2280 City Park Drive Phase 2 Development

Transportation Impact Assessment Report





Prepared by:

^{August} 2018



2280 City Park Drive Phase 2 Residential Development

TIA Strategy Report



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TIA STRATEGY REPORT

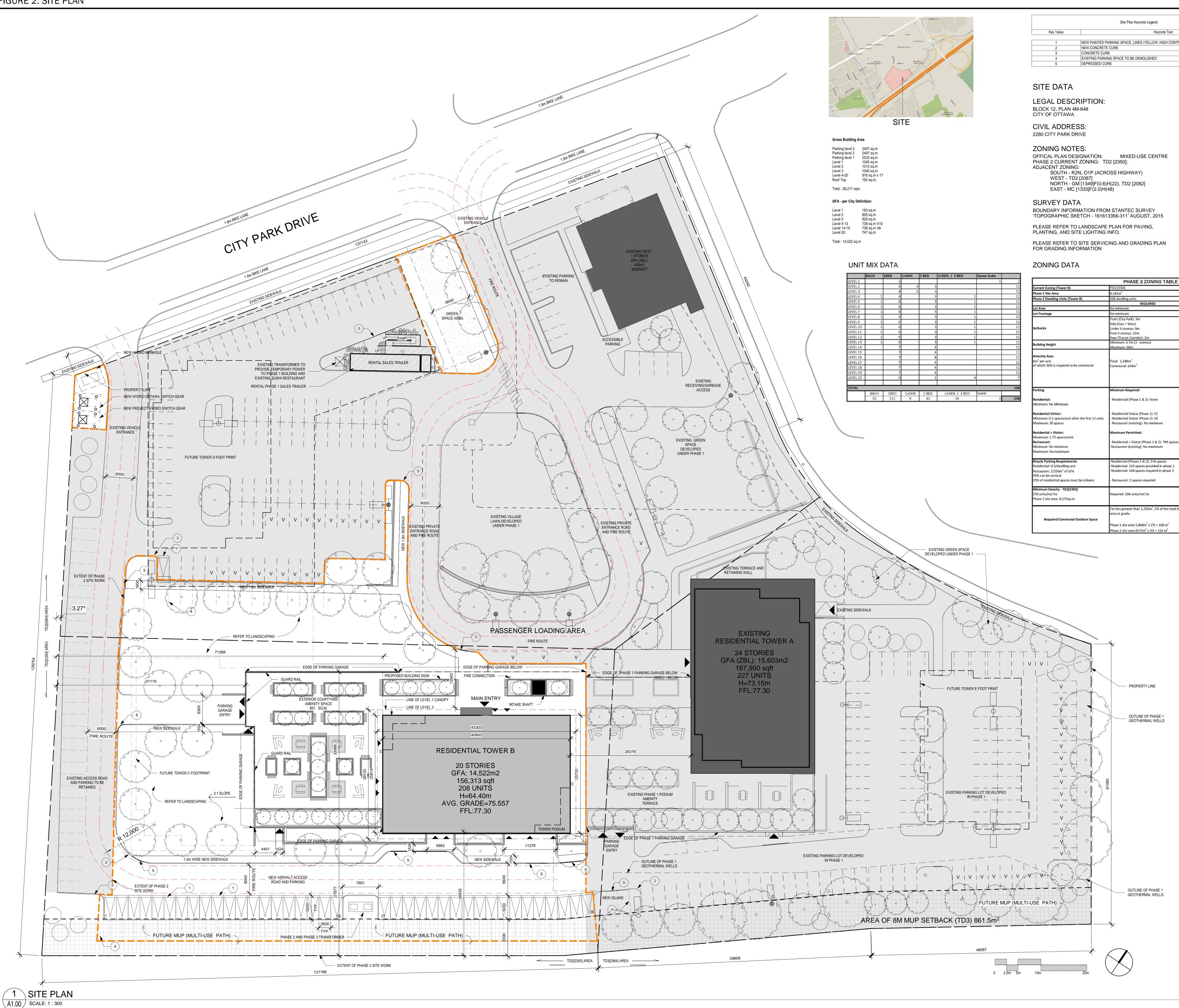
1. PROPOSED DEVELOPMENT

This study has been prepared in support of a Site Plan Application for RioCan's proposed Phase 2 residential redevelopment of 2280 City Park Drive, within the Gloucester Silver City Centre lands. The proposed redevelopment will consist of a single 20 storey residential tower containing 208 units. The site previously accommodated 7,247 m² (78,000 ft²) of commercial retail space and a 465 m² (5,000 ft²) restaurant. All commercial space has been demolished, the restaurant remains and the Phase 1, 227 unit apartment building has recently been built.

The subject site, in its local context depicted in Figure 1, is located adjacent to the south of City Park Drive and directly adjacent to the Blair LRT Station. Access to the site is provided via two existing connections to City Park Drive. The first is an all-way STOP intersection that is aligned with the Silver City access to the north. The second is the three-legged west access that is STOP controlled on the minor approach. The access locations for the Figure 2 Site Plan will generally remain unchanged from the existing access configuration. For the purposes of this study it has been assumed that the subject development will be built and occupied in 2020/21.

As can be seen from review of the TIA Screening Form (Appendix A), the Trip Generator and Location Triggers are met, but the Safety Trigger is not.



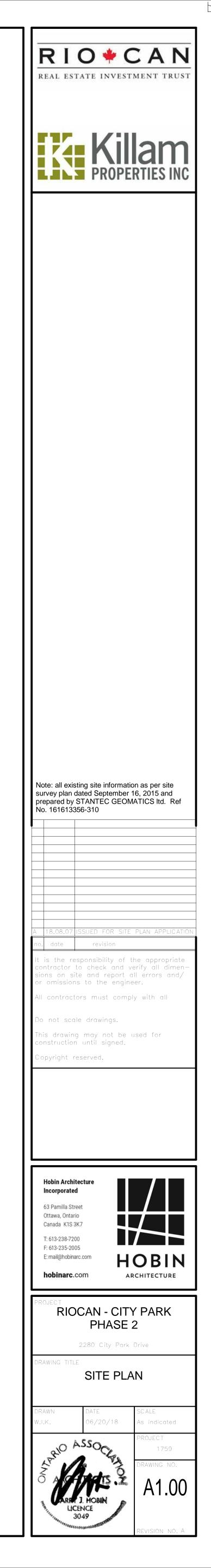


	DACH	IDLD	TTPEN	2 DLD	ZTDEN / SDED	Ш
LEVEL 1		2				Τ
LEVEL 2		4	4	3		Τ
LEVEL 3		4	5	3		Τ
LEVEL 4	1	6		3	1	T
LEVEL 5	1	6		3	1	T
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LEVEL 9	1	6		3		1	
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LEVEL 12	1	6		3		1	
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LEVEL 14		7		4			
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LEVEL 17		7		4			
LEVEL 18		7		4			
LEVEL 19		7		4			
LEVEL 20		0		1		6	
TOTAL							20
	BACH	1BED	1+DEN	2 BED	2+DEN / 3 BED	Guest	
	10	112	9	61	16	1	20

Site Plan Keynote Legend						
Key Value	Key Value Keynote Text					
1	NEW PAINTED PARKING SPACE, LINES (YELLOW, HIGH CONTRAST)					
2	NEW CONCRETE CURB					
3	CONCRETE CURB					
4	EXISTING PARKING SPACE TO BE DEMOLISHED					
5	DEPRESSED CURB					

PHASE 2 ZONING TABLE						
Current Zoning (Tower B)	TD2[2350]					
Phase 2 Site Area	8,185m ²					
Phase 2 Dwelling Units (Tower B)	208 dwelling units					
	REQUIRED PROVIDED					
Lot Area	No minimum	Total Lot Area : 28,622 sq.m.				
Lot Frontage	No minimum	137.15m				
	Front (City Park): 3m	Front: Varies				
	Side (East + West)	Side:				
Setbacks	Under 6 storeys: 0m	East: 112.2m				
	Over 6 storeys: 12m	West: 71.2m				
	Rear (Transit Corridor): 2m	Rear: 25.5m				
Building Height	Minimum: 6.7m (2 storeys)	64.4m from average grade of 75.557				
	Maximum: 60m					
Amenity Area		Private amenity space				
6m ² per unit	Total: 1,248m ²	-Private Balconies: 1020m ² Common amenity space				
of which 50% is required to be communal	Communal: 624m ²	-Interior amenity: 607m ²				
	communal. 024m	-Exterior rooftop amenity: 252m ²				
		-Exterior podium amenity: 857m ²				
		Total amenity area: 2654m ²				
Parking	Minimum Required:	Total Provided (After Phase 2): 478 Spaces				
Residential:	- Residential (Phase 1 & 2): None	Phase 1 (Existing):				
Minimum: No Minimum		- Residential: 107 spaces (31 interior; 76 surface)				
		- Residential Visitor: 21 spaces (surface)				
Residential Visitor:	- Residential Visitor (Phase 1): 21					
Minimum: 0.1 spaces/unit after the first 12 units	- Residential Visitor (Phase 2): 20	Phase 2 (Proposed):				
Maximum: 30 spaces	 Restaurant (existing): No minimum 	- Residential: 207 spaces (169 interior; 38 surface)				
Residential + Visitor:	Maximum Permitted:	- Residential Visitor: 20 spaces (exterior)				
Maximum: 1.75 spaces/unit	Maximum Fernitteu.	Existing Parking to be Retained:				
Restaurant:	- Residential + Visitor (Phase 1 & 2): 749 spaces	- Residential: 143 spaces (surface)				
Minimum: No minimum	-Restaurant (existing): No maximum	- Restaurant: 24 spaces (surface)				
Maximum: No maximum						
Bicycle Parking Requirements	-Residential (Phases 1 & 2): 214 spaces	Total Bicycle Parking: 302 spaces				
Residential: 0.5/dwelling unit	-Residential: 110 spaces provided in phase 1	Residential (Phase 1, existing): 110 spaces				
Restaurant: 1/250m ² of GFA	-Residential: 104 spaces required in phase 2	Residential (Phase 2, proposed): 190 spaces (77 on level				
50% can be vertical		P1, 37 on level P2, 38 on level P3)				
25% of residential spaces must be indoors	 Restaurant: 2 spaces required 	Restaurant: 2 existing spaces				
Minimum Density - TD2[2350]						
250 units/net ha	Required: 204 units/net ha	Proposed: 254 units/net ha				
Phase 2 site area: 8,172sq.m.	nequirea. 204 annsynet na	roposed. 254 difits/fiet fid				
	For lots greater than 1,250m ² , 2% of the total lot	Area provided in Village Lawn:				
	area at grade.	- Phase 1&2 = 1,413m ²				
Required Communal Outdoor Space						
	Phase 1 site area $5.400 \text{m}^2 \times 2\% = 108 \text{m}^2$					
	Phase 2 site area $8172m^2 \times 2\% = 168 m^2$					
	Phase 2 site area 61/2m X 2% = 163 m					



2. EXISTING CONDITIONS

2.1. STUDY AREA

The subject site is bound by City Park Drive to the north, the LRT corridor to the south, the Blair LRT Station to the east and a vacant lot to the west. As previously mentioned, access to/from the subject site is currently provided via two full-movement connections to City Park Drive. With regard to the existing conditions at study area intersections the following intersections, were considered. With regard to projected conditions, given the very low volume of site-generated traffic (only 40 to 45 veh/h two-way total) combined with the primary routes for accessing/egressing the site, only the first three signalized intersections listed below will be assessed.

- City Park/Ogilvie/Bathgate
- City Park/Ogilvie/ CSIS
- Blair/Shopping Centre/OR-174 WB Off Ramp
- Ogilvie/Silver City/CSIS

2.2. AREA ROAD NETWORK

Ogilvie Road is an east-west arterial roadway that extends from St. Laurent Boulevard in the west (where it continues as Coventry Road) to approximately 40 m north of Quincy Avenue in the east. Within the study area it has a four-lane cross-section with auxiliary turn lanes provided at major intersections. Its posted speed limit is 60 km/h. It is located approximately 400 m from the Phase 2 site.

City Park Drive is a crescent-shaped east-west Major Collector roadway with a two-lane cross-section that intersects Ogilvie Road at both its terminuses. Within the study area, the unposted speed limit is understood to be 50 km/h and on-street parking is permitted along both sides of the roadway for most of its length.

Blair Road is a north-south arterial roadway that extends from Innes Road in the south to approximately 80 m north of Massey Lane in the north. Within the study area, Blair Road has a six lane cross-section, south of Ogilvie Road, and a three lane cross-section north of Ogilvie Road. Its posted speed limit is 70 km/h south of Ogilvie Road and 50 km/h north of Ogilvie Road. It is located approximately 550 m from the Phase 2 site.

Aviation Parkway is a north-south federally owned roadway, which extends from the Aviation Museum in the north to HWY 417 in the south. Within the study area, Aviation Parkway has a four-lane cross section with auxiliary turn lanes provided as major intersection. The posted speed limit is noted as 60 km/h. It is located approximately 1.5 km from the Phase 2 site.

OR-174 is an east-west City Freeway with a four-lane cross-section. It extends from Highway 417 in the west and Canaan Road in the east, where it continues as County Road 17. Within the study area, the posted speed limit is 100 km/h.

2.3. AREA PEDESTRIAN AND BICYCLE NETWORKS

With respect to area pedestrian connectivity, sidewalks exist along both sides of most study area roadways. The private Service Road connecting City Park Drive and Blair Road has a sidewalk along the south side of the roadway only. This is an important pedestrian connection as it provides direct access between the subject site and the existing Blair LRT Station. With regard to cycling, the 2013 City's Transportation Master Plan (TMP) identifies Ogilvie Road and Blair Road as Spine Routes with dedicated bike lanes along both sides of Ogilvie Road and Blair Road (north of Ogilvie Road). In addition, an existing major pathway along the west side of Aviation Parkway provides connections to other cycling facilities north of the study area. Within the vicinity of the subject site, a Community Connectivity Project is identified between the site's southern frontage and the future LRT corridor, which is planned to be constructed by 2018. Figure 3 illustrates the planned and existing cycling facilities.

- Aviation/Ogilvie
- Blair/Ogilvie
- Blair/OR-174 EB On-Off Ramp

Figure 3: Cycling Network



2.4. TRANSIT NETWORK

OC Transpo's Blair Rapid Transit (BRT) Station is located within walking distance (200 to 300 m) from the subject site. This station to be operational in November 2018, and will be the terminus of the City's future Phase 1 Confederation Line (LRT). Additionally, local transit service (Route #129) is provided along City Park Drive with a bus stop located at the site's main driveway connection. The existing transit network and service in the vicinity of the Study Area is shown in Figure 4.



Figure 4: Area Transit Network

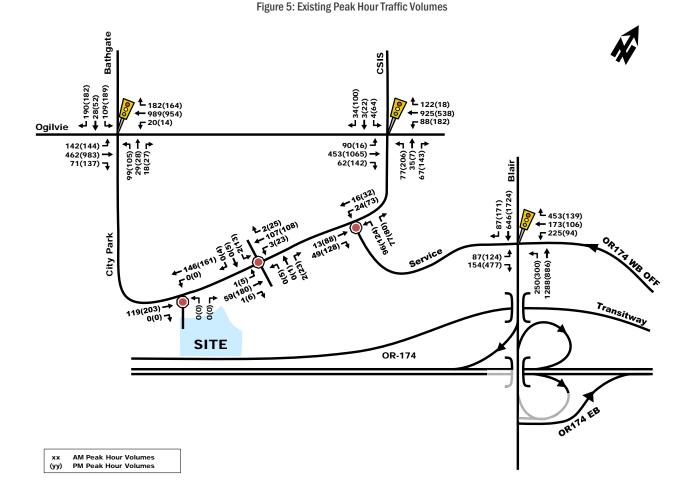
2.5. EXISTING INTERSECTION OPERATION

To establish the baseline intersection operations for the study area intersections, an operational analysis of the existing traffic conditions has been undertaken. The most recent turning movement counts were obtained from the City of Ottawa. The available counts were undertaken between 2013 and 2015. To reflect 2016 conditions the turning movement counts were adjusted using a 1.0% annual background growth rate. Figure 5 shows the resultant traffic volumes at the Study Area intersections. Appendix A contains detailed traffic data sheets, including turning movement counts and signal timing plans for the study area intersections.

To assess the peak hour traffic conditions a level of service analysis has been undertaken using Trafficware Synchro 10.0, which implements the methods of the 2000 Highway Capacity Manual. The key parameters used in the analysis include:

- A saturation flow rate of 1800 (as per the City of Ottawa TIA Guidelines)
- Existing lane arrangements
- Existing signal timing (provided by the City of Ottawa)
- Heavy vehicle equivalent factor of 1.70 (as per the City of Ottawa TIA guidelines)
- Default values for all other inputs (as defined by Synchro 10.0)

The results of the operational analysis are summarized in Table 1. The existing signal timing information is included in Appendix B. Synchro analysis outputs are provided in Appendix C.



	Weekday AM Peak (PM Peak)					
Intersection	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
City Park/Bathgate/Ogilvie (S)	A(B)	0.60(0.61)	WBT(SBL)	14.8(14.9)	A(A)	0.57(0.54)
City Park/CSIS/Ogilvie (S)	A(C)	0.42(0.78)	WBT(NBL)	10.2(16.8)	A(B)	0.40(0.64)
Blair/OR-174 OFF (S)	D(C)	0.85(0.78)	WBR(EBR)	25.9(25.8)	D(B)	0.81(0.70)
City Park/Service Road (U)	A(B)	9.8(12.5)	NBT(NBT)	6.8(6.0)	A(A)	-
City Park/Silver City/Site (U)	A(A)	7.6(8.5)	WBT(EBT)	7.5(8.3)	A(A)	-
City Park/W Site Access (U)	A(A)	0.0(0.0)	EBT(EBT)	0.0(0.0)	A(A)	-
Notes: • Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. • (U) - Unsignalized Intersection • (S) - Signalized Intersection						

Table 1: Intersection Operational Analysis - 2016 Existing Traffic Conditions

As shown in Table 1, the key study area intersections 'as a whole' are currently operating acceptably, at a LoS 'D' or better during the morning and afternoon peak hours. With regard to 'critical movements' at study area intersections, they are operating acceptably, at an LoS 'D' or better during peak hours with regard to City of Ottawa operating standards.

2.6. COLLISION ANALYSIS

Collision history for the five-year period of 2013 through to and including 2017 was obtained from the City of Ottawa for the following intersections: Ogilvie Road/City Park Drive/Bathgate Drive, Ogilvie Road/City Park Drive, Blair Road/OR Regional Road (RR) 174S/Ramp 61/Shopping Centre; Additionally, mid-block data for Ogilvie Road between City Park Drive/Bathgate Drive and City Park Drive east intersections was obtained.

A total of 174 collisions were recorded at or near the study intersections. Most collisions (72%) involved only property damage, indicating low impact speeds, and the remaining 28% involved personal injuries. No recorded fatalities were within the study area. The primary causes of collisions cited by police include: rear ends (57% or 100 collisions), turning movement (20% or 35 collisions), angle (14% or 24 collisions), sideswipe (7% or 12 collisions), and other (2% or 3 collisions)

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

- 1.65 collisions/MEV at the Blair Road and RR 174 N/OR174 Ramp 61/Shopping Centre intersection.
- 0.75 collisions/MEV at the Ogilvie Road and Bathgate/City Park intersection.
- 0.84 collisions/MEV at the Ogilvie Road and CSIS/City Park intersection.

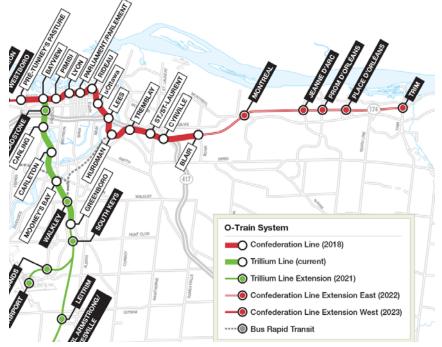
Based on the available data, there does not appear to be any prevailing safety issues at the intersections located off Ogilvie Road; However, the intersection of Blair Road and RR 174 N/OR174 Ramp 61/Shopping Centre has a 1.65 collisions/MEV with the majority (60) of collisions being rear ending. The source of the collision data is provided by the City of Ottawa and related analysis is provided within Appendix D.

3. PLANNED CONDITIONS

3.1. PLANNED STUDY AREA TRANSPORTATION NETWORK CHANGES

As mentioned in Section 2.4 of this report, Phase 1 Confederation Line is will be completed by November 2018. Phase 1 Confederation Line will extend from Tunney's Pasture eastbound through the downtown to Blair Station. Phase 2 Confederation Extension East will continue from Blair Station east through to Trim Station. Phase 2 Confederation Line anticipated year of completion is 2022. Planned LRT construction segments and projected completion times are shown in Figure 6 below.

Figure 6: Planned LRT Phase 2



3.2. OTHER AREA DEVELOPMENT

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

2012 Ogilvie Road

Trinity has acquired the Shoppers City East site location located off Ogilvie Road East of Blair Road. The site is being redeveloped, replacing approximately 150,000 ft² of retail and some office space with approximately 200,000 ft² of retail space. Phase 1 consisting of approximately 40,000 ft² of retail space has been completed and Phase 2 consisting of approximately 160,000 ft² is currently awaiting approval.

4. STUDY AREA

4.1. TRANSIT

As mentioned previously in Section 2.4, the transit options available include: A bus stop on City Park Drive, a BRT station and a future LRT station all within a 400m walking distance.

4.2. NETWORK CONCEPT

East-West Screenline, SL-16 is located along the east side of Highway 174 Blair and the screenline for north-south travel is SL-54. The closest point of crossing these screenlines are over 2.0km away; Therefore, as these screenlines are not in the immediate vicinity of the proposed site, they do not provide any intrinsic value to the area capacity and the impact of the development is anticipated to be minimal. As such, no screenline analysis will be considered.

4.3. INTERSECTION DESIGN

The proposed Phase 2 residential development will access the adjacent road network through two existing intersections off City Park Drive. Site-generated traffic will primarily use the two City Park Drive intersections with Ogilvie Road and the internal shopping centre road that connects to Blair Road at a signalized intersection with the OR 174 westbound off-ramp.

5. TIME PERIODS

Given the land use, the weekday morning and afternoon peak hours are considered the critical time periods for operational analysis for this residential development.

6. HORIZON YEAR

For the purposes of the operational analysis it is assumed that the Phase 2 development will be completed by the 2021, with the horizon year being 2026.

7. EXEMPTIONS REVIEW

The following Table 2 contains the recommended TIA Guideline exemptions.

Module	Element	Exemption Consideration
4.2 Parking	4.2.2 Spillover Parking-	The subject development is proposing to provide a total of 207 residential parking spaces for residents, 20 visitor parking spaces and 190 bike parking spaces (interior). The parking is noted to meet the City's residential parking requirements for the zone (0 resident parking spaces, 20 visitors and 104 bike parking spaces). As such, parking is not expected to spill out of the site.
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Development relies on local street for access. The peak hour traffic generated by the development will be approximately 50 vehicles. Although total traffic on local road might reach close to 160 vehicles on the peak hour, a change in the function of the road is not expected. Therefore, NTM measures are not anticipated to be required.
4.8 Network Concept	-	The proposed development is not expected to generate more than 200 person-trips during peak hour in excess of the equivalent volume permitted by established zoning

Table 2: Recommended TIA Exemptions Summary

In addition to the above recommendations of the Exemptions Review, the following exemptions are also proposed for both Step 3 – Forecasting and Step 4 – Analysis and are summarized in Table 3.

Table 3: Additional Recommended Exemptions Summary

Module	Element	Exemption Consideration
4.3 Boundary Street Design	All Elements	City Park Drive is the only boundary street and it is currently a divided 2-lane local roadway with sidewalks and cycle lanes on both sides of the road. Limited scope/opportunity for improvements to this corridor.

8. DEVELOPMENT – GENERATED TRAFFIC

8.1. SITE TRIP GENERATION

The appropriate trip generation rates are summarized in Table 4.

Table 4: 2009 TRANS and ITE Trip Generation Rates

Land Use	Data Source	Trip Rates		
Lanu USe	Data Source	AM Peak	PM Peak	
High-Rise Apartments	TRANS	T = 0.24(x)	T = 0.27(x)	
Notes: T = Average Vehicle T X = Residential units				

8.1.1. TRANS RESIDENTIAL TRIPS

The standard trip generation rates for the proposed development were obtained from the City's 2009 TRANS Vehicle Trip Generation for the residential units. Table 5 summarizes the resultant vehicle trips.

Table 5:	Projected	Vehicle	Trip	Generation	- TRANS
10010 0.	110,0000	*0111010	111P	achoradion	110.010

Land Use	Source	Units	AM	l Peak (veh	/h)	PM Peak (veh/h)		
	Source	Units	In	Out	Total	In	Out	Total
High-rise apartments	ITE 222	208 ft ²	12	38	50	34	22	56
Total Vehicle Trips			12	38	50	34	22	56

The TRANS person trip rates and initial estimate of peak hour vehicle trips were generated and are summarized in Table 6.

Travel Mode	AM Mode	AM	Peak (perso	ns/h)	PM Mode	PM Peak (persons/h)			
	Share	In	Out	Total	Share	In	Out	Total	
Auto Driver	37%	12	38	50	40%	34	22	56	
Auto Passenger	8%	3	8	11	9%	9	4	13	
Transit	41%	13	42	55	37%	32	20	52	
Non-motorized	14%	4	15	19	14%	12	8	20	
Total People Trips	100%	32	103	135	100%	87	54	140	
Total 'Nev	w' Auto Trips	12	38	50		34	22	56	

8.1.2. ADJUSTED RESIDENTIAL TRIPS

As this site is adjacent to a large shopping centre, BRT Station and the new Confederation LRT station, the auto mode share for vehicle trip rate used in TRANS is high and should be adjusted to reflect the proximity to the transit facilities offered. For this reason, the mode shares used in this study have been modified and are summarized in Table 7.

Travel Mode	Mode Share				
	AM	PM			
Auto Driver	30%	30%			
Auto Passenger	5%	5%			
Transit	55%	55%			
Non-Motorized	10%	10%			

The resulting person trips generated by focusing more on the transit mode share is summarized in Table 8.

Travel Mode	AM Mode	AM	AM Peak (persons/h) PM Mode			PM Peak (persons/h)		
Travel Mode	Share	In	Out	Total	Share	In	Out	Total
Auto Driver	37%	10	31	41	40%	26	17	43
Auto Passenger	8%	2	5	7	9%	5	2	7
Transit	41%	18	57	75	37%	48	29	77
Non-motorized	14%	3	11	14	14%	9	5	14
Total People Trips	100%	33	104	137	100%	88	53	143
Total 'Nev	v' Auto Trips	10	31	41		26	17	43

Table 8: Adjusted TRANS Person Trip Generation - Residential Use

In review of the values of the modal split in Table 7, the projected peak hour vehicle trips from the proposed 208 apartment units are in the 40-45 veh/h two-way total. The projected transit trips, making use of the adjacent LRT station in the 75 to 80-person range in the peak hours.

8.1.3. MODE SHARES

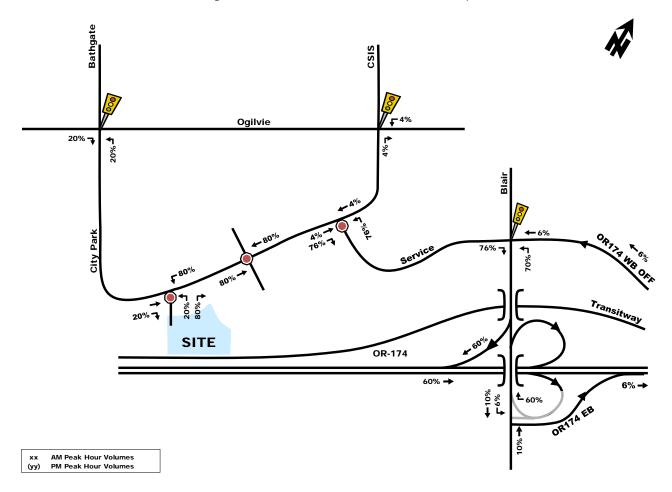
See Section 8.1.2 for information.

8.2. VEHICLE TRAFFIC DISTRIBUTION AND ASSIGNMENT

Traffic distribution 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 and is depicted in Figure 7.

- 65% to/from the west
- 5% to/from the north
- 20% to/from the south; and
- 10% to/from the east

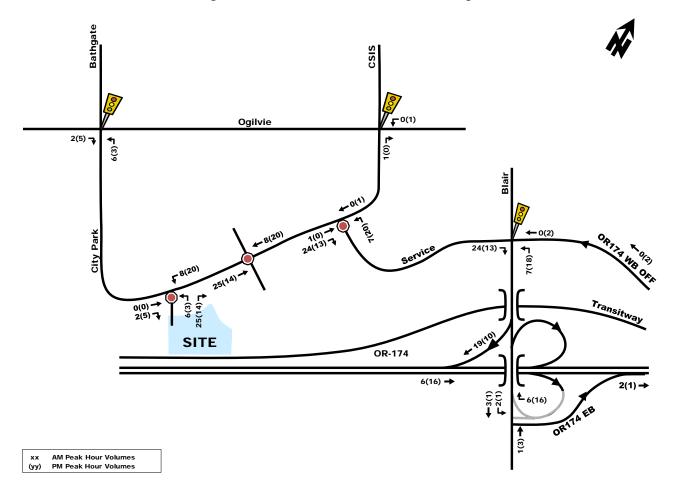
Figure 7: Phase 2 Site-Generated Traffic Distribution Assumptions



8.3. NET SITE-GENERATED VEHICLE TRIPS

Based on the foregoing assumptions on Phase 2 vehicle trip distribution depicted in Figure 7, the assignment of the associated peak hour vehicle trips to the study area is depicted in Figure 8.

Figure 8: Phase 2 New Site-Generated Peak Hour Traffic Assignment



9. BACKGROUND TRAFFIC NETWORK

9.1. TRANSPORTATION NETWORK CHANGES

Several notable transportation network changes are proposed within the study area as per the 2013 TMP - 2031 Affordable Network, they are listed as follows:

Blair Road network changes

- Widen from two to four lanes between Meadowbrook Road and Innes Road;
- Exclusive bus lanes and transit signal priority between Blair Station and Montreal Road. Bus lanes to be provided through a combination of road widening (north of Ogilvie Road) and conversion of existing traffic lanes (south of Ogilvie Road);
- Transit signal priority and queue jump lanes between Innes Road and Blair Station; and
- Affordable: Eastern extension of LRT service following Ottawa Road 174 between Blair Station and Place d'Orléans Station.

Ogilvie Road network changes

• Transit signal priority between Blair Road and St. Laurent Boulevard.

The widening from two to four lanes proposed on Blair Road between Meadowbrook Road and Innes Road is displayed in Figure 9 as per the TMP's 2031 Affordable Network.

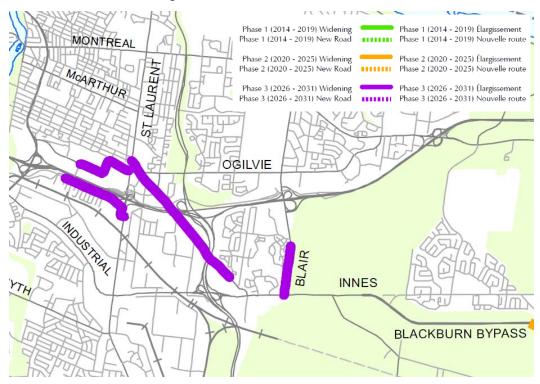


Figure 9: Road Network-2031 Affordable Network

9.2. BACKGROUND TRAFFIC GROWTH

The background traffic growth rate for Blair Road in the immediate study area was calculated based on historical traffic count data (years 2008 and 2013) provided by the City of Ottawa at the Blair/Shopping Centre/174 WB Offramp intersection, as depicted in Table 9. Detailed background traffic growth analysis is included as Appendix E.

