay Length (m)	40.0				46.0	90.0			120.0		40.0
Base Capacity (vph)	292	813	195	1178	657	460	1893	894	487	1955	915
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
pillback 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	0.10	0.24	0.84	0.09	0.30	0.23	0.38	0.07	0.38	0.41	0.04
	0.10	0.27	0.01	0.07	0.00	0.20	0.00	0.07	0.00	0.11	0.01
ntersection Summary											
cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 50 (42%), Referenced to pha	se 2:NBTL a	nd 6:SBTL,	Start of Gre	een							
latural Cycle: 85											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.84											
ntersection Signal Delay: 20.4				Int	ersection L	DS: C					
itersection Capacity Utilization 71.8	1%				U Level of S						
nalysis Period (min) 15	70			IC IC							
	conceller and	nuo mou ha	longor								
95th percentile volume exceeds Queue shown is maximum after t		ue may be	ionger.								
plits and Phases: 2: St. Laurent	& Donald										
\▲							~	- A			
	(B)						√ ø3	- 4	·a4		
📕 💼 🚺 💼 🗍 🖉 🖉 🖉 🖉 🖉 🖉	0.0						4 ØJ		614		
							n	OF STREET			
						1	3 s 📔	35 s			
▼ø1 ↓ 02 17s 55s ↑ ø5 ↓ ↓ ø6						1	3s ∳⊄ø8	<mark>35 s</mark>			

