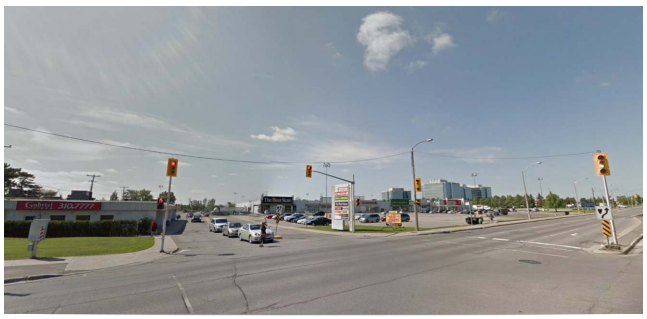
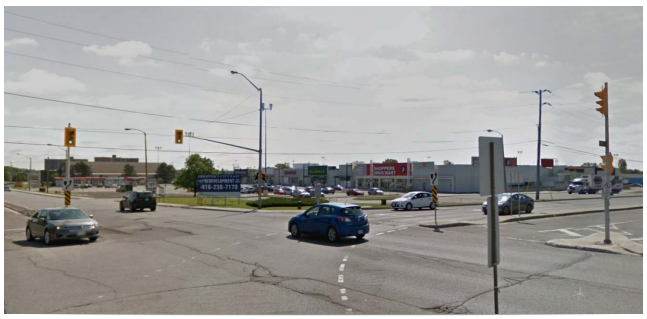
May 2016

Shoppers City East Redevelopment - Phase II

Transportation Impact Study





Prepared for:

TRINITY

Prepared by:

PARSONS

Shoppers City East Redevelopment – Phase 2

Transportation Impact Study

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May 17, 2016

602811-01000

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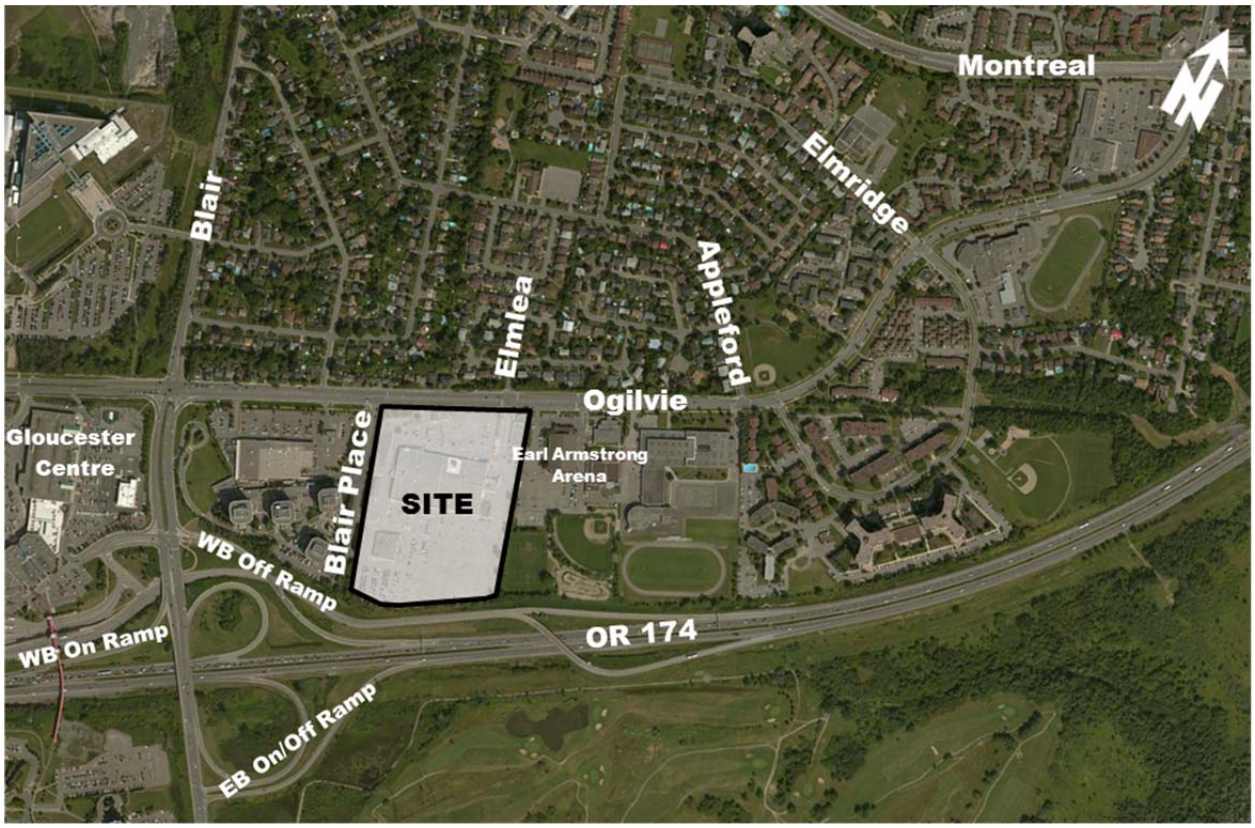
1. Introduction

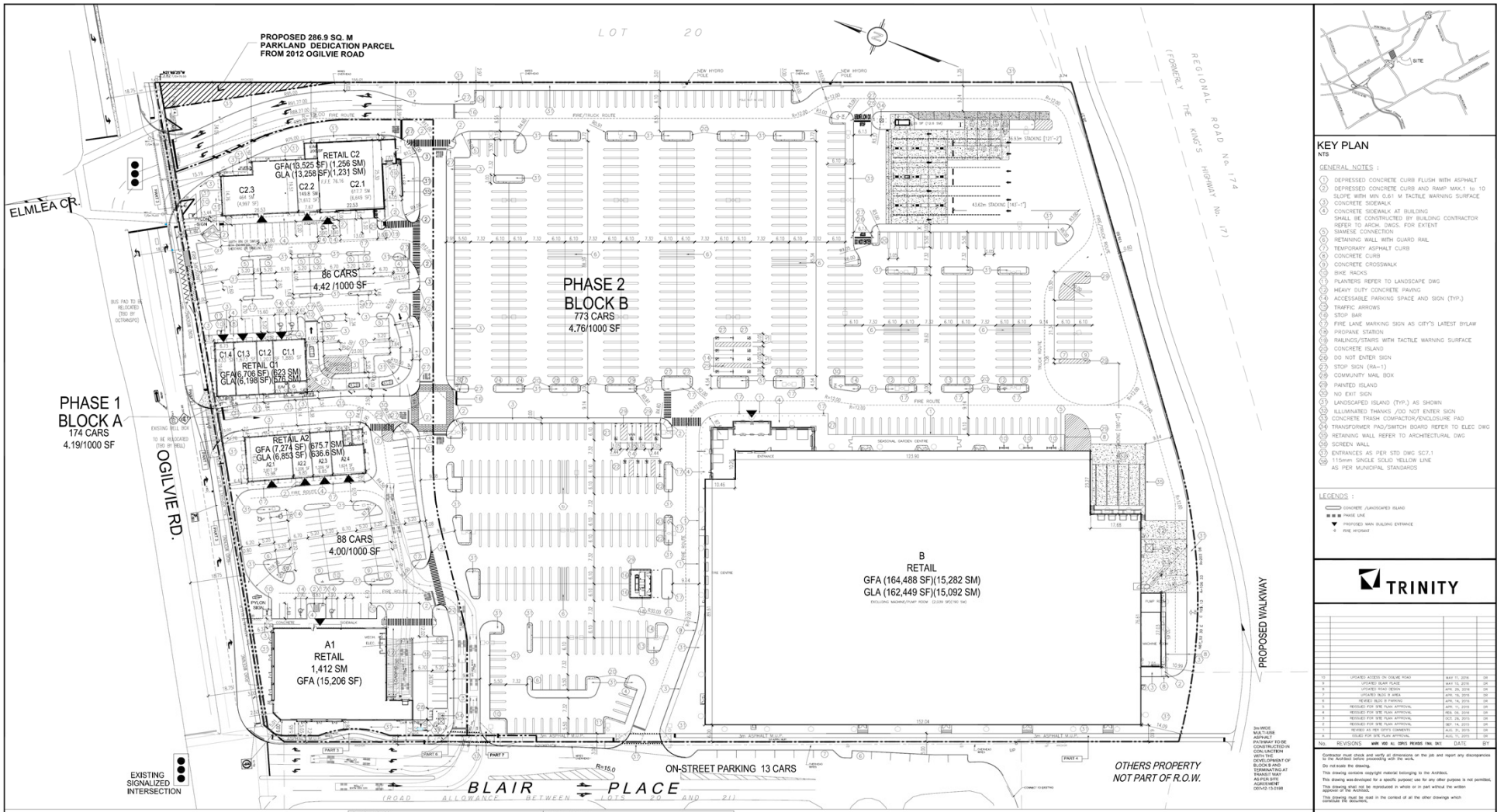
Trinity Development Group Inc has acquired the Shoppers City East site located on Ogilvie Road in the Gloucester portion of the City of Ottawa, municipally addressed as 2012 Ogilvie Road. Their plan is to redevelop the site and as Site Plan Approval is required, this Transportation Impact Study (TIS) is one component of the application.

As depicted in Figure 1: Site Context, the site is located to the east of Blair Road and bounded by Ogilvie Road to the north and Ottawa Road 174 to the south. Existing site access is provided via two signalized connections to Ogilvie Road at either end of the site and via a centrally located right-in only connection from Ogilvie Road. Blair Place, the westerly of the two signalized connections, has two all-movement driveway connections to the subject site.

Figure 1: Site Context



Trinity proposes to demolish all existing on-site buildings and redevelop the site. The previous development comprised of approximately 150,000 ft^2 of primarily retail development with some office use and a place of worship. Previous tenants included the Beer Store, Giant Tiger, Rogers, Shoppers Drug Mart, Fabricland, a restaurant, a convenience store, a flower shop, and Dollarama.



KEY PLAN
NTS

GENERAL NOTES :

1. DEPRESSED CONCRETE CURB FLUSH WITH ASPHALT
2. DEPRESSED CONCRETE CURB AND RAMP MAX.1 to 10 SLOPE WITH MIN 0.61 M TACTILE WARNING SURFACE
3. CONCRETE SIDEWALK
4. CONCRETE SIDEWALK AT BUILDING SHALL BE CONSTRUCTED BY BUILDING CONTRACTOR REFER TO ARCH. DWGS. FOR EXTENT
5. SIAMESE CONNECTION
6. RETAINING WALL WITH GUARD RAIL
7. TEMPORARY ASPHALT CURB
8. CONCRETE CURB
9. CONCRETE CROSSWALK
10. BIKE RACKS
11. PLANTERS REFER TO LANDSCAPE DWG
12. HEAVY DUTY CONCRETE PAVING
14. ACCESSABLE PARKING SPACE AND SIGN (TYP.)
15. TRAFFIC ARROWS
16. STOP BAR
17. FIRE LANE MARKING SIGN AS CITY'S LATEST BYLAW
18. PROPANE STATION
19. RAILINGS/STAIRS WITH TACTILE WARNING SURFACE
23. CONCRETE ISLAND
24. DO NOT ENTER SIGN
25. STOP SIGN (RA-1)
26. COMMUNITY MAIL BOX
27. PAINTED ISLAND
28. NO EXIT SIGN
29. LANDSCAPED ISLAND (TYP.) AS SHOWN
32. ILLUMINATED THANKS /DO NOT ENTER SIGN
33. CONCRETE TRASH COMPACTOR/ENCLOSURE PAD
34. TRANSFORMER PAD/SWITCH BOARD REFER TO ELEC DWG
35. RETAINING WALL REFER TO ARCHITECTURAL DWG
36. SCREEN WALL
37. ENTRANCES AS PER STD DWG SC7.1
38. 115mm SINGLE SOLID YELLOW LINE AS PER MUNICIPAL STANDARDS

LEGENDS :

- CONCRETE /LANDSCAPED ISLAND
- PHASE LINE
- PROPOSED MAIN BUILDING ENTRANCE
- FIRE HYDRANT

TRINITY

No.	REVISIONS	DATE	BY
10	UPDATED ACCESS ON OGILVIE ROAD	MAY 11, 2016	DS
9	UPDATED BLAIR PLACE	MAY 10, 2016	DS
8	UPDATED ROAD DESIGN	APR. 29, 2016	DS
7	UPDATED BLDG B AREA	APR. 19, 2016	DS
6	REVISED BLDG B PARKING	APR. 14, 2016	DS
5	REVISED FOR SITE PLAN APPROVAL	APR. 11, 2016	DS
4	REVISED FOR SITE PLAN APPROVAL	FEB. 26, 2016	DS
3	REVISED FOR SITE PLAN APPROVAL	OCT. 29, 2015	DS
2	REVISED FOR SITE PLAN APPROVAL	SEPT. 14, 2015	DS
1	REVISED AS PER CITY'S COMMENTS	AUG. 31, 2015	DS
0	ISSUED FOR SITE PLAN APPROVAL	AUG. 11, 2015	DS

Contractor must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

Do not scale the drawing.