Time Period	Percent Annual Change							
	North Leg	South Leg	East Leg	West Leg	Overall			
8 hrs	-6.53%	-7.17%	-4.08%	-5.61%	-6.40%			
AM Peak	-3.18%	-6.41%	-2.29%	-6.51%	-4.59%			
PM Peak	-6.67%	-6.39%	3.98%	-5.45%	-5.67%			

Table 9: Blair/Service Road/174 WB offramp Historical Background Growth (2008 – 2013)

As shown in Table 9, the intersection has experienced approximately -5% to -6% overall annual growth within recent years (calculated as a weighted average). As these negative growth rates are unlikely to continue, a 0% per annum traffic growth factor has been assumed along Blair Road, for the horizon years 2021, and 2026

The background traffic growth through the immediate study area along Ogilvie Road (summarized in Table 10) was calculated based on historical traffic count data (years 2006, 2009 and 2013) provided by the City of Ottawa at the Ogilvie/Bathgate/City Park intersection. Detailed background traffic growth analysis is included as Appendix E.



Time Period	Percent Annual Change							
	North Leg	South Leg	East Leg	West Leg	Overall			
8 hrs	4.21%	2.29%	5.42%	5.87%	5.27%			
AM Peak	6.99%	2.02%	10.91%	4.82%	7.25%			
PM Peak	-1.26%	0.25%	0.58%	0.89%	0.48%			

Table 10: Ogilvie/Bathgate/City Park Historical Background Growth (2006 - 2013)

As shown in Table 10, the intersection has experienced approximately 1% to 7% overall annual growth within recent years (calculated as a weighted average). Given that these are these growth rates are unlikely to continue, a 2% per annum traffic growth factor has been assumed along Ogilvie Road, for the horizon years 2021, and 2026

The resulting future background peak hour traffic for the horizon years 2021, 2026 are depicted as Figure 10, and Figure 11 respectively.

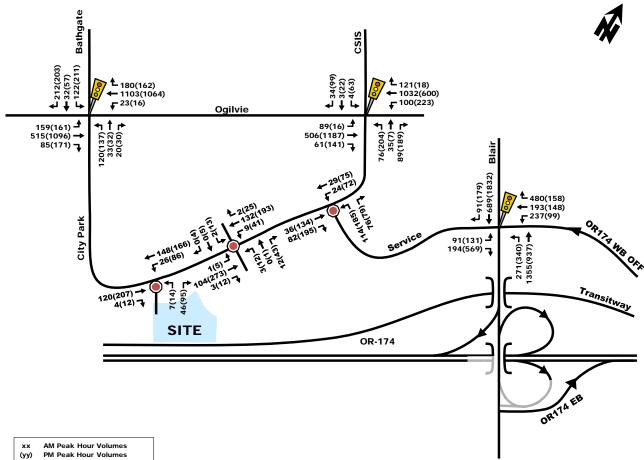


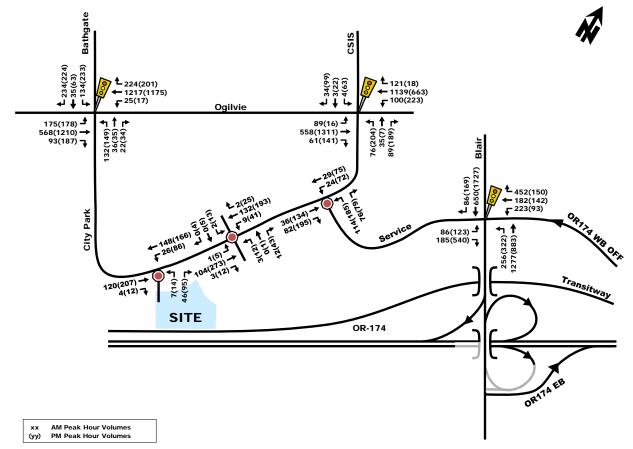
Figure 10: Future Background 2021 Peak Hour Traffic Volumes

The following Table 11 summarizes the performance of key study area intersections for the 2021 background conditions. The study area intersections 'as a whole' are currently operating acceptably, at a LoS 'D' or better during the morning and afternoon peak hours. With regard to 'critical movements' at study area intersections, they are operating acceptably, at an LoS 'D' or better during peak hours with regard to City of Ottawa operating standards. The detailed 2021 future background SYNCHRO (V10) analysis reports are included in Appendix F.

	Weekday AM Peak (PM Peak)							
Intersection		Critical Move	ment	Intersection				
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c		
City Park/Bathgate/Ogilvie (S)	C(C)	0.73(0.75)	NBL(NBL)	17.6(18.1)	B(B)	0.66(0.63)		
City Park/CSIS/Ogilvie (S)	A(C)	0.47(0.79)	WBT(WBL)	10.4(19.8)	A(C)	0.45(0.74)		
Blair/OR-174 OFF (S)	D(D)	0.89(0.85)	WBR(EBR)	27.8(29.7)	D(C)	0.85(0.78)		
City Park/Service Road (U)	B(C)	10.3(17.0)	NBT(NBT)	5.9(6.9)	A(A)	-		
City Park/Silver City/Site (U)	A(B)	7.9(10.0)	WBT(EBT)	7.8(9.7)	A(A)	-		
City Park/W Site Access (U)	A(B)	9.4(10.8)	NBT(NBT)	2.0(3.4)	A(A)	-		
Notes: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. (U) - Unsignalized Intersection (S) - Signalized Intersection								

Table 11: Future Background 2021 Performance at Study Area Intersections





The following Table 12 summarizes the performance of key study area intersections for the 2026 background conditions. The study area intersections 'as a whole' are anticipated acceptably, at a LoS 'D' or better during the morning and afternoon peak hours. With regard to 'critical movements' at study area intersections, they are operating acceptably, at an LoS 'D' or better during peak hours with regard to City of Ottawa operating standards. The detailed 2026 future background SYNCHRO (V10) analysis reports are included in Appendix F

Intersection		Weekday AM Peak (PM Peak)							
		Critical Move	ment	Ir	Intersection				
		max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c			
y Park/Bathgate/Ogilvie (S)	D(D)	0.83(0.82)	NBL(NBL)	21.0(21.7)	C(C)	0.75(0.73)			
y Park/CSIS/Ogilvie (S)	A(D)	0.51(0.85)	WBT(EBT)	11.0(20.9)	A(C)	0.49(0.80)			
ir/OR-174 OFF (S)	D(D)	0.84(0.83)	WBR(EBR)	25.7(28.0)	D(C)	0.81(0.73)			
y Park/Service Road (U)	B(C)	10.3(17.0)	NBT(NBT)	5.9(6.9)	A(A)	-			
y Park/Silver City/Site (U)	A(B)	7.9(10.0)	WBT(EBT)	7.8(9.7)	A(A)	-			
y Park/W Site Access (U)	A(B)	9.4(10.8)	NBT(NBT)	2.0(3.4)	A(A)	-			
	A(B)	9.4(10.8)	NBT(NBT)	2.0(3.4)	3.4) A(A)			

Table 12: Future Background 2026 Performance at Study Area Intersections

• (U) - Unsignalized Intersection

• (S) - Signalized Intersection

9.3. OTHER AREA DEVELOPMENT

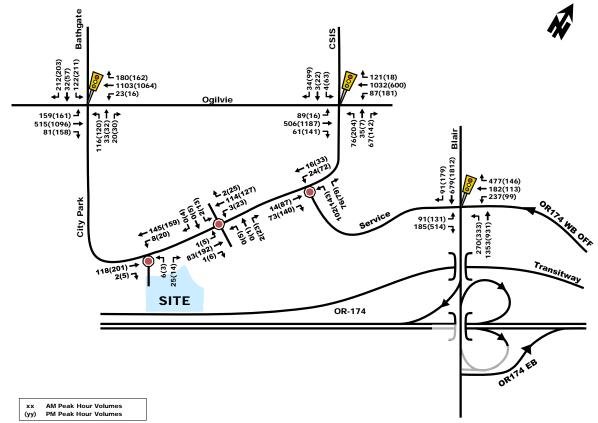
The City of Ottawa's Development Applications webtool has been used to determine if there are proposed developments within the area of influence of the proposed development. These developments have been discussed in greater detail in Section 3.2. If the second phase of redevelopment of Shoppers City East is a Costco, then its traffic generation will impact Blair Road operations. A related TIS has addressed its impacts and requirements. If it is not a Costco, then the traffic impacts along Blair Road will be less.

10.FUTURE TRAFFIC OPERATIONS

10.1. FUTURE 2021 PEAK HOUR

Figure 12, depicts the sum of Phase 2 site-generated traffic and 2021 background traffic. The following Table 13 is a summary of the relevant study area intersection performance.

Figure 12: Projected 2021 Peak Hour Traffic Volumes



	Weekday AM Peak (PM Peak)							
Intersection		Critical Movem	ent	Ir	ntersection			
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c		
City Park/Bathgate/Ogilvie (S)	C(C)	0.75(0.77)	NBL(NBL)	18.0(18.2)	B(B)	0.66(0.63)		
City Park/CSIS/Ogilvie (S)	A(C)	0.47(0.79)	WBT(WBL)	10.4(19.8)	A(C)	0.45(0.74)		
Blair/OR-174 OFF (S)	D(D)	0.89(0.87)	WBR(EBR)	27.8(30.2)	D(C)	0.85(0.79)		
City Park/Service Road (U)	B(D)	10.5(18.4)	NBT(NBT)	5.7(7.6)	A(A)	-		
City Park/Silver City/Site (U)	A(B)	8.0(10.3)	WBT(EBT)	7.9(10.0)	A(B)	-		
City Park/W Site Access (U)	A(B)	9.7(11.2)	NBT(NBT)	2.8(3.8)	A(A)	-		
Notes: Analysis of signalized int (U) - Unsignalized Interset (S) - Signalized Intersect								

As shown in Table 13, the study area intersections 'as a whole' are projected to operate acceptably, at a LoS 'D' or better during the morning and afternoon peak hours. With regard to 'critical movements' at study area intersections, they are operating acceptably, at an LoS 'D' or better during peak hours with regard to City of Ottawa operating standards. These values are very similar to existing conditions due to the low volumes of Phase 2 site-generated traffic. The detailed projected 2021 SYNCHRO (V10) analysis reports are included in Appendix G

10.2. FUTURE 2026 PEAK HOUR

Figure 13, depicts the sum of Phase 2 site-generated traffic superimposed on the horizon year 2026 background traffic. The following Table 14 is a summary of the relevant study area intersection performance.

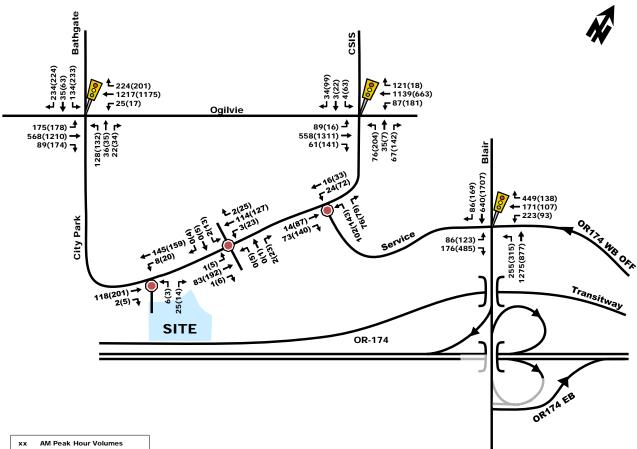


Figure 13: Projected 2026 Peak Hour Traffic Volumes

(yy) PM Peak Hour Volu

Table 14: Projected 2026 Performance at Study Area Intersections

	Weekday AM Peak (PM Peak)							
Intersection		Critical Movement			Intersection			
	LoS max. v/c or avg. delay (s)		Movement	Delay (s)	LoS	v/c		
City Park/Bathgate/Ogilvie (S)	D(D)	0.84(0.84)	NBL(NBL)	21.4(21.8)	C(C)	0.76(0.73)		
City Park/CSIS/Ogilvie (S)	A(D)	0.51(0.85)	WBT(EBT)	11.0(20.9)	A(C)	0.49(0.80)		
Blair/OR-174 OFF (S)	D(D)	0.84(0.84)	WBR(EBR)	25.7(28.5)	D(C)	0.81(0.74)		
City Park/Service Road (U)	B(D)	10.5(18.4)	NBT(NBT)	5.7(7.6)	A(A)	-		
City Park/Silver City/Site (U)	A(B)	8.0(10.3)	WBT(EBT)	7.9(10.0)	A(B)	-		
City Park/W Site Access (U)	A(B)	9.7(11.2)	NBT(NBT)	2.8(3.8)	A(A)	-		
 Notes: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. (U) - Unsignalized Intersection (S) - Signalized Intersection 								

2280 City Park Drive - TIA Strategy Report

As shown in Table 14, the study area intersections 'as a whole' are projected to operate acceptably, at a LoS 'D' or better during the morning and afternoon peak hours. With regard to 'critical movements' at study area intersections, they are operating acceptably, at an LoS 'D' or better during peak hours with regard to City of Ottawa operating standards. The values are also very similar to existing conditions due to the low volumes of Phase 2 site-generated traffic. The detailed projected 2026 SYNCHRO (V10) analysis reports are included in Appendix G

11. DEVELOPMENT DESIGN

11.1. DESIGN FOR SUSTAINABLE MODES

As previously discussed, this site is located in a major transit-oriented area and is within 400m of the new Blair LRT station, a shopping centre and Blair BRT. The sites ultimate plan will have a Multi-Use pathway that will extend along the southern property limit connecting the site to the LRT station, in the interim pedestrians will use the sidewalk facilities and cyclists will use the local road network.

11.2. CIRCULATION AND ACCESS

The driveways to the site connect to City Park Drive and are being constructed as part of Phase 1. For this study it is assumed that the driveways are existing. The two driveways are stop-controlled intersections, with the west driveway being stop controlled on the minor road and the east driveway operates as a four-way stop control.

Within the site, 6.0m wide driveways are provided for access to the parking areas, the parking garage and for site circulation.

11.3. PARKING

11.3.1. PARKING SUPPLY

The proposed development provides a total of 160 parking spaces and 20 visitor parking spaces, which both meet the City's By-Law requirements of a minimum of 0 spaces and 0.1 visitor spaces per unit respectively. The parking space dimensions are noted as 5.2m in length and 2.6m in width, which meet the By-Law requirements.

The proposed number of bicycle parking spaces total 190 parking spaces, exceeding the minimum City's By-Law requirements of 0.5 spaces per unit.

11.3.2. SPILLOVER PARKING

Exempt, see Section 7.

11.4. BOUNDARY STREET DESIGN

City Park Drive is not identified in the TMP. City Park Drive currently has sidewalks on both sides of the road. Cycling Facilities are expected to remain as the existing mixed/shared traffic conditions on City Park Drive. The target MMLOS for the boundary streets are described in Table 15 below. Elements required to reach each target are identified in Table 16. The MMLoS for the road segment analysis for City Park Drive can be found in Appendix H.

Table 15: MMLOS Targets for Boundary Streets

OP Designation / Policy Area	Road Class	Pedestrian LOS	Bicycle LOS	Transit LOS	Truck LOS	Auto LOS
General Urban Area	City Park Drive	В	В	D	В	D
Note:						

Table 16: Minimum Required Elements for MMLOS Analysis

Mode	Required Elements					
	PLOS "A" – intersection evaluation					
	Smart channel right-turn					
	Protected-permissive conflicting left-turns					
	• 0 – 2 lanes crossed					
Pedestrian	Pedestrian delay less than 10s per intersection leg					
	PLOS "C" – segment evaluation					
	Sidewalk width greater than 2 m					
	Boulevard width greater than 2 m					
	Operating speed between 50 – 60 km/h					
	BLOS "B" – intersection evaluation					
	For a pocket bike lane:					
	• Right-turn lane introduced to the right of the bike lane and \leq 50 m long, turning speed \leq 25 km/h (based on curb radii and angle of intersection)					
	 To make a left turn: 					
	• Two-stage, left-turn bike box; \leq 50 km/h,					
	• No lane crossed, \leq 50 km/h; or					
	• 1 lane crossed, ≤ 40 km/h					
Bicycle	 Note: A BLOS "A" is achieved if a physically separated bike lane is provided at an intersection 					
	BLOS "C" – segment evaluation					
	Bike lane not adjacent to parking:					
	 2 travel lanes in each direction without a separating median; 					
	 ≥1.2 m to <1.5 m wide bike lane (includes marked buffer and paved gutter width); and 					
	 60 km/h operating speed. 					
	 Note: A BLOS "A" is achieved if a physically separated bike lane is provided at an intersection 					
	TkLOS "E" – intersection evaluation					
	• Effective corner radius 10 to 15 m with at least one receiving lane on departure from intersection					
Truck	TkLOS "D" – segment evaluation					
	• With two-lane cross section: curb lane width \leq 3.3 m					
	• More than two travel lanes: curb lane width \leq 3.2 m					
A	LOS "D" – intersection evaluation					
Auto	• v/c = 0.81 to 0.90					

11.5. ACCESS INTERSECTION DESIGN

Exempt, see Section 7.

11.6. INTERSECTION DESIGN

No modifications to existing accesses proposed.

11.7. TRANSPORTATION DEMAND MANAGEMENT

Exempt, Bicycle parking exceeds By-Law requirements, cyclists will use the local roadways (cycle lanes proposed for City Park Drive) to access adjacent facilities and the adjacent street has 2m wide sidewalk connections to the adjacent LRT station.

11.8. NEIGHBOURHOOD TRAFFIC MANAGEMENT

Exempt, see Section 7.

11.9. TRANSIT

As previously noted, the proposed residential apartment development is projected to generate between approximately 75 to 80 two-way transit riders during peak hours. Given the number of new transit riders compared to the existing and planned study area transit service summarized in Section 2.4, there will be no adverse impacts on transit facility capacity.

11.10. NETWORK CONCEPT REVIEW

Exempt, see Section 7.

11.11. INTERSECTION DESIGN

12. CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the foregoing analysis are as follows:

Proposed Development:

- The proposed Phase 2 development will consist of 208 high-rise apartment units, 180 parking spaces and 140 bicycle parking spaces.
- The proposed Phase 2 development is projected to generate approximately 40 and 45 two-way vehicle trips per hour and 75 to 80 transit riders during the weekday morning and afternoon peak hours.
- Access to the Phase 2 site will be provided by two existing driveway connections to City Park Drive located south of the Silver City Theatre.
- Access to the boundary arterial roads will be via City Parks' two signalized intersections with Ogilvie Road and via the shopping centre road that connects to Blair/OR 174 westbound off-ramp intersection.

Background Conditions:

 The signalized intersection of Blair Road and OR 174/RAMP 61/Shopping Centre, is projected to operate similarly to the background conditions with an "as a whole" peak period, LoS 'D' during the AM, and LoS 'C' during the PM for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better for both 2021 and 2026 horizons. No improvements required at this intersection.

- The signalized intersection of Ogilvie Road and Bathgate Drive/City Park Drive, is projected to operate with an "as a whole" peak period, LoS 'B' during both AM and PM peaks for the 2021 horizon and LoS 'C' during both AM and PM peaks for 2026 horizon. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better in the 2021 horizon and LoS 'D' or better in the 2026 horizon. No improvements required at this intersection.
- The signalized intersection of Ogilvie Road and CSIS/City Centre Drive, is projected to operate an "as a whole" peak period, LoS 'A' during the AM, and LoS 'C' during the PM for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'D' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/Shopping Centre service Road, is projected to operate with an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/Silver City/East Site Driveway, is projected to operate an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'B' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/West Site Driveway, is projected to operate with an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'B' or better for both 2021 and 2026 horizons. No improvements required at this intersection.

Projected Conditions:

- The signalized intersection of Blair Road and OR 174/RAMP 61/Shopping Centre, is projected to operate similarly to the background conditions with an "as a whole" peak period, LoS 'D' during the AM, and LoS 'C' during the PM for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'D' or better. No improvements required at this intersection.
- The signalized intersection of Ogilvie Road and Bathgate Drive/City Park Drive, is projected to operate with an "as a whole" peak period, LoS 'B' during both AM and PM peaks for the 2021 horizon and LoS 'C' during both AM and PM peaks for 2026 horizon. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better in the 2021 horizon and LoS 'D' or better in the 2026 horizon. No improvements required at this intersection.
- The signalized intersection of Ogilvie Road and CSIS/City Centre Drive, is projected to operate an "as a whole" peak period, LoS 'A' during the AM, and LoS 'C' during the PM for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/Shopping Centre service Road, is projected to operate with an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'C' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/Silver City/East Site Driveway, is projected to operate an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'B' or better for both 2021 and 2026 horizons. No improvements required at this intersection.
- The unsignalized intersection of City Centre Drive/West Site Driveway, is projected to operate with an "as a whole" peak period, LoS 'A' during both AM and PM peaks for both 2021 and 2026 horizons. With regards to the critical movements, the intersection is anticipated to operate with a LoS 'B' or better for both 2021 and 2026 horizons. No improvements required at this intersection.

Site Plan

- As for the MMLoS on the boundary road (City Park Drive), level of service to be provided is as follows: Pedestrian PLoS 'B', Bicycle BLoS 'B', Transit TLoS 'D' and Truck TkLoS 'B'.
- With the provided 6m wide driveways within the site, HSU sized vehicles or smaller are able to maneuver throughout the site's exterior lanes and driveways.

In summary, the proposed Phase 2 residential development is located adjacent to the LRT station and will have a very low peak hour traffic generation. As such, its traffic impact on the study area intersections is minimal, if any, and no road or intersection modifications are required.

Based on foregoing, the proposed development is recommended to proceed from a transportation perspective.

Prepared By:

rather hand

Matthew Mantle, P. Eng. Transportation Engineer

Attachments

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Ronald Jack, P. Eng. Senior Transportation Engineer Ottawa Operations





City of Ottawa 2017 TIA Guidelines	Date	15-Aug-18
TIA Screening Form	Project	2280 City Park Drive: Phase 2
	Project Number	476051-01000
Results of Screening	Ye	es/No
Development Satisfies the Trip Generation Trigger		Yes
Development Satisfies the Location Trigger		Yes
Development Satisfies the Safety Trigger		No

Module 1.1 - Description of Proposed Development	
Municipal Address	2280 City Park Drive
Description of location	Adjacent to Blair LRT Station with vehicle access to City Park
Land Use	Residential
Development Size	208 apartment units
Number of Accesses and Locations	Two driveway connections to City Park Drive
Development Phasing	Second phase of a two phase project
Buildout Year	2020/2021
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Townhomes or Apartments	
Development Size	208	Units
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers	
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	No
Development is in a Design Priority Area (DPA) or Transit- oriented Development (TOD) zone. (See Sheet 3)	Yes
Location Trigger Met?	Yes

Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection;	No	
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	
The development includes a drive-thru facility	No	
Safety Trigger Met?	No	



Traffic Signal Timing

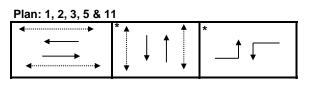
	City	∕ of Ottawa, Public	Works Dep	partment		
		Traffic Opera	ations Unit			
Intersection: Main: Ogilvie Road Side: Bathgate Drive / City Park Drive						
Controller:	Controller: MS-3200 TSD: 5219					
Author:	Jake B	erube		Date:	04-May-16	

Existing Timing Plans⁺

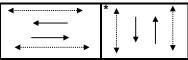
	Plan						Ped Mi	nimum T	ime
	AM Peak	Off Peak	PM Peak	Night	Saturday	AM Heavy	Walk	DW	A+R
	1	2	3	4	5	11			
Cycle	90	90	100	80	90	100			
Offset	27	5	19	х	5	29			
EB Thru	32	32	37	37	32	42	9	15	3.7 + 2.3
WB Thru	32	32	37	37	32	42	9	15	3.7 + 2.3
NB Thru	43	43	43	43	43	43	7	28	3.0 + 4.4
SB Thru	43	43	43	43	43	43	7	28	3.0 + 4.4
EB Left	15	15	20	-	15	15	-	-	3.7 + 1.0
WB Left	15	15	20	-	15	15	-	-	3.7 + 1.0

Notes: 1) The maximum green time for the EB and WB Lefts is 20s.

Phasing Sequence[‡]



Plan: 4



Schedule

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

Time	Plan
0:15	4
8:30	5
19:00	2
22:30	1

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

Notes

 $\ensuremath{\ensuremath{\mathsf{T}}}$: Time for each direction includes amber and all red intervals

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄····· Pedestrian signal

Cost is \$56.50 (\$50 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

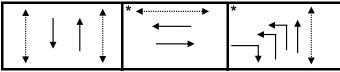
Traffic Operations Unit					
Intersection:	Main:	Blair	Side:	Hwy 174	WB Off Ramp
Controller:	MS-320	00A		TSD:	5867
Author:	Jake B	erube		Date:	05-May-2016

Existing Timing Plans[†]

	Plan				Ped Minir	mum Tir	ne	
	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	100	95	130	85	95			
Offset	Х	Х	50	Х	23			
NB Thru	59	59	94	49	58	7	17	4.2+1.9
SB Thru	32	34	63	34	31	7	17	4.2+1.9
EB Thru	41	36	36	36	37	-	-	3.3+3.5
WB Thru	41	36	36	36	37	7	23	3.3+3.5
NB Left (fp)	27	25	31	15	27	-	-	4.2+2.2

Phasing Sequence[‡]

Plan: All



Note: For Plan 4, the maximum green time allowed for the EB Thru is 10s.

Schedule

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

Saturday				
Time	Plan			
0:15	4			
7:00	5			
22:00	4			

Plan
4
5
4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal **∢**......

Traffic Signal Timing

		City of Ottawa, I	Public Work	s Department	
		Traffic	Operations	Unit	
Intersection:	Main:	Ogilvie Road	Side:	City Park Drive	
Controller:	ATC-3			TSD:	5883
Author:	Jake B	erube		Date:	05-May-2016

Existing Timing Plans[†]

	Plan							Ped Mir	nimum T	ime
	AM Peak	Off Peak	PM Peak	Night	Weekend	AM Heavy	Evening	Walk	DW	A+R
	1	2	3	4	5	11	12			
Cycle	90	90	100	75	90	100	90			
Offset	88	12	30	х	12	13	12			
EB Thru	51	36	46	36	36	61	36	7	22	3.7+2.4
WB Thru	51	51	61	36	41	61	51	7	22	3.7+2.4
NB Thru	39	39	39	39	39	39	39	7	25	3.3+3.2
SB Thru	39	39	39	39	39	39	39	7	25	3.3+3.2
WB Left	-	15	15	-	15	-	15	-	-	3.0+1.0

Phasing Sequence[‡]

Plan: 1, 4 & 11

Plan: 2, 3, 5 & 12

<>	*	*	*
←	5 Second		•
→	ADV. WALK		¥

Notes: 1) If the pedestrian phases for North-South are not actuated, the NB and SB vehicle movements will come up immediately.

2) The 5-second advanced walk time is included in the splits provided in the timing plan table for the NB and SB movements.

3) The WB Left movement has a maximum green time of 15 seconds.

Schedule

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

Saturday				
Plan				
4				
5				
2				
4				

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

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

Cost is \$56.50 (\$50 + HST)



Existing - AM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	7	<u></u>	1	2	<u></u>	1	ľ	4	ľ	4	
Traffic Volume (vph)	142	462	71	20	989	182	99	29	109	28	
Future Volume (vph)	142	462	71	20	989	182	99	29	109	28	
Lane Group Flow (vph)	149	486	75	21	1041	192	104	50	115	229	
Furn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6	-	6	8	-	4		
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase	Ū	2	2	•	0	Ū	0	Ū	•	•	
Ainimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
/inimum Split (s)	11.0	30.0	30.0	11.0	30.0	30.0	42.4	42.4	42.4	42.4	
otal Split (s)	15.0	32.0	32.0	15.0	32.0	32.0	43.0	43.0	42.4	43.0	
	16.7%	35.6%	35.6%	16.7%	35.6%	35.6%	43.0	43.0	43.0	43.0	
otal Split (%)											
'ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
II-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	7.4	7.4	7.4	7.4	
ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	59.9	54.6	54.6	53.5	46.2	46.2	17.5	17.5	17.5	17.5	
Actuated g/C Ratio	0.67	0.61	0.61	0.59	0.51	0.51	0.19	0.19	0.19	0.19	
/c Ratio	0.44	0.24	0.08	0.04	0.60	0.23	0.60	0.15	0.46	0.50	
Control Delay	11.8	11.8	2.1	6.5	15.9	1.6	45.2	18.4	35.7	9.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	11.8	11.8	2.1	6.5	15.9	1.6	45.2	18.4	35.7	9.4	
OS	В	В	А	А	В	А	D	В	D	А	
pproach Delay		10.8			13.5			36.5		18.2	
pproach LOS		В			В			D		В	
Queue Length 50th (m)	7.0	13.5	0.0	0.6	61.2	0.0	17.4	4.7	18.6	4.4	
Queue Length 95th (m)	25.2	47.8	4.6	m2.3	#138.1	6.1	24.8	10.2	25.1	16.9	
nternal Link Dist (m)	20.2	805.4	1.0	112.0	169.5	0.1	21.0	132.3	20.1	125.7	
Furn Bay Length (m)	70.0	003.4	50.0	50.0	107.5	80.0	30.0	132.3	45.0	123.7	
Base Capacity (vph)	372	2057	928	637	1740	842	353	672	507	723	
1 2 1 2	0	2037	920	037	0	042	303 0	072	0	0	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn											
Storage Cap Reductn	0 40	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.24	0.08	0.03	0.60	0.23	0.29	0.07	0.23	0.32	
ntersection Summary											
ycle Length: 90											
ctuated Cycle Length: 90											
Offset: 27 (30%), Referenced to p	hase 2:EBTL a	nd 6:WBTI	. Start of Gr	een							
latural Cycle: 85			, 5.001								
Control Type: Actuated-Coordinate	ed										
faximum v/c Ratio: 0.60	Uu										
ntersection Signal Delay: 14.8				In	tersection L	OS B					
itersection Capacity Utilization 8	5 69/				U Level of S						
	J.U 70			IC	U Level OI	SELVICE E					
nalysis Period (min) 15	Any 4th 2014										
Description: Signal Timing Plan: N			Leven								
95th percentile volume exceed		eue may be	longer.								
Queue shown is maximum after											
n Volume for 95th percentile qu	eue is metered	by upstrea	m signal.								
Splits and Phases: 2: City Park	/Bathgate & Oc	ilvie									
	<u> </u>					Ø4					
🛉 🔰 👖 Trad	Ø2 (R)					~ jø4					

√ Ø1	🗘 🗇 Ø2 (R)	↓ Ø4
15 s	32 s	43 s
	∲ Ø6 (R)	<↑ _{Ø8}
15 s	32 s	43 s

Existing - AM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	۲.	††	1	۲.	<u>††</u>	1	۲	ef 🗧	٦.	4Î		
Traffic Volume (vph)	90	453	62	88	925	122	77	35	4	3		
Future Volume (vph)	90	453	62	88	925	122	77	35	4	3		
Lane Group Flow (vph)	95	477	65	93	974	128	81	108	4	39		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA		
Protected Phases	1 01111	2	1 0.111	1 0.1.11	6	1 01111	1 01111	8	1 0	4	3	7
Permitted Phases	2	-	2	6	Ū	6	8	Ū	4		Ū	•
Detector Phase	2	2	2	6	6	6	8	8	4	4		
Switch Phase	-	-	-	Ŭ	Ŭ	Ū	Ŭ	Ŭ	•	·		
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	35.1	35.1	35.1	35.1	35.1	35.1	33.5	33.5	33.5	33.5	5.0	5.0
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	37.8%	37.8%	37.8%	37.8%	6%	5.0 6%
Yellow Time (s)	30.770	3.7	3.7	30.770	3.7	3.7	3.3	37.070	37.070	37.070	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s) Total Lost Time (s)	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.5	0.0 6.5	0.0 6.5	0.0 6.5		
	0.1	0.1	0.1	0.1	0.1	0.1					Lood	Lood
Lead/Lag							Lag Yes	Lag Yes	Lag Yes	Lag Yes	Lead Yes	Lead Yes
Lead-Lag Optimize?	C May	C-Max	C May	C Max	C May	C Mov						
Recall Mode	C-Max		C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	14.4	14.4	14.4	14.4		
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.16	0.16	0.16	0.16		
v/c Ratio	0.30	0.20	0.07	0.17	0.42	0.14	0.42	0.35	0.02	0.15		
Control Delay	15.8	9.4	7.3	8.3	8.3	2.3	38.9	15.5	27.2	11.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.8	9.4	7.3	8.3	8.3	2.3	38.9	15.5	27.2	11.6		
LOS	В	A	А	А	A	A	D	В	С	В		
Approach Delay		10.1			7.6			25.6		13.1		
Approach LOS		В			A		40.0	С	. (В		
Queue Length 50th (m)	3.5	8.7	0.0	4.0	27.3	0.0	13.3	5.8	0.6	0.5		
Queue Length 95th (m)	24.1	45.1	13.9	18.1	76.5	8.2	21.9	16.1	2.8	7.3		
Internal Link Dist (m)		200.1			350.0			137.2		101.6		
Turn Bay Length (m)	45.0		130.0	100.0		65.0	50.0		30.0			
Base Capacity (vph)	318	2334	918	552	2334	937	365	524	362	451		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.30	0.20	0.07	0.17	0.42	0.14	0.22	0.21	0.01	0.09		
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phase	se 2:EBTL a	nd 6:WBTL	, Start of Gr	een								
Natural Cycle: 75												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.42												
Intersection Signal Delay: 10.2				In	tersection L	OS: B						
Intersection Capacity Utilization 72.7	%				U Level of S							
Analysis Period (min) 15												
Splits and Phases: 4: City Park/CS	sivlin0 & 212	2										
A		-				Høj						
•						л в Ø.	3 ∳ ®Ø4 34 s					
🛘 🐳 Ø6 (R)						λİø	7 🗋 Ø8					_