AM Projected 3: Site/Shopping Centre & Donald

Lane Group EEL EBI EBR WBL WBI NBL NBI SBL SBL SBR Lare Configurations 1 271 196 80 33 330 53 221 84 20 284 1 200 299 1 101 1992 Perm NA PA		≯	-	\mathbf{r}	•	-	1	1	1	Ŧ	<	
Volume (vph) 271 198 80 38 360 53 21 84 20 244 and Group Flow (vph) 285 208 84 40 493 56 49 0 109 299 Lum Type Perm NA PA A A A A A A A A A A A A A <t< th=""><th>ane Group</th><th>EBL</th><th>EBT</th><th>EBR</th><th>WBL</th><th>WBT</th><th>NBL</th><th>NBT</th><th>SBL</th><th>SBT</th><th>SBR</th><th></th></t<>	ane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Johanne (ph) 271 198 B0 38 360 53 21 B4 20 244 ane Croup Flow (ph) 225 206 84 40 493 56 49 0 100 299 fum Type Perm NA	ane Configurations	3	•	1	٦ ۲	4 16	5	1.		ដ	1	
Parm NA Perm	/olume (vph)	271			38		53	21	84	20	284	
Pateckaf Phases 2 6 8 4 4 Detector Phases 2 2 6 6 8 8 4 4 Detector Phases 2 2 2 6 6 8 8 4 4 Detector Phases 2 2 6 6 8 8 4 4 Detector Phases 2 2 6 6 8 8 4 4 Detector Phases 383 383 383 383 303 <td< td=""><td>ane Group Flow (vph)</td><td>285</td><td>208</td><td>84</td><td>40</td><td>493</td><td>56</td><td>49</td><td>0</td><td>109</td><td>299</td><td></td></td<>	ane Group Flow (vph)	285	208	84	40	493	56	49	0	109	299	
Parmited Phases 2 2 2 6 6 8 4 4 Switch Phase 0 0 0.0 10.0 10.0 10.0 10.0 10.0 Minimum Inial (s) 38.3 38.3 38.3 38.3 38.3 30.3 30.3 30.3 30.3 30.3 Ioal Split (s) 38.0 80.0 80.0 80.0 80.0 40.0 40.0 40.0 Ioal Split (s) 66.7% 66.7% 66.7% 63.3 <	Furn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	
Delector Phase 2 2 6 6 8 8 4 4 4 Infimum Initial (s) 10.0 <	Protected Phases		2			6		8		4		
Switch Phase Minimum Inslit (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	Permitted Phases	2		2	6		8		4		4	
Adminum Initial (s) 10.0 40.0 <td< td=""><td>Detector Phase</td><td>2</td><td>2</td><td>2</td><td>6</td><td>6</td><td>8</td><td>8</td><td>4</td><td>4</td><td>4</td><td></td></td<>	Detector Phase	2	2	2	6	6	8	8	4	4	4	
Minimum Split (s) 38.3 38.3 38.3 38.3 38.3 38.3 38.3 38.	Switch Phase											
Total Spitt (%) 80.0 80.0 80.0 80.0 80.0 40.0	Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Oral Spit (%) 80.0 80.0 80.0 80.0 80.0 80.0 40.0<	Minimum Split (s)	38.3	38.3	38.3	38.3	38.3	30.3	30.3	30.3	30.3	30.3	
fold Spin (%) 66.7% 66.7% 66.7% 66.7% 66.7% 67.7% 66.7% 67.7%		80.0		80.0			40.0		40.0	40.0	40.0	
elow Tine (s) 3.3 3.0 3.0		66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	
Mi-Red Time (s) 3.03.0 3.0 <td></td> <td></td> <td></td> <td></td> <td>3.3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>					3.3							
asi Time Adjusi (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.				3.0	3.0	3.0	3.0				3.0	
Time (s) 6.3	. ,											
Lead-Lag Optimize? Recall Mode Recall Mode Recall Mode C -Max C -Max C -Max C -Max C -Max None None None None None Kt Eff Green (s) 91.3 91.3 91.3 91.3 91.3 16.1 16.1 16.1 16.1 16.1 Kt Leff Green (s) 0.76 0.76 0.76 0.76 0.76 0.13 0.13 0.13 0.13 Ve Ratio 0.46 0.15 0.08 0.05 0.20 0.36 0.21 0.63 0.66 Control Delay 7.9 4.1 0.8 4.7 4.1 51.7 25.8 64.4 12.2 Dueue Delay 0.6 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Colume Delay 8.4 4.6 0.8 4.7 4.1 51.7 25.8 64.4 12.2 Dueue Delay 5.9 4.2 39.6 26.2 Kt Leff C 10 0.8 9 0.0 2.0 12.2 12.3 4.6 24.8 0.0 Dueue Length 50th (m) 16.0 8.9 0.0 2.0 12.2 12.3 4.6 24.8 0.0 Dueue Length 50th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Dueue Length 95th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Turn Bay Length (m) 27.0 20.0 Turn Bay Length (m) 27.0 20.0 Turn Bay Length (m) 27.0 20.0 Turn Bay Length (m) 27.0 20.0 Savea Capacity (vph) 6.14 1357 1103 825 2444 329 46.9 36.1 627 Savaration Cap Reductin 0.0 0 0 0 0 0 0 0 0 0 0 0 Solvage Cap Reductin 0.0 0 0 0 0 0 0 0 0 0 0 0 Reduced v/c Ratio 0.55 0.37 0.08 0.05 0.20 0.17 0.10 0.30 0.48 Intersection Summary Cycle Length: 120 Offset: 100 (33%), Referenced to phase 2.EBTL and 6.WBTL, Start of Green Valural Cycle: r.70 Control Type: Actuated Coordinated Valural Cycle: r.70 Solvage Cap Reductin 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	, , , ,											
Lead-Lag Optimize? Recal Mode C-Max C-Max C-Max C-Max None None None None None None Ket Eff Cferen (s) 91.3 91.3 91.3 91.3 91.3 16.1 16.1 16.1 16.1 16.1 Actuated g/C Ratio 0.76 0.76 0.76 0.76 0.76 0.13 0.13 0.13 0.13 Octa Delay 7.9 4.1 0.8 4.7 4.1 51.7 25.8 64.4 12.2 Queue Delay 0.6 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0												
Recall Mode C-Max C-Max C-Max C-Max C-Max C-Max None No												
Act Effci Green (s) 91.3 91.3 91.3 91.3 91.3 91.3 16.1 16.1 16.1 16.1 16.1 Actuated gC Ratio 0.76 0.76 0.76 0.76 0.76 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13		C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Actuated yC Ratio 0.76 0.76 0.76 0.76 0.76 0.76 0.76 0.76									110110			
<i>vic</i> Ratio 0.46 0.15 0.08 0.05 0.20 0.36 0.21 0.63 0.64 2. Control Delay 7.9 4.1 0.8 4.7 4.1 5.7 25.8 64.4 12.2 Deueu Delay 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0												
Control Delay 7.9 4.1 0.8 4.7 4.1 51.7 25.8 64.4 12.2 Dueue Delay 0.6 0.5 0.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>												
Date Delay 0.6 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 fold Delay 8.4 4.6 0.8 4.7 4.1 5.17 25.8 64.4 12.2 Approach Delay 5.9 4.2 39.6 26.2 Approach LOS A A A A D C E B Approach LOS A A A A D C C D C D C D												
Total Delay 8.4 4.6 0.8 4.7 4.1 51.7 25.8 64.4 12.2 LOS A A A A A A A D C E B Approach Delay 5.9 4.2 39.6 26.2 A D C C Dueue Length S0th (m) 16.0 8.9 0.0 2.0 12.2 12.3 4.6 24.8 0.0 Dueue Length S0th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Turn Bay Length (m) 90.8 403.7 54.5 55.0 52.0 153 53.0 153 53.0 100.0 0												
OS A A A A A A A D C E B Approach Delay 5.9 4.2 39.6 26.2												
Approach Delay 5.9 4.2 39.6 26.2 Approach LOS A D C Dueue Length 50th (m) 16.0 8.9 0.0 20.0 12.2 12.3 4.6 24.8 0.0 Dueue Length 50th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Dueue Length (m) 90.8 403.7 54.5 52.0 T </td <td></td>												
Approach LOS A A D C Dueue Length 50th (m) 16.0 8.9 0.0 2.0 12.2 12.3 4.6 24.8 0.0 Dueue Length 95th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Turn Bay Length (m) 27.0 20.0 3ase Capacity (vph) 614 1357 1103 826 2444 329 469 361 627 Starvation Cap Reductn 104 800 0<		A		A	A		U				D	
Dureue Length 50th (m) 16.0 8.9 0.0 2.0 12.2 12.3 4.6 24.8 0.0 Dureue Length 95th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Internal Link Dist (m) 90.8 403.7 54.5 52.0												
Dueue Length 95th (m) 35.2 19.2 2.9 6.0 22.7 23.5 14.9 40.9 24.3 Internal Link Dist (m) 90.8 403.7 54.5 52.0 52.0 Starvation Cap Reductn 104 1357 1103 826 2444 329 469 361 627 Starvation Cap Reductn 104 800 0		16.0		0.0	2.0		12.3				0.0	
ntemal Link Dist (m) 90.8 403.7 54.5 52.0 Turn Bay Length (m) 27.0 20.0 Sase Capacity (vph) 614 1357 1103 826 2444 329 469 361 627 Starvation Cap Reductn 104 800 0 0 0 0 0 0 0 0 0 0 0 Splitback Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced v/c Ratio 0.56 0.37 0.08 0.05 0.20 0.17 0.10 0.30 0.48 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Cycle Length: 120 Splits and Phases: 3: Site/Shopping Centre & Donald Splits And Shopping Centre & Donald Splits And Shopping Centre & Donald Splits And Shopping Ce												
Furn Bay Length (m) 27.0 20.0 Sase Capacity (vph) 614 1357 1103 826 2444 329 469 361 627 Starvation Cap Reductn 104 800 0<		JJ.Z		Z.7	0.0		2J.J				24.3	
Base Capacity (vph) 614 1357 1103 826 2444 329 469 361 627 Starvation Cap Reductn 104 800 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			70.0		27.0	403.7	20.0	J4.J		JZ.0		
Starvation Cap Reductin 104 800 0		614	1257	1102		2444		460		261	627	
Spillback Cap Reductin 0 <td></td>												
Storage Cap Reductin 0												
Reduced v/c Ratio 0.56 0.37 0.08 0.05 0.20 0.17 0.10 0.30 0.48 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Vatural Cycle: 70 Control Type: Actuated-Coordinated Waximum v/c Ratio: 0.66 Intersection LOS: B Intersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald Image: Step Step Step Step Step Step Step Step												
ntersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 70 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.66 ntersection Signal Delay: 12.6 Intersection LOS: B ntersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald												
Cycle Length: 120 Actuated Cycle Length: 120 Diffset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Vatural Cycle: 70 Control Type: Actuated-Coordinated Vaximum v/c Ratio: 0.66 Intersection Signal Delay: 12.6 Intersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald Splits and Phases: 3: Site/Shopping Centre & Donald Splits and Phases: 3: Site/Shopping Centre & Donald Splits and Phases: 3: Site/Shopping Centre & Donald		0.00	0.37	0.08	0.05	0.20	0.17	0.10		0.30	U.4ŏ	
Actuated Cycle Length: 120 Diffset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Vatural Cycle: 70 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.66 Intersection Signal Delay: 12.6 Intersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald Splits and Phases: 40 s	1											
Offset: 100 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 70 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.66 Intersection Signal Delay: 12.6 Intersection Copacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald 80 s	, ,											
Natural Cycle: 70 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.66 Intersection Signal Delay: 12.6 Intersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald 2 2 (R) 80 s 40 s												
Control Type: Actuated-Coordinated Waximum v/c Ratio: 0.66 Intersection Signal Delay: 12.6 Intersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald		se 2:EBTL	and 6:WBT	L, Start of C	breen							
Vaximum v/c Ratio: 0.66 ntersection Signal Delay: 12.6 Intersection Copacity Utilization 75.6% Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald Splits and Phases: 3: Site/Shopping Centre & Donald Solution Compared to the second												
ntersection Signal Delay: 12.6 Intersection LOS: B ntersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald												
ntersection Capacity Utilization 75.6% ICU Level of Service D Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald ↓ ↓ ø4 80 s ↓ ↓ ø4 40 s												
Analysis Period (min) 15 Splits and Phases: 3: Site/Shopping Centre & Donald												
Splits and Phases: 3: Site/Shopping Centre & Donald		, D			IC	CU Level of S	Service D					
• • • • • • • • • • • • • • • • • • •	Analysis Period (min) 15											
• • • • • • • • • • • • • • • • • • •	Splits and Phases: 3: Site/Shopping	g Centre &	Donald									
80 s 40 s 40 s	A	,							a.			
80 s 40 s 40 s	🖚ø2 (R)								♦ ø4			
★	80 s							4				
	4											
T a KIRI T a R	🔽 ø6 (R)								¶_ø8 _			