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This drawing shall not be reproduced in whole or in part without the written approval of the Architect.

This drawing must be read in the context of all the other drawings which constitute this document.

SITE PLAN - PHASE 1 & 2

SCALE: 1:500

COMMERCIAL DEVELOPMENT
CITY CENTRE EAST
2012 OGILVIE ROAD – GLOUCESTER
OTTAWA, ON

PETROFF PARTNERSHIP ARCHITECTS
PETROFF
260 TOWN CENTRE BLVD., SUITE 300
MARKHAM ONTARIO CANADA L3R 8H8
TEL 905. 470. 7000 FAX. 905. 470. 2500

ONTARIO ASSOCIATION OF ARCHITECTS
MICHAELA WEINER
LICENCE
3036

DRAWN BY	DS
CHECKED BY	MW
DATE	AUGUST 28, 2013
ISSUED	MAY 11, 2016
PROJECT No.	13151
DRG. No.	SA-001

SITE STATISTICS		PHASE 1 (BLOCK A)	
TOTAL SITE AREA:	845,890.59 SF (78,583.23 SM) 19.41 ACRES	BLOCK AREA :	181,305.69 SF (16,843.29 SM)(4.16 ACRES)
ROAD WIDENING AREA PART 5:	3,997.02 SF (371.32 SM) 0.09 ACRE	PHASE 1 AREA :	217,902.36 SF (20,250.97 SM)(4.99 ACRES)
ROAD WIDENING AREA PART 3:	2,610.51 SF (298.73 SM) 0.07 ACRE	RETAIL AREA (GFA):	42,711 SF (3,966.7 SM)
DAY LIGHT TRIANGLES PART 3 & 4:	269 SF (25 SM) 0.01 ACRE	RETAIL AREA (GLA):	41,515 SF (3,855.8 SM)
PROPOSED PARKLAND DEDICATION:		TOTAL PARKING REQUIRED (GLA) :	139 CARS (3.34/1000 SF=3,90/100 SM)
PARCEL FROM 2012 OGILVIE ROAD	3,088.27 SF (286.9 SM) 0.07 ACRE	TOTAL PARKING PROVIDED :	174 CARS (4.19/1000 SF=4.51/100 SM)
TOTAL NET SITE AREA:	835,305.7 SF (77,607.28 SM) 19.17 ACRES	TOTAL PAVED AREA :	127,507.67 SF (11,845.27 SM)
		TOTAL LANDSCAPED AREA:	47,502.69 SF (4,413 SM) 37.25%
TOTAL BUILDING AREA (GFA):	207,334 SF (19,261.3 SM) 24.73 %	TOTAL BIKE SPACES REQUIRED :	8 SPACES (1/200 SM OF GFA)
TOTAL BUILDING AREA (GLA):	204,004 SF (18,947.5 SM)	TOTAL BIKE SPACES PROVIDED :	10 SPACES (1/388 SM OF GFA)
TOTAL PARKING REQUIRED :	683 CARS (3,34/1000 SF=3,69/100 SM)	TOTAL NUMBER OF LOADING SPACES PROVIDED:	2 SPACES
TOTAL PARKING PROVIDED :	947 CARS (4.64/1,000 SF=5,00/100 SM)	LOT COVERAGE :	19.34 %
TOTAL PARKING PROVIDED INCLUDING ON-STREET PARKING	960 CARS (4.71/1000 SF -5.07/100 SM)	PHASE 2 (BLOCK B)	
TOTAL PAVED AREA :	517,661.12 SF (48,089.46 SM)	BLOCK AREA :	654,015.01 SF (60,757.99 SM)(15.02 ACRES)
TOTAL LANDSCAPED AREA:	114,427.55 SF (10,630.32 SM) 22.11%	PHASE 2 AREA :	621,586.31 SF (57,743.51 SM)(14.27 ACRES)
TOTAL BIKE SPACES REQUIRED :	39 SPACES (1/500 SM OF GFA)	TOTAL BUILDING AREA (GFA):	164,488 SF (15,282 SM)
TOTAL BIKE SPACES PROVIDED :	41 SPACES (1/470 SM OF GFA)	GAS BAR STORAGE /STRUCTURE AREA :	135 SF (12,6 SM)
PARKING SIZE REQUIRED :	2.6M X 5.2M	TOTAL BUILDING AREA (GFA):	164,623 SF (15,294 SM) 26.49%
PARKING SIZE PROVIDED :	2.6M X 5.2M AND 2.75M X 5.8M AND 2.74M X 5.49M AND 3.95M X 6.19M	TOTAL BUILDING AREA (GLA):	162,449 SF (15,092 SM)
		TOTAL PARKING REQUIRED (GLA) :	544 CARS (3.34/1000 SF=3,90/100 SM)
		COSTCO PARKING :	773 CARS (4.76/1000 SF=5,12/100 SM)
		ON STREET PARKING :	13 CARS
		TOTAL COSTCO PARKING :	786 CARS (4.84/1000 SF -5,21/100 SM)
TOTAL NUMBER OF LOADING SPACES PROVIDED:	6 SPACES	TOTAL PAVED AREA :	390,153.45 SF (36,241.9 SM)
		TOTAL LANDSCAPED AREA:	63,839.59 SF (5,930.42 SM) 16,36%
		TOTAL BIKE SPACES REQUIRED :	31 SPACES (1/500 SM OF GFA)
		TOTAL BIKE SPACES PROVIDED :	31 SPACES (1/500 SM OF GFA)
		TOTAL NUMBER OF LOADING SPACES PROVIDED:	4 SPACES

FORESTRY SERVICES BRANCH IS TO CONTACTED TO ARRANGE A SITE VISIT TO INSPECT THE TREE PROTECTION MEASURES ALONG BLAIR PLACE ONCE THEY ARE FULLY INSTALLED. ALL TREE PROTECTION MEASURES MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY TREE REMOVAL AND/OR ON-SITE WORKS AND MAINTAINED FOR THE DURATION OF CONSTRUCTION.

DRAFT PLAN OF SURVEY of

PART OF LOT 20
CONCESSION 2 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF
CITY OF OTTAWA

PROVIDED BY STANTEC

PARSONS

Figure 2: Proposed Site Plan

The proposed redevelopment (Figure 2) will consist of two blocks. Block A (Trinity) will consist of approximately 40,600 ft^2 of retail and a 1,900 ft^2 coffee shop. A Phase 1 Site Plan (Block A) has already been submitted to and approved by the City. Phase 2 (Block B) will consist of a 160,000 ft^2 warehouse membership club store and an 18-position gas-bar. As shown on the attached Figure 2: Site Plan, Block A fronts onto Ogilvie Road and Block B is at the rear of the site adjacent to Ottawa Road 174. Site access will continue to be provided by two unsignalized driveways to Blair Place, a right-in/right-out connection to Ogilvie Road, and a signalized intersection at Ogilvie/Elmlea. Some roadway modifications will be required.

2. Scope of Work

As part of the Site Plan Approval process, the City of Ottawa requires submission of a formal Transportation Impact Assessment (TIA) consistent with their guidelines dated October 2006. As such, for the proposed level of Phase 2 development, a Transportation Impact Study (TIS) is the appropriate type of study.

2.1 Phase 1 TIA

As part of the Phase 1 Site Plan Approval process a Transportation Brief (TB) and supporting Addendums were submitted to the City. Only a TB was required for Phase 1 due to the small net change in site-generated traffic. In addition to these Phase 1 reports, a Draft of the Phase 2 Transportation Impact Study was also submitted to the City to support roadway modifications proposed as part of the Phase 1 SPA. The roadway modifications recommended for Phase 1 were required to accommodate the ultimate high traffic volume projections associated with Phase 2 of the subject development (warehouse membership club and gas-bar).

This current Phase 2 TIS includes traffic analysis associated with the entire site (Phases 1 and 2), and includes the Phase 1 roadway modifications that have already been approved by the City. It is noteworthy, however, that the Phase 1-approved pork chop island at the Ogilvie Road right-in/right-out site driveway has now been replaced by a bulb-out on the southeast corner of this intersection. The proposed bulb-out/curb extension reinforces the right-in/right-out but in a safer manner.

2.2 Phase 2 TIS

For the purpose of the Phase 2 assessment, horizon years will be analyzed for the year 2017 representing full occupancy, and the year 2022, which is 5-years beyond full build-out. Assessment of the study area road network will include the following intersections:

- Ogilvie/City Park
- Ogilvie/Blair Road
- Ogilvie/Blair Place
- Ogilvie/Elmlea
- Ogilvie/Earl Armstrong Arena
- Ogilvie/Appleford
- Ogilvie/Montreal
- Blair/OR174 WB Off Ramp
- Blair/OR174 EB On-Off Ramp

Given the significant traffic volumes associated with warehouse membership club stores and gas-bars, the warehouse membership club tenant engaged the consulting firm BA Group to collect data specific to this site and its end user. BA Group submitted its findings, which are included as Appendix A, and include the following information:

- Weekday morning, afternoon and Saturday peak hour traffic volumes at the study area intersections (noted above, with the exception of the Ogilvie/Earl Armstrong Arena);
- Weekday morning, afternoon and Saturday peak hour traffic volumes at the existing site driveways and the adjacent site driveways;
- Projected vehicle trips to/from the warehouse membership club store and gas-bar based on data collected from existing similar warehouse membership club sites; and
- Distribution of warehouse membership club related vehicle trips based on market and membership data.

These findings are included in this TIS and create the base for the analysis herein.

3. Existing Transportation Conditions

3.1 Study Area Roads

Ogilvie Road

It is a four-lane divided arterial extending from Montreal Road west to St. Laurent Boulevard. It has sidewalks on both sides. Signalized intersections in the immediate study area are at Blair Road, Blair Place and Shoppers City East/Elmlea. Its right-of-way protection policy is for 37.5 m. As this right-of-way does not currently exist, the Figure 2 Site Plan includes a widening to accommodate 18.75 m from the road's existing centreline.

Blair Place

Blair Place is a three-lane local road with a signalized intersection at Ogilvie Road. It has auxiliary turn lanes on its approach to Ogilvie Road which increase its cross-section to five lanes at the intersection. Its function is to provide access to the adjacent retail and office land uses. A sidewalk exists on the west side only.

Blair Road

It is designated as an arterial road in the City's Official Plan. It has a signalized intersection with Ogilvie Road and a full interchange, with signalized ramp terminals, with Ottawa Road 174 (OR174). From Blair Road to OR174 it has a basic four-lane divided cross-section with extensive auxiliary turn lanes over this length. The right-of-way protection policy for this section of Blair Road is for 37.5 m. North of Ogilvie Road to Montreal Road, Blair Road's cross section reduces to two lanes with a right-of-way protection policy of 30 m.

Local Streets North of Ogilvie Road

There are a number of two-lane local streets located north of Ogilvie Road that connect to Ogilvie Road and provide access/egress to the adjacent community. Some of these streets, such as Dunham Street, Appleford Street, and Crownhill Street, also connect to Blair Road. While no data is available, anecdotally, local residents have advised that due to peak period congestion at the Blair Road/Ogilvie intersection there is non-local through-traffic that uses their streets during these time periods to avoid delays at this intersection.