34 s

51 s

Existing - AM 6: Blair & OR-174 OFF

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Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
ane Configurations	1	1	1	1	1	ሻሻ	1	^	1	
Fraffic Volume (vph)	87	154	225	173	453	250	1288	646	87	
Future Volume (vph)	87	154	225	173	453	250	1288	646	87	
ane Group Flow (vph)	92	162	237	182	477	263	1356	680	92	
urn Type	Perm	pm+ov	Perm	NA	Perm	Prot	NA	NA	Perm	
Protected Phases	I CIIII	5	I CIIII	8	I CIIII	5	2	6	I CIIII	
Permitted Phases	4	4	8	0	8	J	2	0	6	
Detector Phase	4	4 5	8	8	8	5	2	6	6	
Switch Phase	4	J	0	0	U	J	2	0	0	
Ainimum Initial (s)	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	
Ainimum Split (s)	36.8	11.4	36.8	36.8	36.8	11.4	30.1	30.1	30.1	
Total Split (s)	41.0	27.0	41.0	41.0	41.0	27.0	59.0	32.0	32.0	
otal Split (%)	41.0%	27.0%	41.0%	41.0%	41.0%	27.0%	59.0%	32.0%	32.0%	
'ellow Time (s)	3.3	4.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	
	3.5	4.2	3.5		3.5 3.5	4.2		4.2		
II-Red Time (s)	3.5 0.0	0.0	3.5 0.0	3.5 0.0	3.5 0.0	0.0	1.9 0.0	0.0	1.9 0.0	
ost Time Adjust (s)			0.0 6.8		0.0 6.8	0.0 6.4	0.0 6.1		0.0 6.1	
otal Lost Time (s)	6.8	6.4 Lead	0.ŏ	6.8	0.ŏ	6.4 Lead	0.1	6.1 Lag		
ead/Lag						Yes		0	Lag Yes	
ead-Lag Optimize?	Mone	Yes	Mona	Mone	Mana		N 41m	Yes		
Recall Mode Act Effct Green (s)	None 28.9	None 48.5	None 28.9	None 28.9	None 28.9	None 12.5	Min	Min 22.9	Min 22.9	
()							42.1			
Actuated g/C Ratio	0.34	0.57	0.34	0.34	0.34	0.15	0.50	0.27	0.27	
/c Ratio	0.24	0.18	0.41	0.30	0.85	0.54	0.80	0.52	0.19	
Control Delay	24.1	8.0	25.3	23.5	36.7	40.3	22.5	28.1	4.7	
Dueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	24.1	8.0	25.3	23.5	36.7	40.3	22.5	28.1	4.7	
OS	С	А	С	C	D	D	С	С	А	
pproach Delay				31.0			25.4	25.3		
Approach LOS	10.0	0.5	00.0	С	50.4	00.7	С	С	0.0	
Queue Length 50th (m)	10.9	9.5	29.9	22.0	58.4	22.7	103.2	36.6	0.0	
Queue Length 95th (m)	25.0	20.1	55.8	42.7	#124.7	36.0	130.0	50.8	8.1	
nternal Link Dist (m)			70.0	105.9	05.0	05.0	166.4	212.5	70.0	
urn Bay Length (m)	170	10.17	70.0	757	25.0	85.0	000/		70.0	
Base Capacity (vph)	473	1046	719	757	675	840	2226	1646	579	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
pillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.15	0.33	0.24	0.71	0.31	0.61	0.41	0.16	
ntersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 84.5										
latural Cycle: 80										
Control Type: Semi Act-Uncoord										
Aaximum v/c Ratio: 0.85										
ntersection Signal Delay: 25.9				In	tersection LC	DS: C				
ntersection Capacity Utilization 89.5%	/ 0			IC	CU Level of S	ervice E				
viaiysis Periou (min) 15										
	5, 2016									
escription: Signal Timing Plan: May 5		eue may be	longer.							
escription: Signal Timing Plan: May 5	apacity, qu	eue may be	longer.							
bescription: Signal Timing Plan: May 5 95th percentile volume exceeds ca Queue shown is maximum after two	apacity, qu o cycles.	eue may be	longer.							
Description: Signal Timing Plan: May 5 95th percentile volume exceeds ca Queue shown is maximum after two Splits and Phases: 6: Blair & OR-17	apacity, qu o cycles.	eue may be	longer.							
Description: Signal Timing Plan: May 5 95th percentile volume exceeds ca Queue shown is maximum after two	apacity, qu o cycles.	eue may be	longer.				Ø4			
Description: Signal Timing Plan: May 5 95th percentile volume exceeds ca Queue shown is maximum after two Splits and Phases: 6: Blair & OR-17	apacity, qu o cycles.	eue may be	longer.			41	s			
Splits and Phases: 6: Blair & OR-17	apacity, qu o cycles.	eue may be	longer.							

Existing - AM 7: Service & City Park

beak Hour Factor 0.95 0.9							
Novement EBT EBR WBL WBT NBL NBR ane Configurations 1 49 24 16 96 77 uture Volume (veh/h) 13 49 24 16 96 77 uture Volume (Veh/h) 13 49 24 16 96 77 gin Control Free Free Stop 57 95 0.95 0		-	\rightarrow	-	+	•	-
ane Configurations ↓	N				WDT	NDI	-
raffic Volume (veh/h) 13 49 24 16 96 77 uture Volume (Veh/h) 13 49 24 16 96 77 igin Control Free Free Stop rade 0% 0% 0% 0% veak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95			FRK	WBL			NBR
uture Volume (Veh/h) 13 49 24 16 96 77 ign Control Free Stage 0%							
Free Free Stop orade 0% 0% 0% beak Hour Factor 0.95 0.95 0.95 0.95 0.95 beak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 bedestrians ane Width (m) 14 52 25 17 101 81 vedestrians ane Width (m) Valking Speed (m/s) retreent Blockage retreent Blockage retreent Blockage tight turn flare (veh) 100 287 retreent Blockage retreent Blockage tight turn flare (veh) 66 107 40 740 C1, stage 1 conf vol 22, stage 2 conf vol 33 C2, stage 2 conf vol 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 101 101 101 101 101 101 101 101 101 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Trade 0% 0% 0% 0% 0% teak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 tourly flow rate (vph) 14 52 25 17 101 81 tedestrians ane Width (m) valking Speed (m/s) verent Blockage verent Blockage verent Blockage Valking Speed (m/s) verent Blockage verent Blockage verent Blockage verent Blockage Valking Speed (m/s) verent Blockage verent Blockage verent Blockage verent Blockage Valking Speed (m/s) verent Blockage verent Blockage verent Storage verent verent Storage verent Jpstream signal (m) 287 X, platoon unblocked verent Storage verent verent Storage verent C, conflicting volume 66 107 40 verent Storage verent verent Storage Verent C, unblocked vol 66 107 40 verent Storage Verent verent Storage Verent verent Storage Verent verent Storage Verent S			49	24			77
beak Hour Factor 0.95							
Houry flow rate (vph) 14 52 25 17 101 81 redestrians ane Width (m) Valking Speed (m/s)	Grade						
Pededitians Image: Speed (m/s) variable in the speed (m/s) Valking Speed (m/s) Verecrent Blockage None Redian type None More None Aedian type None Valking Speed (m/s) 287 Verecrent Blockage veh) 287 Jpstream signal (m) 287 X, platoon unblocked 287 C, conflicting volume 66 107 40 C1, stage 1 conf vol 20 100 40 C2, stage 2 conf vol							
ane Width (m) Valking Speed (m/s) Valking	Hourly flow rate (vph)	14	52	25	17	101	81
Valking Speed (m/s) None None Vercent Blockage None None Vedian type None None Aedian storage veh) 287 /pstream signal (m) 287 X, platoon unblocked C, conflicting volume 66 107 40 C1, stage 1 conf vol C, stage 1 conf vol C Cu, unblocked vol 66 107 40 C2, stage 1 conf vol 66 107 40 6.2 C, single (s) 4.1 6.4 6.2 C, single (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Vercetion, Lane # EB 1 WB 1 NB 1 Vercetion, Lane # EB 1 VB 1 NB Volume Total 66 42 182 1031 Vincetion, Lane # EB 1 WB 1 NB 1 Vercetion, Lane # Vercet	Pedestrians						
Percent Blockage None None Redian type None None Aedian storage veh) 287 Again storage veh) 287 X, platoon unblocked 287 C, conflicting volume 66 107 40 C1, stage 1 conf vol	Lane Width (m)						
Percent Blockage None None Redian type None None Aedian storage veh) 287 Again storage veh) 287 X, platoon unblocked 287 C, conflicting volume 66 107 40 C1, stage 1 conf vol	Walking Speed (m/s)						
None None None Aedian stype None None Aedian storage veh) 287 Jpstream signal (m) 287 X, platoon unblocked C. conflicting volume 66 107 40 C1, stage 1 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 2.2 3.5 3.3 O queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 100 Yolume Right 52 0 81 SH 1700 1536 939 100 Yolume Right 52 0 81 SH 1700 1536 939 100 100 10 100 10 100 10 100 10	Percent Blockage						
None None Aedian storage veh) 287 /pstream signal (m) 287 X, platoon unblocked 66 107 40 C1, stage 1 conf vol 7 40 7 C2, stage 2 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 7 7 F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 1001 Volume Total 66 42 182 1001 1001 Volume Right 52 0 81 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001	Right turn flare (veh)						
Median storage veh) 287 Jpstream signal (m) 287 X, platoon unblocked 66 107 40 C1, stage 1 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C2, stage 2 conf vol 66 107 40 C3, stage 1 conf vol 66 107 40 C4, stage 1 conf vol 66 107 40 C2, stage 2 conf vol 4.1 6.4 6.2 C4, unblocked vol 66 107 40 C, 2 stage (s) 7 2.2 3.5 3.3 F (s) 2.2 3.5 3.3 0 O queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 1 Yolume Left 0 25 101 1 1 Yolume Right 52 0 81 1 1 1 SH	Median type	None			None		
Ipstream signal (m) 287 X, platoon unblocked 66 C, conflicting volume 66 C1, stage 1 conf vol 740 C2, stage 2 conf vol 66 Cu, unblocked vol 66 C, single (s) 4.1 C, stage (s) 740 F (s) 2.2 3.5 O queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Veloume Total 66 42 182 /olume Total 66 42 182 Veloume Right 52 0 81 SH 1700 1536 939 Veloume Left 0 25 101 /olume Right 52 0 81 S1 S1 S1 S1 SH 1700 1536 939 Veloume Left 0.0 0.4 5.4 S1							
X, platoon unblocked C, conflicting volume 66 107 40 C1, stage 1 conf vol 22, stage 2 conf vol 740 C2, stage 2 conf vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 740 F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 9.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A A opproach LOS A A A opproach LOS A A A					287		
C, conflicting volume 66 107 40 C1, stage 1 conf vol 0 107 40 C2, stage 2 conf vol 66 107 40 Cu, unblocked vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 7 7 F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 10 Volume Total 66 42 182 1031 Volume Left 0 25 101 10 Volume Right 52 0 81 10 SH 1700 1536 939 10 Volume to Capacity 0.04 0.02 0.19 10 Queue Length 95th (m) 0.0 4.4 9.8 10 10 Control Delay (s) 0.0 4.4 9.8 10 10 A A					207		
C1, stage 1 conf vol C2, stage 2 conf vol Cu, unblocked vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Dueue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A A A Approach Delay (s) 0.0 4.4 9.8 ane LOS A A htersection Summary verage Delay 6.8 tersection Capacity Utilization 26.2% ICU Level of Service	vC. conflicting volume			66		107	40
C2, stage 2 conf vol 66 107 40 Cu, unblocked vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 7 7 F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 VIIII Volume Total 66 42 182 1031 Volume Left 0 25 101 101 Volume Right 52 0 81 1031 SH 1700 1536 939 101 Volume to Capacity 0.04 0.02 0.19 101 Queue Length 95th (m) 0.0 0.4 9.8 101 Control Delay (s) 0.0 4.4 9.8 102 101 Queue Length 95th (m) 0.0 4.4 9.8 101 101 Opproach Delay (s) 0.0 4.4 9.8 102	vC1_stage 1 conf vol			00		107	U
Cu, unblocked vol 66 107 40 C, single (s) 4.1 6.4 6.2 C, 2 stage (s) 7 7 7 F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 /olume Left 0 25 101 /olume kight 52 0 81 SH 1700 1536 939 /olume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach LOS A A netersection Summary 6.8 1CU Level of Service							
C, single (s) 4.1 6.4 6.2 C, 2 stage (s) F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 /olume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A netersection Summary 6.8 ICU Level of Service				66		107	40
C, 2 stage (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB1 WB1 NB1 Volume Total 66 42 182 folume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A netersection Summary 6.8 ICU Level of Service							
F (s) 2.2 3.5 3.3 0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach Delay (s) 0.0 4.4 9.8 approach LOS A A htersection Summary 6.8 1CU Level of Service				4.1		0.4	0.2
0 queue free % 98 88 92 M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Left 0 25 101 Olume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A A werage Delay (s) 0.0 4.4 9.8 opproach LOS A A A Mersection Summary 6.8 ICU Level of Service	tE (c)			2.2		2 5	2.2
M capacity (veh/h) 1536 876 1031 Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Total 0 25 101 Volume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A werage Delay 6.8 ICU Level of Service							
Direction, Lane # EB 1 WB 1 NB 1 Volume Total 66 42 182 Volume Total 0 25 101 Volume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A netersection Summary A A verage Delay 6.8 ICU Level of Service							
Volume Total 66 42 182 /olume Left 0 25 101 /olume Right 52 0 81 SH 1700 1536 939 /olume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A htersection Summary 6.8 1CU Level of Service	civi capacity (ven/n)			1536		876	1031
Volume Left 0 25 101 Volume Right 52 0 81 SH 1700 1536 939 Volume to Capacity 0.04 0.02 0.19 Dueue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach Delay (s) 0.0 4.4 9.8 Approach LOS A A htersection Summary 6.8 ICU Level of Service	Direction, Lane #	EB 1	WB 1				
folume Right 52 0 81 SH 1700 1536 939 folume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach Delay (s) 0.0 4.4 9.8 Approach LOS A A htersection Summary 6.8 ICU Level of Service	Volume Total	66					
folume Right 52 0 81 SH 1700 1536 939 folume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach Delay (s) 0.0 4.4 9.8 Approach LOS A A htersection Summary 6.8 ICU Level of Service	Volume Left	0	25	101			
SH 1700 1536 939 /olume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A ntersection Summary A A werage Delay 6.8 ICU Level of Service	Volume Right	52					
Volume to Capacity 0.04 0.02 0.19 Queue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A A ntersection Summary A A werage Delay 6.8 ICU Level of Service	cSH	1700	1536	939			
Dueue Length 95th (m) 0.0 0.4 5.4 Control Delay (s) 0.0 4.4 9.8 ane LOS A A opproach Delay (s) 0.0 4.4 9.8 opproach LOS A 9.8 Intersection Summary 6.8 ICU Level of Service	Volume to Capacity						
Control Delay (s) 0.0 4.4 9.8 ane LOS A A Approach Delay (s) 0.0 4.4 9.8 Approach LOS A A Intersection Summary 6.8 Intersection Capacity Utilization 26.2% ICU Level of Service							
A A A A Approach Delay (s) 0.0 Approach LOS A Antersection Summary A werage Delay 6.8 Antersection Capacity Utilization 26.2%							
Approach Delay (s) 0.0 4.4 9.8 Approach LOS A Intersection Summary werage Delay 6.8 Intersection Capacity Utilization 26.2% ICU Level of Service	Lane LOS						
A A A A A A A A A A A A A A A A A A A		0.0					
ntersection Summary werage Delay 6.8 ntersection Capacity Utilization 26.2% ICU Level of Service		0.0	1. 1				
Kerage Delay 6.8 Intersection Capacity Utilization 26.2% ICU Level of Service				7			
ntersection Capacity Utilization 26.2% ICU Level of Service							
nalysis Period (min) 15	Intersection Capacity Utilization				IC	U Level of S	Service
	Analysis Period (min)			15			

Existing - AM 8: Site/SilverCity & City Park

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	59	1	3	107	2	0	0	2	2	0	0
Future Volume (vph)	1	59	1	3	107	2	0	0	2	2	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	62	1	3	113	2	0	0	2	2	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	64	118	2	2								
Volume Left (vph)	1	3	0	2								
Volume Right (vph)	1	2	2	0								
Hadj (s)	0.03	0.03	-0.57	0.23								
Departure Headway (s)	4.0	4.0	3.7	4.5								
Degree Utilization, x	0.07	0.13	0.00	0.00								
Capacity (veh/h)	878	893	912	751								
Control Delay (s)	7.4	7.6	6.7	7.5								
Approach Delay (s)	7.4	7.6	6.7	7.5								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.5									
Level of Service			А									
Intersection Capacity Utilization			17.8%	ICI	J Level of Serv	/ice			А			
Analysis Period (min)			15									

Existing - AM 9: Site & City Park

	_	~	4	+	•	1
		•	-			-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1	0	0	्रभ	Y	0
Traffic Volume (veh/h)	119	0	0	146	0	0
Future Volume (Veh/h)	119	0	0	146	0	0
Sign Control	Free			Free	Stop	
Grade	0%	0.05	0.05	0%	0%	0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	125	0	0	154	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			125		279	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			125		279	125
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1462		711	926
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	125	154	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1462	1700			
Volume to Capacity	0.07	0.00	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	010	010	A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			11.4%	ICI	U Level of S	ervice
Analysis Period (min)			15	101		
			15			

Existing - PM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	ľ	††	1	۲.	<u>††</u>	1	۲	4î	۲	4
Traffic Volume (vph)	144	983	137	14	954	164	105	28	189	52
uture Volume (vph)	144	983	137	14	954	164	105	28	189	52
ane Group Flow (vph)	152	1035	144	15	1004	173	111	57	199	247
Furn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Vinimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Vinimum Split (s)	11.0	29.0	29.0	11.0	29.0	29.0	42.4	42.4	42.4	42.4
Total Split (s)	20.0	37.0	37.0	20.0	37.0	37.0	43.0	43.0	43.0	43.0
Total Split (%)	20.0%	37.0%	37.0%	20.0%	37.0%	37.0%	43.0%	43.0%	43.0%	43.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4
ost Time Adjust (s)	-0.7	-2.0	-2.0	-0.7	-2.0	-2.0	-3.4	-3.4	-3.4	-3.4
Fotal Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
.ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	1.0	1.0	1.0	1.0
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	66.3	61.9	61.9	58.9	52.3	52.3	25.7	25.7	25.7	25.7
Actuated g/C Ratio	0.66	0.62	0.62	0.59	0.52	0.52	0.26	0.26	0.26	0.26
/c Ratio	0.43	0.49	0.02	0.04	0.52	0.21	0.58	0.13	0.61	0.46
Control Delay	11.8	14.3	5.1	6.5	13.4	1.1	42.7	15.0	39.3	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Delay	11.8	14.3	5.1	6.5	13.4	1.1	42.7	15.0	39.3	9.7
OS	B	В	A	A	B	A	42.7 D	B	57.5 D	A
pproach Delay	D	13.1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	11.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	U	33.3	U	22.9
pproach LOS		B			B			C		C
Queue Length 50th (m)	9.4	43.8	2.1	0.6	52.4	0.0	19.1	4.3	34.6	8.4
Queue Length 95th (m)	24.7	109.5	15.3	m1.7	#94.0	0.6	30.8	11.3	46.9	22.9
nternal Link Dist (m)	27.7	805.4	10.0		169.5	0.0	50.0	132.3	10.7	125.7
Furn Bay Length (m)	70.0	000.4	50.0	50.0	107.5	80.0	30.0	102.0	45.0	120.7
Base Capacity (vph)	435	2097	940	483	1772	843	291	655	497	722
Starvation Cap Reductn	4JJ	0	0	405	0	043	0	000	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.15	0.03	0.57	0.21	0.38	0.09	0.40	0.34
htersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100 Dffset: 19 (19%), Referenced to p	hasa D.EDTL	nd 6-\MPTI	Start of Cr	00 n						
atural Cycle: 85		NU U.WDIL	, Start UI GI	CCII						
ontrol Type: Actuated-Coordinat	ha									
laximum v/c Ratio: 0.61	eu									
				l a	torcontion					
tersection Signal Delay: 14.9	7 20/				tersection L					
tersection Capacity Utilization 7	1.370			IC	U Level of S	DEI VICE D				
nalysis Period (min) 15	104 Ath 2014									
Description: Signal Timing Plan: N		aug mauk-	longor							
95th percentile volume exceed		eue may be	ionger.							
Queue shown is maximum after		bu unatur -	molanal							
n Volume for 95th percentile qu	ieue is metereo	i by upstrea	m signal.							
plits and Phases: 2: City Park	/Bathgate & Oc	ilvie								
√ Ø1						<u> </u>				
Ø1	🖕 🗲 Ø2 (R)						14			

√ Ø1	₩ Ø2 (R)	Ø4
20 s	37 s	43 s
.≁ _{Ø5}	∲ Ø6 (R)	√1 ø8
20 s	37 s	43 s

Existing - PM 4: City Park/CSIS & Ogilvie

	≯	→	*	4	4	•	•	Ť	×	Ļ		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	۲.	<u>††</u>	1	5	<u>††</u>	1	٢	f,	ň	4		
Traffic Volume (vph)	16	1065	142	182	538	18	206	7	64	22		
Future Volume (vph)	16	1065	142	182	538	18	206	7	64	22		
Lane Group Flow (vph)	17	1121	149	192	566	19	217	158	67	128		
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA		
Protected Phases	T OITIT	2	1 onn	1	6	1 onn	T OITH	8	1 onn	4	3	7
Permitted Phases	2	2	2	6	U	6	8	U	4	•	Ū	,
Detector Phase	2	2	2	1	6	6	8	8	4	4		
Switch Phase	2	2	2		0	0	U	0	т	7		
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	29.1	29.1	29.1	10.9	29.1	29.1	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	46.0	46.0	46.0	15.0	61.0	61.0	34.0	34.0	34.0	34.0	5.0	5.0
	46.0%	46.0%	46.0%	15.0%	61.0%	61.0%	34.0%	34.0%	34.0%	34.0%	5%	5%
Total Split (%)	40.0%	40.0%	40.0%			3.7	34.0%	34.0%	34.0%	34.0%	2.0	2.0
Yellow Time (s)				3.0	3.7							
All-Red Time (s)	2.4	2.4	2.4	1.0	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
Lost Time Adjust (s)	-2.1	-2.1	-2.1	0.0	-2.1	-2.1	-2.5	-2.5	-2.5	-2.5		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	المعار	1
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	~ • •		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	50.0	50.0	50.0	64.6	64.6	64.6	26.4	26.4	26.4	26.4		
Actuated g/C Ratio	0.50	0.50	0.50	0.65	0.65	0.65	0.26	0.26	0.26	0.26		
v/c Ratio	0.05	0.66	0.20	0.64	0.26	0.03	0.78	0.34	0.27	0.28		
Control Delay	9.2	16.6	2.7	21.4	8.8	0.1	53.2	7.1	30.3	9.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.2	16.6	2.7	21.4	8.8	0.1	53.2	7.1	30.3	9.2		
LOS	A	В	А	С	A	А	D	А	С	А		
Approach Delay		14.9			11.7			33.8		16.5		
Approach LOS		В			В			С		В		
Queue Length 50th (m)	1.8	96.2	5.9	13.7	22.6	0.0	38.1	1.0	10.1	3.3		
Queue Length 95th (m)	m2.2	55.2	4.3	#37.5	37.6	0.0	#68.1	15.1	20.9	16.3		
Internal Link Dist (m)		200.1			350.0			137.2		101.6		
Turn Bay Length (m)	45.0		130.0	100.0		65.0	50.0		30.0			
Base Capacity (vph)	345	1695	732	318	2189	733	321	517	289	513		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.05	0.66	0.20	0.60	0.26	0.03	0.68	0.31	0.23	0.25		
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 30 (30%), Referenced to phase	se 2:EBTL a	nd 6:WBTL	, Start of Gr	een								
Natural Cycle: 75			,									
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 16.8				In	tersection L	OS∙ B						
Intersection Capacity Utilization 83.7	%				U Level of S							
Analysis Period (min) 15												
Description: Signal Timing Plan: May	5th 2016											
 # 95th percentile volume exceeds of 		aua may ba	longer									
Queue shown is maximum after the		eue may be	ionger.									
m Volume for 95th percentile queue		l by upstrea	m signal.									
Splits and Phases: 4: City Park/CS	5	5						in a s				
Ø1	(K)						₩ÅØ3 ↓					
15 s 46 s							5s 34	0				

🖌 Ø1	• 💤 Ø2 (R)	. ₩ \$ø3 ₽`ø4
15 s	46 s	5 s 34 s
	•	
61 s		5 s 34 s

Existing - PM 6: Blair & OR174 WB Off

	۶	\mathbf{r}	4	+	•	1	1	ţ	4
Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	5	1	٦	†	1	ሻሻ	<u>††</u>	<u> </u>	1
Traffic Volume (vph)	124	477	94	106	139	300	886	1724	171
Future Volume (vph)	124	477	94	106	139	300	886	1724	171
Lane Group Flow (vph)	131	502	99	112	146	316	933	1815	180
Turn Type	Perm	pm+ov	Perm	NA	Free	Prot	NA	NA	Free
Protected Phases	T CITI	5	T CITI	8	1100	5	2	6	1100
Permitted Phases	4	4	8	U	Free	0	2	0	Free
Detector Phase	4	5	8	8	1100	5	2	6	1100
Switch Phase		U	Ū	Ū		0	2	0	
Minimum Initial (s)	10.0	5.0	10.0	10.0		5.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8		11.4	30.1	30.1	
Total Split (s)	36.8	31.0	36.8	36.8		31.0	94.0	63.0	
Total Split (%)	28.1%	23.7%	28.1%	28.1%		23.7%	71.9%	48.2%	
Yellow Time (s)	3.3	4.2	3.3	3.3		4.2	4.2	4.2	
All-Red Time (s)	3.5	1.2	3.5	3.5		1.2	1.2	1.9	
Lost Time Adjust (s)	-2.8	-2.1	-2.8	-2.8		-2.1	-2.1	-2.1	
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	ч. 0	Lead	ч.0	ч.u		Lead	т.0	Lag	
Lead-Lag Optimize?		Yes				Yes		Yes	
Recall Mode	None	None	None	None		None	C-Max	C-Max	
Act Effct Green (s)	23.9	54.0	23.9	23.9	130.8	26.1	98.9	68.8	130.8
Actuated g/C Ratio	0.18	0.41	0.18	0.18	1.00	0.20	0.76	0.53	1.00
v/c Ratio	0.18	0.41	0.18	0.18	0.10	0.20	0.76	0.53	0.12
Control Delay	69.8	39.9	47.3	47.7	0.10	48.8	6.5	26.8	0.12
Queue Delay	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.2
Total Delay	69.8	39.9	47.3	47.7	0.0	48.8	6.5	26.8	0.0
LOS	09.0 E	57.7 D	47.J	47.7 D	0.1 A	40.0 D	0.5 A	20.0 C	0.2 A
Approach Delay	L	U	U	28.1	~	U	17.2	24.4	А
Approach LOS				20.1 C			B	24.4 C	
Queue Length 50th (m)	32.0	104.0	22.4	25.4	0.0	37.1	37.2	128.2	0.0
Queue Length 95th (m)	50.6	131.1	36.0	39.6	0.0	51.4	60.9	120.2	0.0
Internal Link Dist (m)	50.0	131.1	30.0	105.9	0.0	31.4	129.2	212.5	0.0
Turn Bay Length (m)			70.0	103.7	25.0	85.0	127.2	212.0	70.0
Base Capacity (vph)	253	657	425	447	1478	690	2563	2562	1498
Starvation Cap Reductn	253	007	423	447	0	090	2503	2302	0
Spillback Cap Reductin	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	0.52	0.76	0.23	0.25	0.10	0.46	0.36	0.71	0.12
	0.52	0.70	0.20	0.20	0.10	0.40	0.50	0.71	0.12
Intersection Summary Cycle Length: 130.8									
Actuated Cycle Length: 130.8									
Offset: 50 (38%), Referenced to phase	se 2:NBT ar	nd 6 SBT SI	art of Green	1					
Natural Cycle: 90		a 0.501, 51							
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.78									
Intersection Signal Delay: 25.8				Int	ersection L(<u> 15.</u> C			
Intersection Capacity Utilization 84.7	%				J Level of S				
Analysis Period (min) 15	70								
Description: Signal Timing Plan: May	/ 5th, 2016								
Splits and Phases: 6: Blair & OR1	74 WR ∩ff								
									~ .
Tø2 (R)									Ø4
94 s								36.8	S

Ø2 (R)	•	🚽 ø4
94 s		36.8 s
\$ Ø5	↓ ↓ Ø6 (R)	₩ø8
31 s	63 s	36.8 s

Existing - PM 7: Transitway & City Park

		\mathbf{i}	4	+	1	*
		•				•
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	f)			र्भ	Y	
Traffic Volume (veh/h)	88	128	73	32	124	80
Future Volume (Veh/h)	88	128	73	32	124	80
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	93	135	77	34	131	84
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				287		
pX, platoon unblocked						
vC, conflicting volume			228		348	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			228		348	160
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					0.1	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			94		79	91
cM capacity (veh/h)			1340		611	885
					011	000
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	228	111	215			
Volume Left	0	77	131			
Volume Right	135	0	84			
cSH	1700	1340	695			
Volume to Capacity	0.13	0.06	0.31			
Queue Length 95th (m)	0.0	1.4	10.0			
Control Delay (s)	0.0	5.6	12.5			
Lane LOS		А	В			
Approach Delay (s)	0.0	5.6	12.5			
Approach LOS			В			
Intersection Summary						
			(0			
Average Delay			6.0			
Intersection Capacity Utilization			41.6%	ICI	J Level of S	ervice
Analysis Period (min)			15			

Existing - PM 8: City Park & SilverCity

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	180	6	23	108	25	5	1	23	13	5	4
Future Volume (vph)	5	180	6	23	108	25	5	1	23	13	5	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	189	6	24	114	26	5	1	24	14	5	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	200	164	30	23								
Volume Left (vph)	5	24	5	14								
Volume Right (vph)	6	26	24	4								
Hadj (s)	0.02	-0.03	-0.41	0.05								
Departure Headway (s)	4.2	4.2	4.3	4.8								
Degree Utilization, x	0.23	0.19	0.04	0.03								
Capacity (veh/h)	837	840	764	688								
Control Delay (s)	8.5	8.2	7.5	7.9								
Approach Delay (s)	8.5	8.2	7.5	7.9								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			8.3									
Level of Service			А									
Intersection Capacity Utilization			30.3%	ICI	U Level of Ser	vice			А			
Analysis Period (min)			15									