80 s

AM Projected 4: St. Laurent & Cyrville

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Lane Group	WBR	NBT	SBL	SBT	ø4
Lane Configurations	1	ቀ ቶር ₆	5	<u> ተተ</u> ъ	
Volume (vph)	272	796	191	1201	
Lane Group Flow (vph)	286	858	201	1264	
Turn Type	Over	NA	Prot	NA	
Protected Phases	8	2	8	6	4
Permitted Phases	0	2	U	U	•
Detector Phase	8	2	8	6	
Switch Phase	0	2	U	U	
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.8	25.8	31.8	25.8	16.5
Total Split (s)	65.0	40.0	65.0	40.0	15.0
	54.2%	33.3%	54.2%	40.0 33.3%	13%
Total Split (%)					
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.1	2.1	2.1	2.1	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.8	5.8	5.8	5.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	None	C-Max	None
Act Effct Green (s)	20.1	88.3	20.1	88.3	
Actuated g/C Ratio	0.17	0.74	0.17	0.74	
v/c Ratio	0.64	0.24	0.71	0.35	
Control Delay	26.7	0.5	51.7	11.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	26.7	0.5	51.7	11.0	
LOS	C	A	D	В	
Approach Delay	0	0.5	5	16.6	
Approach LOS		A		B	
Queue Length 50th (m)	35.2	1.7	37.3	57.8	
Queue Length 95th (m)	58.6	2.5	m45.6	77.0	
Internal Link Dist (m)	50.0	166.6	1143.0	332.0	
		100.0	130.0	JJZ.U	
Turn Bay Length (m)	074	2540		2502	
Base Capacity (vph)	876	3560	836	3583	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.33	0.24	0.24	0.35	
Intersection Summary					
Cycle Length: 120					
Actuated Cycle Length: 120					
Offset: 10 (8%), Referenced to ph	ase 2.NRT and	6.SRT Sta	rt of Groon		
	use z.ivdi allu	0.501, 310	IT OF GIEEII		
Natural Cycle: 75 Control Type: Actuated Coordinate	od				
Control Type: Actuated-Coordinate	eu				
Maximum v/c Ratio: 0.71					
Intersection Signal Delay: 12.4	1.00/				ersection LOS: B
Intersection Capacity Utilization 44	4.2%			IC	U Level of Service A
Analysis Period (min) 15					
m Volume for 95th percentile qu	eue is metered	by upstrea	m signal.		
Splits and Phases: 4: St. Laurer	nt & Cvrville				
▲			A	,	\$ 28
ø2 (R)			→ ₀4		™ ø8