OR 174

OR 174 is a City owned freeway with a posted speed limit of 100 km/h. Within the study area, OR 174 has a four-lane cross section and is grade separated with Blair Road. Access between Blair Road and OR 174 is provided by on/off ramps accommodating all directions. Access/egress to/from the proposed development via OR 174 is not feasible. Within standard road networks, highway roads provide direct

access to arterial roadways, not private developments. In addition, the Blair interchange is located in close proximity to the site and there is insufficient space to provide an additional interchange along OR 174 at the site's location. Finally, the existing transitway/future LRT is located between OR 174 and the proposed development and an elevated connection over it is also not feasible. As such, direct access to the proposed site cannot/will not be provided via OR 174.

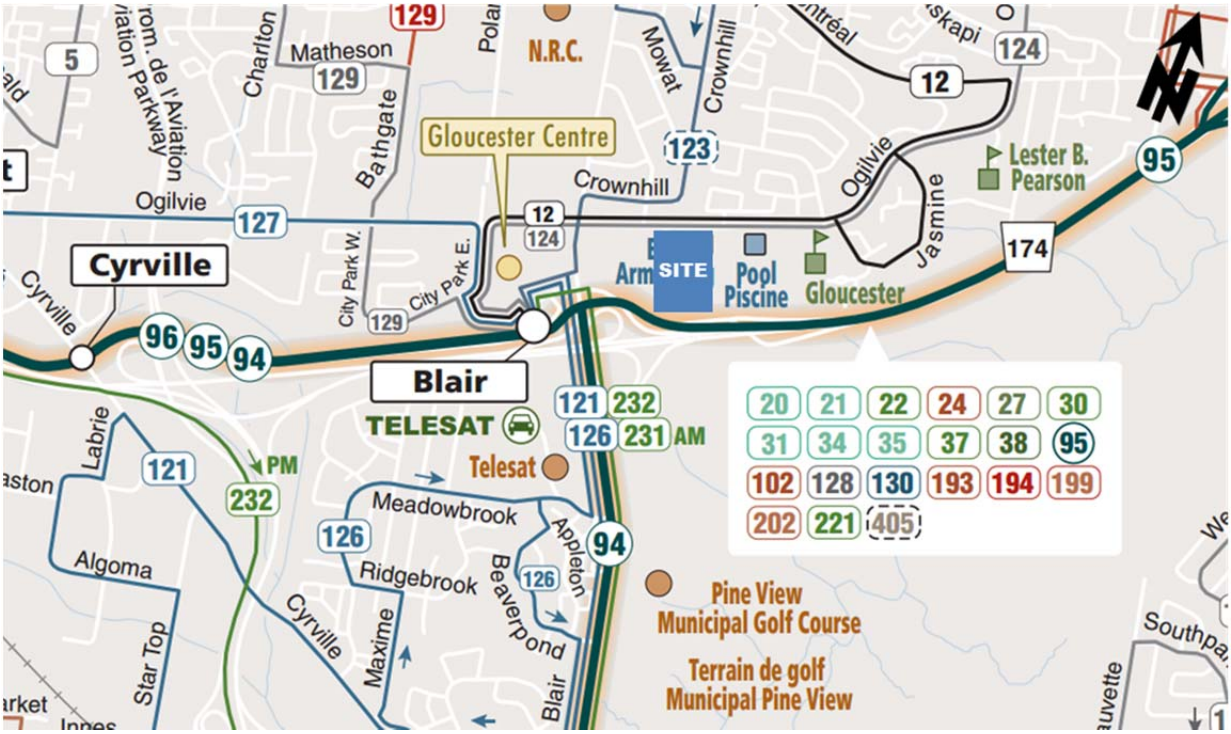
3.2 Transit

Transit service, as depicted in Figure 3, within the vicinity of the site is currently provided by OC Transpo Regular Routes #12 and 124, which provide frequent all-day service. Bus stops for these routes are located along Ogilvie Road adjacent to the proposed development.

The existing Blair Transitway Station is located in the Shopping Centre adjacent to the west side of Blair Road and on the north side of OR174. It is approximately 1 km walking distance from the Shoppers City East site. It can be reached on foot by the Ogilvie-Blair sidewalk system or by cutting through the office complex adjacent to the west of the subject site.

The City will be converting the bus-based Transitway to light rail from Blair Station west to the Tunney's Pasture Station with the construction occurring during the 2013 to 2018 time period. This section of LRT is expected to be operational in 2018. There are plans to extend the LRT further east of Blair Station to Place d'Orléans Station by 2023.

Figure 3: Area Transit Network



3.3 Cycling Facilities

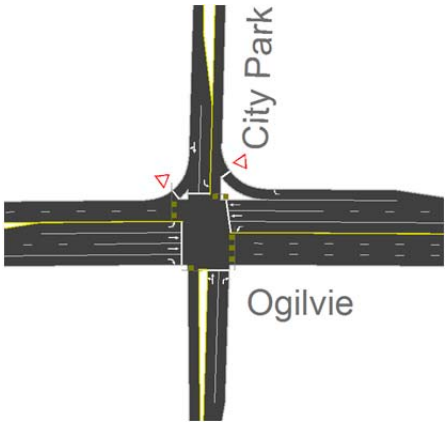
In the Ottawa Cycling Plan, Ogilvie Road is classified as a Spine Route. Currently, the only location where there is an on-street bicycle lane east of Blair Road is from Blair Road to Blair Place in the eastbound direction only. This was likely provided at the time of redevelopment of the adjacent Canadian Tire site. The long-term plan is to provide a multi-use pathway on Ogilvie Road from Blair Road to Montreal Road.

As part of the Phase 1 SPA, it was agreed upon to provide a 3.0m wide MUP along the site's frontage of Ogilvie Road from Blair Place to Elmlea Gate. In addition, a 3.0 m wide MUP is proposed to be constructed along the west side of the Site connecting to the planned east-west MUP parallel to the south boundary of the site, adjacent to OR147.

3.4 Existing Intersection Configuration

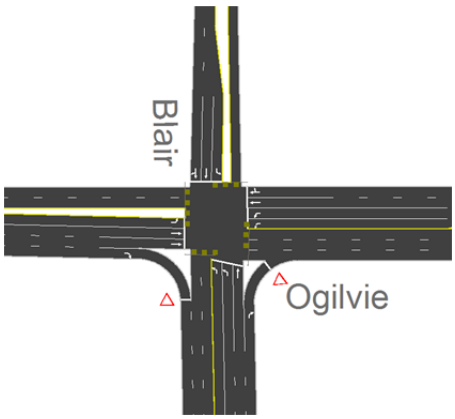
Ogilvie/City Park

The Ogilvie/City Park intersection is a signalized four-legged intersection. The westbound approach consists of a left-turn lane, two through lanes and a channelized right-turn lane. The eastbound approach consists of a left-turn lane, two through lanes and a right-turn lane. The northbound approach consists of a shared though/left-turn lane and a right-turn lane. The southbound approach consists of a left-turn lane and a shared through/channelized right-turn lane. All movements are permitted at this location.



Ogilvie/Blair Road

The Ogilvie/Blair Road intersection is a signalized four-legged intersection. The westbound approach consists of two left-turn lanes, a through lane and a shared through/right-turn lane. The eastbound approach consists of a left-turn lane, two through lanes and a channelized right-turn lane. The northbound approach consists of two left-turn lanes, a through lane and a channelized right-turn lane. The southbound approach consists of a left-turn lane, a through lane and a shared through/ right-turn lane. All movements are permitted at this location.



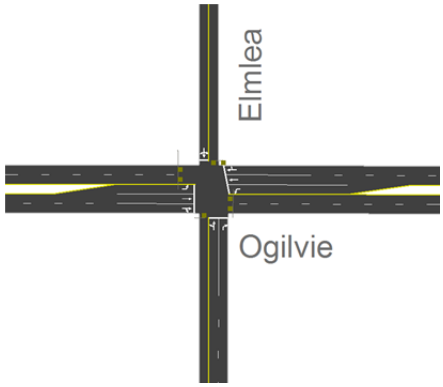
Ogilvie/Blair Place

The Ogilvie/Blair Place intersection is a signalized three-legged intersection. The westbound approach consists of a left-turn lane and two through lanes. The eastbound approach consists of two through lanes and a channelized right-turn lane. The northbound approach consists of two

left-turn lanes and a right-turn lane. All movements are permitted at this location.

Ogilvie/Elmlea

The Ogilvie/Elmlea intersection is a signalized four-legged intersection. The west and eastbound approaches consist of a left-turn lane, a through lane and a shared through/right-turn lane. The northbound approach consists of a shared through/left-turn lane and a right-turn lane. The southbound approach consists of a single full movement lane. All movements are permitted at this location.

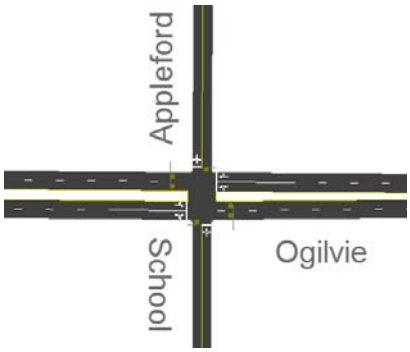


Ogilvie/Earl Armstrong Arena

The Ogilvie/Earl Armstrong Arena intersection is a signalized 'T' intersection. The westbound approach consists of a single left-turn lane and two through lanes. The eastbound approach consists of a through lane and a shared through/right-turn lane. The northbound approach consists of a single left-turn lane and a single right-turn lane. All movements are permitted at this location.

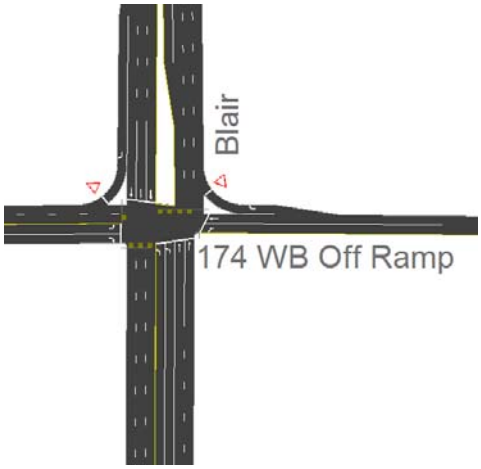
Ogilvie/Appleford

The Ogilvie/Appleford intersection is a signalized four-legged intersection. The west and eastbound approaches consist of a shared through/left-turn lane and a shared through/right-turn lane. The north and southbound approaches consist of a single full movement lane. All movements are permitted at this location.



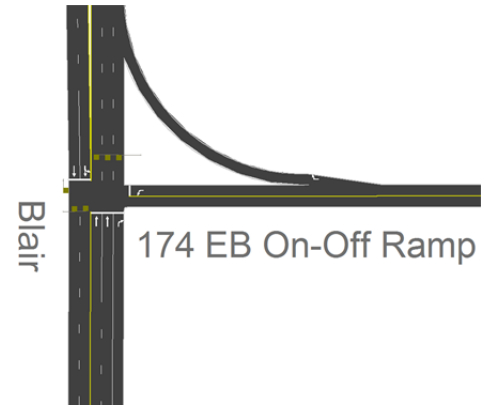
Blair/174 WB Off Ramp

The Blair/174 WB Off Ramp intersection is a signalized four-legged intersection. The westbound approach consists of a left-turn lane and a shared through/channelized right-turn lane. The eastbound approach consists of a left-turn lane and a right-turn lane. The southbound approach consists of three through lanes and a channelized right-turn lane. The northbound approach consists of two left-turn lanes and two through lanes. The eastbound through, northbound right-turn, and southbound left-turn movements are not permitted at this location.