Existing - PM 9: City Park

	→	~	4	+	•	1
Movement	EBT	▼ EBR	▼ WBL	WBT	NBL	NBR
Lane Configurations	<u>دها</u> ۲۰	LDK	VVDL	<u>۱۵۷۷</u>		NDK
Traffic Volume (veh/h)	203	0	0	4 161	T 0	0
Future Volume (Veh/h)	203	0	0	161	0	0
Sign Control	Free	v	U	Free	Stop	U
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	214	0.75	0.75	169	0.75	0.75
Pedestrians	214	0	0	107	0	0
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	None			None		
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			214		383	214
vC1, stage 1 conf vol			214		303	214
vC2, stage 2 conf vol						
vCu, unblocked vol			214		383	214
tC, single (s)			4.1		383 6.4	6.2
tC, 2 stage (s)			4.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1356		620	826
					020	020
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	214	169	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1356	1700			
Volume to Capacity	0.13	0.00	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			А			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			А			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			14.6%	ICI	J Level of S	ervice
Analysis Period (min)			14.070	100		01 1100
			15			





City Operations - Transportation Services Collision Details Report - Public Version

From: January 1, 2013 To: December 31, 2017

Traffic Control: Tra	ffic signal						Total C	ollisions: 97	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2013-Jan-06, Sun,09:19	Snow	Sideswipe	P.D. only	Packed snow	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2013-Jan-06, Sun,11:09	Snow	Rear end	Non-fatal injury	Slush	West	Turning left	Pick-up truck	Other motor vehicle	
					West	Turning left	Pick-up truck	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2013-Jan-10, Thu,17:20	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Passenger van	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2013-Jan-15, Tue,11:54	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

2013-Jan-22, Tue,09:00	Clear	Rear end	P.D. only	Dry	North North	Going ahead Stopped	Automobile, station wagon Automobile, station wagon	Other motor vehicle Other motor vehicle	
2013-Jan-28, Mon,14:03	Snow	SMV other	Non-fatal injury	Wet	West	Turning left	Passenger van	Pedestrian	1
2013-Feb-05, Tue,20:32	Snow	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Pick-up truck	Other motor vehicle	
2013-Feb-17, Sun,09:05	Clear	Rear end	P.D. only	Dry	North	Turning left	Passenger van	Other motor vehicle	
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2013-Feb-26, Tue,17:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2013-Mar-21, Thu,08:00	Clear	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Passenger van	Other motor vehicle	
2013-May-23, Thu,17:29	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	
					North	Stopped	Passenger van	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	

2013-Jun-01, Sat,10:12	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2013-Jun-06, Thu,12:15	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2013-Jun-27, Thu,18:00	Clear	Rear end	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2013-Jun-28, Fri,09:09	Rain	Rear end	Non-fatal injury	Wet	North		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2013-Jun-28, Fri,17:15	Rain	Rear end	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2013-Jul-24, Wed,17:58	Clear	Turning movement	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2013-Jul-25, Thu,12:35	Clear	Rear end	P.D. only	Dry	North		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle

2013-Sep-06, Fri,17:04	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2013-Sep-09, Mon,10:05	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2013-Oct-03, Thu,13:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2013-Nov-04, Mon,14:25	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2013-Dec-04, Wed,15:45	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2013-Dec-09, Mon,02:55	Snow	Turning movement	Non-fatal injury	Wet	North	Turning left	Police vehicle	Other motor vehicle
					North	Going ahead	Police vehicle	Other motor vehicle
2013-Dec-14, Sat,21:24	Snow	Angle	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle

2013-Dec-16, Mon,11:43	Clear	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2013-Dec-18, Wed,08:35	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2013-Dec-23, Mon,10:49	Clear	Sideswipe	P.D. only	Wet	West		Automobile, station wagon	Other motor vehicle
					West		Truck - tractor	Other motor vehicle
2014-Feb-26, Wed,17:00	Clear	Turning movement	P.D. only	Dry	West	Turning left	Passenger van	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2014-Mar-09, Sun,17:34	Clear	Rear end	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					East	00	Automobile, station wagon	Other motor vehicle
2014-Mar-26, Wed,15:53	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2014-May-03, Sat,14:20	Rain	Sideswipe	P.D. only	Wet	North		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle

2014-May-13, Tue,12:40	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Passenger van	Other motor vehicle
2014-May-21, Wed,13:10	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Jun-17, Tue,14:39	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Moped	Other motor vehicle
2014-Jul-25, Fri,21:02	Clear	Rear end	Non-fatal injury	Dry	East	Changing lanes	Pick-up truck	Cyclist
					East	Going ahead	Bicycle	Other motor vehicle
2014-Aug-02, Sat,18:12	Clear	SMV other	P.D. only	Dry	East	Turning left	Automobile, station wagon	Curb
2014-Sep-02, Tue,17:00	Rain	Rear end	P.D. only	Wet	North	Turning right	Pick-up truck	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2014-Dec-13, Sat,18:35	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Jan-06, Tue,18:29	Rain	Rear end	P.D. only	Slush	East	Turning right	Passenger van	Other motor vehicle

					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Jan-20, Tue,15:50	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Unknown	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Jan-23, Fri,00:50	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Jan-28, Wed,14:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2015-Feb-13, Fri,08:42	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2015-Feb-22, Sun,14:44	Clear	Rear end	P.D. only	lce	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Feb-26, Thu,19:05	Clear	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Mar-20, Fri,14:22	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle

					South	Turning right	Pick-up truck	Other motor vehicle
2015-Apr-03, Fri,18:16	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2015-Apr-06, Mon,20:19	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2015-Apr-21, Tue,08:43	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2015-May-08, Fri,17:30	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Unknown	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-May-13, Wed,13:41	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
2015-Jun-11, Thu,15:15	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2015-Jun-11, Thu,16:09	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist

					East	Going ahead	Bicycle	Other motor vehicle
2015-Jul-06, Mon,15:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2015-Aug-26, Wed,19:29	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
_					North	Stopped	Pick-up truck	Other motor vehicle
2015-Sep-15, Tue,16:41	Clear	Rear end	Non-fatal injury	Dry	East	00	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2015-Sep-23, Wed,08:30	Clear	Sideswipe	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle
					West	Unknown	Unknown	Other motor vehicle
2015-Sep-25, Fri,09:32	Clear	Rear end	P.D. only	Dry	West	Going ahead	Delivery van	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Oct-08, Thu,15:40	Clear	Sideswipe	Non-fatal injury	Dry	North	•	Automobile, station wagon	Other motor vehicle
					North	Turning left	Truck and trailer	Other motor vehicle
2015-Oct-23, Fri,13:55	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle

					North		Automobile, station wagon	Other motor vehicle
2015-Nov-05, Thu,16:31	Clear	Turning movement	P.D. only	Dry	North		Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2015-Nov-02, Mon,11:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2015-Nov-26, Thu,13:52	Clear	Rear end	Non-fatal injury	Dry	East		Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Dec-10, Thu,11:28	Clear	Rear end	Non-fatal injury	Dry	West	00	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2015-Dec-15, Tue,06:15	Rain	Turning movement	P.D. only	Wet	West	Going ahead	Passenger van	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2015-Dec-31, Thu,17:45	Clear	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Municipal transit bus	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2016-Jan-12, Tue,18:26	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle

					East	Stopped	Pick-up truck	Other motor vehicle
2016-Feb-07, Sun,13:34	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Passenger van	Other motor vehicle
2016-Feb-12, Fri,17:15	Snow	Rear end	P.D. only	Loose snow	South	Unknown	Unknown	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2016-May-03, Tue,08:59	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2016-May-12, Thu,16:34	Clear	Sideswipe	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2016-Jun-09, Thu,06:35	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Motorcycle	Skidding/sliding
2016-Jul-22, Fri,14:29	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2016-Aug-02, Tue,21:37	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle

2016-Aug-12, Fri,16:16	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile,	Other motor
					North	Stopped	station wagon Pick-up truck	vehicle Other motor
								vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2016-Sep-10, Sat,17:02	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2016-Sep-19, Mon,07:32	Clear	Rear end	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2016-Dec-14, Wed,14:25	Clear	Rear end	P.D. only	Slush	South	Turning right	Automobile, station wagon	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jan-06, Fri,15:05	Clear	Sideswipe	P.D. only	Loose snow	South	Overtaking	Delivery van	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2017-Jan-19, Thu,17:36	Clear	Rear end	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2017-Feb-02, Thu,17:08	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle

2017-Apr-04, Tue,11:34	Rain	Sideswipe	P.D. only	Wet	West	Overtaking	Automobile, station wagon	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2017-May-23, Tue,09:02	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Municipal transit bus	Other motor vehicle
2017-Aug-17, Thu,21:39	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2017-Sep-04, Mon,15:05	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-06, Wed,11:09	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Sep-17, Sun,11:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Oct-04, Wed,13:16	Clear	Other	P.D. only	Dry	West	Reversing	Automobile, station wagon	Other motor vehicle

					East	Turning left	Automobile, station wagon	Other motor vehicle
2017-Oct-27, Fri,11:57	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Oct-30, Mon,09:29	Rain	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Tow truck	Other motor vehicle
2017-Nov-21, Tue, 15:59	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Passenger van	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2017-Nov-29, Wed,08:56	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
_					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Dec-05, Tue,20:15	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
_					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Dec-14, Thu,02:40	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2017-Dec-23, Sat,14:16	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Dec-31, Sun,12:59	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

BLAIR RD @ OR174 IC112 RAMP26 Location:

Traffic Control: No	control				Total Collisions: 4				
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2014-Aug-28, Thu,17:21	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	
					North	Going ahead	Bicycle	Other motor vehicle	
2015-Nov-01, Sun,01:42	Rain	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Ran off road	
2016-Nov-26, Sat,11:07	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Steel guide rail	
2017-Aug-03, Thu,08:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: BLAIR RD @ OR174 IC112 RAMP52											
Traffic Control:	No control					Total C	Collisions: 1				
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Vehicle type	First Event	No. Ped			

2016-Dec-08, Thu,17:12	Snow	Rear end	Non-fatal injury	Loose snow	North	Slowing or stopping		Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle

Location: BLAIR RD @ REGIONAL RD 174 N/OR174 IC112 RAMP61

Traffic Control: Tra	ffic signal			Total Collisions: 100					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2013-Jan-01, Tue,10:07	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Pick-up truck	Other motor vehicle	
2013-Jan-23, Wed,08:20	Clear	Rear end	P.D. only	Dry	North	Slowing or stoppin	ng Pick-up truck	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	
2013-Jan-23, Wed,13:38	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Passenger van	Other motor vehicle	
2013-Jan-29, Tue,17:25	Rain	Rear end	P.D. only	Wet	North	Slowing or stoppin	ng Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2013-Feb-08, Fri,15:06	Snow	Angle	P.D. only	Loose snow	West	Turning right	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Municipal transit bus	Other motor vehicle	

2013-Feb-22, Fri,11:30	Clear	Other	P.D. only	Dry	North	Reversing	Pick-up truck	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2013-Mar-20, Wed,19:13	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2013-Apr-11, Thu,14:21	Clear	Turning movement	Non-fatal injury	Dry	West	•	Automobile, station wagon	Other motor vehicle
					East	Turning left	Passenger van	Other motor vehicle
2013-May-06, Mon,07:43	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2013-May-13, Mon,16:10	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2013-Jun-14, Fri,09:32	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Jun-21, Fri,16:10	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2013-Jun-24, Mon,06:30	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Jul-07, Sun,16:17	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Passenger van	Other motor vehicle
					North	Changing lanes	Passenger van	Other motor vehicle
2013-Sep-25, Wed,07:05	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2013-Sep-30, Mon,09:57	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2013-Oct-17, Thu,00:26	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2013-Oct-17, Thu,07:30	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2013-Oct-21, Mon,15:29	Clear	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle
					North	Turning left	Pick-up truck	Other motor vehicle

2013-Oct-28, Mon,08:00	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2013-Oct-31, Thu,19:26	Rain	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	Passenger van	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2013-Nov-21, Thu,14:49	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2013-Nov-26, Tue,21:56	Snow	Turning movement	P.D. only	Loose snow	East		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2013-Nov-30, Sat,09:45	Clear	Rear end	P.D. only	Wet	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2013-Dec-14, Sat,21:50	Snow	SMV other	P.D. only	lce	West		Automobile, station wagon	Skidding/sliding
2013-Dec-18, Wed, 19:21	Snow	Rear end	P.D. only	Loose snow	North		Automobile, station wagon	Other motor vehicle
					North	Turning left	Pick-up truck	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle

2013-Dec-20, Fri,10:08	Snow	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Dec-20, Fri,15:44	Snow	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2014-Jan-20, Mon,08:30	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Feb-14, Fri,12:47	Snow	Rear end	Non-fatal injury	Loose snow	North	Slowing or stopping) Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2014-Feb-25, Tue,10:04	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Jun-15, Sun,13:42	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Jul-02, Wed,10:11	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Passenger van	Other motor vehicle

2014-Aug-30, Sat,12:35	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle
2014-Sep-10, Wed,14:52	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2014-Sep-20, Sat,08:54	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-14, Tue,06:53	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Oct-15, Wed,19:09	Rain	Turning movement	P.D. only	Wet	East	Turning left	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Nov-14, Fri,13:08	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2014-Dec-03, Wed,18:27	Snow	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Passenger van	Other motor vehicle

2014-Dec-18, Thu,08:30	Snow	Rear end	Non-fatal injury	Wet	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2014-Dec-29, Mon,16:00	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2015-Jan-05, Mon,16:46	Clear	Rear end	P.D. only	lce	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2015-Jan-06, Tue,15:40	Clear	Rear end	P.D. only	Ice	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Stopped	Delivery van	Other motor vehicle
2015-Jan-19, Mon,14:56	Clear	Rear end	Non-fatal injury	Wet	West		Automobile, station wagon	Other motor vehicle
					West	Turning left	Police vehicle	Other motor vehicle
2015-Feb-09, Mon,08:05	Clear	Rear end	Non-fatal injury	Loose snow	West	Slowing or stopping	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2015-Feb-14, Sat,11:47	Drifting Snow	Rear end	P.D. only	Packed snow	South		Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2015-Feb-14, Sat,21:06	Snow	Angle	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding
					South		Automobile, station wagon	Other motor vehicle
2015-Feb-17, Tue,11:12	Clear	Sideswipe	Non-fatal injury	Wet	South		Automobile, station wagon	Other motor vehicle
					South	Going ahead	Truck - dump	Other motor vehicle
2015-Feb-17, Tue,18:50	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2015-Feb-21, Sat,18:31	Snow	Rear end	P.D. only	Loose snow	West	Turning right	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2015-Mar-03, Tue,07:20	Clear	Rear end	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2015-Mar-18, Wed,08:35	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2015-Mar-20, Fri,14:14	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle

2015-Mar-21, Sat,10:37	Rain	Angle	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2015-Apr-20, Mon,08:36	Rain	Angle	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2015-Jun-23, Tue, 19:46	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jun-29, Mon,12:52	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2015-Jul-08, Wed,20:25	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2015-Jul-15, Wed,12:15	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2015-Sep-21, Mon,22:10	Clear	Sideswipe	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2015-Sep-28, Mon,18:21	Rain	Rear end	P.D. only	Wet	North		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2015-Oct-13, Tue,09:49	Rain	Other	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Curb
					North		Municipal transit bus	Other motor vehicle
2015-Oct-19, Mon,18:59	Clear	Angle	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2015-Oct-23, Fri,15:41	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Oct-26, Mon,09:15	Clear	Rear end	Non-fatal injury	Dry	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2015-Nov-10, Tue,18:00	Clear	Turning movement	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					West	•	Automobile, station wagon	Other motor vehicle
2015-Nov-25, Wed,06:55	Fog, mist, smoke, dust	, Rear end	Non-fatal injury	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle

2015-Dec-15, Tue,13:20	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2016-Feb-09, Tue,15:48	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Apr-01, Fri,16:00	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2016-May-17, Tue,10:47	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle
2016-Jun-29, Wed,08:52	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Sep-10, Sat,23:18	Rain	Turning movement	P.D. only	Wet	South	Going ahead	Passenger van	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
2016-Sep-19, Mon,19:42	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Pick-up truck	Other motor vehicle

2016-Sep-23, Fri,07:30	Rain	Rear end	P.D. only	Wet	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2016-Oct-22, Sat,00:33	Rain	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2016-Nov-14, Mon,14:08	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2016-Nov-21, Mon,09:10	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Pick-up truck	Other motor vehicle
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2017-Jan-06, Fri,14:40	Clear	Turning movement	P.D. only	Wet	East	Turning left	Passenger van	Other motor vehicle
					West	•	Automobile, station wagon	Other motor vehicle
2017-Jan-19, Thu,14:56	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2017-Jan-21, Sat,18:24	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	-	Other motor vehicle

2017-Feb-04, Sat,18:10	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Mar-18, Sat,10:00	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Pick-up truck	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2017-Mar-18, Sat,21:47	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Turning right	Automobile, station wagon	Other motor vehicle
2017-Apr-03, Mon,07:46	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2017-Apr-15, Sat,17:08	Rain	Turning movement	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle
					North	Turning left	Municipal transit bus	Other motor vehicle
2017-May-04, Thu,21:21	Rain	Turning movement	P.D. only	Wet	East	Turning left	Unknown	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2017-May-14, Sun,11:00	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Unknown	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

2017-May-18, Thu,07:40	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2017-May-24, Wed,10:30	Clear	Turning movement	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					North	Turning left	Passenger van	Other motor vehicle
2017-May-24, Wed,21:22	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-07, Wed,20:01	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-14, Wed,13:58	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Jul-18, Tue,08:08	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2017-Aug-04, Fri,15:48	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Slowing or stopping	Pick-up truck	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle

2017-Aug-11, Fri,00:40	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Oct-04, Wed,12:26	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Oct-16, Mon,08:26	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Nov-07, Tue,07:45	Clear	Rear end	P.D. only	Dry	West S	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West S	Slowing or stopping	-	Other motor vehicle

Location: BLAIR RD @ REGIONAL RD 174 S/OR174 IC112 RAMP15

Traffic Control: Trai	ffic signal			Total Collisions: 70					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2013-Mar-13, Wed,15:30	Clear	Rear end	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2013-Mar-22, Fri,09:15	Clear	Rear end	P.D. only	Wet	South	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2013-Mar-22, Fri,09:29	Clear	Rear end	P.D. only	Wet	South	Going ahead	Tow truck	Other motor vehicle	

					South		Automobile, station wagon	Other motor vehicle
2013-Apr-24, Wed,16:03	Rain	Rear end	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle
					South	Turning left	Truck - closed	Other motor vehicle
2013-Jun-07, Fri,12:15	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding
					South	Stopped	Automobile, station wagon	Other motor vehicle
2013-Jun-11, Tue,19:24	Rain	Rear end	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2013-Jun-22, Sat,12:49	Rain	SMV other	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding
2013-Jul-12, Fri,10:16	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Delivery van	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2013-Jul-27, Sat,10:43	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Skidding/sliding
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2013-Jul-27, Sat,14:45	Clear	Sideswipe	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle

2013-Aug-01, Thu,12:56	Rain	Rear end	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2013-Sep-12, Thu,17:23	Rain	Turning movement	P.D. only	Wet	North		Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2013-Oct-26, Sat,13:49	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Passenger van	Other motor vehicle
2014-Jan-03, Fri,12:40	Clear	Rear end	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2014-Feb-18, Tue,08:30	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Pick-up truck	Skidding/sliding
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2014-Apr-29, Tue,21:15	Rain	Rear end	P.D. only	Wet	South	•	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
					South		Pick-up truck	Other motor vehicle
2014-Jun-03, Tue,12:18	Rain	Rear end	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle

					South	Stopped	Automobile, station wagon	Other motor vehicle
2014-Jun-21, Sat,13:05	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2014-Jul-08, Tue,17:15	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	9 Pick-up truck	Other motor vehicle
					South	Slowing or stopping	Pick-up truck	Other motor vehicle
2014-Jul-31, Thu,12:21	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	a Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2014-Oct-04, Sat,14:57	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	a Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2014-Oct-04, Sat,13:00	Rain	Rear end	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Turning left	Pick-up truck	Other motor vehicle
2014-Oct-06, Mon,17:32	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-03, Sat,17:44	Snow	Turning movement	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle

					North	Going ahead	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2015-Jan-31, Sat,05:40	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2015-Feb-12, Thu,18:18	Clear	Rear end	Non-fatal injury	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2015-Mar-31, Tue,14:14	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Jun-05, Fri,16:49	Rain	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	g Passenger van	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2015-Jul-07, Tue,16:03	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2015-Jul-11, Sat,11:47	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle

2015-Sep-28, Mon,14:42	Rain	Rear end	Non-fatal injury	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2015-Sep-28, Mon,15:20	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2015-Oct-26, Mon,08:12	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2015-Oct-28, Wed,21:07	Rain	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2015-Oct-30, Fri,14:40	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-13, Fri,12:06	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping) Pick-up truck	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2015-Dec-21, Mon,17:00	Freezing Rain	Turning movement	P.D. only	lce	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Jan-15, Fri,18:30	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jan-17, Sun,11:32	Clear	Turning movement	Non-fatal injury	Wet	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-06, Sat,13:10	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Other motor vehicle
					West	Stopped	Passenger van	Other motor vehicle
2016-Feb-21, Sun,10:17	Clear	Turning movement	Non-fatal injury	Wet	North	Making "U" turn	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2016-Feb-27, Sat,21:55	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2016-Aug-03, Wed,23:01	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Motorcycle	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2016-Sep-07, Wed,21:59	Rain	Rear end	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle

2016-Nov-02, Wed,15:30	Clear	Rear end	P.D. only	Dry		Slowing or stopping	station wagon	Other motor vehicle Other motor vehicle
2016-Nov-26, Sat,15:25	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2016-Nov-30, Wed,19:50	Rain	Turning movement	Non-fatal injury	Wet	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Passenger van	Skidding/sliding
					South	Stopped	Pick-up truck	Other motor vehicle
2017-Jan-09, Mon,13:30	Clear	Angle	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2017-Jan-10, Tue,08:30	Snow	SMV other	P.D. only	Slush	East		Automobile, station wagon	Cable guide rail
2017-Feb-11, Sat,11:51	Clear	Other	P.D. only	Wet	East		Automobile, station wagon	Debris falling off vehicle
					East		Automobile, station wagon	Other
2017-Feb-12, Sun,02:45	Snow	Rear end	P.D. only	Loose snow	East	·	Automobile, station wagon	Other motor vehicle
					East		Automobile, station wagon	Other motor vehicle

2017-Mar-02, Thu,16:09	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Mar-08, Wed,15:18	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle
					South	Turning left	Pick-up truck	Other motor vehicle
2017-Jun-07, Wed,09:00	Clear	Turning movement	P.D. only	Dry	North		Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2017-Jun-29, Thu, 12:08	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2017-Aug-10, Thu,09:01	Clear	Sideswipe	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					East		Automobile, station wagon	Other motor vehicle
2017-Aug-18, Fri,17:56	Rain	Rear end	P.D. only	Wet	North		Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Sep-12, Tue,17:08	Clear	Sideswipe	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Sep-29, Fri,22:20	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Oct-12, Thu,07:35	Clear	Rear end	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					East		Pick-up truck	Other motor vehicle
2017-Nov-01, Wed,17:09	Rain	Turning movement	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle
2017-Nov-02, Thu,13:43	Rain	Rear end	P.D. only	Wet	South		Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
					South	•	Automobile, station wagon	Other motor vehicle
2017-Dec-05, Tue,11:37	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2017-Dec-11, Mon,12:23	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Truck - dump	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2017-Dec-23, Sat,11:59	Snow	Turning movement	Non-fatal injury	Loose snow	South		Automobile, station wagon	Other motor vehicle
					North		Automobile, station wagon	Other motor vehicle

2017-Dec-27, Wed,13:15	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle
					East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle
2017-Dec-28, Thu,07:00	Clear	SMV other	P.D. only	lce	East	Merging	Automobile, station wagon	Snowbank/drift
2017-Dec-28, Thu,17:45	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-29, Fri,16:16	Clear	Turning movement	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2017-Dec-29, Fri,18:14	Clear	Approaching	Non-fatal injury	Other	North	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle

Location: BLAIR RD btwn OGILVIE RD & OR174 IC112 RAMP36

Fraffic Control: No control						Total Collisions: 9					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped		
2013-Apr-05, Fri,16:46	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle			
					South	Going ahead	Automobile, station wagon	Other motor vehicle			
2013-Jul-19, Fri,16:30	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle			

					North		Automobile, station wagon	Other motor vehicle
2013-Jul-31, Wed,18:45	Clear	SMV other	P.D. only	Dry	North		Automobile, station wagon	Curb
2013-Sep-26, Thu,16:08	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	Merging	Pick-up truck	Other motor vehicle
2015-Jan-23, Fri,15:09	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2015-Oct-05, Mon,15:45	Clear	Sideswipe	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2016-Oct-27, Thu,21:54	Snow	Rear end	P.D. only	Slush	South	•	Automobile, station wagon	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle
2016-Nov-14, Mon,18:02	Clear	Sideswipe	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle
					South	•	Automobile, station wagon	Other motor vehicle
2017-Aug-10, Thu,20:00	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle

Location: BLAIR RD btwn OR174 IC112 RAMP26 & OR174 IC112 RAMP52

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2013-Mar-01, Fri,16:35	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2013-May-24, Fri,13:38	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	
2014-Jul-08, Tue,16:24	Rain	Rear end	P.D. only	Wet	South	Changing lanes	Pick-up truck	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Oct-21, Fri,18:27	Rain	Rear end	Non-fatal injury	Wet	North		Automobile, station wagon	Cyclist	
					North	Going ahead	Bicycle	Other motor vehicle	

Location: BLAIR RD btwn OR174 IC112 RAMP36 & OR174 IC112 RAMP26

Traffic Control: No control						Total Collisions: 3					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped		
2013-Mar-12, Tue,16:06	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle			
					South	Going ahead	Passenger van	Other motor vehicle			
2013-Nov-01, Fri,18:15	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle			

					North	Turning left	Municipal transit bus	Other motor vehicle
2016-Oct-31, Mon,14:50	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes		Other motor vehicle
					South			Other motor vehicle

Location: BLAIR RD btwn OR174 IC112 RAMP52 & OR174 IC112 RAMP53

Traffic Control: No	control			Total Collisions: 1					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Vehicle type	First Event	No. Ped	
2015-Oct-16, Fri,20:55	Rain	Rear end	P.D. only	Wet	North	Going ahead Automobile, station wagon	Other motor vehicle		
					North	Slowing or stopping Automobile, station wagon	Other motor vehicle		

Location: OGILVIE RD @ 185 E OF BATHGATE DR/185 E OF CIT

Traffic Control: Tra	ffic signal					Total Collisions: 4				
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped	
2013-Jan-08, Tue,00:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle		
					West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle		
2015-Jan-10, Sat,14:33	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle		
					East	Going ahead	Automobile, station wagon	Other motor vehicle		
					North	Turning right	Pick-up truck	Other motor vehicle		
2015-Apr-02, Thu,20:29	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle		

					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Oct-16, Fri,16:44	Clear	Sideswipe	Non-fatal injury	Dry	East	Going ahead	Truck - dump	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

Location: OGILVIE RD @ 240 W OF BLAIR RD

Traffic Control: Traffic signal

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jun-24, Tue,15:34	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Tow truck	Other motor vehicle	
					West		Automobile, station wagon	Other motor vehicle	
2015-Feb-12, Thu,08:30	Clear	Rear end	P.D. only	Slush	North	Slowing or stopping	Pick-up truck	Skidding/sliding	
					North	Stopped	Delivery van	Other motor vehicle	
2016-Jan-12, Tue,14:33	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-17, Mon,15:40	Clear	Rear end	Non-fatal injury	Dry	South		Automobile, station wagon	Other motor vehicle	
_					South		Automobile, station wagon	Other motor vehicle	

Location: OGILVIE RD @ BATHGATE DR/CITYPARK DR W

Traffic Control:	Traffic signal				Total Collisions: 36						
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Vehicle type	First Event	No. Ped			

2013-May-29, Wed,13:24	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Pick-up truck	Other motor vehicle	
2013-Jun-07, Fri,21:30	Rain	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South		Automobile, station wagon	Other motor vehicle	
2013-Aug-23, Fri,07:45	Clear	Angle	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Pick-up truck	Other motor vehicle	
2013-Oct-11, Fri,14:00	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East		Automobile, station wagon	Other motor vehicle	
2013-Dec-12, Thu, 17:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Feb-06, Thu,13:00	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Feb-26, Wed,16:41	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Pedestrian	1

2014-Mar-03, Mon,13:35	Clear	Angle	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Mar-13, Thu,17:22	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2014-Sep-04, Thu,18:07	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Sep-08, Mon,17:33	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Sep-11, Thu,14:28	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Nov-21, Fri,19:54	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Slowing or stopping	g Passenger van	Other motor vehicle
2014-Dec-02, Tue,18:04	Clear	Angle	P.D. only	Dry	South	Turning right	Unknown	Cyclist
					West	Going ahead	Bicycle	Other motor vehicle

2015-Apr-20, Mon,17:13	Clear	Turning movement	Non-fatal injury	Wet	West	Turning left	Passenger van	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Nov-04, Wed,16:18	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,13:31	Rain	SMV other	Non-fatal injury	Wet	South	Turning left	Pick-up truck	Pedestrian	1
2016-Jan-05, Tue,08:46	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-05, Tue,08:40	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Municipal transit bus	Other motor vehicle	
2016-Jan-09, Sat,18:15	Clear	Other	P.D. only	Wet	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Pick-up truck	Other motor vehicle	
2016-Mar-12, Sat,13:43	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Pick-up truck	Other motor vehicle	
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-Jun-01, Wed,10:10	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	

					West	•	Automobile, station wagon	Other motor vehicle	
2016-Jun-11, Sat,15:14	Clear	Rear end	P.D. only	Dry	South		Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Aug-13, Sat,10:27	Rain	Angle	Non-fatal injury	Wet	West		Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	
					South		Automobile, station wagon	Other motor vehicle	
2016-Nov-06, Sun,15:45	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Passenger van	Pedestrian	1
2017-Jan-09, Mon,18:30	Clear	Sideswipe	P.D. only	Slush	North		Automobile, station wagon	Other motor vehicle	
					North	•	Automobile, station wagon	Other motor vehicle	
2017-Jan-20, Fri,14:48	Freezing Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Feb-18, Sat,12:10	Clear	Angle	Non-fatal injury	Wet	West		Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-04, Sat,00:30	Snow	SMV other	P.D. only	Ice	West	•	Automobile, station wagon	Skidding/sliding	

2017-Mar-12, Sun,14:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2017-Apr-09, Sun,22:06	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle
					East		Automobile, station wagon	Other motor vehicle
2017-Jun-20, Tue,08:06	Rain	Sideswipe	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East		Automobile, station wagon	Other motor vehicle
2017-Jul-21, Fri,16:02	Clear	Angle	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle
					North		Municipal transit bus	Other motor vehicle
2017-Oct-11, Wed,15:00	Clear	Rear end	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle
					West		Automobile, station wagon	Other motor vehicle
2017-Nov-27, Mon,12:14	Clear	Angle	P.D. only	lce	South		Automobile, station wagon	Other motor vehicle
					East		Automobile, station wagon	Other motor vehicle
2017-Dec-29, Fri,10:41	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle

Location: OGILVIE RD @ CITY PARK DR E/CSIS HQ ACCESS

Traffic Control: Traffic signal

Total Collisions: 41

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2013-Jun-02, Sun,10:53	Clear	Turning movement	Non-fatal injury	Wet	West		Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2013-Sep-22, Sun,15:49	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	2
2014-Jan-14, Tue,11:57	Clear	Rear end	P.D. only	Wet	East		Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Passenger van	Other motor vehicle	
2014-Jan-21, Tue,15:49	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	
					West	Unknown	Automobile, station wagon	Other motor vehicle	
2014-Jul-19, Sat,14:48	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Dec-09, Tue,18:30	Clear	Rear end	P.D. only	Packed snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