● 1 ø2(R)	_ _ _{∅4}	≯ _≈
40 s	15 s	65 s
●		
40 s		

AM Projected 5: St. Laurent & Conventry/Ogilvie

	۶	-	\mathbf{r}	4	-	*	1	1	1	Ŧ	-
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	ሻሻ	* *	*	ሻሻ	*	1	μ.	**1	1	***	1
Volume (vph)	71	153	61	563	537	32	102	812	27	901	119
Lane Group Flow (vph)	75	161	64	593	565	34	107	1146	28	948	125
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											
Vinimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0
Vinimum Split (s)	11.2	34.3	34.3	11.2	34.3	34.3	11.4	33.4	11.4	33.4	33.4
Fotal Split (s)	15.0	35.0	35.0	35.0	55.0	55.0	16.0	34.0	16.0	34.0	34.0
Total Split (%)	12.5%	29.2%	29.2%	29.2%	45.8%	45.8%	13.3%	28.3%	13.3%	28.3%	28.3%
fellow 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)	2.5	2.6	2.6	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.7
ost 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)	6.2	6.3	6.3	6.2	6.3	6.3	6.4	6.4	6.4	6.4	6.4
_ead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.2	11.5	11.5	26.7	30.4	30.4	13.6	53.9	7.5	42.8	42.8
Actuated g/C Ratio	0.08	0.10	0.10	0.22	0.25	0.25	0.11	0.45	0.06	0.36	0.36
r/c Ratio	0.27	0.50	0.19	0.81	0.66	0.07	0.56	0.54	0.27	0.55	0.20
Control Delay	52.9	56.6	1.3	44.9	36.5	0.3	60.8	26.0	78.3	23.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fotal Delay	52.9	56.6	1.3	44.9	36.5	0.3	60.8	26.0	78.3	23.1	5.2
.OS	D	E	А	D	D	А	E	С	E	С	А
Approach Delay		43.9			39.6			29.0		22.5	
Approach LOS		D			D			С		С	
Queue Length 50th (m)	8.6	19.3	0.0	70.2	47.9	0.0	24.2	70.9	6.1	68.0	8.1
Queue Length 95th (m)	15.8	29.6	0.0	85.2	52.6	0.0	40.9	101.1	13.3	93.4	24.0
nternal Link Dist (m)		157.6			126.0			62.8		166.6	
Turn Bay Length (m)	105.0		60.0	80.0			50.0		75.0		55.0
Base Capacity (vph)	296	810	517	813	1375	686	194	2140	136	1738	632
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	0.25	0.20	0.12	0.73	0.41	0.05	0.55	0.54	0.21	0.55	0.20
ntersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%), Referenced to phase 2:	NBT and (5:SBT, Star	of Green								
Vatural Cycle: 105											
Control Type: Actuated-Coordinated											
/laximum v/c Ratio: 0.81											
ntersection Signal Delay: 31.6					tersection L						
ntersection Capacity Utilization 74.8%				IC	U Level of S	ervice D					
Analysis Period (min) 15											
Splits and Phases: 5: St. Laurent &	Conventry	/Ogilvie									
▶₀1 ↓ ↑ ₀2(R)				~ 04					- ø3		

≻ ø1	🕴 Tø2(R)		₹ ₀3	
16 s 🛛	34 s	35 s	35 s	
▲ ø5	● 🗣 ø6 (R)	▲ ø8		≯ _{@7}
16 s	34 s	55 s		15 s

AM Projected 6: Cyrville & Ogilvie

	≯	+	\mathbf{F}	∢	+	•	1	Ť	1	Ŧ	
ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
ane Configurations		* *	1	μ.	* *	1	r,	ĥ	ř	ĥ	
olume (vph)	1	379	100	34	732	94	132	162	44	139	
ane Group Flow (vph)	0	400	105	36	771	99	139	184	46	186	
urn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	
rotected Phases		2			6			8		4	
ermitted Phases	2		2	6		6	8		4		
etector Phase	2	2	2	6	6	6	8	8	4	4	
witch Phase											
inimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
inimum Split (s)	27.2	27.2	27.2	27.2	27.2	27.2	38.1	38.1	38.1	38.1	
otal Split (s)	75.0	75.0	75.0	75.0	75.0	75.0	45.0	45.0	45.0	45.0	
otal Split (%)	62.5%	62.5%	62.5%	62.5%	62.5%	62.5%	37.5%	37.5%	37.5%	37.5%	
ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	37.370	37.370	37.370	37.370	
I-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4	
	2.0	0.0	0.0	0.0	0.0	0.0			0.0		
ost Time Adjust (s)							0.0	0.0		0.0	
otal Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1	7.1	7.1	
ead/Lag											
ead-Lag Optimize?	0.12	0.11	0.11	0.11	0.11	0.14					
ecall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	
ct Effct Green (s)		68.8	68.8	68.8	68.8	68.8	37.9	37.9	37.9	37.9	
ctuated g/C Ratio		0.57	0.57	0.57	0.57	0.57	0.32	0.32	0.32	0.32	
c Ratio		0.22	0.12	0.07	0.40	0.11	0.41	0.33	0.14	0.34	
ontrol Delay		16.3	7.6	11.9	14.9	2.5	36.9	32.9	40.8	42.7	
ueue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay		16.3	7.6	11.9	14.9	2.5	36.9	32.9	40.8	42.7	
DS		В	А	В	В	А	D	С	D	D	
oproach Delay		14.5			13.4			34.6		42.3	
oproach LOS		В			В			С		D	
ueue Length 50th (m)		30.9	5.4	3.6	50.1	0.0	25.7	32.4	10.7	41.4	
ueue Length 95th (m)		42.8	17.4	8.5	63.3	7.1	44.8	51.7	23.4	65.5	
ternal Link Dist (m)		126.0			312.1			56.0		216.6	
urn Bay Length (m)				60.0		60.0	30.0		75.0		
ase Capacity (vph)		1854	882	518	1943	884	337	559	339	552	
arvation Cap Reductn		0	0	0	0	0	0	0	0	0	
pillback Cap Reductn		0	0	0	0	0	0	0	0	0	
torage Cap Reductn		0	0	0	0	0	0	0	0	0	
educed v/c Ratio		0.22	0.12	0.07	0.40	0.11	0.41	0.33	0.14	0.34	
		0.22	0.12	0.07	0.40	0.11	0.41	0.55	0.14	0.54	
ersection Summary											
ycle Length: 120											
ctuated Cycle Length: 120											
ffset: 36 (30%), Referenced to phas	se 2:EBTL a	ind 6:WBTL	, Start of Gr	een							
atural Cycle: 70											
ontrol Type: Actuated-Coordinated											
aximum v/c Ratio: 0.41											
tersection Signal Delay: 20.6				In	tersection L	OS: C					
tersection Capacity Utilization 81.09	%			IC	U Level of S	Service D					
nalysis Period (min) 15											
olits and Phases: 6: Cyrville & Og	ilvie										
*							<u> </u>				
							♦ ~@4	1			
🜩ø2 (R)							1.1.1				
75 s							45 s				
-s-rø∠(R) /5s 											
							45 s	3			