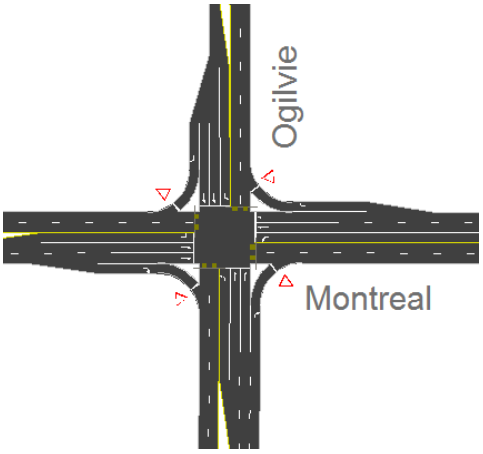
Blair/174 WB Off Ramp

The Blair/174 EB On-Off Ramp intersection is a signalized three-legged intersection. The westbound approach consists of a left-turn lane and a channelized right-turn lane. The northbound approach consists of two through lanes and a right-turn lane. The southbound approach consists of a shared through/left-turn lane and a through lane. All movements are permitted at this location.



Montreal/Ogilvie

The Montreal/Ogilvie intersection is a signalized four-legged intersection. All four approaches consist of a single left-turn lane, two through lanes, and a channelized right-turn lane. All movements are permitted at this location.



3.5 Existing Peak Hour Traffic Volumes

As mentioned previously, BA Group was engaged to provide current intersection traffic count volumes at intersections within the vicinity of the site. The following Figure 4 illustrates the weekday morning and afternoon peak hour traffic volumes (April 2015) at the Ogilvie/City Park, Ogilvie/Blair Road, Ogilvie/Blair Place, Ogilvie/Elmlea/Site, Ogilvie/Appleford, and Ogilvie/Montreal intersections. Also included are the two signalized ramp terminals on Blair Road at OR174 and the existing site driveways along Blair Place and Ogilvie Road. Traffic volumes indicate that peak hour two-way volumes adjacent to the site on Ogilvie Road range from 1,100 veh/h to 1,600 veh/h during the morning and afternoon peak hours, respectively.

In addition, the City has requested analysis at the Ogilvie/Earl Armstrong Arena intersection located adjacent to the site. These traffic volumes were provided by the City of Ottawa for the weekday morning and afternoon peak hours. It is noteworthy that this existing count was balanced/factored up with count data from the adjacent Ogilvie/Elmlea and Ogilvie/Appleford intersections. No Saturday peak hour data is available at this intersection and as such is not included herein.

Figure 5 illustrates the Saturday peak hour peak hour traffic volumes at the study area intersections. These volumes indicate that peak hour two-way volumes adjacent to the site on Ogilvie Road are approximately 1,200 veh/h during the weekend peak hour. Weekday and weekend peak hour traffic volumes are included as Appendix B.

3.6 Existing Peak Hour Intersection Operations

With regard to intersection operation, the following Table 1 provides a summary of existing traffic operations at the study area intersections based on the SYNCHRO (V8) traffic analysis software. The subject intersections were assessed in terms of the volume-to-capacity (v/c) ratio and the corresponding Level of Service (LoS) for the critical movement(s). The subject intersections 'as a whole' were assessed based on a weighted v/c ratio. The SYNCHRO model output of existing conditions is provided within Appendix C.

As shown in Table 1, study area intersections 'as a whole' are currently operating at an acceptable LoS 'D' or better during all peak hours (weekday and weekend), with respect to the City of Ottawa operating standards of LoS 'D' or better (*0.90 > v/c > 0.00*). The Blair Road/Ogilvie intersection is operating close to capacity with a v/c ratio of 0.85 during the afternoon peak hour. The other intersections, however, have significant spare capacity with v/c ratios ranging from 0.24 to 0.73.

With regard to 'critical movements', the northbound and southbound movements at the Blair Road/Ogilvie intersection are currently operating at capacity (LoS 'E') during the morning and afternoon peak hours, respectively, and the northbound left-turn movement is currently failing (LoS 'F') during the Saturday peak hour. In addition, the eastbound right-turn movement at the Blair/OR174 WB Off-Ramp intersection, exiting the Gloucester Centre, is currently operating at capacity (LoS 'E') during the afternoon peak hour. All other critical movements are operating at an acceptable LoS 'D' or better.

Figure 4: Current Weekday Morning and Afternoon Peak Hour Traffic Volumes

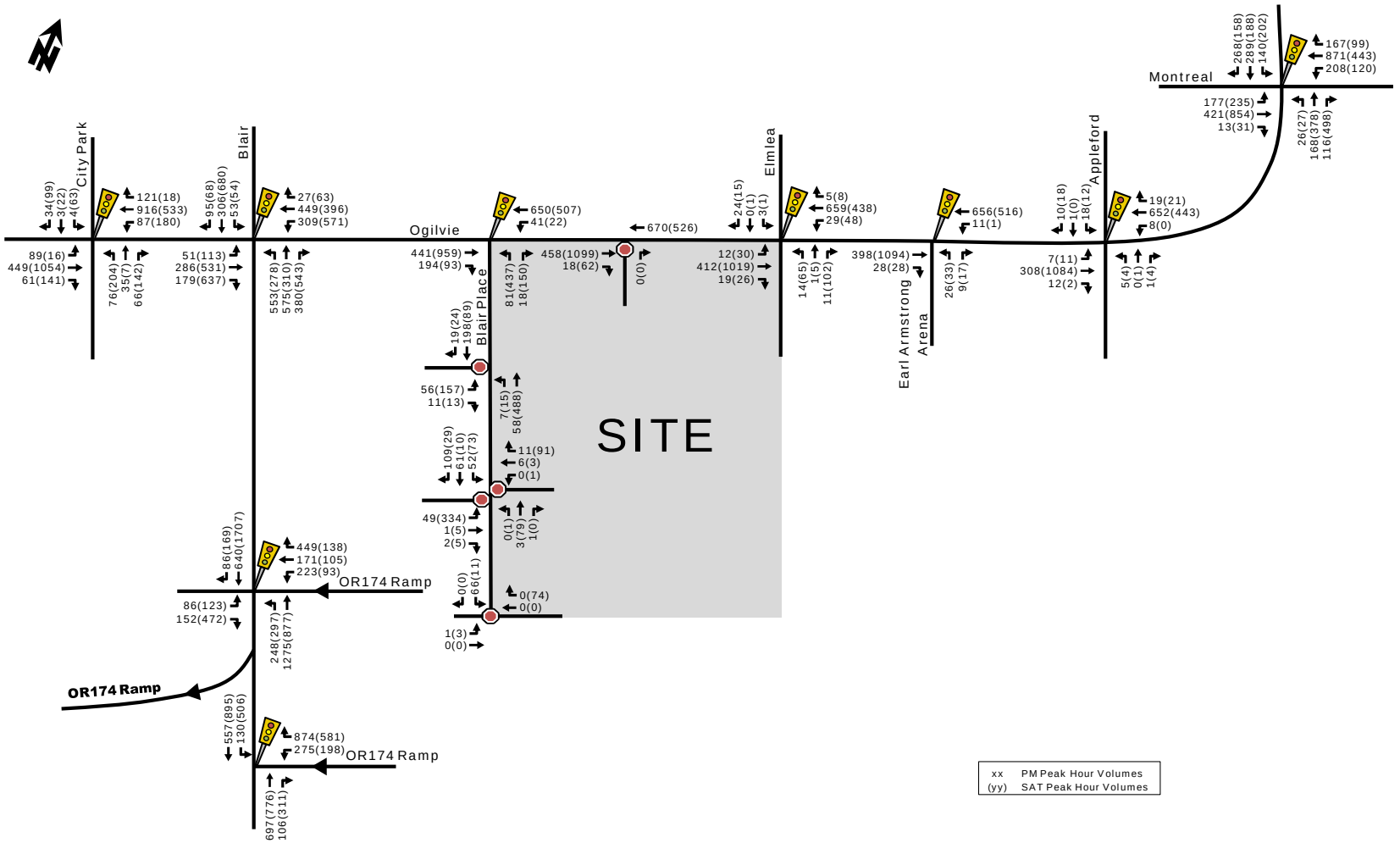


Figure 5: Current Saturday Peak Hour Traffic Volumes

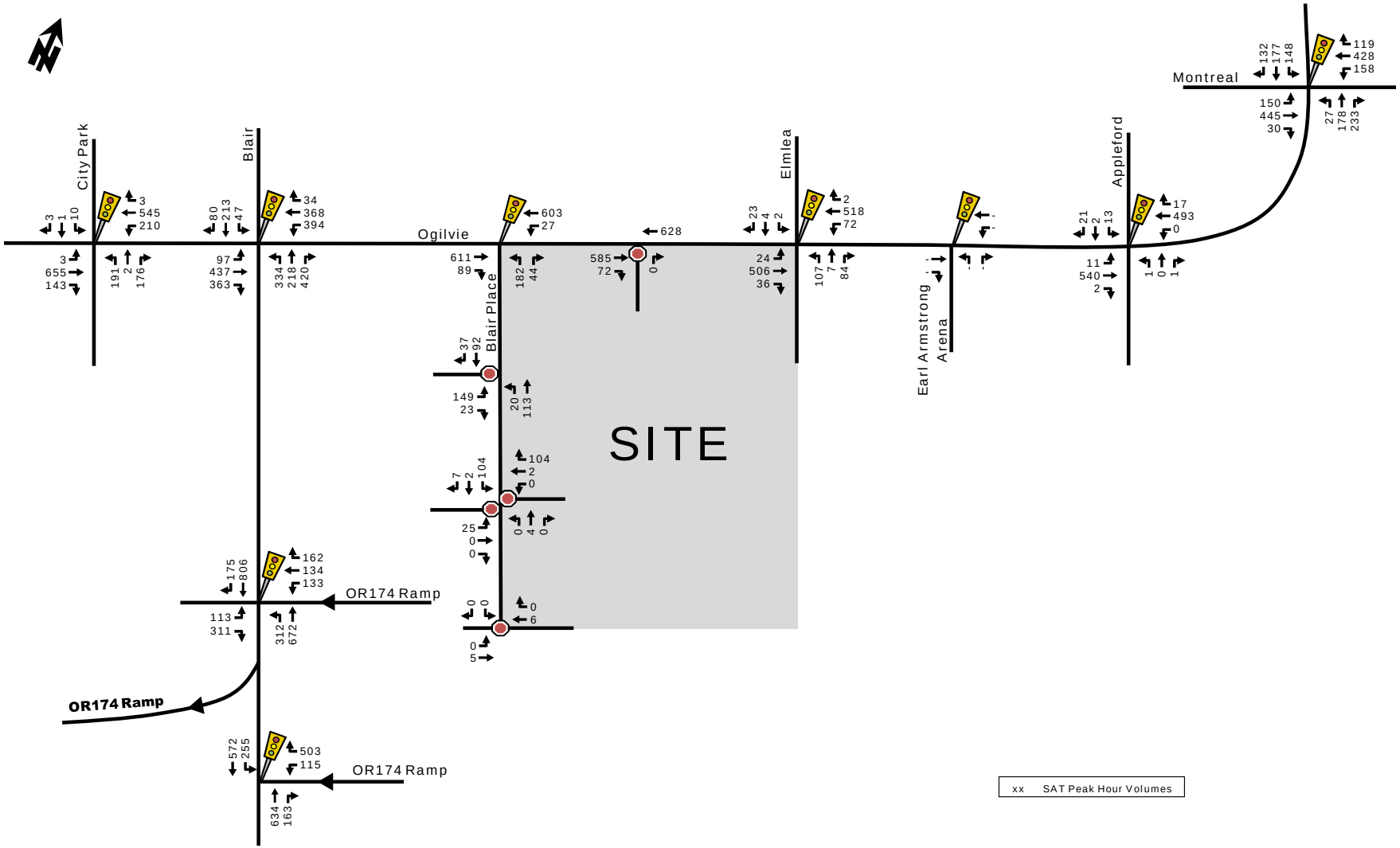


Table 1: Existing Performance at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak) [SAT Peak]					
	Critical Movement			Intersection 'as a whole'		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Ogilvie/City Park	A (D) [C]	0.47 (0.83) [0.76]	NBL (NBL) [NBL]	8.0 (20.7) [15.6]	A (B) [A]	0.37 (0.66) [0.49]
Ogilvie/Blair Road	E (E) [F]	0.92 (0.95) [1.03]	NBT (SBT) [NBL]	47.9 (42.0) [38.7]	C (D) [B]	0.72 (0.85) [0.67]
Ogilvie/Blair Place	A (B) [A]	0.29 (0.68) [0.33]	WBT (NBL) [NBL]	6.2 (13.6) [8.1]	A (A) [A]	0.27 (0.52) [0.29]
Ogilvie/Elmlea/Site	A (A) [A]	0.25 (0.48) [0.47]	WBT (EBT) [NBT]	4.3 (9.0) [7.8]	A (A) [A]	0.24 (0.45) [0.30]
Ogilvie/Earl Armstrong Arena	A (A) [-]	0.25 (0.44) [-]	WBT (EBT) [-]	4.5 (4.0) [-]	A (A) [-]	0.24 (0.36) [-]
Ogilvie/Appleford	A (A) [A]	0.29 (0.43) [0.23]	WBT (EBT) [EBT]	4.9 (5.4) [5.8]	A (A) [A]	0.24 (0.42) [0.22]
Ogilvie/Montreal	C (D) [D]	0.77 (0.84) [0.86]	WBL (SBL) [SBL]	35.8 (37.7) [29.9]	A (B) [A]	0.51 (0.67) [0.49]
Blair/174 WB Off Ramp	B (E) [B]	0.69 (0.93) [0.65]	WBL (EBR) [NBL]	18.0 (27.0) [19.2]	A (C) [A]	0.44 (0.73) [0.49]
Blair/174 EB On-Off Ramp[1]	C (D) [A]	0.75 (0.89) [0.54]	WBL (SBL) [WBL]	11.0 (20.2) [13.2]	A (C) [A]	0.60 (0.71) [0.47]