2014-Dec-10, Wed,17:24	Snow	Turning movement	P.D. only	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Dec-10, Wed,16:40	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Dec-30, Tue,13:13	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Jan-02, Fri,15:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jan-14, Wed,22:05	Strong wind	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-28, Wed,16:51	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Pedestrian	1
2015-Feb-17, Tue,17:37	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	a Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Feb-17, Tue,08:00	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Passenger van	Other motor vehicle	

					West	Stopped	Delivery van	Other motor vehicle	
2015-Feb-27, Fri,07:40	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West		Automobile, station wagon	Other motor vehicle	
2015-Mar-02, Mon,13:42	Clear	Rear end	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle	
					East	Turning left	Passenger van	Other motor vehicle	
2015-Apr-06, Mon,17:10	Clear	Rear end	P.D. only	Dry	West		Automobile, station wagon	Other motor vehicle	
_					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Apr-10, Fri,16:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-Apr-14, Tue,16:15	Clear	SMV other	Fatal injury	Dry	North	Turning left	Pick-up truck	Pedestrian	1
2015-Apr-20, Mon,13:42	Rain	Rear end	P.D. only	Wet	Unknown	Going ahead	Pick-up truck	Other motor vehicle	
					Unknown	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-May-19, Tue,16:51	Clear	Turning movement	P.D. only	Dry	East		Automobile, station wagon	Other motor vehicle	
					West		Automobile, station wagon	Other motor vehicle	

2015-Jul-03, Fri,18:16	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-25, Sat,18:20	Rain	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Aug-11, Tue,18:57	Clear	Angle	P.D. only	Wet	North	Turning right	Automobile, station wagon	Cyclist	
					West	Unknown	Bicycle	Other motor vehicle	
2015-Sep-10, Thu,16:20	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-26, Mon,13:13	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2015-Nov-02, Mon,15:15	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Dec-17, Thu,16:11	Rain	Rear end	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle	
					East		Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	

2016-Jan-29, Fri,12:48	Snow	Rear end	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2016-Jun-02, Thu,18:47	Clear	Turning movement	Non-fatal injury	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jun-03, Fri,14:10	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2016-Jun-21, Tue,05:38	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Turning left	Pick-up truck	Other motor vehicle
2016-Sep-06, Tue,19:27	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Pick-up truck	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2016-Sep-08, Thu,13:51	Rain	Turning movement	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-20, Thu,08:38	Fog, mist, smoke dust	, Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2016-Dec-30, Fri,13:03	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2017-Feb-17, Fri,18:51	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-May-18, Thu,19:13	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
0047 May 02 Tue 40.52	Olasa	Descard	New fetelinium.	Dec	Fast	Osina shaad	D'als un fau als	Othermoter
2017-May-23, Tue,12:53	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2017-Sep-03, Sun,17:40	Rain	SMV other	Non-fatal injury	Wet	East	Turning right	Automobile, station wagon	Curb
2017-Oct-13, Fri,11:42	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Making "U" turn	Automobile, station wagon	Other motor vehicle

Location: OGILVIE RD btwn BATHGATE DR & CITY PARK DR (1)

Traffic Control: No control

Total Collisions: 4

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

2015-Nov-09, Mon,16:20	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped		Other motor vehicle
2016-Jul-04, Mon,16:27	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead		Other motor vehicle
					East	Slowing or stopping		Other motor vehicle
2016-Aug-13, Sat,17:08	Snow	Rear end	Non-fatal injury	Wet	West	Going ahead		Other motor vehicle
					West	Slowing or stopping		Other motor vehicle
2017-Feb-15, Wed,09:37	Snow	Rear end	Non-fatal injury	Packed snow	East	Going ahead		Other motor vehicle
					East	Stopped	Municipal transit bus	Other motor vehicle

Location: OGILVIE RD btwn BATHGATE DR & CITY PARK DR (2)

Traffic Control: No	control				Total Collisions: 3					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped	
2013-Nov-29, Fri,17:00	Clear	Sideswipe	P.D. only	lce	East	Changing lanes	Automobile, station wagon	Other motor vehicle		
					East	Going ahead	Municipal transit bus	Other motor vehicle		
2014-Oct-24, Fri,14:45	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle		
					East	Stopped	Automobile, station wagon	Other motor vehicle		

					East	Slowing or stopping F	Pick-up truck	Other motor vehicle
2016-Nov-01, Tue,11:14	Clear	Rear end	P.D. only	Dry	West	5	Automobile, station wagon	Other motor vehicle
					West	Slowing or stopping F	Passenger van	Other motor vehicle
					West	Slowing or stopping A s		Other motor vehicle

Location: OGILVIE RD btwn CITY PARK DR & BLAIR RD (1)

Traffic Control: No	control				Total Collisions: 6					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped	
2013-Nov-12, Tue,18:16	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle		
					East	Slowing or stopping	Passenger van	Other motor vehicle		
					East	Stopped	Automobile, station wagon	Other motor vehicle		
2014-Feb-28, Fri,08:05	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle		
					East	Changing lanes	Pick-up truck	Other motor vehicle		
2015-Jun-21, Sun,03:24	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Curb		
2015-Nov-28, Sat,15:57	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle		
					East	Turning right	Automobile, station wagon	Other motor vehicle		
2015-Dec-29, Tue,10:37	Rain	SMV other	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Skidding/sliding		

2016-Sep-30, Fri,13:01	Clear	Angle	P.D. only	Dry	East	Changing lanes		Other motor vehicle
					North	Turning right	Pick-up truck	Other motor vehicle

Location: OGILVIE RD btwn CITY PARK DR & BLAIR RD (2)

Traffic Control: No control

Total Collisions: 7

Traine Control. No	Control								
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2013-Jan-05, Sat,20:35	Clear	Sideswipe	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	
2014-Jan-07, Tue,17:20	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping) Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Nov-17, Mon,00:01	Snow	Rear end	P.D. only	Wet	East	Slowing or stopping) Passenger van	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Dec-13, Sun,17:16	Rain	Angle	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-May-18, Thu,16:42	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-01, Fri,19:44	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	

					East	Stopped	Pick-up truck	Other motor vehicle
2017-Dec-08, Fri,10:43	Clear	SMV other	P.D. only	Dry	South	Reversing	Pick-up truck	Pole (utility, power)

Appendix E TRAFFIC GROWTH ANALYSIS

Time	Percent An	Percent Annual Change - Blair at 174N OR/Shopping Cent											
Period	North Leg	South Leg	East Leg	West Leg	Overall								
8 hrs	-6.53%	-7.17%	-4.08%	-5.61%	-6.40%								
AM Peak	-3.18%	-6.41%	-2.29%	-6.51%	-4.59%								
PM Peak	-6.67%	-6.39%	3.98%	-5.45%	-5.67%								

Time	Percent Annual Change - Ogilvie at Bathgate/City										
Period	North Leg	South Leg	East Leg	West Leg	Overall						
8 hrs	4.21%	2.29%	5.42%	5.87%	5.27%						
AM Peak	6.99%	2.02%	10.91%	4.82%	7.25%						
PM Peak	-1.26%	0.25%	0.58%	0.89%	0.48%						

Appendix F SYNCHRO 2021 AND 2026 BACKGROUND TRAFFIC ANALYSIS

Existing - AM 2: City Park/Bathgate & Ogilvie

	٦	-	\mathbf{r}	4	-	•	1	1	1	Ļ
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	ľ	<u></u>	1	2	<u></u>	1	1	4Î	ľ	4Î
Traffic Volume (vph)	159	515	85	23	1103	180	120	33	122	32
Future Volume (vph)	159	515	85	23	1103	180	120	33	122	32
ane Group Flow (vph)	167	542	89	24	1161	189	126	56	128	257
urn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6	-	6	8	-	4	•
etector Phase	5	2	2	1	6	6	8	8	4	4
witch Phase	Ū	2	2	•	U	Ū	0	Ū	•	•
linimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
finimum Split (s)	11.0	30.0	30.0	11.0	30.0	30.0	42.4	42.4	42.4	42.4
otal Split (s)	15.0	32.0	32.0	15.0	32.0	32.0	43.0	43.0	42.4	43.0
	16.7%	35.6%	35.6%	16.7%	35.6%	35.6%	43.0	43.0	43.0	43.0
otal Split (%)	3.7							47.6%	47.8%	
ellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.0			3.0
II-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	7.4	7.4	7.4	7.4
ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
ct Effct Green (s)	58.5	53.0	53.0	51.7	44.3	44.3	19.0	19.0	19.0	19.0
ctuated g/C Ratio	0.65	0.59	0.59	0.57	0.49	0.49	0.21	0.21	0.21	0.21
'c Ratio	0.57	0.27	0.10	0.05	0.70	0.23	0.73	0.15	0.48	0.52
ontrol Delay	17.4	12.8	3.1	8.0	19.7	2.4	55.1	17.7	34.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
otal Delay	17.4	12.8	3.1	8.0	19.7	2.4	55.1	17.7	34.7	9.0
OS	В	В	А	А	В	А	E	В	С	А
pproach Delay		12.6			17.1			43.6		17.6
pproach LOS		В			В			D		В
Queue Length 50th (m)	8.9	17.2	0.0	0.9	76.8	0.1	21.2	5.1	20.2	5.0
Queue Length 95th (m)	31.4	53.8	6.9	m3.1	#162.9	9.7	31.0	11.0	27.6	18.4
nternal Link Dist (m)	51.4	805.4	0.7	110.1	169.5	7.7	51.0	132.3	21.0	125.7
furn Bay Length (m)	70.0	003.4	50.0	50.0	107.5	80.0	30.0	132.3	45.0	123.7
ase Capacity (vph)	322	1997	904	50.0 597	1667	812	30.0	674	45.0 504	738
tarvation Cap Reductn							322 0	0/4	504 0	/38 0
	0	0	0	0	0	0				0
pillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
educed v/c Ratio	0.52	0.27	0.10	0.04	0.70	0.23	0.39	0.08	0.25	0.35
ntersection Summary										
cle Length: 90										
ctuated Cycle Length: 90										
ffset: 27 (30%), Referenced to p	hase 2. FRTL a	nd 6·\WRTI	Start of Gr	een						
atural Cycle: 85				0011						
ontrol Type: Actuated-Coordinat	ed									
aximum v/c Ratio: 0.73	eu									
				l a	torcoction					
tersection Signal Delay: 17.6	1 10/				tersection L					
tersection Capacity Utilization 9	1.1%			IC	U Level of S	Service F				
nalysis Period (min) 15	Any 4th 2014									
Description: Signal Timing Plan: N										
95th percentile volume exceed		eue may be	longer.							
Queue shown is maximum after										
n Volume for 95th percentile qu	ieue is meterec	by upstrea	m signal.							
Splits and Phases: 2: City Park	/Bathgate & Oc	ilvie								
	<u> </u>				4	Ø4				
🕈 💋 I 🔰 🐺	•Ø2 (R)				T	· 104				

√ Ø1	→Ø2 (R)	↓ Ø4
15 s	32 s	43 s
	Ø6 (R)	<↑ Ø8
15 s	32 s	43 s

Existing - AM 4: City Park/CSIS & Ogilvie

	≯	-	\mathbf{F}	∢	-	×.	•	Ť	1	Ļ		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	۲.	††	1	۲.	<u>††</u>	1	۲	4Î	۲	¢Î		
Traffic Volume (vph)	89	506	61	100	1032	121	76	35	4	3		
Future Volume (vph)	89	506	61	100	1032	121	76	35	4	3		
Lane Group Flow (vph)	94	533	64	105	1086	127	80	131	4	39		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA		
Protected Phases	1 0.111	2	1 0.111	1 0.111	6	1 01111		8	1 0.111	4	3	7
Permitted Phases	2	-	2	6	Ū	6	8		4	•		
Detector Phase	2	2	2	6	6	6	8	8	4	4		
Switch Phase	-	-	-	Ū	Ŭ	Ū	Ŭ	Ŭ	•	•		
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	35.1	35.1	35.1	35.1	35.1	35.1	33.5	33.5	33.5	33.5	5.0	5.0
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	37.8%	37.8%	37.8%	37.8%	6%	5.0 6%
Yellow Time (s)	30.778	3.7	3.7	30.770	3.7	3.7	3.3	3.3	3.3	37.070	2.0	2.0
All-Red Time (s)	3.7 2.4	3.7 2.4	3.7 2.4	3.7 2.4	3.7 2.4	3.7 2.4	3.3	3.3	3.3	3.3	0.0	2.0
Lost Time Adjust (s)	2.4 0.0	2.4 0.0	2.4 0.0	0.0	2.4 0.0	2.4	0.0	3.2 0.0	3.2 0.0	3.2 0.0	0.0	0.0
Total Lost Time (s)	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.5	0.0 6.5	0.0 6.5	0.0 6.5		
	0.1	0.1	0.1	0.1	0.1	0.1					Lead	Lead
Lead/Lag							Lag	Lag	Lag	Lag Yes		Yes
Lead-Lag Optimize?	C Max	C-Max	C May	C Max	C May	C May	Yes	Yes	Yes		Yes	
Recall Mode	C-Max		C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	14.4	14.4	14.4	14.4		_
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.16	0.16	0.16	0.16		
v/c Ratio	0.34	0.23	0.07	0.20	0.47	0.14	0.42	0.40	0.02	0.15		
Control Delay	18.1	9.4	7.3	8.6	8.8	2.2	38.8	14.4	27.2	11.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		_
Total Delay	18.1	9.4	7.3	8.6	8.8	2.2	38.8	14.4	27.2	11.6		
LOS	В	A	А	А	A	А	D	B	С	B		_
Approach Delay		10.4			8.1			23.6		13.1		
Approach LOS	. <i></i>	В			A		40.0	С	.	В		
Queue Length 50th (m)	3.6	9.7	0.0	4.7	32.0	0.0	13.2	5.8	0.6	0.5		
Queue Length 95th (m)	24.4	50.1	14.1	20.8	88.7	8.2	21.6	17.2	2.8	7.3		
Internal Link Dist (m)	45.0	200.1	400.0	400.0	350.0	(5.0	50.0	137.2	00.0	101.6		
Turn Bay Length (m)	45.0	0005	130.0	100.0	0005	65.0	50.0	50.4	30.0			
Base Capacity (vph)	276	2335	919	526	2335	937	365	534	355	451		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.34	0.23	0.07	0.20	0.47	0.14	0.22	0.25	0.01	0.09		
Intersection Summary Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phas	se 2:EBTL a	nd 6:WBTI	Start of Gr	een								
Natural Cycle: 80	02.20120			0011								
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.47												
Intersection Signal Delay: 10.4				In	tersection L	∩s· b						
Intersection Capacity Utilization 75.89	26				U Level of S							
Analysis Period (min) 15	70			10	O LEVEL OF C							
Splits and Phases: 4: City Park/CS	SIS & Oailvie	2										
⇒Ø2 (R)	no a Ogivit	,					3 1 04					
51 s						5 s	34 s					
₩ Ø6 (R)						#1ø	7 🔺 ø8					
							100					

34 s

51 s

Existing - AM 6: Blair & OR-174 OFF

6. Biall & OR-174 OFF	٦	~	6	+	×.	•	t	Ţ	1	
Lane Group	EBL	EBR	▼ WBL	WBT	WBR	NBL	NBT	▼ SBT	SBR	
Lane Configurations	<u> </u>	1	<u></u>	•••••		<u>אסר</u> ז'ז	† †			
Traffic Volume (vph)	91	194	237	193	480	271	1355	689	91	
Future Volume (vph)	91	194	237	193	480	271	1355	689	91	
Lane Group Flow (vph)	96	204	249	203	505	285	1426	725	96	
Turn Type	Perm	pm+ov	Perm	NA	Perm	Prot	NA	NA	Perm	
Protected Phases		5		8		5	2	6		
Permitted Phases	4	4	8		8				6	
Detector Phase	4	5	8	8	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8	36.8	11.4	30.1	30.1	30.1	
Total Split (s)	41.0	27.0	41.0	41.0	41.0	27.0	59.0	32.0	32.0	
Total Split (%)	41.0%	27.0%	41.0%	41.0%	41.0%	27.0%	59.0%	32.0%	32.0%	
Yellow Time (s)	3.3	4.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	
All-Red Time (s)	3.5	2.2	3.5	3.5	3.5	2.2	1.9	1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.8	6.4	6.8	6.8	6.8	6.4	6.1	6.1	6.1	
Lead/Lag		Lead				Lead		Lag	Lag	
Lead-Lag Optimize?		Yes				Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	Min	Min	
Act Effct Green (s)	30.8	51.2	30.8	30.8	30.8	13.4	44.9	24.9	24.9	
Actuated g/C Ratio	0.35	0.58	0.35	0.35	0.35	0.15	0.50	0.28	0.28	
v/c Ratio	0.26	0.23	0.43	0.33	0.89	0.58	0.83	0.53	0.19	
Control Delay	25.3	8.8	26.4	24.7	42.5	41.7	24.2	29.2	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.3	8.8	26.4	24.7	42.5	41.7	24.2	29.2	5.3	
LOS	С	А	С	С	D	D	С	С	А	
Approach Delay				34.5			27.1	26.4		
Approach LOS				С			С	С		
Queue Length 50th (m)	12.4	14.2	34.1	26.8	69.9	25.8	112.4	40.2	0.0	
Queue Length 95th (m)	26.3	24.8	58.8	47.4	#137.1	38.0	141.6	55.8	9.2	
Internal Link Dist (m)			70.0	105.9	05.0	05.0	166.4	212.5	70.0	
Turn Bay Length (m)	105	4047	70.0	707	25.0	85.0	0077	4550	70.0	
Base Capacity (vph)	425	1017	671	707	637	784	2077	1558	554	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.20	0.37	0.29	0.79	0.36	0.69	0.47	0.17	
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 89										
Natural Cycle: 80										
Control Type: Semi Act-Uncoord										
Maximum v/c Ratio: 0.89										
Intersection Signal Delay: 27.8					tersection L(
Intersection Capacity Utilization 93.5%)			IC.	CU Level of S	Service F				
Analysis Period (min) 15	001/									
Description: Signal Timing Plan: May 5	0, 2016	ouo merch -	longor							
# 95th percentile volume exceeds ca Queue shown is maximum after two		eue may bê	ionger.							
adout shown is maximum after two	5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									
Splits and Phases: 6: Blair & OR-17	4 OFF									
1 ø₂							Ø4			
59 s						41	S			
\$ Ø5		4 Ø6				-	Ø8			
27 s		▼ Ø0 32 s				41				
							_			

Existing - AM 7: Service & City Park

		\mathbf{r}	<	-	•	1
	-	•			,	-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4			र्स	¥	
Traffic Volume (veh/h)	36	82	24	29	114	76
Future Volume (Veh/h)	36	82	24	29	114	76
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	38	86	25	31	120	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	NONE			NOTIC		
Upstream signal (m)				287		
pX, platoon unblocked				207		
vC, conflicting volume			124		162	81
vC1, stage 1 conf vol			124		102	01
vC1, stage 1 conf vol						
vC2, stage 2 coni voi vCu, unblocked vol			104		1/0	81
			124		162	
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			0.0		0.5	0.0
tF (s)			2.2		3.5	3.3
p0 queue free %			98		85	92
cM capacity (veh/h)			1463		815	979
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	124	56	200			
Volume Left	0	25	120			
Volume Right	86	0	80			
cSH	1700	1463	873			
Volume to Capacity	0.07	0.02	0.23			
Queue Length 95th (m)	0.0	0.4	6.7			
Control Delay (s)	0.0	3.4	10.3			
Lane LOS	0.0	3.4 A	10.3 B			
Approach Delay (s)	0.0	3.4	10.3			
Approach LOS	0.0	3.4	10.3 B			
			Ď			
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			27.9%	IC	U Level of S	ervice
Analysis Period (min)			15			

Existing - AM 8: Site/SilverCity & City Park

	≯	+	*	4	+	*	1	1	*	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	104	3	9	132	2	3	0	12	2	0	0
Future Volume (vph)	1	104	3	9	132	2	3	0	12	2	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	109	3	9	139	2	3	0	13	2	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	113	150	16	2								
Volume Left (vph)	1	9	3	2								
Volume Right (vph)	3	2	13	0								
Hadj (s)	0.02	0.04	-0.42	0.23								
Departure Headway (s)	4.1	4.1	4.0	4.7								
Degree Utilization, x	0.13	0.17	0.02	0.00								
Capacity (veh/h)	863	870	827	709								
Control Delay (s)	7.7	7.9	7.1	7.7								
Approach Delay (s)	7.7	7.9	7.1	7.7								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.8									
Level of Service			А									
Intersection Capacity Utilization			23.7%	ICI	J Level of Serv	/ice			А			
Analysis Period (min)			15									

Existing - AM 9: Site & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	¢î			र्स	Y	
Traffic Volume (veh/h)	120	4	26	148	7	46
Future Volume (Veh/h)	120	4	26	148	7	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	126	4	27	156	7	48
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			130		338	128
vC1, stage 1 conf vol			100		550	120
vC2, stage 2 conf vol						
vCu, unblocked vol			130		338	128
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			т. I		U.T	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	95
cM capacity (veh/h)			90 1455		645	93
					045	722
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	130	183	55			
Volume Left	0	27	7			
Volume Right	4	0	48			
cSH	1700	1455	874			
Volume to Capacity	0.08	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	1.2	9.4			
Lane LOS		А	А			
Approach Delay (s)	0.0	1.2	9.4			
Approach LOS			А			
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			30.1%	ICI	U Level of S	ervice
Analysis Period (min)			15	101	2 2010: 01 0	
			10			

Existing - PM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ň	<u>††</u>	1	۲	<u>††</u>	1	ň	4Î	۲	4	
Traffic Volume (vph)	161	1096	171	16	1064	162	137	32	211	57	
Future Volume (vph)	161	1096	171	16	1064	162	137	32	211	57	
Lane Group Flow (vph)	169	1154	180	17	1120	171	144	66	222	274	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2	1 0.111	1	6	1 01111	1 01111	8	1 01111	4	
Permitted Phases	2	2	2	6	U	6	8	Ū	4		
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase	0	2	2	•	U	0	Ū	0	•	•	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Vinimum Split (s)	11.0	29.0	29.0	11.0	29.0	29.0	42.4	42.4	42.4	42.4	
Total Split (s)	20.0	37.0	37.0	20.0	37.0	37.0	43.0	43.0	43.0	43.0	
Total Split (%)	20.0%	37.0%	37.0%	20.0%	37.0%	37.0%	43.0%	43.0%	43.0%	43.0%	
Yellow Time (s)	3.7	37.078	37.078	3.7	37.078	37.078	43.070	43.070	3.0	3.0	
All-Red Time (s)	3.7 1.0	3.7 2.3	3.7 2.3	3.7 1.0	3.7 2.3	3.7 2.3	3.0 4.4	3.0 4.4	3.0 4.4	3.0 4.4	
	0.7		2.3 -2.0								
Lost Time Adjust (s)		-2.0		0.7	-2.0	-2.0	-3.4	-3.4	-3.4	-3.4	
Total Lost Time (s)	5.4	4.0	4.0	5.4	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	NL.	N	N	NL-	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	63.2	60.2	60.2	53.7	49.8	49.8	27.3	27.3	27.3	27.3	
Actuated g/C Ratio	0.63	0.60	0.60	0.54	0.50	0.50	0.27	0.27	0.27	0.27	
//c Ratio	0.60	0.57	0.20	0.07	0.66	0.21	0.75	0.14	0.64	0.48	
Control Delay	19.4	16.3	5.9	9.1	17.5	1.7	55.7	14.5	39.6	9.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	16.3	5.9	9.1	17.5	1.7	55.7	14.5	39.6	9.7	
LOS	В	В	А	A	В	А	E	В	D	А	
Approach Delay		15.4			15.3			42.7		23.1	
Approach LOS		В			В			D		С	
Queue Length 50th (m)	12.2	57.0	3.8	0.8	71.4	0.9	25.5	4.9	37.9	9.4	
Queue Length 95th (m)	31.3	128.1	19.9	m2.3	#151.5	2.3	41.8	12.4	52.9	25.3	
Internal Link Dist (m)		805.4			169.5			132.3		125.7	
Turn Bay Length (m)	70.0		50.0	50.0		80.0	30.0		45.0		
Base Capacity (vph)	360	2040	923	410	1689	810	273	658	492	732	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.57	0.20	0.04	0.66	0.21	0.53	0.10	0.45	0.37	
ntorsoction Summary											
ntersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100			Chart of Cr								
Offset: 19 (19%), Referenced to phase	e 2:EBTE a		, Start of Gr	een							
Vatural Cycle: 85											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.75						00.0					
ntersection Signal Delay: 18.1	,				tersection L						
ntersection Capacity Utilization 83.9%	6			IC	U Level of S	service E					
Analysis Period (min) 15											
Description: Signal Timing Plan: May											
95th percentile volume exceeds ca		eue may be	longer.								
Queue shown is maximum after tw											
m Volume for 95th percentile queue	is metered	l by upstrea	m signal.								
	hards a C										
Splits and Phases: 2: City Park/Bat	ngate & Og	jiivie									
6 01	👍 Ø2 (R)						4				

√ Ø1	₩Ø2 (R)	↓ Ø4
20 s	37 s	43 s
.≁ _{Ø5}	∲ Ø6 (R)	√ ¶ø8
20 s	37 s	43 s

Existing - PM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	5	<u>†</u> †	1	ň	<u>†</u> †	1	7	4Î	ň	Þ		
Traffic Volume (vph)	16	1187	141	223	600	18	204	7	63	22		
Future Volume (vph)	16	1187	141	223	600	18	204	7	63	22		
Lane Group Flow (vph)	17	1249	148	235	632	19	215	206	66	127		
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA		
Protected Phases	T GIIII	2	T CITI	phi pi	6	T CITI	T GIIII	8	T CITI	4	3	7
Permitted Phases	2	2	2	6	0	6	8	U	4	7	J	,
Detector Phase	2	2	2	1	6	6	8	8	4	4		
Switch Phase	2	2	2	1	0	0	0	0	4	4		
	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Initial (s)	29.1	10.0 29.1	10.0						10.0		1.0	1.0
Minimum Split (s)			29.1	10.9	29.1	29.1	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	46.0	46.0	46.0	15.0	61.0	61.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	46.0%	46.0%	46.0%	15.0%	61.0%	61.0%	34.0%	34.0%	34.0%	34.0%	5%	5%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	1.0	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
Lost Time Adjust (s)	-2.1	-2.1	-2.1	0.0	-2.1	-2.1	-2.5	-2.5	-2.5	-2.5		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	47.9	47.9	47.9	64.8	64.8	64.8	26.2	26.2	26.2	26.2		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.26	0.26	0.26	0.26		
v/c Ratio	0.05	0.77	0.21	0.79	0.29	0.03	0.78	0.41	0.31	0.28		
Control Delay	9.2	20.2	2.6	42.5	8.9	0.1	53.4	7.0	32.0	9.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.2	20.2	2.6	42.5	8.9	0.1	53.4	7.0	32.0	9.3		
LOS	А	С	A	D	A	А	D	A	С	A		
Approach Delay		18.2	7.	5	17.6	7.	5	30.7		17.1		
Approach LOS		B			В			C		В		
Queue Length 50th (m)	1.8	118.3	5.0	27.3	25.5	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	m2.1	#102.8	6.3	#75.5	42.5	0.0	#67.2	16.8	21.1	16.1		
Internal Link Dist (m)	1112.1	200.1	0.0	# 70.0	350.0	0.0	# 07.2	137.2	21.1	101.6		
Turn Bay Length (m)	45.0	200.1	130.0	100.0	550.0	65.0	50.0	107.2	30.0	101.0		
Base Capacity (vph)	314	1623	707	298	2198	735	321	549	250	512		
Starvation Cap Reductn	0	0	0	270	2170	0	0	0	2.50	0		
Spillback Cap Reductin	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.05	0.77	0.21	0.79	0.29	0.03	0.67	0.38	0.26	0.25		
	0.05	0.77	0.21	0.79	0.29	0.03	0.07	0.30	0.20	0.20		
Intersection Summary Cycle Length: 100 Actuated Cycle Length: 100 Offset: 30 (30%), Referenced to phas Natural Cycle: 90	se 2:EBTL a	ind 6:WBTL	, Start of Gr	een								
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.79												
Intersection Signal Delay: 19.8 Intersection Capacity Utilization 89.5	%				tersection L U Level of S							
Analysis Period (min) 15 Description: Signal Timing Plan: May # 95th percentile volume exceeds of	capacity, qu	eue may be	longer.									
Queue shown is maximum after tw m Volume for 95th percentile queue		l by upstrea	m signal.									
Splits and Phases: 4: City Park/CS	Ų	9					.]
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15 s 46 s							5s 34	S				

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15 s	46 s	5 s 34 s
61 s		5 s 34 s

Existing - PM 6: Blair & OR174 WB Off

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Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	۲	1	۲	1	1	ሻሻ	† †	<u> </u>	1
Traffic Volume (vph)	131	569	99	148	158	340	937	1832	179
Future Volume (vph)	131	569	99	148	158	340	937	1832	179
Lane Group Flow (vph)	138	599	104	156	166	358	986	1928	188
Turn Type	Perm	pm+ov	Perm	NA	Free	Prot	NA	NA	Free
Protected Phases	1 01111	5	1 01111	8	1100	5	2	6	1100
Permitted Phases	4	4	8	Ū	Free	Ū	-	Ū	Free
Detector Phase	4	5	8	8	1100	5	2	6	
Switch Phase		-	-	-		-	_	-	
Minimum Initial (s)	10.0	5.0	10.0	10.0		5.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8		11.4	30.1	30.1	
Total Split (s)	36.8	31.0	36.8	36.8		31.0	94.0	63.0	
Total Split (%)	28.1%	23.7%	28.1%	28.1%		23.7%	71.9%	48.2%	
Yellow Time (s)	3.3	4.2	3.3	3.3		4.2	4.2	4.2	
All-Red Time (s)	3.5	1.9	3.5	3.5		1.9	1.9	1.9	
Lost Time Adjust (s)	-2.8	-2.1	-2.8	-2.8		-2.1	-2.1	-2.1	
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	1.0	Lead	1.0	1.0		Lead	1.0	Lag	
Lead-Lag Optimize?		Yes				Yes		Yes	
Recall Mode	None	None	None	None		None	C-Max	C-Max	
Act Effct Green (s)	26.1	59.3	26.1	26.1	130.8	29.2	96.7	63.5	130.8
Actuated g/C Ratio	0.20	0.45	0.20	0.20	1.00	0.22	0.74	0.49	1.00
v/c Ratio	0.20	0.45	0.20	0.44	0.11	0.22	0.39	0.81	0.13
Control Delay	80.4	43.0	45.3	48.5	0.2	47.1	7.4	33.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.4	43.0	45.3	48.5	0.0	47.1	7.4	33.1	0.0
LOS	F	43.0 D	43.3 D	40.5 D	A	ч <i>л</i> .т D	A	C	0.2 A
Approach Delay		U	U	28.9		D D	18.0	30.2	
Approach LOS				C			B	C	
Queue Length 50th (m)	33.8	122.8	22.8	35.2	0.0	40.6	45.2	160.6	0.0
Queue Length 95th (m)	55.6	173.7	37.4	53.3	0.0	58.1	65.6	184.2	0.0
Internal Link Dist (m)	50.0		57.1	105.9	0.0	50.1	129.2	212.5	0.0
Turn Bay Length (m)			70.0	100.7	25.0	85.0	127.2	212.0	70.0
Base Capacity (vph)	217	701	425	447	1478	732	2506	2366	1498
Starvation Cap Reductn	0	0	425	0	0	0	2300	2300	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	0.64	0.85	0.24	0.35	0.11	0.49	0.39	0.81	0.13
Intersection Summary									
Cycle Length: 130.8									
Actuated Cycle Length: 130.8									
Offset: 50 (38%), Referenced to pha	se 2:NBT ar	nd 6:SBT. St	art of Greer	1					
Natural Cycle: 90	u								
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.85									
Intersection Signal Delay: 29.7				Int	ersection L(JS+C			
Intersection Capacity Utilization 92.9	1%				U Level of S				
Analysis Period (min) 15	70			101					
Description: Signal Timing Plan: May	v 5th. 2016								
1 0 0 3									
Splits and Phases: 6: Blair & OR1	74 WB Off							A	
🕇 Ø2 (R)									Ø4
94 s								36.8	3 s