AM Projected 7: Cummings & Donald

	٦	\mathbf{i}	1	1	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	5	1	5	•	
Volume (vph)	52	133	195	101	1 215
Lane Group Flow (vph)	55	140	205	101	325
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2	2	0
Detector Phase	4	4	2	2	6
Switch Phase	т	т	2	2	U
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	20.7	20.7	32.1	32.1	32.1
	20.7	20.7	32.1 25.0	25.0	25.0
Total Split (s)					
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.4	3.4	3.8	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.1	7.1	7.1
Lead/Lag					
Lead-Lag Optimize?	N	NI	N 4	N.4	N 4
Recall Mode	None	None	Max	Max	Max
Act Effct Green (s)	10.0	10.0	30.9	30.9	30.9
Actuated g/C Ratio	0.20	0.20	0.62	0.62	0.62
v/c Ratio	0.16	0.34	0.33	0.10	0.30
Control Delay	17.7	6.7	9.0	6.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	6.7	9.0	6.5	6.6
LOS	В	А	А	А	А
Approach Delay	9.8			8.1	6.6
Approach LOS	А			А	А
Queue Length 50th (m)	4.0	0.0	9.7	4.2	12.4
Queue Length 95th (m)	10.9	10.4	21.8	9.8	24.8
Internal Link Dist (m)	403.7			123.9	126.8
Turn Bay Length (m)	100.1		55.0	.20.7	. 20.0
Base Capacity (vph)	624	629	621	1108	1072
Starvation Cap Reductn	024	027	021	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.22	0.33	0.10	0.30
	0.07	0.22	0.00	0.10	0.50
Intersection Summary					
Cycle Length: 50					
Actuated Cycle Length: 49.8					
Natural Cycle: 55					
Control Type: Actuated-Uncoordina	ated				
Maximum v/c Ratio: 0.34					
Intersection Signal Delay: 7.9				In	tersection L
Intersection Capacity Utilization 58	.7%				U Level of S
Analysis Period (min) 15					2 20101010
Splits and Phases: 7: Cummings	s & Donald				
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25 s		25 s	
↓ _{ø6}			
25 s			

PM Projected 1: St. Laurent & McArthur

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	<u> </u>	7	1	*	*	7
Volume (vph)	209	430	563	900	707	94
Lane Group Flow (vph)	2207	453	503	947	744	99
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	1 OIIII	5	2	6	1 Onn
Permitted Phases		4	2	2	Ū	6
Detector Phase	4	4	5	2	6	6
Switch Phase			U	2	Ū	Ū
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	27.8	27.8	10.5	15.5	22.5	22.5
Total Split (s)	25.0	25.0	40.0	95.0	55.0	55.0
Total Split (%)	20.8%	20.8%	33.3%	79.2%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.2	2.2	2.2	2.2
	2.3	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)						
Total Lost Time (s)	5.8	5.8	5.5	5.5	5.5	5.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?	N A	N 4 - · ·	Yes	C M	Yes	Yes
Recall Mode	Max	Max	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.2	19.2	89.5	89.5	54.7	54.7
Actuated g/C Ratio	0.16	0.16	0.75	0.75	0.46	0.46
v/c Ratio	0.81	0.73	0.92	0.37	0.48	0.14
Control Delay	72.0	11.9	25.7	1.2	25.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	11.9	25.7	1.2	25.2	4.9
LOS	E	В	С	А	С	А
Approach Delay	31.6			10.6	22.8	
Approach LOS	С			В	С	
Queue Length 50th (m)	50.6	0.0	7.2	5.8	66.8	0.1
Queue Length 95th (m)	#89.9	32.6	m#60.5	6.1	86.6	10.3
Internal Link Dist (m)	260.9	22.0		418.0	58.4	. 0.0
Turn Bay Length (m)	200.7		85.0	110.0	50.1	50.0
Base Capacity (vph)	271	619	698	2528	1545	718
Starvation Cap Reductn	0	019	098	2528	1545	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.73	0.85	0.37	0.48	0.14
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 98 (82%), Referenced to ph	hase 2:NBTL a	nd 6:SBT	Start of Gree	en		
Natural Cycle: 90						
Control Type: Actuated-Coordinate	he					
Maximum v/c Ratio: 0.92	Su					
Intersection Signal Delay: 18.6				Int	ersection L	OC P
	- 00/					
Intersection Capacity Utilization 85	0.9%			IC	U Level of S	Service E
Analysis Period (min) 15						
# 95th percentile volume exceed		eue may be	longer.			
Queue shown is maximum after						
m Volume for 95th percentile que	eue is metered	by upstrea	m signal.			
Splits and Phases: 1: St. Lauren	nt & McArthur					
🗋 ø2 (R)						
95 s						
▲ ø5			🖞 ø6(A	9		
10.			T uou	ij		
40 \$			0.8			