Notes: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.
1 Southbound left-turn movement at the Blair/174 EB On-Off Ramp coded as a de-facto left-turn.

With signal phase timing optimization, these critical movements operate at acceptable levels of service, with the exception of the movements at the Blair Road/Ogilvie intersection during the afternoon peak hour. The modified existing SYNCHRO model output is included within Appendix C.

With regard to the site driveway connections to Ogilvie Road (Ogilvie/Blair Place and Ogilvie/Elmlea), field observations of traffic flow at the two intersections were indicative of the findings of the level of service analysis. At all times we observed the site driveway connections to Ogilvie Road to operate acceptably with minimum delay and with all vehicles clearing on their green cycle.

At the adjacent Blair Road/Ogilvie intersection, field observations revealed that it carries high traffic volumes in all directions with high volumes of left-turn traffic. As such, there are a number of traffic signal phases, a long overall cycle length, delays resulting in queues and not all vehicles get through the intersection on their first green light. This reflects failure of particular movements at this intersection.

Extending the existing westbound double left-turn lanes from 90 m to 110 m would help improve this intersection's operations.

3.7 Background Traffic Growth

To assist in determining the appropriate background factor, three historic City counts at the Blair Road/Ogilvie intersection were reviewed. As summarized in Appendix D, the analysis findings were quite erratic with the 8-hour counts showing a modest annual reduction (-2.65%), the afternoon peak hour counts showing a significant annual reduction (-8.67%) and the morning peak hour showing a fairly high increase (+4.17%). Given the wide variance of these growth rates, it was considered reasonable to assume a 1% per annum growth rate in background traffic along Blair Road, Ogilvie Road and Montreal Road, for a five year horizon beyond site build-out.

The resulting future background traffic for the year 2017 (when the site is expected to be fully occupied) and for the horizon year 2022 (5 years after build-out) are depicted in Figures 6 and 7, respectively. Given the site is a retail site, with the highest amount of trips generated during the afternoon and Saturday peak hours, the ensuing analysis includes these two peak periods only.

3.8 Road Safety Conditions

Collision history for intersections within the vicinity of the site (2011 to 2013, inclusive) was obtained from the City of Ottawa, which reveal that most collisions (79%) involved only property damage, indicating low impact speeds and 21% involved personal injuries.

The primary causes of collisions cited by police include rear end (53%), turning movement (17%), angle (13%), and sideswipe (10%) type collisions.

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

- 0.63/MEV at the Ogilvie/City Park intersection;
- 1.23/MEV at the Blair Road/Ogilvie intersection;
- 0.53/MEV at the Ogilvie/Blair Place intersection;
- 0.71/MEV at the Ogilvie/Elmlea intersection;
- 0.28/MEV at the Ogilvie/Appleford intersection;
- 1.04/MEV at the Ogilvie/Montreal intersection;
- 2.20/MEV at the Blair/OR174 WB Off Ramp intersection; and
- 1.18/MEV at the Blair/OR174 EB Ramps intersection.

Based on the available data, there does not appear to be any prevailing safety issues at intersections directly adjacent to the site (Ogilvie/Blair Place and Ogilvie/Elmlea). The source collision data as provided by the City of Ottawa and related analysis is included as Appendix E.

It should be noted that the Blair/OR174 WB Off-Ramp intersection is experiencing a notable collision rate of 2.20 collisions per million entering vehicles. Further assessment of the intersection safety may be required by the City of Ottawa at this location. As this is a major highway interchange that does not provide direct access to the subject site, a safety assessment at this location is not the responsibility of the proponent.

Figure 6: Projected 2017 Baseline Traffic Volumes

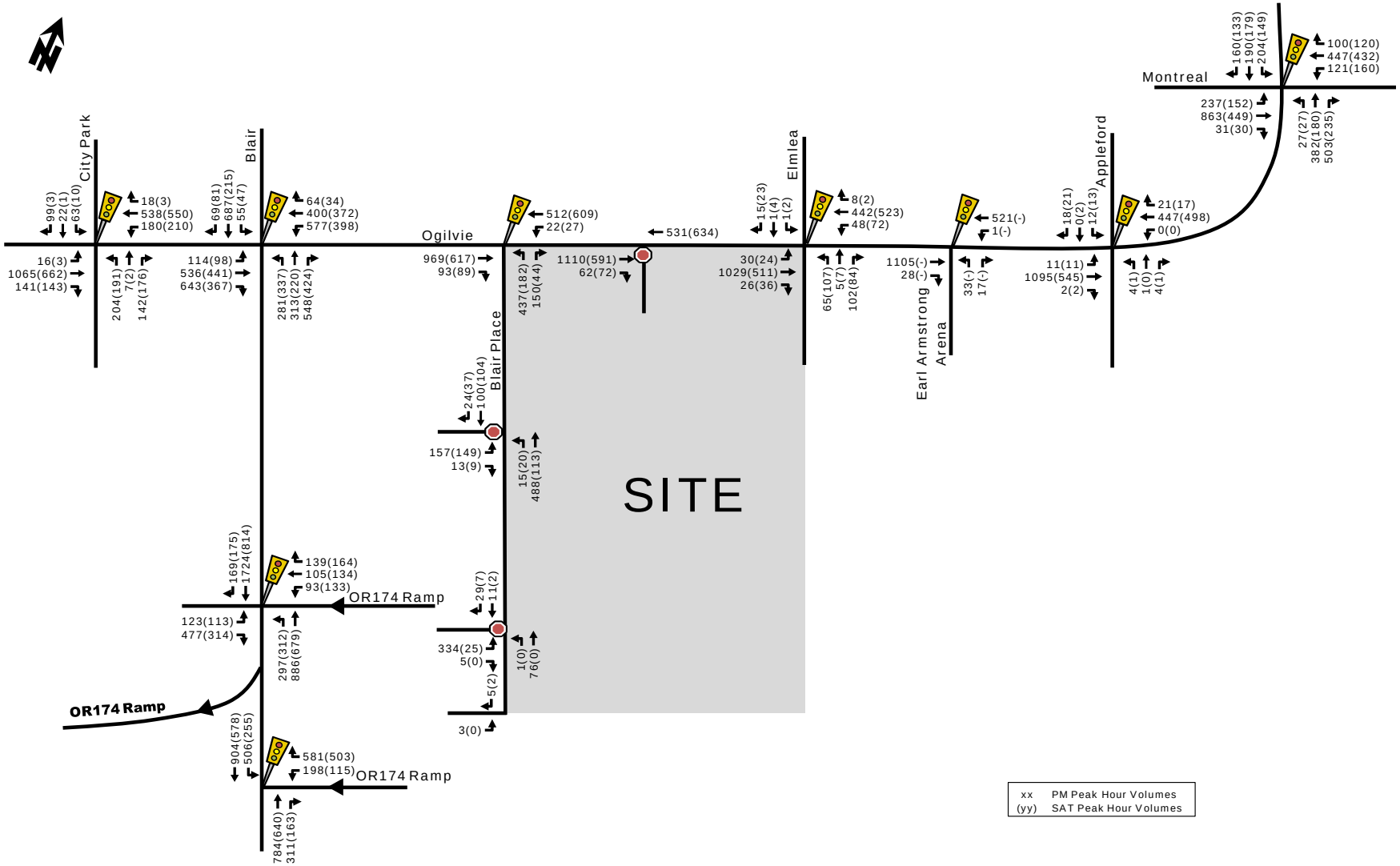
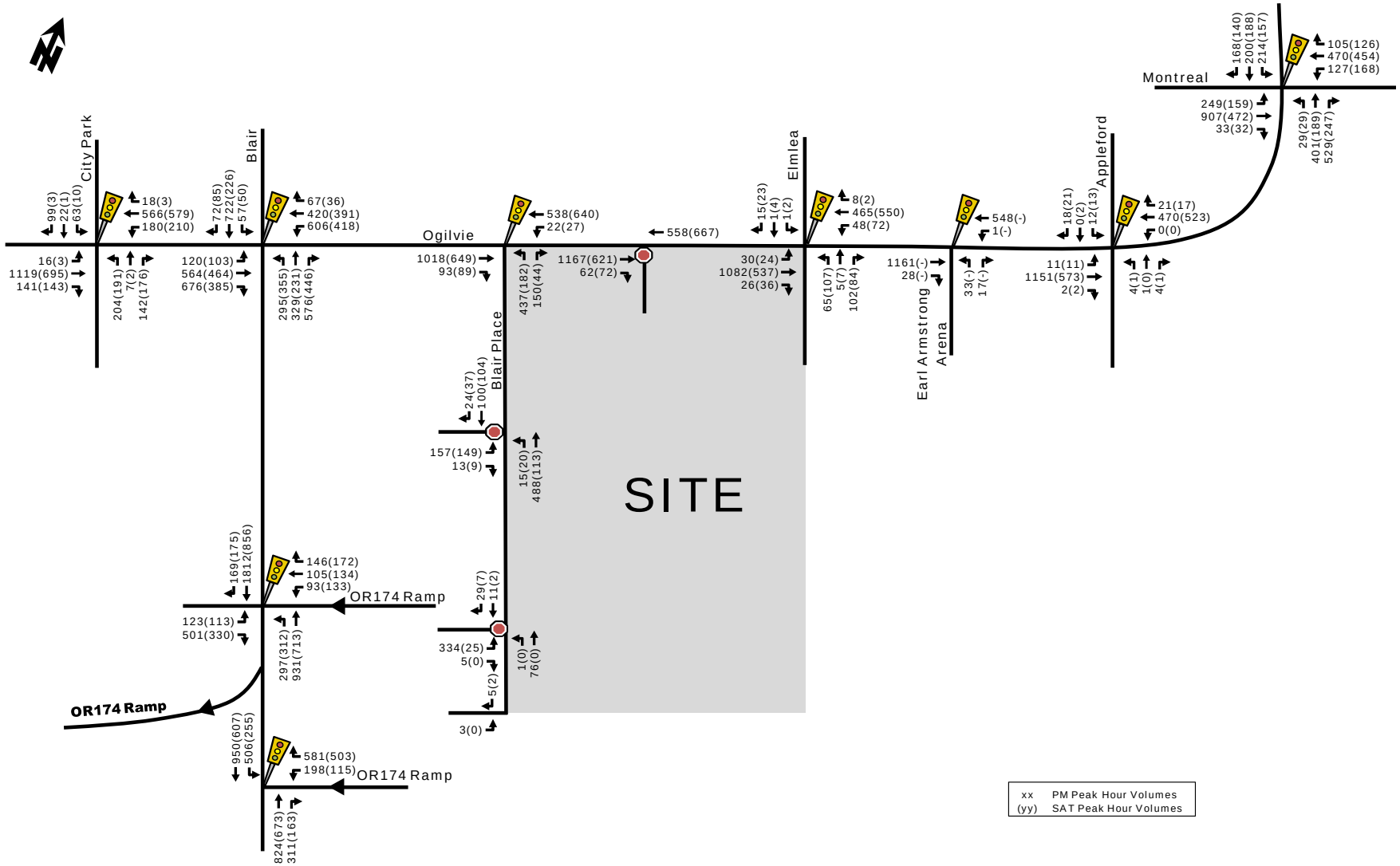


Figure 7: Projected 2022 Baseline Traffic Volumes



4. Planned Transportation Projects

4.1 Ottawa Road 174

Adjacent to the south of the site is OR174 - a freeway facility that accommodates an estimated AADT of 37,000 vehicles in each direction. Peak hour peak direction volumes currently approach 6,000 veh/h during the commuter peaks. During both peak periods, the freeway experiences considerable congestion through the section of the freeway (adjacent to the site) as a result of downstream capacity constraints. In the morning peak period, westbound lane reductions beyond the Highway 417/OR174 Split result in extensive queuing and delays regularly through the Blair Road interchange. In the afternoon peak period, there are geometric/operational issues to the east through the Montreal Road interchange that result in eastbound queuing and delays through the 417/OR174 Split.