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Existing - PM 7: Transitway & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	þ	105	70	्र्	Y	70
Traffic Volume (veh/h)	134	195	72	75	185	79
Future Volume (Veh/h)	134	195	72	75	185	79
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	141	205	76	79	195	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				287		
pX, platoon unblocked						
vC, conflicting volume			346		474	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			346		474	244
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		62	90
cM capacity (veh/h)			1213		514	795
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	346	155	278			
Volume Left	0	76	195			
Volume Right	205	0	83			
cSH	1700	1213	575			
Volume to Capacity	0.20	0.06	0.48			
Queue Length 95th (m)	0.0	1.5	19.9			
Control Delay (s)	0.0	4.3	17.0			
Lane LOS		А	С			
Approach Delay (s)	0.0	4.3	17.0			
Approach LOS			С			
Intersection Summary						
Average Delay			6.9			
Intersection Capacity Utilization			54.3%	ICI	J Level of S	envice
Analysis Period (min)			54.5 <i>%</i>	ICI		CIVILE
Analysis Penou ((1111)			10			

Existing - PM 8: City Park & SilverCity

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	273	12	41	193	25	12	1	43	13	5	4
Future Volume (vph)	5	273	12	41	193	25	12	1	43	13	5	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	287	13	43	203	26	13	1	45	14	5	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	305	272	59	23								
Volume Left (vph)	5	43	13	14								
Volume Right (vph)	13	26	45	4								
Hadj (s)	0.01	0.01	-0.38	0.05								
Departure Headway (s)	4.4	4.5	4.8	5.3								
Degree Utilization, x	0.37	0.34	0.08	0.03								
Capacity (veh/h)	793	780	660	593								
Control Delay (s)	10.0	9.7	8.3	8.5								
Approach Delay (s)	10.0	9.7	8.3	8.5								
Approach LOS	В	А	А	А								
Intersection Summary												
Delay			9.7									
Level of Service			А									
Intersection Capacity Utilization			44.5%	ICI	J Level of Se	rvice			А			
Analysis Period (min)			15									

Existing - PM 9: City Park

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Movement	EBT	EBR	▼ WBL	WBT	NBL	NBR
Lane Configurations	<u>دها</u> ۲	LDK	WDL	<u>۷۷۵۱</u>		NDN
Traffic Volume (veh/h)	207	12	86	€ 166	14	95
Future Volume (Veh/h)	207	12	86	166	14	95
Sign Control	Free	14	00	Free	Stop	,,
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	218	13	91	175	15	100
Pedestrians	210	15	71	175	15	100
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			231		582	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			231		582	224
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		97	88
cM capacity (veh/h)			1337		443	815
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	231	266	115			
Volume Left	0	91	15			
Volume Right	13	0	100			
cSH	1700	1337	735			
Volume to Capacity	0.14	0.07	0.16			
Queue Length 95th (m)	0.0	1.7	4.2			
Control Delay (s)	0.0	3.1	10.8			
Lane LOS	0.0	A	B			
Approach Delay (s)	0.0	3.1	10.8			
Approach LOS	0.0	0.1	B			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			43.5%	ICI	J Level of S	ervice
Analysis Period (min)			15			
			10			

Existing - AM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
ane Configurations	۲	††	1	۲	††	1	ň	¢.	۲	4	
Traffic Volume (vph)	175	568	93	25	1217	224	132	36	134	35	
uture Volume (vph)	175	568	93	25	1217	224	132	36	134	35	
ane Group Flow (vph)	184	598	98	26	1281	236	139	61	141	283	
une ereup new (upn)	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2	T CHI	1	6	T CITI	T CHI	8	T CITI	4	
ermitted Phases	2	2	2	6	0	6	8	0	4	т	
etector Phase	5	2	2	1	6	6	8	8	4	4	
witch Phase	5	۷	۷	1	0	U	0	0	4	4	
	ΕO	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
linimum Initial (s)	5.0	10.0	10.0		10.0	10.0	10.0	42.4	10.0	10.0	
linimum Split (s)	11.0	30.0	30.0	11.0	30.0	30.0	42.4		42.4	42.4	
otal Split (s)	15.0	32.0	32.0	15.0	32.0	32.0	43.0	43.0	43.0	43.0	
otal Split (%)	16.7%	35.6%	35.6%	16.7%	35.6%	35.6%	47.8%	47.8%	47.8%	47.8%	
ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
I-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	7.4	7.4	7.4	7.4	
ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
ecall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
ct Effct Green (s)	57.5	51.8	51.8	50.0	42.5	42.5	20.1	20.1	20.1	20.1	
ctuated g/C Ratio	0.64	0.58	0.58	0.56	0.47	0.47	0.22	0.22	0.22	0.22	
c Ratio	0.70	0.31	0.11	0.05	0.80	0.29	0.83	0.16	0.50	0.53	
ontrol Delay	30.8	13.6	3.8	9.2	24.2	3.2	67.3	17.1	34.3	8.7	
ueue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	30.8	13.6	3.8	9.2	24.2	3.2	67.3	17.1	34.3	8.7	
OS	С	В	А	А	С	А	E	В	С	А	
pproach Delay		16.1			20.8			52.0		17.2	
pproach LOS		В			С			D		В	
ueue Length 50th (m)	13.1	20.9	0.0	1.1	94.6	1.0	23.6	5.4	21.9	5.2	
ueue Length 95th (m)	#48.6	60.0	8.6	m3.5	#187.7	13.4	35.7	11.6	30.5	19.3	
ternal Link Dist (m)	# 10.0	805.4	0.0	110.0	169.5	10.1	00.7	132.3	00.0	125.7	
urn Bay Length (m)	70.0	000.4	50.0	50.0	107.5	80.0	30.0	152.5	45.0	125.7	
ase Capacity (vph)	284	1952	886	561	1601	808	296	674	502	752	
arvation Cap Reductn	0	0	000	0	0	000	0	0/4	0	0	
	0	0	0	0	0	0	0	0	0	0	
oillback Cap Reductn torage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
educed v/c Ratio			0.11		0.80	0.29		0.09	0.28		
	0.65	0.31	0.11	0.05	0.80	0.29	0.47	0.09	0.28	0.38	
tersection Summary											
ycle Length: 90											
ctuated Cycle Length: 90											
ffset: 27 (30%), Referenced to pl	hase 2:EBTL a	nd 6:WBTI	. Start of Gr	een							
atural Cycle: 95			, 5.001 01								
ontrol Type: Actuated-Coordinate	he										
aximum v/c Ratio: 0.83	50										
tersection Signal Delay: 21.0				In	tersection L	05.0					
tersection Capacity Utilization 96	6%				CU Level of S						
	0.070			IC	O LEVELUI S						
nalysis Period (min) 15	lov 1th 2011										
escription: Signal Timing Plan: M			langer								
95th percentile volume exceed		eue may be	longer.								
Queue shown is maximum afte											
Volume for 95th percentile que	eue is meterec	i by upstrea	m signal.								
olits and Phases: 2: City Park/	Bathgate & Og	jilvie									
	-										
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√ Ø1	🖉 💠 Ø2 (R)	↓ Ø4	
15 s	32 s	43 s	
<u>∕</u> ø5	∎ 💞 Ø6 (R)	≪ † ø8	
15 s	32 s	43 s	

Existing - AM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	ň	††	1	5	<u>†</u> †	1	٦	¢.	٦	¢î		
Traffic Volume (vph)	89	558	61	100	1139	121	76	35	4	3		
Future Volume (vph)	89	558	61	100	1139	121	76	35	4	3		
Lane Group Flow (vph)	94	587	64	105	1199	127	80	131	4	39		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA		
Protected Phases		2			6			8		4	3	7
Permitted Phases	2		2	6		6	8		4			
Detector Phase	2	2	2	6	6	6	8	8	4	4		
Switch Phase	10.0	10.0	10.0	10.0	10.0	40.0	10.0	10.0	10.0	10.0		
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	35.1	35.1	35.1	35.1	35.1	35.1	33.5	33.5	33.5	33.5	5.0	5.0
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	37.8%	37.8%	37.8%	37.8%	6%	6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
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)	6.1	6.1	6.1	6.1	6.1	6.1	6.5	6.5	6.5	6.5	Land	1
Lead/Lag							Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			~ • •				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	14.4	14.4	14.4	14.4		
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.16	0.16	0.16	0.16		
v/c Ratio	0.39	0.25	0.07	0.21	0.51	0.14	0.42	0.40	0.02	0.15		
Control Delay	22.3	10.3	8.1	8.8	9.3	2.2	38.8	14.4	27.2	11.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	22.3	10.3	8.1	8.8	9.3	2.2	38.8	14.4	27.2	11.6		
LOS	С	B	А	А	A	А	D	B	С	B		
Approach Delay		11.6			8.7			23.6		13.1		
Approach LOS	0.7	B	0.0	47	A	0.0	10.0	С	0 (В		
Queue Length 50th (m)	3.7	11.0	0.0	4.7	37.2	0.0	13.2	5.8	0.6	0.5		
Queue Length 95th (m)	#33.9	54.7 200.1	14.5	21.1	102.6 350.0	8.2	21.6	17.2 137.2	2.8	7.3 101.6		
Internal Link Dist (m)	45.0	200.1	130.0	100.0	300.0	65.0	50.0	137.Z	30.0	101.0		
Turn Bay Length (m)	238	2335	919	501	2335	937	365	534	30.0	451		
Base Capacity (vph)	230	2330	919	0	2350	937		0	300 0	401		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.39	0.25	0.07	0.21	0.51	0.14	0.22	0.25	0.01	0.09		
	0.39	0.25	0.07	0.21	0.51	0.14	0.22	0.25	0.01	0.09		
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90 Offset: 88 (98%), Referenced to phase	e 2:EBTL a	ind 6:WBTL	, Start of Gr	reen								
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.51						00 D						
Intersection Signal Delay: 11.0	,				tersection L							
Intersection Capacity Utilization 78.9%	6			IC	U Level of S	Service D						
Analysis Period (min) 15												
 95th percentile volume exceeds ca Queue shown is maximum after tw 		eue may be	longer.									
Calife and Dhasses 4, Oth Dr. 1/00	IS & Oqilvie	ò										
Splits and Phases: 4: City Park/CSI	0											
Splits and Phases: 4: City Park/CSI						₩øs	3 🗣 🛛 🖗 🖓					
						5 s	3 ∲ ø4 34 s					
							34 s					

Existing - AM 6: Blair & OR-174 OFF

6: Blair & OR-174 OFF	٦	\mathbf{r}	4	+	×.	•	Ť	ţ	1	
Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
ane Configurations	5	1	1	↑	1	ካካ	† †	^	1	
Fraffic Volume (vph)	86	185	223	182	452	256	1277	650	86	
-uture Volume (vph)	86	185	223	182	452	256	1277	650	86	
ane Group Flow (vph)	91	195	235	192	476	269	1344	684	91	
Furn Type	Perm	pm+ov	Perm	NA	Perm	Prot	NA	NA	Perm	
Protected Phases		5		8		5	2	6		
Permitted Phases	4	4	8		8				6	
Detector Phase	4	5	8	8	8	5	2	6	6	
Switch Phase										
Vinimum Initial (s)	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	
Ainimum Split (s)	36.8	11.4	36.8	36.8	36.8	11.4	30.1	30.1	30.1	
Fotal Split (s)	41.0	27.0	41.0	41.0	41.0	27.0	59.0	32.0	32.0	
Fotal Split (%)	41.0%	27.0%	41.0%	41.0%	41.0%	27.0%	59.0%	32.0%	32.0%	
rellow Time (s)	3.3	4.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	
All-Red Time (s)	3.5	2.2	3.5	3.5	3.5	2.2	1.9	1.9	1.9	
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)	6.8	6.4	6.8	6.8	6.8	6.4	6.1	6.1	6.1	
_ead/Lag		Lead				Lead		Lag	Lag	
ead-Lag Optimize?		Yes				Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	Min	Min	
Act Effct Green (s)	28.8	48.5	28.8	28.8	28.8	12.6	41.7	22.4	22.4	
Actuated g/C Ratio	0.34	0.58	0.34	0.34	0.34	0.15	0.50	0.27	0.27	
//c Ratio	0.24	0.22	0.41	0.31	0.84	0.55	0.80	0.53	0.19	
Control Delay	24.0	8.4	25.0	23.6	36.2	40.0	22.3	28.4	4.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fotal Delay	24.0	8.4	25.0	23.6	36.2	40.0	22.3	28.4	4.6	
_OS	С	А	С	С	D	D	С	С	А	
Approach Delay				30.6			25.3	25.6		
Approach LOS				С			С	С		
Queue Length 50th (m)	10.7	12.0	29.4	23.1	57.6	23.0	101.7	37.0	0.0	
Queue Length 95th (m)	24.8	24.5	55.1	44.8	#123.9	36.7	128.0	51.3	8.0	
nternal Link Dist (m)				105.9			166.4	212.5		
Turn Bay Length (m)			70.0		25.0	85.0			70.0	
Base Capacity (vph)	472	1050	724	762	679	846	2241	1647	580	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.19	0.32	0.25	0.70	0.32	0.60	0.42	0.16	
ntersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 84										
Vatural Cycle: 80										
Control Type: Semi Act-Uncoord										
Maximum v/c Ratio: 0.84										
ntersection Signal Delay: 25.7				In	tersection L()S· C				
ntersection Capacity Utilization 89.1%					CU Level of S					
Analysis Period (min) 15)			i.						
Description: Signal Timing Plan: May 5	5 2016									
95th percentile volume exceeds ca		eue may he	longer							
Queue shown is maximum after two		sao may be								
Childs and Dhasses 4. Disks 9 OD 17										
Splits and Phases: 6: Blair & OR-17	4 UFF					- T 4				
Tø2						4	Ø4			
						41 :	S			
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Existing - AM 7: Service & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4			र्स	¥	
Traffic Volume (veh/h)	36	82	24	29	114	76
Future Volume (Veh/h)	36	82	24	29	114	76
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	38	86	25	31	120	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	NONE			NOTIC		
Upstream signal (m)				287		
pX, platoon unblocked				207		
vC, conflicting volume			124		162	81
vC1, stage 1 conf vol			124		102	01
vC1, stage 1 conf vol						
vC2, stage 2 coni voi vCu, unblocked vol			104		1/0	81
			124		162	
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			0.0		0.5	0.0
tF (s)			2.2		3.5	3.3
p0 queue free %			98		85	92
cM capacity (veh/h)			1463		815	979
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	124	56	200			
Volume Left	0	25	120			
Volume Right	86	0	80			
cSH	1700	1463	873			
Volume to Capacity	0.07	0.02	0.23			
Queue Length 95th (m)	0.0	0.4	6.7			
Control Delay (s)	0.0	3.4	10.3			
Lane LOS	0.0	3.4 A	10.3 B			
Approach Delay (s)	0.0	3.4	10.3			
Approach LOS	0.0	3.4	10.3 B			
			Ď			
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			27.9%	IC	U Level of S	ervice
Analysis Period (min)			15			

Existing - AM 8: Site/SilverCity & City Park

	≯	+	*	4	+	*	1	1	*	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	104	3	9	132	2	3	0	12	2	0	0
Future Volume (vph)	1	104	3	9	132	2	3	0	12	2	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	109	3	9	139	2	3	0	13	2	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	113	150	16	2								
Volume Left (vph)	1	9	3	2								
Volume Right (vph)	3	2	13	0								
Hadj (s)	0.02	0.04	-0.42	0.23								
Departure Headway (s)	4.1	4.1	4.0	4.7								
Degree Utilization, x	0.13	0.17	0.02	0.00								
Capacity (veh/h)	863	870	827	709								
Control Delay (s)	7.7	7.9	7.1	7.7								
Approach Delay (s)	7.7	7.9	7.1	7.7								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.8									
Level of Service			А									
Intersection Capacity Utilization			23.7%	ICI	J Level of Serv	/ice			А			
Analysis Period (min)			15									

Existing - AM 9: Site & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	¢î			र्स	Y	
Traffic Volume (veh/h)	120	4	26	148	7	46
Future Volume (Veh/h)	120	4	26	148	7	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	126	4	27	156	7	48
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			130		338	128
vC1, stage 1 conf vol			100		550	120
vC2, stage 2 conf vol						
vCu, unblocked vol			130		338	128
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			т. I		U.T	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	95
cM capacity (veh/h)			90 1455		645	93
					045	722
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	130	183	55			
Volume Left	0	27	7			
Volume Right	4	0	48			
cSH	1700	1455	874			
Volume to Capacity	0.08	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	1.2	9.4			
Lane LOS		А	А			
Approach Delay (s)	0.0	1.2	9.4			
Approach LOS			А			
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			30.1%	ICI	U Level of S	ervice
Analysis Period (min)			15	101	2 2010: 01 0	
			10			

FB 2026 PM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	ň	††	1	ň	<u>†</u> †	1	٦	ţ,	٦	4	
Traffic Volume (vph)	178	1210	187	17	1175	201	149	35	233	63	
Future Volume (vph)	178	1210	187	17	1175	201	149	35	233	63	
Lane Group Flow (vph)	187	1274	197	18	1237	212	157	73	245	302	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2	1 01111	1	6	1 0.111	1 01111	8	1 01111	4	
Permitted Phases	2	2	2	6	Ū	6	8	U	4		
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase	5	2	۷		0	0	0	0	Т	г	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Vinimum Split (s)	11.0	29.0	29.0	11.0	29.0	29.0	42.4	42.4	42.4	42.4	
Total Split (s)	20.0	37.0	37.0	20.0	37.0	37.0	42.4	42.4	42.4	42.4	
	20.0%	37.0%	37.0%	20.0%	37.0%	37.0%	43.0%	43.0%	43.0%	43.0%	
Fotal Split (%)	3.7										
(ellow Time (s)		3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
Lost Time Adjust (s)	0.7	-2.0	-2.0	0.7	-2.0	-2.0	-3.4	-3.4	-3.4	-3.4	
Total Lost Time (s)	5.4	4.0	4.0	5.4	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	61.6	58.4	58.4	51.6	47.6	47.6	29.0	29.0	29.0	29.0	
Actuated g/C Ratio	0.62	0.58	0.58	0.52	0.48	0.48	0.29	0.29	0.29	0.29	
//c Ratio	0.75	0.64	0.22	0.08	0.77	0.27	0.82	0.15	0.67	0.50	
Control Delay	37.2	19.1	6.9	10.3	22.0	2.4	63.4	13.6	39.6	11.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	37.2	19.1	6.9	10.3	22.0	2.4	63.4	13.6	39.6	11.0	
LOS	D	В	А	В	С	А	E	В	D	В	
Approach Delay		19.7			19.0			47.6		23.8	
Approach LOS		В			В			D		С	
Queue Length 50th (m)	18.4	70.8	5.4	0.9	87.5	4.2	28.2	5.2	41.7	13.2	
Queue Length 95th (m)	44.1	#162.8	23.7	m2.5	#180.5	4.7	47.7	13.0	58.4	30.9	
Internal Link Dist (m)		805.4			169.5			132.3		125.7	
Turn Bay Length (m)	70.0		50.0	50.0		80.0	30.0		45.0		
Base Capacity (vph)	320	1980	899	367	1614	798	257	660	489	733	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.64	0.22	0.05	0.77	0.27	0.61	0.11	0.50	0.41	
ntersection Summary	0.00	0.04	0.22	0.05	0.11	0.27	0.01	0.11	0.00	0.41	
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 19 (19%), Referenced to pha	SO 2.EDTL	nd 6-\MDTI	Start of Cr	00 n							
Vatural Cycle: 85	ISC Z.EDTE d		, Start UI GI	CCII							
Natural Cycle. 00 Control Type: Actuated Coordinated											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.82											
ntersection Signal Delay: 21.7	10/				tersection L						
ntersection Capacity Utilization 89.7	1%			IC	U Level of S	ervice E					
Analysis Period (min) 15											
Description: Signal Timing Plan: Mag 95th percentile volume exceeds		eue may be	longer.								
Queue shown is maximum after t			J								
m Volume for 95th percentile queu		l by upstrea	m signal.								
Splits and Phases: 2: City Park/Ba	athaate & Oc	ilvie									
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20 s	37 s	43 s
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20 s	37 s	43 s

FB 2026 PM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	5	<u>††</u>	1	5	<u>††</u>	1	5	ef.	7	f,		
Traffic Volume (vph)	16	1311	141	223	663	18	204	7	63	22		
Future Volume (vph)	16	1311	141	223	663	18	204	7	63	22		
Lane Group Flow (vph)	17	1380	148	235	698	19	215	206	66	127		
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA		
Protected Phases		2		1	6			8		4	3	7
Permitted Phases	2		2	6		6	8		4			
Detector Phase	2	2	2	1	6	6	8	8	4	4		
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	29.1	29.1	29.1	10.9	29.1	29.1	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	46.0	46.0	46.0	15.0	61.0	61.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	46.0%	46.0%	46.0%	15.0%	61.0%	61.0%	34.0%	34.0%	34.0%	34.0%	5%	5%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	1.0	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
Lost Time Adjust (s)	-2.1	-2.1	-2.1	0.0	-2.1	-2.1	-2.5	-2.5	-2.5	-2.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lead/Lag	Lag	Lag	Lag	Lead	4.0	4.0	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	47.9	47.9	47.9	64.8	64.8	64.8	26.2	26.2	26.2	26.2	NONE	NULLE
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	04.0	0.26	0.26	0.26	0.26		
v/c Ratio	0.48	0.48	0.48	0.05	0.03	0.03	0.20	0.20	0.20	0.20		
Control Delay	8.7	23.1	2.2	42.5	9.2	0.03	53.4	7.0	32.0	9.3		
Queue Delay	0.0	23.1	0.0	42.5	9.2	0.1	0.0	0.0	0.0	9.3		
Total Delay	8.7	23.1	2.2	42.5	9.2	0.0	53.4	7.0	32.0	9.3		
LOS	6.7 A	23.1 C	2.2 A	42.3 D	9.2 A	0.1 A	55.4 D	7.0 A	32.0 C	9.3 A		
Approach Delay	A	20.9	A	U	17.2	A	D	30.7	C	17.1		
Approach LOS		20.9 C			В			50.7 C		B		
Queue Length 50th (m)	1.6	136.7	3.1	27.3	29.0	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	m1.8	#179.4	m7.6	#75.5	47.6	0.0	#67.2	16.8	21.1	16.1		
Internal Link Dist (m)	1111.0	200.1	1117.0	π13.3	350.0	0.0	#07.Z	137.2	21.1	101.6		
Turn Bay Length (m)	45.0	200.1	130.0	100.0	550.0	65.0	50.0	137.2	30.0	101.0		
Base Capacity (vph)	297	1623	707	298	2198	735	321	549	250	512		
Starvation Cap Reductn	0	0	0	270	2170	0	0	0	230	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.06	0.85	0.21	0.79	0.32	0.03	0.67	0.38	0.26	0.25		
	0.00	0.05	0.21	0.77	0.52	0.05	0.07	0.50	0.20	0.25		
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 30 (30%), Referenced to pha	se 2:EBTL a	IND 6:WBIL	, Start of Gr	een								
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.85						~~ ~						
Intersection Signal Delay: 20.9	0/				tersection L							
Intersection Capacity Utilization 93.2	%			IC	U Level of S	Service F						
Analysis Period (min) 15	FIL 004 (
Description: Signal Timing Plan: May												
# 95th percentile volume exceeds		eue may be	longer.									
Queue shown is maximum after t												
m Volume for 95th percentile queu	e is metered	i by upstrea	m signal.									
Splits and Phases: 4: City Park/CS	SIS <u>& O</u> gilvie	9										
✓ Ø1	(R)						HAØ3	Ø4				
15 s 46 s	V 7							-				

Ø1	∎ 🗲 Ø2 (R)	. ∱ \$ø3 ↓™ø4
15 s	46 s	5 s 34 s
	•	
61 s		5 s 34 s

FB 2026 PM <u>6: Blair & OR174 WB Off</u>

	≯	*	4	+	•	•	Ť	Ļ	4
Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	<u> </u>	1	<u> </u>	1	1	ኘካ	<u>^</u>	<u></u>	1
Traffic Volume (vph)	123	540	93	142	150	322	883	1727	169
Future Volume (vph)	123	540	93	142	150	322	883	1727	169
Lane Group Flow (vph)	129	568	98	149	158	339	929	1818	178
Furn Type	Perm	pm+ov	Perm	NA	Free	Prot	NA	NA	Free
Protected Phases	1 GHH	5	T CITI	8	TICC	5	2	6	1100
Permitted Phases	4	4	8	0	Free	5	2	0	Free
Detector Phase	4	5	8	8	TICC	5	2	6	1100
Switch Phase	•	U	Ū	0		Ū	2	U	
Minimum Initial (s)	10.0	5.0	10.0	10.0		5.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8		11.4	30.1	30.1	
Total Split (s)	36.8	31.0	36.8	36.8		31.0	94.0	63.0	
Total Split (%)	28.1%	23.7%	28.1%	28.1%		23.7%	71.9%	48.2%	
Yellow Time (s)	3.3	4.2	3.3	3.3		4.2	4.2	4.2	
All-Red Time (s)	3.5	1.9	3.5	3.5		1.9	1.9	1.9	
Lost Time Adjust (s)	-2.8	-2.1	-2.8	-2.8		-2.1	-2.1	-2.1	
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag		Lead				Lead		Lag	
Lead-Lag Optimize?		Yes				Yes		Yes	
Recall Mode	None	None	None	None		None	C-Max	C-Max	
Act Effct Green (s)	25.0	57.7	25.0	25.0	130.8	28.7	97.8	65.1	130.8
Actuated g/C Ratio	0.19	0.44	0.19	0.19	1.00	0.22	0.75	0.50	1.00
v/c Ratio	0.77	0.83	0.30	0.44	0.11	0.47	0.37	0.75	0.12
Control Delay	77.7	41.6	46.0	49.3	0.1	46.9	6.8	29.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	41.6	46.0	49.3	0.1	46.9	6.8	29.9	0.2
LOS	E	D	D	D	А	D	А	С	А
Approach Delay				29.3			17.5	27.3	
Approach LOS				С			В	С	
Queue Length 50th (m)	31.7	117.3	21.8	34.1	0.0	38.6	39.2	140.1	0.0
Queue Length 95th (m)	51.6	159.4	35.5	51.0	0.0	55.2	60.7	168.0	0.0
Internal Link Dist (m)				105.9			129.2	212.5	
Turn Bay Length (m)			70.0		25.0	85.0			70.0
Base Capacity (vph)	220	685	425	447	1478	724	2535	2423	1498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.83	0.23	0.33	0.11	0.47	0.37	0.75	0.12
Intersection Summary									
Cycle Length: 130.8									
Actuated Cycle Length: 130.8									
Offset: 50 (38%), Referenced to pha	ase 2:NBT ar	nd 6:SBT, Si	art of Greer	า					
Natural Cycle: 90									
Control Type: Actuated-Coordinated	t								
Maximum v/c Ratio: 0.83									
Intersection Signal Delay: 28.0					ersection L				
Intersection Capacity Utilization 88.8	8%			IC	U Level of S	Service E			
Analysis Period (min) 15									
Description: Signal Timing Plan: Ma	iy 5th, 2016								
Splits and Phases: 6: Blair & OR	174 WB Off								
¢2 (R)								- 2	Ø4
94 s	*							36.8	
51.5								50.0	

Ø2 (R)		-∜ ø4
94 s		36.8 s
\$ Ø5	Ø6 (R)	₩Ø8
31 s	63 s	36.8 s

FB 2026 PM 7: Transitway & City Park

				4		
	-	\rightarrow	-	-	1	-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4î			र्भ	Y	
Traffic Volume (veh/h)	134	195	72	75	185	79
Future Volume (Veh/h)	134	195	72	75	185	79
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	141	205	76	79	195	83
Pedestrians		200				00
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	NOTE			NULLE		
Upstream signal (m)				287		
pX, platoon unblocked				207		
vC, conflicting volume			346		474	244
vC1, stage 1 conf vol			340		4/4	∠44
vC1, stage 1 conf vol						
vC2, stage 2 cont vol			244		474	244
			346		474	
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			2.2		2 5	2.2
tF (s)			2.2		3.5	3.3
p0 queue free %			94		62	90
cM capacity (veh/h)			1213		514	795
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	346	155	278			
Volume Left	0	76	195			
Volume Right	205	0	83			
cSH	1700	1213	575			
Volume to Capacity	0.20	0.06	0.48			
Queue Length 95th (m)	0.0	1.5	19.9			
Control Delay (s)	0.0	4.3	17.0			
Lane LOS		A	С			
Approach Delay (s)	0.0	4.3	17.0			
Approach LOS			С			
Intersection Summary						
			6.9			
Average Delay				101	LL ourst of C	ondoo
Intersection Capacity Utilization			54.3%	ICI	J Level of S	ervice
Analysis Period (min)			15			

FB 2026 PM 8: City Park & SilverCity

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			\$			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	273	12	41	193	25	12	1	43	13	5	4
Future Volume (vph)	5	273	12	41	193	25	12	1	43	13	5	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	287	13	43	203	26	13	1	45	14	5	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	305	272	59	23								
Volume Left (vph)	5	43	13	14								
Volume Right (vph)	13	26	45	4								
Hadj (s)	0.01	0.01	-0.38	0.05								
Departure Headway (s)	4.4	4.5	4.8	5.3								
Degree Utilization, x	0.37	0.34	0.08	0.03								
Capacity (veh/h)	793	780	660	593								
Control Delay (s)	10.0	9.7	8.3	8.5								
Approach Delay (s)	10.0	9.7	8.3	8.5								
Approach LOS	В	А	А	А								
Intersection Summary												
Delay			9.7									
Level of Service			А									
Intersection Capacity Utilization			44.5%	ICI	U Level of Se	ervice			А			
Analysis Period (min)			15									

FB 2026 PM 9: City Park

		~	4	+	•	1
Movement			-	WDT	1 NDL	-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations Traffic Volume (veh/h)	1 207	12	86	ର୍କ 166	₩ 14	95
Future Volume (Veh/h)	207 207	12	86 86	166	14 14	95 95
		IZ	80			90
Sign Control	Free			Free	Stop	
Grade	0% 0.95	0.05	0.05	0%	0%	0.05
Peak Hour Factor		0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	218	13	91	175	15	100
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			231		582	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			231		582	224
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		97	88
cM capacity (veh/h)			1337		443	815
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	231	266	115			
Volume Left	0	91	15			
Volume Right	13	0	100			
cSH	1700	1337	735			
Volume to Capacity	0.14	0.07	0.16			
Queue Length 95th (m)	0.0	1.7	4.2			
Control Delay (s)	0.0	3.1	10.8			
Lane LOS		A	В			
Approach Delay (s)	0.0	3.1	10.8			
Approach LOS			В			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			43.5%		U Level of S	onvico
Analysis Daried (min)			43.5% 15	ICI	D Level OF S	ervice
Analysis Period (min)			15			