PM Projected 2: St. Laurent & Donald

2: St. Laurent & Donald	≯	-	1	+	×	•	Ť	/	1	Ļ	~	
Lane Group	EBL	EBT	• WBL	WBT	WBR	NBL	NBT	• NBR	SBL	• SBT	SBR	
Lane Configurations	ሻ	≜ 16	٦	44	1	5	44	1	۲,	44	1	
Volume (vph)	77	167	246	160	284	117	1018	99	267	974	33	
Lane Group Flow (vph)	81	242	259	168	299	123	1072	104	281	1025	35	
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	
Protected Phases		4	3	8		5	2		1	6		
Permitted Phases	4		8		8	2		2	6		6	
Detector Phase	4	4	3	8	8	5	2	2	1	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	30.3	30.3	11.3	30.3	30.3	11.3	30.1	30.1	11.3	30.1	30.1	
Total Split (s)	34.0	34.0	16.0	50.0	50.0	20.0	50.0	50.0	20.0	50.0	50.0	
Total Split (%)	28.3%	28.3%	13.3%	41.7%	41.7%	16.7%	41.7%	41.7%	16.7%	41.7%	41.7%	
Yellow Time (s)	3.3	3.3	3.7	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0	2.6	3.0	3.0	2.6	2.4	2.4	2.6	2.4	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	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.1	6.1	6.3	6.1	6.1	
Lead/Lag	Lag	Lag	Lead	0.5	0.5	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	14.5	14.5	30.5	30.5	30.5	55.3	45.8	45.8	76.9	61.1	61.1	
Actuated g/C Ratio	0.12	0.12	0.25	0.25	0.25	0.46	0.38	0.38	0.64	01.1	0.51	
v/c Ratio	0.12	0.12	1.03	0.23	0.25	0.40	0.38	0.38	0.66	0.51	0.01	
					8.0	9.8	28.9		23.7	19.1	0.04	
Control Delay	65.7 0.0	45.4	103.4 23.5	31.4	0.2			1.7	23.7			
Queue Delay		0.0		0.0		0.0	0.0	0.0		0.0	0.0	
Total Delay	65.7	45.4	126.8	31.4	8.2	9.8	28.9	1.7	23.7	19.1	0.5	
LOS Annuant Dalau	E	D	F	С	А	А	C	А	С	B	А	
Approach Delay		50.5		55.9			24.9			19.6		
Approach LOS	10 Г	D	(0.(E	()	7 1	C	0.7	15.7	B	0.0	
Queue Length 50th (m)	18.5	23.7	~60.6	17.7	6.4	7.1	107.8	0.7	15.7	103.6	0.0	
Queue Length 95th (m)	32.8	34.5	#104.5	21.6	22.0	9.5	160.0	3.0	m#82.1	135.5	m0.2	
Internal Link Dist (m)	10.0	320.4		90.8	1/ 0	00.0	332.0		100.0	418.0	40.0	
Turn Bay Length (m)	40.0	700	054	1004	46.0	90.0	1005		120.0	4707	40.0	
Base Capacity (vph)	265	782	251	1234	718	368	1295	660	423	1727	826	
Starvation Cap Reductn	0	0	16	0	64	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn Reduced v/c Ratio	0 0.31	0 0.31	0 1.10	0 0.14	0 0.46	0 0.33	0 0.83	0 0.16	0 0.66	0 0.59	0 0.04	
Intersection Summary	5.0.	5.01		5	5.10	5.00	5.00	5.1.0	5.00	5107		
Cycle Length: 120												_
Actuated Cycle Length: 120												
Offset: 32 (27%), Referenced to pha	se 2·NRTL a	nd 6.SRTI	Start of Gre	en								
Natural Cycle: 95												
Control Type: Actuated-Coordinated												
Vaximum v/c Ratio: 1.03												
ntersection Signal Delay: 31.3				Ini	ersection L	25. C						
ntersection Capacity Utilization 88.9	2%				U Level of S							
Analysis Period (min) 15	770			IC.	O LEVELUI 3	DEI VICE E						
 Volume exceeds capacity, queue 	a is theoratic	ally infinito										
		any minine.										
Queue shown is maximum after t # 95th percentile volume exceeds		ouo mouto	longer									
# 95th percentile volume exceeds Queue shown is maximum after t		eue may be	longer.									
m Volume for 95th percentile queu		by upstrea	m signal.									
		29 495004										
Splits and Phases: 2: St. Laurent	& Donald											

 Splits and Phases:
 2: St. Laurent & Donald

 Image: splits and Phases:
 2: St. Laurent & Donald

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PM Projected 3: Site/Shopping Centre & Donald

Lane Group Lane Configurations Volume (vph) Lane Group Flow (vph) Turn Type Protected Phases	EBL 1 261	EBT	EBR	MIDI							
Volume (vph) Lane Group Flow (vph) Turn Type Protected Phases		1	LDIX	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph) Furn Type Protected Phases		★	1	N	≜1 ,	×.	ĥ		ۍ ۲	1	
Turn Type Protected Phases		443	150	60	329	133	56	69	29	240	
Turn Type Protected Phases	275	466	158	63	394	140	133	0	104	253	
Protected Phases	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	
		2			6		8		4		
Permitted Phases	2		2	6		8		4		4	
Detector Phase	2	2	2	6	6	8	8	4	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	10.0	
Minimum Split (s)	38.3	38.3	38.3	38.3	38.3	30.3	30.3	30.3	30.3	30.3	
Total Split (s)	80.0	80.0	80.0	80.0	80.0	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	6.3	
Lead/Lag	0.5	0.0	0.0	0.5	0.0	0.0	0.0		0.0	0.0	
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	88.1	88.1	88.1	88.1	88.1	19.3	19.3	None	19.3	19.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.16	0.16		0.16	0.16	
v/c Ratio	0.73	0.36	0.15	0.11	0.16	0.73	0.45		0.59	0.57	
Control Delay	7.2	5.7	0.15	6.3	5.3	67.8	30.9		58.9	10.1	
Queue Delay	0.4	0.7	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.5	6.4	0.6	6.3	5.3	67.8	30.9		58.9	10.1	
LOS	7.5 A	A.	A	0.5 A	3.5 A	67.0 E	50.7 C		50.7 E	B	
Approach Delay	Л	5.7	А	Л	5.4	L	49.8		24.3	D	
Approach LOS		A			.ч А		47.0 D		24.3 C		
Queue Length 50th (m)	16.3	26.4	0.0	3.7	12.0	31.7	17.1		23.0	0.0	
Queue Length 95th (m)	29.8	43.2	m2.5	10.3	21.8	49.8	33.4		38.3	20.7	
Internal Link Dist (m)	27.0	90.8	1112.5	10.5	407.4	47.0	54.5		52.0	20.7	
Turn Bay Length (m)		70.0		27.0	+. <i>1</i> 0F	20.0	54.5		52.0		
Base Capacity (vph)	664	1310	1065	596	2433	338	474		309	592	
Starvation Cap Reductn	105	504	0	0	2433	0	4/4		0	0	
Spillback Cap Reductn	0	0	0	0	18	0	0		0	1	
Storage Cap Reductn	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.58	0.15	0.11	0.16	0.41	0.28		0.34	0.43	
Reduced V/C Rallo	0.49	0.00	0.15	0.11	0.10	0.41	0.20		0.54	0.45	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 80 (67%), Referenced to pha	ase 2:EBTL a	nd 6:WBTL	Start of Gr	een							
Natural Cycle: 70											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.73											
Intersection Signal Delay: 15.1				In	tersection L	DS: B					
Intersection Capacity Utilization 94.2	2%			IC	U Level of S	ervice F					
Analysis Period (min) 15											
m Volume for 95th percentile queu	ue is metered	by upstrea	m signal.								
Splits and Phases: 3: Site/Shoppi	ng Centre &	Donald									
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PM Projected 4: St. Laurent & Cyrville