With the planned conversion of the BRT Transitway to light rail from the Blair Station west to the Tunney's Pasture Station, bus service currently on the dedicated Transitway will be rerouted to Highway 417 and Ottawa Road 174 for some portion of the 2013 to 2018 construction period.

According to the TMP, the City of Ottawa plans to provide additional lane capacity on OR174 west of Jeanne d'Arc Boulevard. There is also on-going Environmental Assessment Study to determine the need for widening of the OR174/CR17 Corridor further east to Clarence Rockland.

4.2 Interprovincial Bridge Study

The environmental assessment study to determine the preferred corridor and functional design for the east end Interprovincial Bridge is on hold. The recent preliminary recommended alignment was the Kettle Island-Aviation Parkway corridor. Both the Province of Ontario and the City of Ottawa do not support this alignment, thus the status of the project is unknown.

4.3 Ogilvie Road Resurfacing

The section of Ogilvie Road between City Park Drive East and Gregory Court was resurfaced in 2015, which includes the portion of Ogilvie Road adjacent to the subject site.

4.4 Shoppers City East Phase 1 (Block A)

Resulting from the Site Plan Approval process for Phase 1 of the subject site, multiple roadway modifications were approved. As previously noted, these modifications are required to accommodate the entire site's generated traffic (Phases 1 and 2) as much of Phase 2 traffic will use the Phase 1 driveway connections. The required Phase 1 modifications, for which RMA drawing packages have been prepared where applicable, are as follows:

- Easterly relocation of the right-in/right-out site driveway connection to Ogilvie Road;
- Relocation of the full-movement site connection to Blair Place;
- Double northbound left-turn lanes at the Ogilvie/Elmlea intersection;
- Eastbound right-turn lane at the Ogilvie/Elmlea/Site Driveway intersection; and
- Multi-use path (MUP) along the site's frontage adjacent to Ogilvie Road.

These roadway modifications are included in the ensuing Phase 2 analysis.

5. Projected Site Traffic Generation

5.1 Block A Trip Generation – Trinity Retail

As shown on the proposed Site Plan (Figure 2), approximately 40,592 ft^2 of retail and a 1,900 ft^2 coffee shop with drive-through are being proposed fronting Ogilvie Road, located at the north end of the site. Summarized in Table 2, are the appropriate vehicle trip generation rates for the proposed land uses, obtained from the 9th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

Table 2: ITE Trip Generation Rates

Land Use	Data Source	Trip Rates	
		PM Peak	SAT Peak
Specialty Retail	ITE 826	T = 2.71(X); T = 2.40(X) + 21.48	T = 5.02(X);
Coffee Shop w/Drive-Through	ITE 937	T = 42.80(X);	T = 84.52(X); Ln(T) = 0.64 Ln(X) +4.68

Notes: T = Average Vehicle Trip Ends
X = 1,000 ft^2 Gross Floor Area
Specialty Retail SAT Peak rate is assumed to be the PM Peak Hour Generator rate.

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

To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. As such, the person trip generation for the proposed retail and restaurant are summarized in Table 3.

Table 3: Modified Person Trip Generation

Land Use	Data Source	Area	PM Peak (persons/h)			SAT Peak (persons/h)		
			In	Out	Total	In	Out	Total
Specialty Retail	ITE 826	40,592 ft^2	68	87	155	148	117	265
Coffee Shop w/Drive-Through	ITE 937	1,900 ft^2	53	53	106	105	106	211

Note: 1.3 factor to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%

The person trips shown in Table 3 for the proposed site were then reduced by modal share values, including a reduction for 'pass-by' trips, based on the site's location and proximity to adjacent communities, employment, other shopping uses and transit availability. Modal share and 'pass-by' values for the retail and coffee shop land uses within Block A of the proposed development are summarized in Tables 4 and 5, respectively.

Table 4: Specialty Retail Site Trip Generation

Travel Mode	Mode Share	PM Peak (Persons/hr)			SAT Peak (Persons/hr)		
		In	Out	Total	In	Out	Total
Auto Driver	60%	41	53	94	89	71	160
Auto Passenger	15%	11	13	24	23	18	41
Transit	10%	6	8	14	14	11	25
Non-motorized	15%	10	13	23	22	17	39
Total Person Trips	100%	68	87	155	148	117	265
Less 'Pass-by' (30%)		-14	-14	-28	-24	-24	-48
Total 'New' Auto Trips		**27**	**39**	**66**	**65**	**47**	**112**

Table 5: Coffee Shop Site Trip Generation

Travel Mode	Mode Share	PM Peak (Persons/hr)			SAT Peak (Persons/hr)		
		In	Out	Total	In	Out	Total
Auto Driver	60%	32	32	64	63	64	127
Auto Passenger	20%	11	11	22	21	22	43
Transit	5%	3	3	6	6	5	11
Non-motorized	15%	7	7	14	15	15	30
Total Person Trips	100%	53	53	106	105	106	211
Less 'Pass-by' (50%)		-16	-16	-32	-32	-32	-64
Total 'New' Auto Trips		**16**	**16**	**32**	**31**	**32**	**63**

Based on the foregoing tables, the resulting number of potential 'new' two-way vehicle trips for the proposed Block A retail/coffee shop is 100 and 175 veh/h during the weekday afternoon and Saturday peak hours, respectively. The resulting number of potential 'pass-by' two-way vehicle trips for the proposed Block A is 60 and 112 veh/h during the weekday afternoon and Saturday peak hours, respectively.

5.2 Block B Trip Generation – Warehouse Membership Club

The proposed warehouse membership club store and gas-bar, located along the southern edge of the site, are considered significant trip-generators. As such, BA Group was engaged to provide projected site-generated vehicle trips for the warehouse store and gas-bar based on data collection and observations at very similar warehouse membership club sites, including the existing Gloucester warehouse membership club store located at 1900 Cyrville Road.

As mentioned previously, the ensuing assessment includes weekday afternoon and Saturday peak hour analysis only, as the retail site will generate significantly more vehicle trips during these two peak hours than during the weekday morning peak hour. The following Tables 6 and 7 summarize BA Group's projected vehicle trip generation for the proposed warehouse membership club store and gas-bar, respectively. The report/analysis as provided by BA Group is included as Appendix A.

Table 6: Projected Warehouse Membership Club Store Trip Generation

	PM Peak (veh/hr)			SAT Peak (veh/hr)		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Existing Gloucester Warehouse Store (1900 Cyrville Road) Trip Generation	580	630	1,210	740	780	1,520
Projected Increase due to Gas Bar Addition	-	-	60	-	-	70
Projected Warehouse Store (Ogilvie Road) Trip Generation	635	635	1,270	795	795	1,590
Less Pass-by (20%)	-125	-125	-250	-160	-160	-320
Total 'New' Warehouse Store Auto Trips	**510**	**510**	**1,020**	**635**	**635**	**1,270**

As shown in Table 6, based on data collected by BA Group, it is expected that the existing Gloucester warehouse store's (1900 Cyrville Road) vehicle trips would increase by 60 to 70 veh/h during the afternoon and Saturday peak hours with the addition of a gas-bar. As such, the total amount of 'new' vehicle trips travelling to/from the proposed warehouse membership club store is approximately 1,020 and 1,270 veh/h during the afternoon and Saturday peak hours, respectively. In addition to this, approximately 250 and 320 veh/h are projected to access/egress the warehouse store as 'pass-by' trips during the afternoon and Saturday peak hours, respectively.

Table 7: Projected Warehouse Membership Club Gas-Bar Trip Generation

	PM Peak (veh/hr)			SAT Peak (veh/hr)		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Gas Bar Trip Generation	240	240	480	240	240	480
Less Interaction with Warehouse Store (50%)	-120	-120	-240	-120	-120	-240
Less Pass-by (40%)	-95	-95	-190	-95	-95	-190
Total 'New' Gas-Bar Auto Trips	**25**	**25**	**50**	**25**	**25**	**50**

As shown in Table 7, based on data collected at related warehouse membership club sites, approximately 50% of gas-bar patrons are also patrons of the warehouse store. As these trips have already been accounted for in warehouse store trip generation (Table 6), they were removed from the gas-bar trip generation (Table 7). The total resulting 'new' vehicle trips for the gas-bar is 50 veh/h during both the afternoon and Saturday peak hours. In addition to this, approximately 190 veh/h are projected to access/egress the gas-bar as 'pass-by' trips during both peak hours.

Based on the foregoing, the resulting number of potential 'new' two-way vehicle trips for the proposed warehouse membership club site (store and gas-bar) is 1,070 and 1,320 veh/h during the weekday afternoon and Saturday peak hours, respectively. The resulting number of potential 'pass-by' two-way vehicle trips for the proposed warehouse membership club site is 440 and 510 veh/h during the weekday afternoon and Saturday peak hours, respectively.

For analysis purposes, 'pass-by' trips are not removed from the network, they are a reduction in the existing through movement volumes and an equivalent increase in turning movement volumes to/from the proposed site (i.e. traffic that is considered to be 'pass-by' is not 'new' traffic to the study area; it is existing traffic that is temporarily diverted to/from the road network adjacent to the subject site).

With regard to multi-purpose trips, this is a reduction in site-generated traffic to account for trips between land uses located on the same site. This is considered acceptable industry practice when multiple trip generation rates are used for a single site. Given the nature of the site occupants and particularly the warehouse membership club and its gas-bar, a 50% multi-purpose trip reduction was applied to the gas-bar trip generation which reflects existing traffic at similar sites throughout Ontario.

5.3 Existing Shoppers City East Vehicle Trips

Based on the existing counts at the site driveways, depicted in Figures 4 and 5, the current two-way peak hour site-generated traffic totals approximately 570 and 600 veh/h during the afternoon and Saturday peak hours, respectively. An existing 30% pass-by rate was assumed for the existing retail site. These trips are currently included in all study area intersection counts. As existing site-generated vehicles will no longer be travelling to/from the site, these volumes will be removed from the existing traffic volumes (see Section 5.5.1) and replaced with the proposed site-generated traffic volumes. To provide an estimate of the amount of 'new' traffic traveling within the study area the **net** total amount of site-generated vehicles is calculated in Table 8 below.

5.4 Total Net Site Trip Generation

The following Table 8 outlines the total projected net increase in vehicle trips to/from the proposed redevelopment. This was calculated by adding the Block A trip generation (Tables 4 and 5) to Block B trip generation (Tables 6 and 7) and then the existing Shoppers City East vehicle trips (Section 5.3) were removed.