Appendix G SYNCHRO 2021 AND 2026 TOTAL TRAFFIC ANALYSIS

FT 2021 AM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	1	††	1	۲	††	1	۲	4Î	۲	4	
Traffic Volume (vph)	159	515	87	23	1103	180	126	33	122	32	
Future Volume (vph)	159	515	87	23	1103	180	126	33	122	32	
Lane Group Flow (vph)	167	542	92	24	1161	189	133	56	128	257	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	30.0	30.0	42.4	42.4	42.4	42.4	
Total Split (s)	15.0	32.0	32.0	15.0	32.0	32.0	43.0	43.0	43.0	43.0	
Total Split (%)	16.7%	35.6%	35.6%	16.7%	35.6%	35.6%	47.8%	47.8%	47.8%	47.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	7.4	7.4	7.4	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	58.2	52.7	52.7	51.2	43.8	43.8	19.4	19.4	19.4	19.4	
Actuated g/C Ratio	0.65	0.59	0.59	0.57	0.49	0.49	0.22	0.22	0.22	0.22	
v/c Ratio	0.57	0.27	0.10	0.05	0.70	0.23	0.75	0.15	0.47	0.51	
Control Delay	17.8	13.0	3.3	8.2	20.1	2.4	56.2	17.5	34.0	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.8	13.0	3.3	8.2	20.1	2.4	56.2	17.5	34.0	8.9	
LOS	В	В	А	А	С	А	E	В	С	А	
Approach Delay		12.9			17.5			44.7		17.2	
Approach LOS		В			В			D		В	
Queue Length 50th (m)	9.2	17.7	0.0	0.9	78.3	0.1	22.4	5.0	20.0	4.9	
Queue Length 95th (m)	31.6	53.8	7.6	m3.1	#162.9	9.7	32.6	11.0	27.6	18.4	
Internal Link Dist (m)		805.4			169.5			132.3		125.7	
Turn Bay Length (m)	70.0	1000	50.0	50.0		80.0	30.0		45.0	700	
Base Capacity (vph)	320	1983	898	593	1651	807	326	674	504	738	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.27	0.10	0.04	0.70	0.23	0.41	0.08	0.25	0.35	
Intersection Summary											
Cycle Length: 90											
Actuated Cycle Length: 90											
Offset: 27 (30%), Referenced to phase	e 2:EBTL a	nd 6:WBTL	Start of Gr	een							
Natural Cycle: 85											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.75											
Intersection Signal Delay: 18.0					tersection L						
Intersection Capacity Utilization 91.1%)			IC	U Level of S	Service F					
Analysis Period (min) 15											
Description: Signal Timing Plan: May	4th, 2016										
# 95th percentile volume exceeds ca		eue may be	longer.								
Queue shown is maximum after two											
m Volume for 95th percentile queue		l by upstrea	m signal.								
Splits and Phases: 2: City Park/Bath	ngate & Og	jilvie			· ·						
🖌 👩 1 🚽 🗘 🖗 🥏 Ø2	(P)				4	©4					

√ Ø1	≠ø2 (R)	₩Ø4
15 s	32 s	43 s
	● Ø6 (R)	< ↑ ø8
15 s	32 s	43 s

FT 2021 AM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	ľ	<u>††</u>	1	ľ	<u></u>	1	ľ	et F	1	4		
Traffic Volume (vph)	89	506	61	100	1032	121	76	35	4	3		
Future Volume (vph)	89	506	61	100	1032	121	76	35	4	3		
Lane Group Flow (vph)	94	533	64	105	1086	127	80	132	4	39		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA		
Protected Phases		2			6			8		4	3	7
Permitted Phases	2		2	6	-	6	8	-	4		-	
Detector Phase	2	2	2	6	6	6	8	8	4	4		
Switch Phase	2	2	2	0	Ū	0	Ū	Ū	•	•		
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	35.1	35.1	35.1	35.1	35.1	35.1	33.5	33.5	33.5	33.5	5.0	5.0
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	34.0	34.0	33.0	33.5	5.0	5.0
		56.7%		56.7%						34.0 37.8%	5.0 6%	5.0 6%
Total Split (%)	56.7%		56.7%		56.7%	56.7%	37.8%	37.8%	37.8%			
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
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)	6.1	6.1	6.1	6.1	6.1	6.1	6.5	6.5	6.5	6.5		
Lead/Lag							Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	14.4	14.4	14.4	14.4		
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.16	0.16	0.16	0.16		
v/c Ratio	0.34	0.23	0.07	0.20	0.47	0.14	0.42	0.41	0.02	0.15		
Control Delay	18.3	9.5	7.3	8.6	8.8	2.2	38.8	14.4	27.2	11.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	18.3	9.5	7.3	8.6	8.8	2.2	38.8	14.4	27.2	11.6		
LOS	В	А	А	А	А	А	D	В	С	В		
Approach Delay		10.5			8.1			23.6		13.1		
Approach LOS		В			А			С		В		
Queue Length 50th (m)	3.6	9.8	0.0	4.7	32.0	0.0	13.2	5.8	0.6	0.5		
Queue Length 95th (m)	24.4	50.1	14.1	20.8	88.7	8.2	21.6	17.4	2.8	7.3		
Internal Link Dist (m)		200.1		2010	350.0	0.2	2110	137.2	2.0	101.6		
Turn Bay Length (m)	45.0	200.1	130.0	100.0	000.0	65.0	50.0	107.2	30.0	101.0		
Base Capacity (vph)	276	2335	919	526	2335	937	365	535	355	451		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.34	0.23	0.07	0.20	0.47	0.14	0.22	0.25	0.01	0.09		
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to phase	e 2:EBTL a	nd 6:WBTL	, Start of Gr	een								
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.47												
Intersection Signal Delay: 10.4				In	tersection L	OS: B						
Intersection Capacity Utilization 75.8%	6				U Level of S							
Analysis Period (min) 15	-											
Splits and Phases: 4: City Park/CSI	IS & Ogilvie	9										
Splits and Fliases. 4. City Fain/Con												
	0											
5) solution (R) 51 s						. ∦k ø: 5 s	3 ₽ Ø4 34 s					

34 s

51 s

FT 2021 AM 6: Blair & OR-174 OFF

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Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	٦	1	٦	†	1	ካካ	<u>††</u>	<u>†††</u>	1	
Traffic Volume (vph)	91	218	237	193	480	278	1355	689	91	
Future Volume (vph)	91	218	237	193	480	278	1355	689	91	
Lane Group Flow (vph)	96	229	249	203	505	293	1426	725	96	
Turn Type	Perm	pm+ov	Perm	NA	Perm	Prot	NA	NA	Perm	
Protected Phases		5		8		5	2	6		
Permitted Phases	4	4	8		8				6	
Detector Phase	4	5	8	8	8	5	2	6	6	
Switch Phase	10.0		10.0	10.0	10.0		10.0	40.0	40.0	
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8	36.8	11.4	30.1	30.1	30.1	
Total Split (s)	41.0	27.0	41.0	41.0	41.0	27.0	59.0	32.0	32.0	
Total Split (%)	41.0%	27.0%	41.0%	41.0%	41.0%	27.0%	59.0%	32.0%	32.0%	
Yellow Time (s)	3.3	4.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	
All-Red Time (s)	3.5 0.0	2.2	3.5 0.0	3.5 0.0	3.5 0.0	2.2 0.0	1.9 0.0	1.9 0.0	1.9 0.0	
Lost Time Adjust (s) Total Lost Time (s)	0.0 6.8	0.0 6.4	0.0 6.8	0.0 6.8	0.0 6.8	0.0 6.4	0.0 6.1	0.0 6.1	0.0 6.1	
Lead/Lag	0.ð	6.4 Lead	0.ŏ	0.ŏ	0.ŏ	6.4 Lead	0.1	6.1 Lag	6.1 Lag	
Lead-Lag Optimize?		Yes				Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	Min	Min	Min	
Act Effct Green (s)	30.8	51.4	30.8	30.8	30.8	13.6	44.9	24.7	24.7	
Actuated g/C Ratio	0.35	0.58	0.35	0.35	0.35	0.15	0.50	0.28	0.28	
v/c Ratio	0.35	0.38	0.35	0.33	0.35	0.15	0.83	0.28	0.28	
Control Delay	25.3	9.1	26.4	24.7	42.5	41.6	24.2	29.5	5.3	
Queue Delay	0.0	0.0	0.0	0.0	42.5	41.0	0.0	0.0	0.0	
Total Delay	25.3	9.1	26.4	24.7	42.5	41.6	24.2	29.5	5.3	
LOS	23.5 C	A	C	C	42.5 D	-1.0 D	C	27.5 C	A	
Approach Delay	0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	U	34.5	D	D	27.2	26.6	~	
Approach LOS				C			C	C		
Queue Length 50th (m)	12.4	16.5	34.1	26.8	69.9	26.5	112.4	40.3	0.0	
Queue Length 95th (m)	26.3	27.9	58.8	47.4	#137.1	38.9	141.6	56.1	9.2	
Internal Link Dist (m)				105.9			166.4	212.5		
Turn Bay Length (m)			70.0		25.0	85.0			70.0	
Base Capacity (vph)	425	1017	671	707	637	784	2077	1550	552	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.23	0.37	0.29	0.79	0.37	0.69	0.47	0.17	
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 89										
Natural Cycle: 80										
Control Type: Semi Act-Uncoord										
Maximum v/c Ratio: 0.89										
Intersection Signal Delay: 27.8				In	tersection L(DS: C				
Intersection Capacity Utilization 93.5	%			IC	U Level of S	Service F				
Analysis Period (min) 15										
Description: Signal Timing Plan: May	5, 2016									
# 95th percentile volume exceeds of	capacity, qu	eue may be	longer.							
Queue shown is maximum after tw	vo cycles.									
Splits and Phases: 6: Blair & OR-1	74 OFF									
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FT 2021 AM 7: Service & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4			र्स	Y	
Traffic Volume (veh/h)	37	106	24	29	121	76
Future Volume (Veh/h)	37	106	24	29	121	76
Sign Control	Free	100		Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	39	112	25	31	127	80
Pedestrians	57	112	25	51	127	00
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
	NOLIG			None		
Median storage veh)				207		
Upstream signal (m)				287		
pX, platoon unblocked						
vC, conflicting volume			151		176	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		176	95
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		84	92
cM capacity (veh/h)			1430		800	962
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	151	56	207			
Volume Left	0	25	127			
Volume Right	112	0	80			
cSH	1700	1430	855			
Volume to Capacity	0.09	0.02	0.24			
Queue Length 95th (m)	0.0	0.4	7.2			
Control Delay (s)	0.0	3.5	10.5			
Lane LOS	0.0	A	B			
Approach Delay (s)	0.0	3.5	10.5			
Approach LOS	0.0	0.0	B			
Intersection Summary						
· · · · · · · · · · · · · · · · · · ·			5.7			
Average Delay						
Intersection Capacity Utilization			34.3%	ICI	U Level of S	ervice
Analysis Period (min)			15			

FT 2021 AM 8: Site/SilverCity & City Park

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	129	3	9	140	2	3	0	12	2	0	0
Future Volume (vph)	1	129	3	9	140	2	3	0	12	2	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	136	3	9	147	2	3	0	13	2	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	140	158	16	2								
Volume Left (vph)	1	9	3	2								
Volume Right (vph)	3	2	13	0								
Hadj (s)	0.02	0.04	-0.42	0.23								
Departure Headway (s)	4.1	4.1	4.1	4.8								
Degree Utilization, x	0.16	0.18	0.02	0.00								
Capacity (veh/h)	861	864	807	694								
Control Delay (s)	7.9	8.0	7.2	7.8								
Approach Delay (s)	7.9	8.0	7.2	7.8								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.9									
Level of Service			А									
Intersection Capacity Utilization			24.3%	ICI	J Level of Se	ervice			А			
Analysis Period (min)			15									

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	ţ.			स्	¥		
Traffic Volume (veh/h)	120	6	34	148	13	71	
Future Volume (Veh/h)	120	6	34	148	13	71	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly flow rate (vph)	126	6	36	156	14	75	
Pedestrians		-					
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume			132		357	129	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			132		357	129	
tC, single (s)			4.1		6.4	6.2	
tC, 2 stage (s)							
tF (s)			2.2		3.5	3.3	
p0 queue free %			98		98	92	
cM capacity (veh/h)			1453		625	921	
	ED 1						
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total	132	192	89				
Volume Left	0	36	14				
Volume Right	6	0	75				
cSH	1700	1453	857				
Volume to Capacity	0.08	0.02	0.10				
Queue Length 95th (m)	0.0	0.6	2.6				
Control Delay (s)	0.0	1.6	9.7				
Lane LOS		А	А				
Approach Delay (s)	0.0	1.6	9.7				
Approach LOS			А				
Intersection Summary							
Average Delay			2.8				
Intersection Capacity Utilization			32.6%	ICI	J Level of Se	ervice	
Analysis Period (min)			15				

FT 2021 AM 9: Site & City Park

FT 2021 PM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	۲.	††	1	1	<u>††</u>	1	۲	4Î	۲	4	
Traffic Volume (vph)	161	1096	176	16	1064	162	140	32	211	57	
Future Volume (vph)	161	1096	176	16	1064	162	140	32	211	57	
Lane Group Flow (vph)	169	1154	185	17	1120	171	147	66	222	274	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.0	29.0	29.0	11.0	29.0	29.0	42.4	42.4	42.4	42.4	
Total Split (s)	20.0	37.0	37.0	20.0	37.0	37.0	43.0	43.0	43.0	43.0	
Total Split (%)	20.0%	37.0%	37.0%	20.0%	37.0%	37.0%	43.0%	43.0%	43.0%	43.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
_ost Time Adjust (s)	0.7	-2.0	-2.0	0.7	-2.0	-2.0	-3.4	-3.4	-3.4	-3.4	
Total Lost Time (s)	5.4	4.0	4.0	5.4	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
Act Effct Green (s)	63.2	60.2	60.2	53.7	49.8	49.8	27.3	27.3	27.3	27.3	
Actuated g/C Ratio	0.63	0.60	0.60	0.54	0.50	0.50	0.27	0.27	0.27	0.27	
//c Ratio	0.60	0.57	0.20	0.07	0.66	0.21	0.77	0.14	0.64	0.48	
Control Delay	19.4	16.3	6.0	9.1	17.5	1.7	57.4	14.5	39.6	9.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	16.3	6.0	9.1	17.5	1.7	57.4	14.5	39.6	9.7	
LOS	В	В	А	A	В	А	E	В	D	А	
Approach Delay		15.4			15.3			44.1		23.1	
Approach LOS		В			В			D		С	
Queue Length 50th (m)	12.2	57.0	3.9	0.8	71.4	0.9	26.2	4.9	37.9	9.4	
Queue Length 95th (m)	31.3	128.1	20.4	m2.3	#151.5	2.3	42.8	12.4	52.9	25.3	
Internal Link Dist (m)		805.4			169.5			132.3		125.7	
Turn Bay Length (m)	70.0		50.0	50.0		80.0	30.0		45.0		
Base Capacity (vph)	360	2040	924	410	1689	810	273	658	492	732	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.57	0.20	0.04	0.66	0.21	0.54	0.10	0.45	0.37	
ntersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 19 (19%), Referenced to phase	se 2. FBTL a	nd 6·W/RTI	Start of Gr	een							
Natural Cycle: 85	30 Z.LDTL 0			CCII							
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.77											
ntersection Signal Delay: 18.2				In	tersection L	OS∙ B					
ntersection Capacity Utilization 83.9	%				U Level of S						
Analysis Period (min) 15	/0										
Description: Signal Timing Plan: May	/ 4th 2016										
 95th percentile volume exceeds of 		eue may be	longer								
Queue shown is maximum after th		cue may be	longer.								
m Volume for 95th percentile queu		hy unstream	n signal								
volume to 35th percentile queu		n by upsiled	ni siyilal.								
Cality and Dhasses 2. City Dark/Da	thgate & Oc	nilvie									
Splits and Phases: 2: City Park/Ba											

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20 s	37 s	43 s
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20 s	37 s	43 s

FT 2021 PM 4: City Park/CSIS & Ogilvie

Lane Group Lane Configurations Traffic Volume (vph) Future Volume (vph)	EBL	ГРТ										
Traffic Volume (vph)	*	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø
Traffic Volume (vph)		<u>††</u>	1	5	<u>††</u>	1	۲	¢Î	۲	ţ,		
	16	1187	141	224	600	18	204	7	63	22		
	16	1187	141	224	600	18	204	7	63	22		
Lane Group Flow (vph)	17	1249	148	236	632	19	215	206	66	127		
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA		
Protected Phases	1 01111	2	1 01111	1	6	1 01111	1 01111	8	1 01111	4	3	7
Permitted Phases	2	-	2	6		6	8	Ū	4		0	
Detector Phase	2	2	2	1	6	6	8	8	4	4		
Switch Phase	-	-	-		Ū	Ū	U	Ū		·		
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	29.1	29.1	29.1	10.9	29.1	29.1	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	46.0	46.0	46.0	15.0	61.0	61.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	46.0%	46.0%	46.0%	15.0%	61.0%	61.0%	34.0%	34.0%	34.0%	34.0%	5%	5%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	1.0	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
Lost Time Adjust (s)	-2.1	-2.1	-2.4	0.0	-2.1	-2.1	-2.5	-2.5	-2.5	-2.5	0.0	0.0
Total Lost Time (s)	-2.1	4.0	-2.1	4.0	4.0	4.0	4.0	4.0	4.0	-2.5		
Lead/Lag				Lead	4.0	4.0					Lead	Lead
0	Lag	Lag Yes	Lag Yes				Lag	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes			Yes	C May	C May	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	47.8	47.8	47.8	64.8	64.8	64.8	26.2	26.2	26.2	26.2		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.26	0.26	0.26	0.26		
v/c Ratio	0.05	0.77	0.21	0.79	0.29	0.03	0.78	0.41	0.31	0.28		
Control Delay	9.2	20.3	2.6	42.5	8.9	0.1	53.4	7.0	32.0	9.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.2	20.3	2.6	42.5	8.9	0.1	53.4	7.0	32.0	9.3		
LOS	А	С	А	D	A	А	D	A	С	A		
Approach Delay		18.3			17.7			30.7		17.1		
Approach LOS		В			В			С		В		
Queue Length 50th (m)	1.8	118.5	5.1	27.5	25.5	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	m2.1	#102.8	6.3	#76.4	42.5	0.0	#67.2	16.8	21.1	16.1		
Internal Link Dist (m)		200.1			350.0			137.2		101.6		
Turn Bay Length (m)	45.0		130.0	100.0		65.0	50.0		30.0			
Base Capacity (vph)	313	1621	706	299	2198	735	321	549	250	512		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.05	0.77	0.21	0.79	0.29	0.03	0.67	0.38	0.26	0.25		
Intersection Summary Cycle Length: 100 Actuated Cycle Length: 100 Offset: 30 (30%), Referenced to pha Natural Cycle: 90 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.79		nd 6:WBTL	, Start of Gr		torsoction	DS- P						
Intersection Signal Delay: 19.8 Intersection Capacity Utilization 89.6 Analysis Period (min) 15 Description: Signal Timing Plan: Ma					tersection L U Level of S							
# 95th percentile volume exceeds Queue shown is maximum after	capacity, que two cycles.											
m Volume for 95th percentile queu Splits and Phases: 4: City Park/C			m signal.									
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15 s	46 s	5 s 34 s
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61 s		5 s 34 s

FT 2021 PM 6: Blair & OR174 WB Off

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Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	٢	1	۲	1	1	ሻሻ	† †	^	1	
Traffic Volume (vph)	131	582	99	150	158	358	937	1832	179	
Future Volume (vph)	131	582	99	150	158	358	937	1832	179	
ane Group Flow (vph)	138	613	104	158	166	377	986	1928	188	
urn Type	Perm	pm+ov	Perm	NA	Free	Prot	NA	NA	Free	
Protected Phases	T CITI	5	T CITI	8	TICC	5	2	6	TICC	
Permitted Phases	4	4	8	0	Free	J	2	0	Free	
Detector Phase	4	5	8	8	TIEE	5	2	6	TIEE	
witch Phase	т	5	0	0		J	2	0		
finimum Initial (s)	10.0	5.0	10.0	10.0		5.0	10.0	10.0		
linimum Split (s)	36.8	11.4	36.8	36.8		11.4	30.1	30.1		
otal Split (s)	36.8	31.0	36.8	36.8		31.0	94.0	63.0		
otal Split (%)	28.1%	23.7%	28.1%	28.1%		23.7%	71.9%	48.2%		
ellow Time (s)	3.3	4.2	3.3	3.3		4.2	4.2	40.270		
	3.5		3.5			4.2		4.2		
-Red Time (s)	3.5 -2.8	1.9 -2.1	3.5 -2.8	3.5 -2.8		-2.1	1.9 -2.1	-2.1		
ost Time Adjust (s)	-2.8 4.0	-2.1 4.0	-2.8 4.0			-2.1 4.0	-2.1 4.0			
otal Lost Time (s)	4.0		4.0	4.0			4.0	4.0		
ead/Lag		Lead				Lead		Lag		
ead-Lag Optimize?	None	Yes	Mana	More		Yes	C Mari	Yes		
ecall Mode	None	None	None	None	100.0	None	C-Max	C-Max	100.0	
t Effct Green (s)	26.2	59.9	26.2	26.2	130.8	29.7	96.6	62.9	130.8	
tuated g/C Ratio	0.20	0.46	0.20	0.20	1.00	0.23	0.74	0.48	1.00	
Ratio	0.80	0.87	0.31	0.44	0.11	0.51	0.39	0.82	0.13	
ntrol Delay	80.6	43.8	45.2	48.5	0.2	47.2	7.5	33.8	0.2	
eue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
tal Delay	80.6	43.8	45.2	48.5	0.2	47.2	7.5	33.8	0.2	
)S	F	D	D	D	А	D	A	С	А	
proach Delay				29.0			18.5	30.8		
proach LOS				С			В	С		
ieue Length 50th (m)	33.8	126.5	22.8	35.7	0.0	42.7	45.3	162.4	0.0	
eue Length 95th (m)	55.7	181.0	37.4	53.6	0.0	61.4	65.6	184.2	0.0	
ernal Link Dist (m)				105.9		a= -	129.2	212.5		
rn Bay Length (m)			70.0		25.0	85.0			70.0	
se Capacity (vph)	215	708	425	447	1478	746	2503	2342	1498	
arvation Cap Reductn	0	0	0	0	0	0	0	0	0	
billback Cap Reductn	0	0	0	0	0	0	0	0	0	
orage Cap Reductn	0	0	0	0	0	0	0	0	0	
duced v/c Ratio	0.64	0.87	0.24	0.35	0.11	0.51	0.39	0.82	0.13	
ersection Summary										
cle Length: 130.8										
tuated Cycle Length: 130.8										
fset: 50 (38%), Referenced to pha	ase 2:NBT an	d 6:SBT, St	art of Greer	1						
atural Cycle: 90										
ntrol Type: Actuated-Coordinated	t									
ximum v/c Ratio: 0.87										
ersection Signal Delay: 30.2				Inte	ersection L(DS: C				
ersection Capacity Utilization 93.	7%			ICI	J Level of S	ervice F				
alysis Period (min) 15										
escription: Signal Timing Plan: Ma	y 5th, 2016									
olits and Phases: 6: Blair & OR	174 WB Off									
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FT 2021 PM 7: Transitway & City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	}	200	70	र्भ	M 2015	70
Traffic Volume (veh/h)	134	208	72	76	205	79
Future Volume (Veh/h)	134	208	72	76	205	79
Sign Control	Free			Free	Stop	
Grade	0%	0.05	0.05	0%	0%	0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	141	219	76	80	216	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)				287		
pX, platoon unblocked						
vC, conflicting volume			360		482	250
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		482	250
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		58	89
cM capacity (veh/h)			1199		508	788
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	360	156	299			
Volume Left	0	76	216			
Volume Right	219	0	83			
cSH	1700	1199	564			
Volume to Capacity	0.21	0.06	0.53			
Queue Length 95th (m)	0.0	1.5	23.5			
Control Delay (s)	0.0	4.3	18.4			
Lane LOS		А	С			
Approach Delay (s)	0.0	4.3	18.4			
Approach LOS			С			
Intersection Summary						
Average Delay			7.6			
Intersection Capacity Utilization			56.4%		J Level of S	onvico
Analysis Period (min)			50.4% 15	ICI	P LEVEL OF 2	ervice
Analysis Penou (MIN)			15			

FT 2021 PM 8: City Park & SilverCity

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			4			4	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	287	12	41	213	25	12	1	43	13	5	4
Future Volume (vph)	5	287	12	41	213	25	12	1	43	13	5	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	302	13	43	224	26	13	1	45	14	5	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	320	293	59	23								
Volume Left (vph)	5	43	13	14								
Volume Right (vph)	13	26	45	4								
Hadj (s)	0.01	0.01	-0.38	0.05								
Departure Headway (s)	4.5	4.5	4.9	5.4								
Degree Utilization, x	0.40	0.36	0.08	0.03								
Capacity (veh/h)	788	777	646	580								
Control Delay (s)	10.3	10.0	8.4	8.6								
Approach Delay (s)	10.3	10.0	8.4	8.6								
Approach LOS	В	В	А	А								
Intersection Summary												
Delay			10.0									
Level of Service			А									
Intersection Capacity Utilization			46.4%	ICI	J Level of Se	rvice			А			
Analysis Period (min)			15									

FT 2021 PM 9: City Park

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1	17	10/	र्भ	Y	100
Traffic Volume (veh/h)	207	17	106	166	17	109
Future Volume (Veh/h)	207	17	106	166	17	109
Sign Control	Free			Free	Stop	
Grade	0%	0.05	0.05	0%	0%	0.05
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	218	18	112	175	18	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			236		626	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			236		626	227
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		96	86
cM capacity (veh/h)			1331		410	812
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	236	287	133			
Volume Left	0	112	18			
Volume Right	18	0	115			
cSH	1700	1331	717			
Volume to Capacity	0.14	0.08	0.19			
Queue Length 95th (m)	0.0	2.1	5.1			
Control Delay (s)	0.0	3.6	11.2			
Lane LOS		A	В			
Approach Delay (s)	0.0	3.6	11.2			
Approach LOS	010	010	В			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			3.0 46.1%		J Level of S	onvico
Analysis Daried (min)			46.1%	ICI	Tener of 2	ervice
Analysis Period (min)			15			

FT 2026 AM 2: City Park/Bathgate & Ogilvie

Lane Cardigurations EBL EBI EBR WBL WBT NBL NBT SBL SBL SBL Lane Cardigurations T		٦	-	\mathbf{r}	*	+	•	1	†	1	ţ	
Lane Conflorations N A T N Distance N	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Traffic Volume (vph) 175 568 95 25 127 224 138 36 134 35 Lane Group Flow (vph) 184 598 100 26 128 236 145 6 141 283 Lane Group Flow (vph) 184 598 100 26 128 236 145 6 145 141 283 Vent Perm NA Perm Perm NA Perm Perm NA Perm Perm NA Perm NA Perm Perm Perm NA Perm Perm NA Perm Perm NA Perm Perm NA Perm Perm Perm NA Pe		<u> </u>										
Future (volph) 175 568 96 25 1217 224 138 36 134 35 Turn Type pm-pt NA Perm Data 236 145 61 114 283 Turn Type pm-pt NA Perm Perm NA Perm NA Perm NA Perm NA Perm NA Perm <td></td>												
Lane Group Flow (oph) 184 598 100 26 1281 236 145 61 141 283 Part Lane Group Flow (oph) NA Perm Part NA Perm		175	568	95		1217	224	138	36	134	35	
Turn Type pm-pt NA Perm pm-pt NA Perm Perm Perm Perm Perm NA PermIelod Phases 2 2 6 6 8 8 4 PermIelod Phases 5 2 2 1 6 6 8 8 4 Switch Phase 5 2 2 1 6 6 8 8 4 424	Lane Group Flow (vph)											
Prodecia Phases 5 2 2 2 6 6 6 8 4 Perildic Phase 5 2 2 2 6 6 6 8 4 4 Deledic Phase 5 2 2 2 1 6 6 8 8 4 4 Deledic Phase 5 2 2 2 1 6 6 8 8 4 4 Minimum Initial (s) 5.0 10.0 10.0 5.0 10.0 10.0 10.0 10.0 1			NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm		
Delector Phase 5 2 2 1 6 6 8 8 4 4 Minimum Initial (s) 5.0 10.0 10.0 5.0 10.0												
Switch Prase Switch Prase Switch Prase Switch Prase Minimum Spill (s) 11.0 30.0 30.0 11.0 30.0 30.0 42.4 42.4 42.4 Total Spill (k) 15.0 32.0 32.0 15.0 32.0 43.0 43.0 43.0 Total Spill (k) 16.7% 35.6% 35.6% 35.6% 47.8% 47.8% 47.8% Vellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.0 3.0 3.0 3.0 All-Red Time (s) 10 2.3 2.3 1.0 2.3 2.3 4.4 4.4 4.4 All-Red Time (s) 0.0	Permitted Phases	2		2	6		6	8		4		
Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 Minimum Spill (s) 11.0 30.0 30.0 11.0 30.0 32.0 32.0 42.4 42.4 42.4 42.4 Total Spill (s) 15.7% 35.6% 35.6% 35.6% 35.6% 47.8% 47.8% 47.8% 47.8% Collar Spill (s) 10.7% 35.6% 35.6% 35.6% 35.6% 47.8% 47.8% 47.8% 47.8% Collar Time (s) 10.7 2.3 2.3 10.0 2.3 2.3 4.4 4.4 4.4 Lead ILing Lead Lead Lead Lead Lead Lead Lead Lead Lead None None None None Cell Bind Adjust (S) 0.0	Detector Phase	5	2	2	1	6	6	8	8	4	4	
Minimum Split (s) 110 300 300 110 300 300 42.4 42.4 42.4 42.4 Total Split (s) 15.0 32.0 32.0 15.0 32.0 43.0 43.0 43.0 Total Split (s) 15.7% 37.7 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4	Switch Phase											
Total Split (s) 15.0 32.0 32.0 15.0 32.0 32.0 43.0 43.0 43.0 43.0 43.0 Total Split (%) 16.7% 35.6% 35.6% 16.7% 35.6% 35.6% 47.8\% 47.8\% 47.8\%	Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s) 15.0 32.0 32.0 32.0 32.0 43.0 43.0 43.0 Total Split (s) 16.7% 35.6% 35.6% 35.6% 35.6% 47.8% 47.4 4.60 1.60 </td <td>Minimum Split (s)</td> <td></td> <td>30.0</td> <td>30.0</td> <td></td> <td>30.0</td> <td>30.0</td> <td>42.4</td> <td>42.4</td> <td>42.4</td> <td>42.4</td> <td></td>	Minimum Split (s)		30.0	30.0		30.0	30.0	42.4	42.4	42.4	42.4	
Yellow Time (s) 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7		15.0	32.0	32.0	15.0	32.0	32.0	43.0	43.0	43.0	43.0	
All-Red Time (s) 10 2.3 2.3 1.0 2.3 2.3 2.3 4.4 4.4 4.4 4.4 Lost Time Adjus (s) 0.0	Total Split (%)	16.7%	35.6%	35.6%	16.7%	35.6%	35.6%	47.8%	47.8%	47.8%	47.8%	
Lost Time Adjusi (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.7 6.0 6.0 4.7 6.0 6.0 7.4 7.4 7.4 7.4 Lead-Lag Lag L	Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
Lost Time Adjusi (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 4.7 6.0 6.0 4.7 6.0 6.0 7.4 7.4 7.4 7.4 Lead-Lag Lag L	All-Red Time (s)							4.4		4.4		
Total Los Time (s) 4.7 6.0 6.0 7.4 7.4 7.4 7.4 7.4 Lead/Lag Lag	Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LeadLag Dplimize? Yes			6.0	6.0	4.7	6.0	6.0	7.4	7.4	7.4	7.4	
Lead Lag Oplinize? Yes Yes Yes Yes Yes Yes Recall Mode None C-Max C-Max C-Max C-Max C-Max None	Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Recall Mode None C-Max C-Max None	Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes					
Actuated g/C Ratio 0.64 0.57 0.57 0.55 0.47 0.47 0.23 0.23 0.23 0.23 v/c Ratio 0.71 0.31 0.11 0.05 0.81 0.29 0.84 0.15 0.49 0.53 Control Delay 31.5 13.9 3.9 9.3 24.8 3.3 68.4 16.9 33.7 8.6 Queue Delay 0.0	Recall Mode					C-Max	C-Max					
wic Ratio 0.71 0.31 0.11 0.05 0.81 0.29 0.84 0.15 0.49 0.53 Control Delay 31.5 13.9 3.9 9.3 24.8 3.3 68.4 16.9 33.7 8.6 Queue Delay 0.0 <td< td=""><td>Act Effct Green (s)</td><td>57.2</td><td>51.5</td><td>51.5</td><td>49.6</td><td>42.1</td><td>42.1</td><td>20.5</td><td>20.5</td><td>20.5</td><td>20.5</td><td></td></td<>	Act Effct Green (s)	57.2	51.5	51.5	49.6	42.1	42.1	20.5	20.5	20.5	20.5	
Control Delay 31.5 13.9 3.9 9.3 24.8 3.3 68.4 16.9 33.7 8.6 Cueue Delay 0.0	Actuated g/C Ratio	0.64	0.57	0.57	0.55	0.47	0.47	0.23	0.23	0.23	0.23	
Queue Delay 0.0 <th< td=""><td>v/c Ratio</td><td></td><td>0.31</td><td>0.11</td><td>0.05</td><td>0.81</td><td>0.29</td><td>0.84</td><td>0.15</td><td>0.49</td><td></td><td></td></th<>	v/c Ratio		0.31	0.11	0.05	0.81	0.29	0.84	0.15	0.49		
Total Delay 31.5 13.9 3.9 9.3 24.8 3.3 68.4 16.9 33.7 8.6 LOS C B A A C A E B C A Approach Delay 16.4 21.2 53.1 16.9 Approach LOS B C D B Queue Length 50th (m) 13.7 21.3 0.0 1.1 96.0 1.5 24.6 5.3 21.8 5.2 Queue Length 95th (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 19.3 Internal Link Dist (m) 805.4 169.5 132.3 125.7							3.3			33.7		
LOS C B A A C A E B C A Approach Delay 16.4 21.2 53.1 16.9 Approach LOS B C D B D B D B D B D B D D B D D B D			0.0					0.0		0.0		
Approach Delay 16.4 21.2 53.1 16.9 Approach LOS B C D B Queue Length 50th (m) 13.7 21.3 0.0 1.1 96.0 1.5 24.6 5.3 21.8 5.2 Queue Length 95th (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 119.3 Internal Link Dist (m) 805.4 169.5 132.3 125.7 125.7 Tum Bay Length (m) 70.0 50.0 50.0 80.3 20.9 674 502 752 Starvation Cap Reductin 0		31.5	13.9	3.9	9.3	24.8	3.3	68.4	16.9	33.7	8.6	
Approach LOS B C D B Queue Length 50th (m) 13.7 21.3 0.0 1.1 96.0 1.5 24.6 5.3 21.8 5.2 Queue Length 90th (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 19.3 Internal Link Dist (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 19.3 Internal Link Dist (m) 70.0 50.0 50.0 80.0 30.0 45.0 Base Capacity (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0		С		А	А		А	E		С		
Ouceue Length 50th (m) 13.7 21.3 0.0 1.1 96.0 1.5 24.6 5.3 21.8 5.2 Queue Length 95th (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 19.3 Internal Link Dist (m) 805.4 169.5 132.3 125.7 Turn Bay Length (m) 70.0 50.0 50.0 80.0 30.0 45.0 Base Capacitly (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0 <td></td>												
Queue Length 95th (m) #49.0 60.0 9.0 m3.5 #187.7 13.4 37.0 11.6 30.5 19.3 Internal Link Dist (m) 70.0 50.0 50.0 80.0 30.0 45.0 Base Capacity (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0												
Internal Link Dist (m) 805.4 169.5 132.3 125.7 Turn Bay Length (m) 70.0 50.0 50.0 80.0 30.0 45.0 Base Capacity (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5.3</td> <td></td> <td></td> <td></td>									5.3			
Turn Bay Length (m) 70.0 50.0 50.0 80.0 30.0 45.0 Base Capacity (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0		#49.0		9.0	m3.5		13.4	37.0		30.5		
Base Capacity (vph) 283 1938 881 558 1587 803 299 674 502 752 Starvation Cap Reductn 0 <			805.4			169.5			132.3		125.7	
Starvation Cap Reductin 0 <td></td>												
Spillback Cap Reductin 0												
Storage Cap Reductin 0												
Reduced v/c Ratio 0.65 0.31 0.11 0.05 0.81 0.29 0.48 0.09 0.28 0.38 Intersection Summary Cycle Length: 90 Cycle Lengt												
Intersection Summary Cycle Length: 90 Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
Cycle Length: 90 Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.	Reduced v/c Ratio	0.65	0.31	0.11	0.05	0.81	0.29	0.48	0.09	0.28	0.38	
Cycle Length: 90 Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.	Intersection Summary											
Actuated Cycle Length: 90 Offset: 27 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
Offset: 27 (30%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection Capacity Utilization 96.6% Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
Natural Cycle: 95 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.		nase 2:EBTL a	nd 6:WBTL	. Start of Gr	een							
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection Capacity Utilization 96.6% IcU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.				,								
Maximum v/c Ratio: 0.84 Intersection Signal Delay: 21.4 Intersection LOS: C Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.		ed										
Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
Intersection Capacity Utilization 96.6% ICU Level of Service F Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.	Intersection Signal Delay: 21.4				In	tersection L	OS: C					
Analysis Period (min) 15 Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.		.6%										
Description: Signal Timing Plan: May 4th, 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
# 95th percentile volume exceeds capacity, queue may be longer.		ay 4th, 2016										
			eue may be	longer.								
Queue shown is maximum after two cycles.	Queue shown is maximum after		.,,,,	5								
Volume for 95th percentile queue is metered by upstream signal.			l by upstrea	m signal.								
Splits and Phases: 2: City Park/Bathgate & Ogilvie	Splits and Phases: 2: City Park/I	Bathgate & Oc	jilvie									
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15 s	32 s	43 s	
	📕 🐳 Ø6 (R)	▲ Ø8	
15 s	32 s	43 s	