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Lane Group	WBR	NBT	SBL	SBT	ø4
Lane Configurations	1	##%	5	ተተ ጌ	
Volume (vph)	361	1491	315	1097	
Lane Group Flow (vph)	380	1626	332	1155	
Turn Type	Over	NA	Prot	NA	
Protected Phases	8	2	8	6	4
Permitted Phases					
Detector Phase	8	2	8	6	
Switch Phase	-	_	-	-	
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.8	25.8	31.8	25.8	16.5
Total Split (s)	68.0	37.0	68.0	37.0	15.0
Total Split (%)	56.7%	30.8%	56.7%	30.8%	13%
Yellow Time (s)	30.770	3.7	30.770	3.7	3.7
All-Red Time (s)	2.1	2.1	2.1	2.1	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	2.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	
	J.0	0.0	J.0	0.0	
Lead/Lag					
Lead-Lag Optimize?	Mana	C May	Nono	C May	Nono
Recall Mode	None	C-Max	None	C-Max	None
Act Effct Green (s)	30.7	77.7	30.7	77.7	
Actuated g/C Ratio	0.26	0.65	0.26	0.65	
v/c Ratio	0.67	0.52	0.77	0.37	
Control Delay	30.8	2.0	36.7	20.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	30.8	2.0	36.7	20.3	
LOS	С	А	D	С	
Approach Delay		2.0		23.9	
Approach LOS		А		С	
Queue Length 50th (m)	54.7	5.6	77.5	58.4	
Queue Length 95th (m)	83.5	m35.7	m53.8	m100.9	
Internal Link Dist (m)		166.6		332.0	
Turn Bay Length (m)			130.0		
Base Capacity (vph)	912	3112	878	3154	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.42	0.52	0.38	0.37	
Interception Cummers					
Intersection Summary					
Cycle Length: 120					
Actuated Cycle Length: 120					
Offset: 13 (11%), Referenced to p	hase 2:NBT an	d 6:SBT, St	art of Gree	n	
Natural Cycle: 80					
Control Type: Actuated-Coordinate	ed				
Maximum v/c Ratio: 0.77					
Intersection Signal Delay: 14.5					ersection LOS: B
Intersection Capacity Utilization 65	5.1%			ICI	J Level of Service C
Analysis Period (min) 15					
m Volume for 95th percentile qu	eue is metered	by upstrea	m signal.		
Splits and Phases: 4: St. Laurer	nt & Cyrville			- L MA	
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PM Projected 5: St. Laurent & Conventry/Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
ane Configurations	ሻሻ	* *	1	ካካ	**	1	ሻ	44 b	5	***	1	
olume (vph)	292	559	209	590	562	99	277	1201	57	638	137	
ane Group Flow (vph)	307	588	220	621	592	104	292	1604	60	672	144	
urn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	
rotected Phases	7	4		3	8		5	2	1	6		
ermitted Phases			4			8					6	
etector Phase	7	4	4	3	8	8	5	2	1	6	6	
witch Phase												
linimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	
linimum Split (s)	11.2	34.3	34.3	11.2	34.3	34.3	11.4	33.4	11.4	33.4	33.4	
otal Split (s)	26.0	35.0	35.0	26.0	35.0	35.0	24.0	44.0	15.0	35.0	35.0	
otal Split (%)	21.7%	29.2%	29.2%	21.7%	29.2%	29.2%	20.0%	36.7%	12.5%	29.2%	29.2%	
ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
I-Red Time (s)	2.5	2.6	2.6	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.7	
ost 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	
otal Lost Time (s)	6.2	6.3	6.3	6.2	6.3	6.3	6.4	6.4	6.4	6.4	6.4	
ead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lead	Lag	Lag	
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
ecall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max	
ct Effct Green (s)	22.6	26.3	26.3	22.2	25.9	25.9	17.6	40.7	8.0	28.6	28.6	
ctuated g/C Ratio	0.19	0.22	0.22	0.18	0.22	0.22	0.15	0.34	0.07	0.24	0.24	
/c Ratio	0.50	0.79	0.44	1.02	0.81	0.22	1.18	0.98	0.54	0.58	0.30	
control Delay	47.7	52.5	8.6	85.2	45.7	1.1	158.4	56.5	94.0	28.0	6.5	
ueue Delay	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	47.7	53.6	8.6	85.2	45.7	1.1	158.4	56.5	94.0	28.0	6.5	
SC	D	D	А	F	D	А	F	E	F	С	А	
pproach Delay		43.1			60.8			72.2		29.0		
pproach LOS		D			E			E		С		
ueue Length 50th (m)	34.3	67.7	1.5	~87.7	47.6	0.0	~82.2	~148.1	10.9	55.4	11.9	
ueue Length 95th (m)	49.2	87.4	21.0	#124.8	64.8	0.0	#135.6	#178.3	29.6	40.0	14.4	
nternal Link Dist (m)		157.6			126.0			62.8		166.6		
urn Bay Length (m)	105.0		60.0	80.0			50.0		75.0		55.0	
ase Capacity (vph)	618	810	524	607	810	510	248	1637	121	1160	480	
tarvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
pillback Cap Reductn	0	74	0	0	0	0	0	0	0	0	0	
torage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
educed v/c Ratio	0.50	0.80	0.42	1.02	0.73	0.20	1.18	0.98	0.50	0.58	0.30	
tersection Summary												
ycle Length: 120												
ctuated Cycle Length: 120												
ffset: 1 (1%), Referenced to phas	e 2:NB1 and	5:SBL, Start	ot Green									
atural Cycle: 115												
control Type: Actuated-Coordinate	d											
laximum v/c Ratio: 1.18												
tersection Signal Delay: 55.8	00/				ersection L(
tersection Capacity Utilization 93	.9%			IC	U Level of S	ervice F						
nalysis Period (min) 15	1 11 11											
Volume exceeds capacity, que		ally infinite.										
Queue shown is maximum after												
95th percentile volume exceeds		eue may be	ionger.									
Queue shown is maximum after	two cycles.											
plits and Phases: 5: St. Lauren	t & Conventry	/Ogilvie										
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24 \$	35.8				30.8				26 :	8		