Table 8: Total 'Net' Site Vehicle Trip Generation

Land Use	PM Peak (veh/h)			SAT Peak (veh/h)		
	In	Out	Total	In	Out	Total
Specialty Retail Trip Generation	41	53	94	89	71	160
Coffee Shop Trip Generation	32	32	64	63	64	127
Warehouse Club Store Trip Generation	635	635	1,270	795	795	1,590
Warehouse Club Gas Bar Trip Generation	240	240	480	240	240	480
Less Interaction (50%)	*-120*	*-120*	*-240*	*-120*	*-120*	*-240*
Less Specialty Retail Pass-by (30%)	*-14*	*-14*	*-28*	*-24*	*-24*	*-48*
Less Coffee Shop Pass-by (50%)	*-16*	*-16*	*-32*	*-32*	*-32*	*-64*
Less Warehouse Club Store Pass-by (20%)	*-125*	*-125*	*-250*	*-160*	*-160*	*-320*
Less Warehouse Club Gas-Bar Pass-by (40%)	*-95*	*-95*	*-190*	*-95*	*-95*	*-190*
Total 'New' Auto Trips	**578**	**590**	**1,168**	**756**	**739**	**1,495**
Total 'Pass-by' Auto Trips	***-250***	***-250***	***-500***	***-311***	***-311***	***-622***
Less Existing Site 'New' Auto Trips	141	256	397	203	220	423
Less Existing Site 'Pass-by' Auto Trips (30%)	*-85*	*-85*	*-170*	*-90*	*-90*	*-180*
Total Net 'New' Auto Trips	**437**	**334**	**771**	**553**	**519**	**1072**
Total Net 'Pass-by' Auto Trips	***-165***	***-165***	***-330***	***-221***	***-221***	***-442***

As shown in Table 8, the resulting number of potential 'new' two-way vehicle trips for the proposed development is approximately 1,170 and 1,495 veh/h during the weekday afternoon and Saturday peak hours, respectively. The potential amount of 'pass-by' two way vehicle trips is approximately 500 and 620 veh/h during the afternoon and Saturday peak hours, respectively. However, as there is currently approximately 570 to 600 veh/h accessing/egressing the existing site, these trips have been removed from the projected trip generation to calculate a net increase in 'new' vehicle trips of approximately 770 and 1,070 veh/h and a net increase of 'pass-by' trips of approximately 330 and 440 veh/h during the afternoon and Saturday peak hours, respectively. This approach prevents double counting of site-generated traffic.

5.5 Vehicle Traffic Distribution and Assignment

5.5.1 Phase 1

Based on the existing counts at the site driveways, the current two-way peak hour site-generated traffic totals approximately 570 and 600 veh/h during the weekday afternoon and Saturday peak hours, respectively. The proposed retail will have a different traffic distribution than the existing retail as the warehouse membership club has more of a regional draw. As such, the existing site-generated traffic volumes were removed from the study area. The assumed traffic distribution of existing retail volumes was based on the traffic volumes at the existing site driveways and study area intersections, and our knowledge of the surrounding area. The assumed existing distribution is as follows:

- 35% to/from the east;
- 35% to/from the west;
- 15% to/from the south; and
- 15% to/from the north.

Once existing site-generated traffic volumes were removed from the study area, total projected site-generated traffic volumes for the proposed Phase 1 development were assigned to study area intersections based on the same traffic distribution.

5.5.2 Phase 2

As part of the transportation consulting services provided by BA Group, site-generated vehicle trip distribution was developed based on the existing warehouse membership club Gloucester site and is outlined as follows:

- 45% to/from the east via Ogilvie Road (35%) and OR174 (10%);
- 40% to/from the west via Ogilvie Road (15%) and OR174 (25%);
- 10% to/from the south via Blair Road; and
- 5% to/from the north via Blair Road.

With regards to pass-by trips distribution during the afternoon peak hour, it is based on the existing traffic distribution along Ogilvie Road. During the Saturday peak hour 'pass-by' trips could be diverted from OR174 as well as Ogilvie Road. As such, the following 'pass-by' distribution was applied:

Weekday Afternoon Peak Hour

- 65% 'Pass-by' in the eastbound direction on Ogilvie Road; and
- 35% 'Pass-by' in the westbound direction on Ogilvie Road.

Saturday Peak Hour

- 30% 'Pass-by' in the eastbound direction on Ogilvie Road;
- 30% 'Pass-by' in the westbound direction on Ogilvie Road;
- 20% 'Pass-by' in the eastbound direction on OR174; and
- 20% 'Pass-by' in the westbound direction on OR 174.
- The net 'New' site-generated trips are illustrated in Figure 7.

The Phase 1 and 2 net site-generated 'New' and 'Pass-By' trips are illustrated as Figures 8 and 9, respectively.

Figure 8: Projected 'New' Traffic

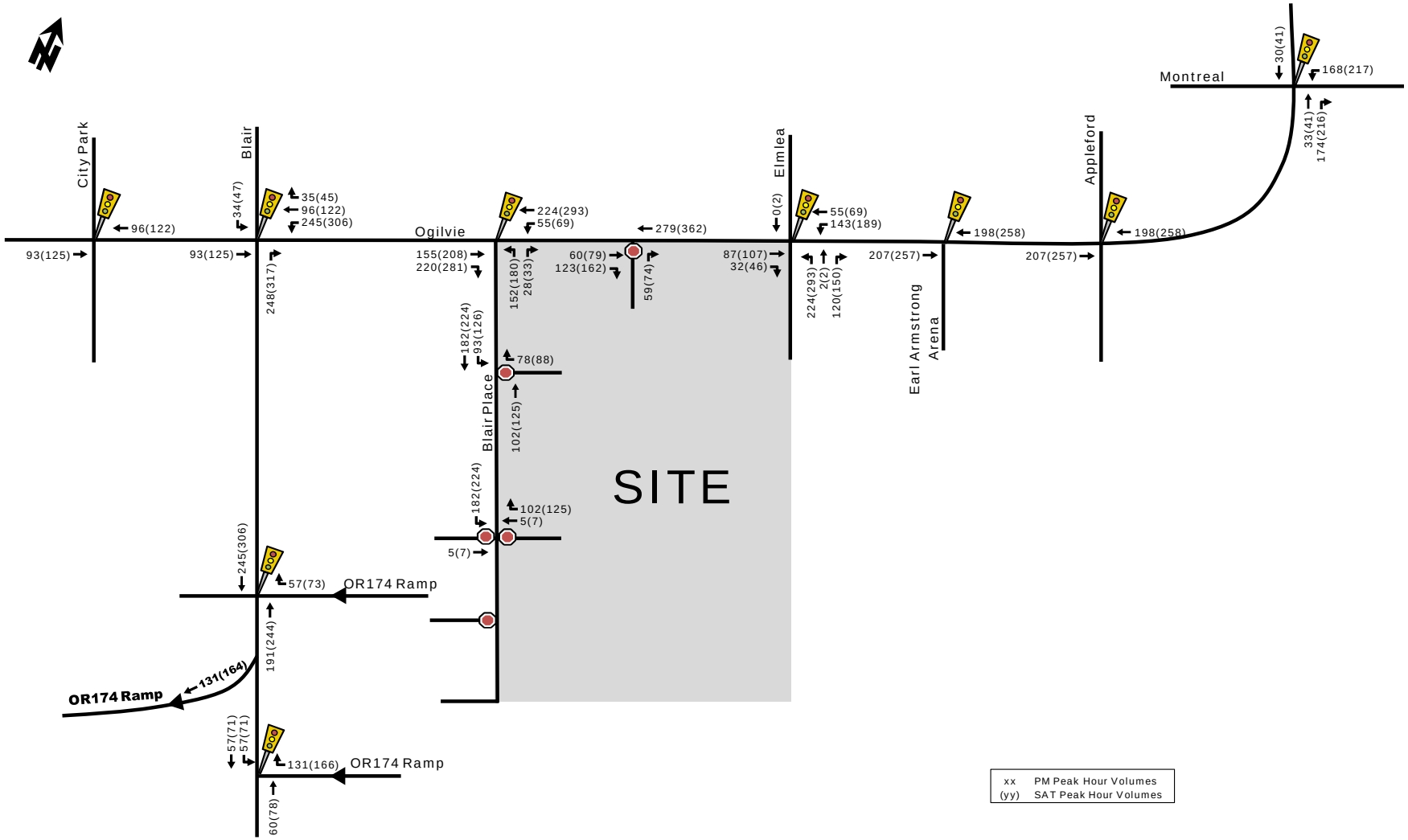
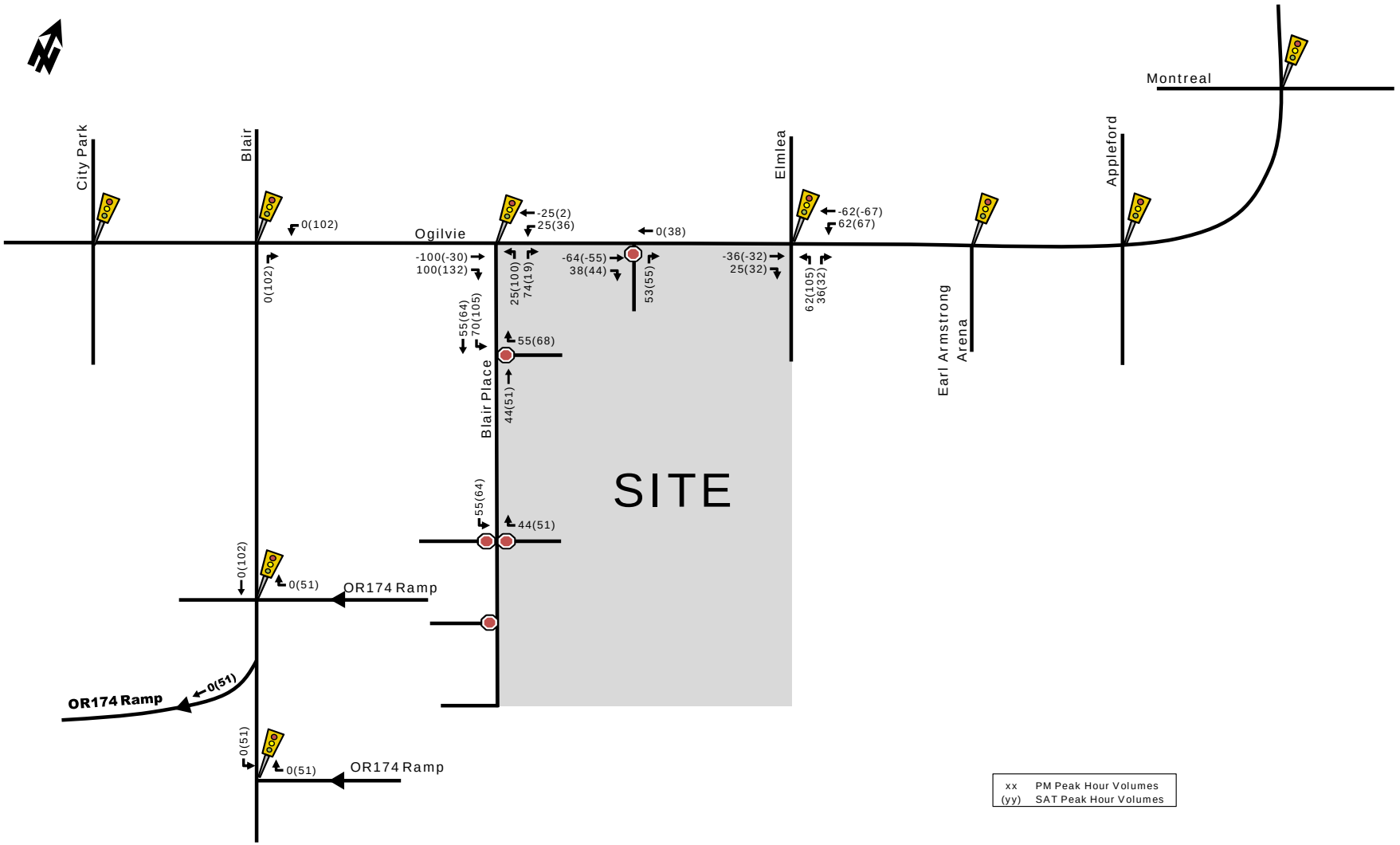


Figure 9: Projected 'Pass-by' Traffic



6. Future Traffic Operations

6.1 Projected 2017 Conditions at Full Site Development

Total projected 2017 volumes associated with the proposed development are illustrated in Figure 10. They were derived by superimposing 'new' site-generated volumes (Figure 8) and site-generated 'pass-by' volumes (Figure 9) onto projected 2017 baseline traffic volumes (Figure 6) and then the existing site-generated traffic volumes were removed.