FT 2026 AM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	۲	<u>††</u>	1	۲	<u>††</u>	1	7	¢Î	۲	eî.		
Traffic Volume (vph)	89	558	61	100	1139	121	76	35	4	3		
Future Volume (vph)	89	558	61	100	1139	121	76	35	4	3		
Lane Group Flow (vph)	94	587	64	105	1199	127	80	132	4	39		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA		
Protected Phases		2			6			8		4	3	7
Permitted Phases	2		2	6		6	8		4			
Detector Phase	2	2	2	6	6	6	8	8	4	4		
Switch Phase	40.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	40.0	10.0	1.0	1.0
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	35.1	35.1	35.1	35.1	35.1	35.1	33.5	33.5	33.5	33.5	5.0	5.0
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	37.8%	37.8%	37.8%	37.8%	6%	6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
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)	6.1	6.1	6.1	6.1	6.1	6.1	6.5	6.5	6.5	6.5		
Lead/Lag							Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	14.4	14.4	14.4	14.4		
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.16	0.16	0.16	0.16		
v/c Ratio	0.39	0.25	0.07	0.21	0.51	0.14	0.42	0.41	0.02	0.15		
Control Delay	22.5	10.5	8.3	8.8	9.3	2.2	38.8	14.4	27.2	11.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	22.5	10.5	8.3	8.8	9.3	2.2	38.8	14.4	27.2	11.6		
LOS	С	В	А	A	A	A	D	В	С	В		
Approach Delay		11.8			8.7			23.6		13.1		
Approach LOS		В			A			С		В		
Queue Length 50th (m)	3.7	11.0	0.0	4.7	37.2	0.0	13.2	5.8	0.6	0.5		
Queue Length 95th (m)	#33.9	54.7	14.5	21.1	102.6	8.2	21.6	17.4	2.8	7.3		
Internal Link Dist (m)		200.1			350.0			137.2		101.6		
Turn Bay Length (m)	45.0		130.0	100.0		65.0	50.0		30.0			
Base Capacity (vph)	238	2335	919	501	2335	937	365	535	355	451		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.39	0.25	0.07	0.21	0.51	0.14	0.22	0.25	0.01	0.09		
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 88 (98%), Referenced to ph	ase 2:EBTL a	nd 6:WBTL	, Start of Gr	een								
Natural Cycle: 90												
Control Type: Actuated-Coordinate	d											
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 11.0				In	tersection L	OS: B						
Intersection Capacity Utilization 78.	.9%			IC	U Level of S	Service D						
Analysis Period (min) 15												
# 95th percentile volume exceeds	s capacity, qu	eue may be	longer.									
Queue shown is maximum after		,	Ū									
Splits and Phases: 4: City Park/C	CSIS & Ogilvie	9										
ø2 (R)						Frøs	3 🖡 🖗 🛛 🖗					
51 s						5 s	34 s					
+						Høj						
) 🖗 Ø6 (R)												
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FT 2026 AM 6: Blair & OR-174 OFF

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Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	۲	1	5	1	1	ኸኘ	<u>††</u>	<u> </u>	1	
Traffic Volume (vph)	86	209	223	182	452	263	1277	650	86	
Future Volume (vph)	86	209	223	182	452	263	1277	650	86	
Lane Group Flow (vph)	91	220	235	192	476	277	1344	684	91	
Turn Type	Perm	pm+ov	Perm	NA	Perm	Prot	NA	NA	Perm	
Protected Phases		5		8		5	2	6		
Permitted Phases	4	4	8		8				6	
Detector Phase	4	5	8	8	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8	36.8	11.4	30.1	30.1	30.1	
Total Split (s)	41.0	27.0	41.0	41.0	41.0	27.0	59.0	32.0	32.0	
Total Split (%)	41.0%	27.0%	41.0%	41.0%	41.0%	27.0%	59.0%	32.0%	32.0%	
Yellow Time (s)	3.3	4.2	3.3	3.3	3.3	4.2	4.2	4.2	4.2	
All-Red Time (s)	3.5	2.2	3.5	3.5	3.5	2.2	1.9	1.9	1.9	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.8	6.4	6.8	6.8	6.8	6.4	6.1	6.1	6.1	
Lead/Lag Lead-Lag Optimize?		Lead Yes				Lead Yes		Lag	Lag	
	News		None	Mana	Mana		Min	Yes	Yes	
Recall Mode	None 28.8	None	None 28.8	None 28.8	None 28.8	None 12.9	Min 41.7	Min 22.0	Min 22.0	
Act Effct Green (s)		48.9	0.34	28.8 0.34		0.15	41.7 0.50	0.26	0.26	
Actuated g/C Ratio v/c Ratio	0.34 0.24	0.58 0.25	0.34	0.34	0.34 0.84	0.15	0.50	0.26	0.26	
Control Delay	24.0	8.6	25.0	23.6	36.2	39.5	22.3	28.8	4.7	
Queue Delay	24.0	8.0 0.0	25.0	23.0	30.2 0.0	39.5 0.0	0.0	28.8	4.7	
Total Delay	24.0	8.6	25.0	23.6	36.2	39.5	22.3	28.8	4.7	
LOS	24.0 C	0.0 A	25.0 C	23.0 C	50.2 D	39.3 D	22.3 C	20.0 C	4.7 A	
Approach Delay	C	A	C	30.6	D	U	25.2	26.0	A	
Approach LOS				30.0 C			23.2 C	20.0 C		
Queue Length 50th (m)	10.7	14.0	29.4	23.1	57.6	23.7	101.7	37.1	0.0	
Queue Length 95th (m)	24.8	27.1	55.1	44.8	#123.9	37.2	128.0	52.3	8.1	
Internal Link Dist (m)	24.0	27.1	55.1	105.9	1123.7	57.2	166.4	212.5	0.1	
Turn Bay Length (m)			70.0	105.7	25.0	85.0	100.4	212.5	70.0	
Base Capacity (vph)	471	1050	724	762	679	846	2241	1635	576	
Starvation Cap Reductn	0	0	0	0	0	0+0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.21	0.32	0.25	0.70	0.33	0.60	0.42	0.16	
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 84										
Natural Cycle: 80										
Control Type: Semi Act-Uncoord Maximum v/c Ratio: 0.84										
Intersection Signal Delay: 25.7				In	tersection L(
Intersection Capacity Utilization 89.1%					CU Level of S					
Analysis Period (min) 15)			IC.	O LEVELUI 3					
Description: Signal Timing Plan: May !	5 2016									
# 95th percentile volume exceeds ca		eue may he	longer							
Queue shown is maximum after tw		cuc may be	ionger.							
Splits and Phases: 6: Blair & OR-17	4 OFF									
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27 s		32 s				41	S			

FT 2026 AM 7: Service & City Park

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	EDT	•		WDT	ND	-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4			र्स	¥	
Traffic Volume (veh/h)	37	106	24	29	121	76
Future Volume (Veh/h)	37	106	24	29	121	76
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	39	112	25	31	127	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	. 10110					
Upstream signal (m)				287		
pX, platoon unblocked				207		
vC, conflicting volume			151		176	95
vC1, stage 1 conf vol			151		170	75
vC2, stage 2 conf vol						
vCu, unblocked vol			151		176	95
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			4.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			2.2 98		3.5 84	3.3 92
cM capacity (veh/h)			1430		800	962
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	151	56	207			
Volume Left	0	25	127			
Volume Right	112	0	80			
cSH	1700	1430	855			
Volume to Capacity	0.09	0.02	0.24			
Queue Length 95th (m)	0.0	0.4	7.2			
Control Delay (s)	0.0	3.5	10.5			
Lane LOS	2.0	A	В			
Approach Delay (s)	0.0	3.5	10.5			
Approach LOS	0.0	0.0	10.5 B			
			U			
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			34.3%	ICI	U Level of S	ervice
Analysis Period (min)			15			

FT 2026 AM 8: Site/SilverCity & City Park

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	129	3	9	140	2	3	0	12	2	0	0
Future Volume (vph)	1	129	3	9	140	2	3	0	12	2	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	136	3	9	147	2	3	0	13	2	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	140	158	16	2								
Volume Left (vph)	1	9	3	2								
Volume Right (vph)	3	2	13	0								
Hadj (s)	0.02	0.04	-0.42	0.23								
Departure Headway (s)	4.1	4.1	4.1	4.8								
Degree Utilization, x	0.16	0.18	0.02	0.00								
Capacity (veh/h)	861	864	807	694								
Control Delay (s)	7.9	8.0	7.2	7.8								
Approach Delay (s)	7.9	8.0	7.2	7.8								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.9									
Level of Service			А									
Intersection Capacity Utilization			24.3%	ICI	J Level of Se	ervice			А			
Analysis Period (min)			15									

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	-	\mathbf{r}	1	+	1	1
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	¢.			स्	Y	
Traffic Volume (veh/h)	120	6	34	148	13	71
Future Volume (Veh/h)	120	6	34	148	13	71
Sign Control	Free	0	0.	Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	126	6	36	156	14	75
Pedestrians	120	0	30	100	14	75
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	News			News		
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			132		357	129
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			132		357	129
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	92
cM capacity (veh/h)			1453		625	921
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	132	192	89			
Volume Left	0	36	89 14			
Volume Right	6	36 0	14 75			
cSH Mahara ta Canadita	1700	1453	857			
Volume to Capacity	0.08	0.02	0.10			
Queue Length 95th (m)	0.0	0.6	2.6			
Control Delay (s)	0.0	1.6	9.7			
Lane LOS		А	А			
Approach Delay (s)	0.0	1.6	9.7			
Approach LOS			А			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			32.6%	ICI	U Level of S	ervice
Analysis Period (min)			15			
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FT 2026 AM 9: Site & City Park

FT 2026 PM 2: City Park/Bathgate & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	1	<u></u>	1	2	<u>†</u> †	1	2	el el	7	4	
Traffic Volume (vph)	178	1210	192	17	1175	201	152	35	233	63	
Future Volume (vph)	178	1210	192	17	1175	201	152	35	233	63	
Lane Group Flow (vph)	187	1274	202	18	1237	212	160	73	245	302	
Furn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2	-	2	6	Ŭ	6	8	Ū	4	•	
Detector Phase	5	2	2	1	6	6	8	8	4	4	
Switch Phase	0	2	2	•	U	0	U	0		•	
Ainimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	
Ainimum Split (s)	11.0	29.0	29.0	11.0	29.0	29.0	42.4	42.4	42.4	42.4	
Fotal Split (s)	20.0	37.0	37.0	20.0	37.0	37.0	43.0	43.0	43.0	43.0	
otal Split (%)	20.0%	37.0%	37.0%	20.0%	37.0%	37.0%	43.0%	43.0%	43.0%	43.0%	
(ellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.3	2.3	1.0	2.3	2.3	4.4	4.4	4.4	4.4	
ost Time Adjust (s)	0.7	-2.0	-2.0	0.7	-2.0	-2.0	-3.4	-3.4	-3.4	-3.4	
otal Lost Time (s)	5.4	4.0	4.0	5.4	4.0	4.0	4.0	4.0	4.0	4.0	
ead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
ead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
ecall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	
ct Effct Green (s)	61.6	58.4	58.4	51.6	47.6	47.6	29.0	29.0	29.0	29.0	
ctuated g/C Ratio	0.62	0.58	0.58	0.52	0.48	0.48	0.29	0.29	0.29	0.29	
/c Ratio	0.75	0.64	0.22	0.08	0.77	0.27	0.84	0.15	0.67	0.50	
Control Delay	37.2	19.1	6.9	10.3	22.0	2.4	65.8	13.6	39.6	11.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	37.2	19.1	6.9	10.3	22.0	2.4	65.8	13.6	39.6	11.0	
OS	D	В	А	В	С	А	E	В	D	В	
pproach Delay	5	19.6	7.	5	19.0		-	49.4	5	23.8	
pproach LOS		B			В			D		C	
Queue Length 50th (m)	18.4	70.8	5.5	0.9	87.5	4.2	28.9	5.2	41.7	13.2	
Queue Length 95th (m)	44.1	#162.8	24.1	m2.5	#180.5	4.7	48.9	13.0	58.4	30.9	
nternal Link Dist (m)		805.4	27.1	1112.3	169.5	т.7	40.7	132.3	50.4	125.7	
furn Bay Length (m)	70.0	003.4	50.0	50.0	107.5	80.0	30.0	152.5	45.0	123.7	
ase Capacity (vph)	320	1980	900	30.0	1614	798	257	660	43.0	733	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
educed v/c Ratio	0.58	0.64	0.22	0.05	0.77	0.27	0.62	0.11	0.50	0.41	
tersection Summary											
ycle Length: 100											
ctuated Cycle Length: 100											
Offset: 19 (19%), Referenced to phase	se 2:EBTL a	nd 6:WBTL	, Start of Gr	een							
atural Cycle: 85											
Control Type: Actuated-Coordinated											
Aaximum v/c Ratio: 0.84											
ntersection Signal Delay: 21.8				In	tersection L	05.0					
ntersection Capacity Utilization 89.9	%				U Level of S						
	70			IC.	O LEVELUI S						
Analysis Period (min) 15 Description: Signal Timing Plan: May	4th 2014										
95th percentile volume exceeds		eue may be	longer.								
Queue shown is maximum after the		,									
n Volume for 95th percentile queu		l by upstrea	m signal.								
· · ·			<u> </u>								
plits and Phases: 2: City Park/Ba	athgate & Oc	jilvie				.					
√ Ø1	- 402 (R)						4				

√ Ø1	₩Ø2 (R)	↓ Ø4
20 s	37 s	43 s
.≁ _{Ø5}	∲ Ø6 (R)	√ ¶ø8
20 s	37 s	43 s

FT 2026 PM 4: City Park/CSIS & Ogilvie

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	۲	<u>††</u>	1	۲	<u>††</u>	1	7	4Î	۲.	ţ,		
Traffic Volume (vph)	16	1311	141	224	663	18	204	7	63	22		
Future Volume (vph)	16	1311	141	224	663	18	204	7	63	22		
Lane Group Flow (vph)	17	1380	148	236	698	19	215	206	66	127		
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA		
Protected Phases		2		1	6			8		4	3	7
Permitted Phases	2		2	6		6	8		4			
Detector Phase	2	2	2	1	6	6	8	8	4	4		
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	29.1	29.1	29.1	10.9	29.1	29.1	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	46.0	46.0	46.0	15.0	61.0	61.0	34.0	34.0	34.0	34.0	5.0	5.0
Total Split (%)	46.0%	46.0%	46.0%	15.0%	61.0%	61.0%	34.0%	34.0%	34.0%	34.0%	5%	5%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.7	3.7	3.3	3.3	3.3	3.3	2.0	2.0
All-Red Time (s)	2.4	2.4	2.4	1.0	2.4	2.4	3.2	3.2	3.2	3.2	0.0	0.0
Lost Time Adjust (s)	-2.1	-2.1	-2.1	0.0	-2.1	-2.1	-2.5	-2.5	-2.5	-2.5		
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lead/Lag	Lag	Lag	Lag	Lead			Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	47.8	47.8	47.8	64.8	64.8	64.8	26.2	26.2	26.2	26.2		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.26	0.26	0.26	0.26		
v/c Ratio	0.06	0.85	0.21	0.79	0.32	0.03	0.78	0.41	0.31	0.28		
Control Delay	8.8	23.2	2.2	42.5	9.2	0.1	53.4	7.0	32.0	9.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	8.8	23.2	2.2	42.5	9.2	0.1	53.4	7.0	32.0	9.3		
LOS	А	С	А	D	А	А	D	А	С	A		
Approach Delay		21.0			17.2			30.7		17.1		
Approach LOS		С			В		07.0	С		В		
Queue Length 50th (m)	1.6	137.1	3.1	27.5	29.0	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	m1.8	#179.4	m7.6	#76.4	47.6	0.0	#67.2	16.8	21.1	16.1		
Internal Link Dist (m)	45.0	200.1	130.0	100.0	350.0	65.0	E0.0	137.2	30.0	101.6		
Turn Bay Length (m)	45.0 296	1621	706	299	2198	735	50.0 321	549	250	512		
Base Capacity (vph) Starvation Cap Reductn	290	0	0	299	2190	0	321 0	0	250	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.06	0.85	0.21	0.79	0.32	0.03	0.67	0.38	0.26	0.25		
	0.00	0.00	0.21	0.77	0.52	0.05	0.07	0.00	0.20	0.25		
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100			Chart of Cr									
Offset: 30 (30%), Referenced to pha	ASE ZEBIL S		, Start of Gr	een								
Natural Cycle: 90 Control Type: Actuated-Coordinated	4											
Maximum v/c Ratio: 0.85	1											
Intersection Signal Delay: 20.9				In	tersection L							
Intersection Capacity Utilization 93.	2%				U Level of S							
Analysis Period (min) 15	2 70											
	v 5th 2016											
Description: Signal Timing Plan: May 5th 2016 # 95th percentile volume exceeds capacity, queue may be longer.												
# 95in percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.												
m Volume for 95th percentile que		l by upstrea	m signal.									
Splits and Phases: 4: City Park/CSIS & Ogilvie												
√ Ø1 • • Ø2	Ŭ						₩ø3	Ø4				
15 c 46 c							5 s 34					

Ø1	🛛 🐳 Ø2 (R)	Å Åø3 ↓ ▶ø4
15 s	46 s	5 s 34 s
	•	₩Åøz ≪¶øs
61 s		5 s 34 s

FT 2026 PM <u>6: Blair & OR174 WB Off</u>

	٨	*	4	+	•	*	†	Ļ	~
Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	۲	1	۲	^	1	ሻሻ	<u>††</u>	<u> </u>	1
Traffic Volume (vph)	123	553	93	144	150	340	883	1727	169
Future Volume (vph)	123	553	93	144	150	340	883	1727	169
Lane Group Flow (vph)	129	582	98	152	158	358	929	1818	178
Turn Type	Perm	pm+ov	Perm	NA	Free	Prot	NA	NA	Free
Protected Phases		5		8		5	2	6	
Permitted Phases	4	4	8		Free				Free
Detector Phase	4	5	8	8		5	2	6	
Switch Phase									
Minimum Initial (s)	10.0	5.0	10.0	10.0		5.0	10.0	10.0	
Minimum Split (s)	36.8	11.4	36.8	36.8		11.4	30.1	30.1	
Total Split (s)	36.8	31.0	36.8	36.8		31.0	94.0	63.0	
Total Split (%)	28.1%	23.7%	28.1%	28.1%		23.7%	71.9%	48.2%	
Yellow Time (s)	3.3	4.2	3.3	3.3		4.2	4.2	4.2	
All-Red Time (s)	3.5	1.9	3.5	3.5		1.9	1.9	1.9	
Lost Time Adjust (s)	-2.8	-2.1	-2.8	-2.8		-2.1	-2.1	-2.1	
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag		Lead				Lead		Lag	
Lead-Lag Optimize?	N	Yes	N	NI		Yes	0.14	Yes	
Recall Mode	None	None	None	None	120.0	None	C-Max	C-Max	100.0
Act Effct Green (s)	25.0	58.3	25.0	25.0	130.8	29.3	97.8	64.5	130.8
Actuated g/C Ratio v/c Ratio	0.19 0.78	0.45 0.84	0.19 0.30	0.19 0.45	1.00 0.11	0.22 0.49	0.75 0.37	0.49 0.76	1.00 0.12
Control Delay	0.78 79.0	0.84 42.4	0.30 45.9	0.45 49.5	0.11	46.9	0.37 6.9	0.76	0.12
Queue Delay	79.0 0.0	42.4	45.9 0.0	49.5 0.0	0.1	40.9	0.9 0.0	30.4 0.0	0.2
Total Delay	79.0	42.4	45.9	49.5	0.0	46.9	6.9	30.4	0.0
LOS	77.0 E	42.4 D	43.7 D	47.5 D	A	40.7 D	0.7 A	50.4 C	0.2 A
Approach Delay	L	U	U	29.5	~	U	18.0	27.7	~
Approach LOS				C			B	C	
Queue Length 50th (m)	31.7	120.5	21.8	34.7	0.0	40.7	39.4	142.0	0.0
Queue Length 95th (m)	51.8	165.6	35.5	51.8	0.0	58.1	60.7	168.0	0.0
Internal Link Dist (m)				105.9			129.2	212.5	
Turn Bay Length (m)			70.0		25.0	85.0			70.0
Base Capacity (vph)	217	690	425	447	1478	735	2533	2402	1498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.84	0.23	0.34	0.11	0.49	0.37	0.76	0.12
Intersection Summary									
Cycle Length: 130.8									
Actuated Cycle Length: 130.8		d LCDT C	ort of Cross						
Offset: 50 (38%), Referenced to pha	ase 2:INBT ar	10 6:SBT, St	art of Greer	1					
Natural Cycle: 90 Control Type: Actuated-Coordinated	4								
Maximum v/c Ratio: 0.84	1								
Intersection Signal Delay: 28.5				Int	ersection L(S. C			
Intersection Capacity Utilization 89.7	7%				U Level of S				
Analysis Period (min) 15	1 70								
Description: Signal Timing Plan: Ma	y 5th, 2016								
Splits and Phases: 6: Blair & OR1	174 WR Off								
								1	a
Ø2 (R)									Ø4
94 s								36.8	5 S

Ø2 (R)	•	-∜ Ø4
94 s		36.8 s
\$ Ø5	●	₩ Ø8
31 s	63 s	36.8 s

FT 2026 PM 7: Transitway & City Park

		_		-		
	-		1	-		1
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4			સ્	- M	
Traffic Volume (veh/h)	134	208	72	76	205	79
Future Volume (Veh/h)	134	208	72	76	205	79
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	141	219	76	80	216	83
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	None			None		
Upstream signal (m)				287		
pX, platoon unblocked				207		
vC, conflicting volume			360		482	250
vC1, stage 1 conf vol			500		402	230
vC2, stage 2 conf vol						
vCu, unblocked vol			360		482	250
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			т. I		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			94		58	89
cM capacity (veh/h)			1199		508	788
					506	700
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	360	156	299			
Volume Left	0	76	216			
Volume Right	219	0	83			
cSH	1700	1199	564			
Volume to Capacity	0.21	0.06	0.53			
Queue Length 95th (m)	0.0	1.5	23.5			
Control Delay (s)	0.0	4.3	18.4			
Lane LOS		А	С			
Approach Delay (s)	0.0	4.3	18.4			
Approach LOS			С			
Intersection Summary						
Average Delay			7.6			
Intersection Capacity Utilization			56.4%	ICI	J Level of S	envice
Analysis Period (min)			15	ICI	Level OL 2	CIVICE
Analysis Pellou (IIIII)			10			

FT 2026 PM 8: City Park & SilverCity

	≯	-	\mathbf{r}	4	←	*	1	1	1	1	Ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	287	12	41	213	25	12	1	43	13	5	4
Future Volume (vph)	5	287	12	41	213	25	12	1	43	13	5	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	302	13	43	224	26	13	1	45	14	5	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	320	293	59	23								
Volume Left (vph)	5	43	13	14								
Volume Right (vph)	13	26	45	4								
Hadj (s)	0.01	0.01	-0.38	0.05								
Departure Headway (s)	4.5	4.5	4.9	5.4								
Degree Utilization, x	0.40	0.36	0.08	0.03								
Capacity (veh/h)	788	777	646	580								
Control Delay (s)	10.3	10.0	8.4	8.6								
Approach Delay (s)	10.3	10.0	8.4	8.6								
Approach LOS	В	В	А	А								
Intersection Summary												
Delay			10.0									
Level of Service			А									
Intersection Capacity Utilization			46.4%	ICI	J Level of Se	rvice			А			
Analysis Period (min)			15									

FT 2026 PM 9: City Park

			4	+	•	~
Movement	- EDT	FDD	-	W/DT	۱ NDI	-
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations Traffic Volume (veh/h)	₽ 207	17	106	ର୍କ 166	₩ 17	109
Future Volume (Veh/h)	207 207	17	106	166	17	109
Sign Control	Free	17	100	Free	Stop	109
Grade	0%			0%	0%	
Peak Hour Factor	0%	0.95	0.95	0%	0%	0.95
Hourly flow rate (vph)	218	0.95	0.95	0.95	0.95	0.95
Pedestrians	218	10	112	1/5	18	115
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)	None			None		
Median type	ivone			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked			236		626	227
vC, conflicting volume			236		020	221
vC1, stage 1 conf vol						
vC2, stage 2 conf vol			227		(0)	207
vCu, unblocked vol			236		626	227 6.2
tC, single (s)			4.1		6.4	0.2
tC, 2 stage (s)			1.1		25	3.3
tF (s)			2.2		3.5	
p0 queue free %			92		96	86
cM capacity (veh/h)			1331		410	812
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	236	287	133			
Volume Left	0	112	18			
Volume Right	18	0	115			
cSH	1700	1331	717			
Volume to Capacity	0.14	0.08	0.19			
Queue Length 95th (m)	0.0	2.1	5.1			
Control Delay (s)	0.0	3.6	11.2			
Lane LOS		А	В			
Approach Delay (s)	0.0	3.6	11.2			
Approach LOS			В			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			46.1%	ICI	U Level of S	ervice
Analysis Period (min)			15	100	2 2010: 01 0	
			10			



Multi-Modal Level of Service - Segments Form

Consultant Scenario Comments	Future Total 2026		Project Date	476851 Aug. 28, 20	18					
SEGMENTS		City Park	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	;
	Sidewalk Width Boulevard Width		1.8 m 0.5 - 2 m							
	Avg Daily Curb Lane Traffic Volume		≤ 3000							
Pedestrian	Operating Speed On-Street Parking		> 30 to 50 km/h yes							
est	Exposure to Traffic PLoS	B	В	-	-	-	-	-	-	
eq	Effective Sidewalk Width		2.0 m							<u> </u>
<u>م</u>	Pedestrian Volume		250 ped/hr							
	Crowding PLoS Level of Service		B	-	-	-	-	-	-	
	Type of Cycling Facility		Curbside Bike Lane							
	Number of Travel Lanes		≤ 2 (no centreline)							
	Operating Speed		>40 to <50 km/h							
	# of Lanes & Operating Speed LoS		#N/A	-	-	-	-	-	-	
Bicycle	Bike Lane (+ Parking Lane) Width		≥ 1.8 m							
icy .	Bike Lane Width LoS Bike Lane Blockages	#N/A	A Rare	-	-	-	-	-	-	
8	Blockage LoS		A	-	-	-	-	_	_	
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge							
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes							
	Sidestreet Operating Speed		>40 to 50 km/h							
	Unsignalized Crossing - Lowest LoS		В	-	-	-	-	-	-	
	Level of Service		#N/A	-	-	-	-	-	-	
sit	Facility Type		Mixed Traffic							
Transit	Friction or Ratio Transit:Posted Speed	D	Vt/Vp ≥ 0.8							
Ē	Level of Service		D	-	-	-	-	-	-	
~	Truck Lane Width		> 3.7 m							
Truck	Travel Lanes per Direction	В	1							
Ē	Level of Service		В	-	-	-	-	-	-	

Section	Section
Section 8	Section 9
-	-
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