PM Projected 6: Cyrville & Ogilvie

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ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
ane Configurations		* *	1	*	*	1	7	ĥ	r.	ĥ	
olume (vph)	4	964	173	63	729	133	117	236	142	213	
ane Group Flow (vph)	0	1019	182	66	767	140	123	282	149	337	
urn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	
rotected Phases		2			6			8		4	
ermitted Phases	2		2	6		6	8		4		
etector Phase	2	2	2	6	6	6	8	8	4	4	
vitch Phase											
inimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
inimum Split (s)	27.2	27.2	27.2	27.2	27.2	27.2	38.1	38.1	38.1	38.1	
otal Split (s)	70.0	70.0	70.0	70.0	70.0	70.0	50.0	50.0	50.0	50.0	
otal Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%	
ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.7	3.7	3.4	3.4	
.,	2.0										
st Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
tal Lost Time (s)		6.2	6.2	6.2	6.2	6.2	7.1	7.1	7.1	7.1	
ad/Lag											
ad-Lag Optimize?											
ecall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	
t Effct Green (s)		63.8	63.8	63.8	63.8	63.8	42.9	42.9	42.9	42.9	
tuated g/C Ratio		0.53	0.53	0.53	0.53	0.53	0.36	0.36	0.36	0.36	
c Ratio		0.59	0.21	0.35	0.43	0.16	0.47	0.45	0.48	0.55	
ontrol Delay		18.2	1.6	22.6	17.9	2.7	36.8	31.7	43.5	40.0	
Jeue Delay		9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
tal Delay		27.5	1.6	22.6	17.9	2.7	36.8	31.7	43.5	40.0	
)S		С	А	С	В	А	D	С	D	D	
proach Delay		23.5			16.1			33.2		41.1	
proach LOS		С			В			С		D	
ueue Length 50th (m)		123.5	0.6	8.6	55.3	0.0	22.2	49.4	35.1	75.7	
ueue Length 95th (m)		m122.3	m4.5	20.3	69.8	9.2	41.4	74.1	56.0	104.3	
ternal Link Dist (m)		126.0		20.0	312.1	7.2		56.0	00.0	216.6	
irn Bay Length (m)		120.0		60.0	512.1	60.0	30.0	50.0	75.0	210.0	
ase Capacity (vph)		1717	852	191	1802	853	264	629	310	615	
arvation Cap Reductn		667	052	0	0	0	204	029	0	015	
		007	0		0				0	0	
illback Cap Reductn				0		0	0	0			
orage Cap Reductn		0	0	0	0	0	0	0	0	0	
duced v/c Ratio		0.97	0.21	0.35	0.43	0.16	0.47	0.45	0.48	0.55	
ersection Summary											
cle Length: 120											
ctuated Cycle Length: 120											
fset: 36 (30%), Referenced to pl	hase 2:EBTL a	and 6:WBTI	Start of Gr	een							
atural Cycle: 70				0011							
ontrol Type: Actuated-Coordinate	he										
aximum v/c Ratio: 0.59	.u										
ersection Signal Delay: 25.2				In	tersection L						
	NE 00/										
ersection Capacity Utilization 10	13.970			IC	U Level of S	DEI VILLE G					
alysis Period (min) 15		hu unater -	molanal								
Volume for 95th percentile que	eue is metereo	a by upstrea	m signal.								
lits and Phases: 6: Cyrville &	Ogilvie										
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PM Projected 7: Cummings & Donald

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Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	5	1	3	•	٦,
Volume (vph)	129	232	235	246	172
Lane Group Flow (vph)	136	244	247	259	275
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		-
Detector Phase	4	4	2	2	6
Switch Phase			-	-	3
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	20.7	20.7	32.1	32.1	32.1
Total Split (s)	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.4	3.4	3.8	3.8	3.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	0.0 6.7	0.0 7.1	0.0 7.1	0.0 7.1
Lead/Lag	0.7	0.7	7.1	7.1	7.1
0					
Lead-Lag Optimize? Recall Mode	Nono	None	Max	Max	Max
	None				
Act Effct Green (s)	10.8	10.8	27.5	27.5	27.5
Actuated g/C Ratio	0.21	0.21	0.53	0.53	0.53
v/c Ratio	0.39	0.48	0.45	0.28	0.30
Control Delay	20.3	6.4	11.4	8.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	6.4	11.4	8.2	6.8
LOS	С	А	В	A	A
Approach Delay	11.4			9.8	6.8
Approach LOS	В			А	А
Queue Length 50th (m)	10.2	0.0	12.2	11.4	9.4
Queue Length 95th (m)	21.9	13.1	30.4	25.0	22.6
Internal Link Dist (m)	407.4			123.9	126.8
Turn Bay Length (m)			55.0		
Base Capacity (vph)	598	693	553	939	916
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	0.23	0.35	0.45	0.28	0.30
Intersection Summary					
Cycle Length: 50					
Actuated Cycle Length: 52.3					
Natural Cycle: 55					
Control Type: Actuated-Uncoordina	atod				
	aled				
Maximum v/c Ratio: 0.48				اسا	torcostion
Intersection Signal Delay: 9.6	20/				tersection L
Intersection Capacity Utilization 60.	.5%			IC	U Level of S
Analysis Period (min) 15					
Splits and Phases: 7: Cummings	& Donald				
Splits and Phases. 7. Cummings					
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25 s		