The following Table 9 provides a summary of projected 2017 performances of study area intersections at full site build-out. The SYNCHRO model output of projected conditions is provided within Appendix F. The signal timing adjustments recommended based on existing conditions are included in the following analysis, however, no other roadway modifications or signal timing adjustments are included.

Table 9: Projected 2017 Performance of Study Area Intersections

Intersection	Weekday PM Peak [SAT Peak]					
	Critical Movement			Intersection 'as a whole'		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Ogilvie/City Park	D[C]	0.83[0.76]	NBL[NBL]	21.5[15.8]	B[A]	0.70[0.53]
Ogilvie/Blair Road	F[F]	1.18[1.04]	WBL[NBL]	54.5[38.1]	E[C]	0.96[0.78]
Ogilvie/Blair Place	C[A]	0.71[0.58]	NBL[NBL]	13.6[9.6]	A[A]	0.54[0.47]
Ogilvie/Elmlea/Site	D[E]	0.87[0.91]	EBT[WBL]	28.2[25.8]	D[C]	0.85[0.79]
Ogilvie/Earl Armstrong Arena	A[–]	0.49[–]	EBT[–]	5.2[–]	A[–]	0.40[–]
Ogilvie/Appleford	A[A]	0.49[0.31]	EBT[EBT]	3.5[4.3]	A[A]	0.48[0.30]
Ogilvie/Montreal	D[D]	0.87[0.87]	WBL[SBL]	41.2[32.0]	D[B]	0.82[0.64]
Blair/174 WB Off Ramp	D[B]	0.90[0.65]	EBR[NBL]	31.2[18.4]	D[A]	0.83[0.57]
Blair/174 EB On-Off Ramp[1]	E[B]	0.97[0.65]	SBL[SBL]	22.9[13.2]	C[A]	0.76[0.50]

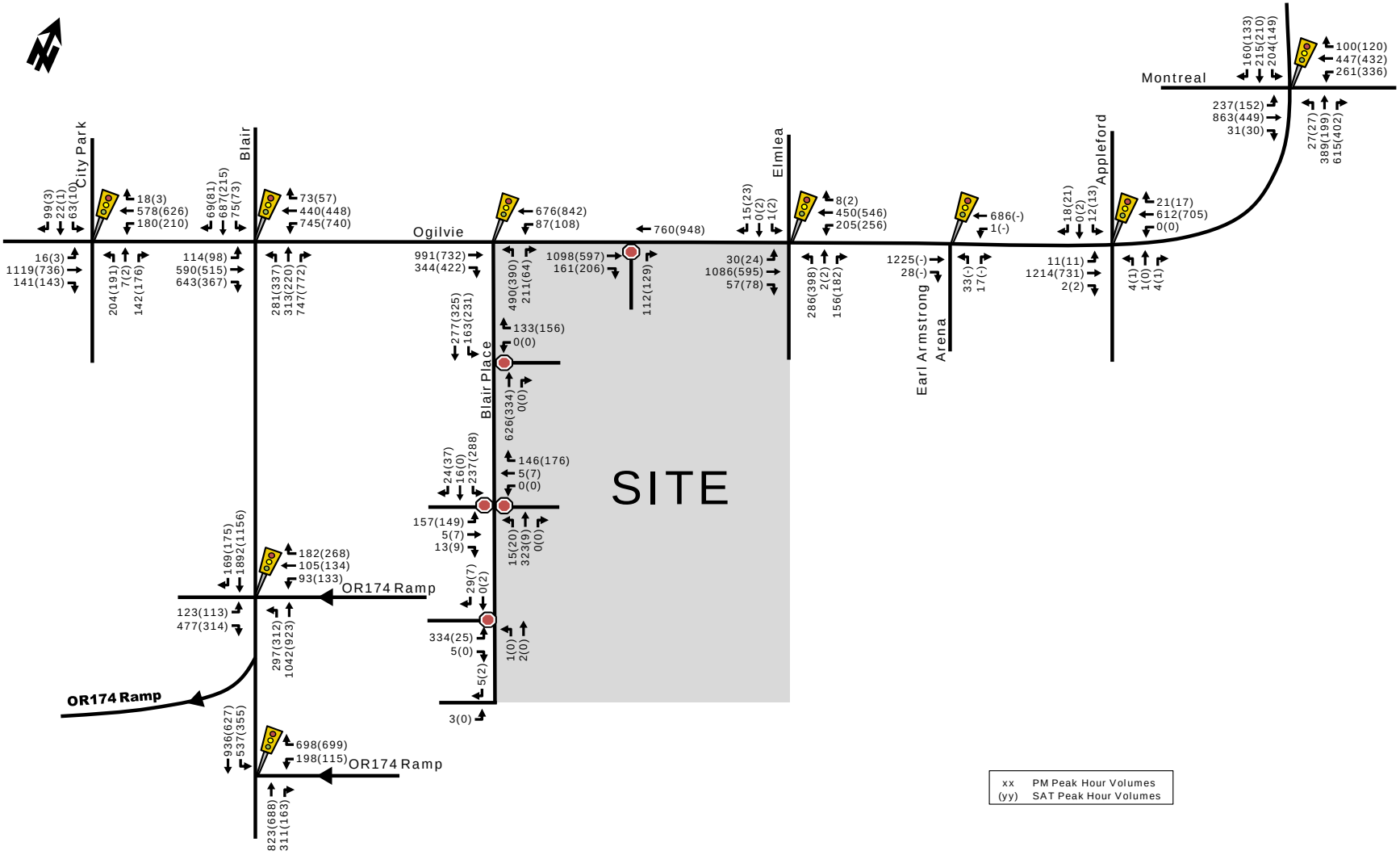
Notes: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.
1 Southbound left-turn movement at the Blair/174 EB On-Off Ramp coded as a de-facto left-turn.

As shown in Table 9, with the previously recommended signal timing plan modifications, the signalized study area intersections, 'as a whole', are projected to operate at an acceptable LoS 'D' or better during both peak hours, with the exception of the Blair Road/Ogilvie intersection during the weekday afternoon peak hour, which is projected to operate at capacity (LoS 'E').

With regard to the 'critical movements' at study area intersections, the westbound left-turn and northbound left-turn movements at the Blair Road/Ogilvie intersection are projected to fail (LoS 'F') during the afternoon and Saturday peak hours, respectively. During the afternoon peak hour, the southbound left-turn movement at the Blair/OR 174 EB On-Off is projected to operate at capacity (LoS 'E').

With regard to study area intersections that provide access/egress to/from the site, the westbound left-turn movement is projected to operate at capacity at the Ogilvie/Elmlea/Site intersection during the Saturday peak hour. This is based on existing lane configuration of the driveway comprised of an assumed single northbound shared through/left-turn lane and a single right-turn lane.

Figure 10: Total Projected 2017 Peak Hour Traffic Volumes



The following mitigative measures are recommended to improve existing and future operations at study area intersections at 2017. The SYNCHRO model output for these modifications are provided within Appendix F.

Blair Road/Ogilvie

- Optimize signal phasing;
  - All movements are projected to operate at LoS 'E' or better during the afternoon peak hour and LoS 'D' or better during the Saturday peak hour;
- As mentioned previously, extending the westbound left-turn lanes at the Blair Road/Ogilvie intersection will help improve this movement.

Blair/OR 174 EB On-Off Ramps

- Optimize signal phasing;
  - All movements are projected to operate at LoS 'D' or better during the afternoon peak hour;
- As this is a major highway interchange that does not provide direct access to the subject site and as the existing 'critical movement' is currently operating close to capacity (LoS 'D', v/c=0.89), this modification is not considered to be the responsibility of the proponent.

Ogilvie/Elmlea

Based on the projected traffic volumes, an eastbound right-turn lane is recommended at the Ogilvie/Elmlea/Site intersection. With this additional lane, the 'critical' westbound left-turn movement is projected to operate at an acceptable LoS 'D'. Based on the amount of projected traffic for the westbound left-turn movement, an extension of the existing left-turn lane is recommended at this location. This is further outlined below in section *'Turn Lane Requirements'*.

With regards to the northbound lane configuration, a double northbound left-turn lane is recommended at this intersection to improve operations. A double left-turn movement requires a fully protected signal phase and as such two options of signal timing for the Ogilvie/Elmlea/Site intersection are outlined below. For the purpose of the ensuing analysis, the critical Saturday peak hour was assessed which has a northbound left-turn volume of approximately 400 veh/h. The SYNCHRO model output for the different options at the Ogilvie/Elmlea/Site intersection for the weekday afternoon and Saturday peak hours is included as Appendix G.

- *Option 1: Retain Pedestrian Crossings on all Four Legs of Intersection*
  - The existing north-south pedestrian crossings along the east and west sides of the intersection cannot be accommodated within the existing Saturday peak hour cycle length given the addition of a fully protected double left-turn movement. As such, an increased signal cycle length may be required;
  - Increasing the cycle length would require increased cycle lengths throughout the corridor during the peak hours to maintain signal coordination;
  - Providing a 110 second cycle length would result in an acceptable level of service (LoS 'D', v/c = 0.84) for the critical northbound left-turn movement during the Saturday peak hour;

  - The 95th percentile queue lengths in the northbound left-turn lanes are projected to be approximately 68 m; the average queue lengths are projected to be approximately 45 m during the Saturday peak hour;
  - The existing pedestrian crossing time can be maintained along the east and west legs of the intersection.

- *Option 2: Prohibit Pedestrian Crossing on West Leg of Intersection*
  - This option is similar to the existing intersection operations at the adjacent Ogilvie/Blair Place intersection;
  - With this modification, the projected total site volumes result in an acceptable level of service (LoS 'C', v/c = 0.76) for the critical northbound left-turn movement during the Saturday peak hour;
  - The 95th percentile queue lengths in the northbound left-turn lanes are projected to be approximately 50 m and the average queue lengths are projected to be approximately 35 m during the Saturday peak hour; and
  - The existing cycle length and pedestrian crossing times were increased and north-south pedestrians crossing the west leg of the intersection was prohibited to provide more time to the critical northbound left-turn movement;
    - The existing volume of pedestrian crossing at this location (along the west leg) currently ranges from 2 to 11 persons/hour during the morning, afternoon and Saturday peak hours;
    - The existing pedestrian crossing can be maintained for the east leg of the intersection.

Based on the foregoing and comments from the City, the recommended configuration of the Ogilvie/Elmlea/Site intersection is to provide double northbound left-turn lanes and maintain pedestrian crossing along all legs of the intersection. This 'Option 1' promotes active modes by not restricting the pedestrian movement along the west side of the intersection.

Turn Lane Requirements

With regards to turn lane storage requirements at the signalized study area intersections, an extension of the westbound left-turn storage lanes at the Ogilvie/Blair Road intersection is recommended to provide a combined total of approximately 220 m plus 90 m taper.

At the **Ogilvie/Elmlea/Site intersection**, the following storage lengths are recommended based on the projected 2017 traffic volumes and the existing cycle lengths:

- Westbound left-turn lane – approximately 90 m of westbound left-turn lane storage is recommended at this intersection, however, given the location of the adjacent intersection (Ogilvie/Earl Armstrong Arena), there is insufficient space for a standard taper length. As such, a reduced storage length of 60 m with a reduced taper length is proposed. Given the constrained space, the following factors are considered:
  - Depending on the signal cycle length, the recommended storage length ranges from 55 m to 90 m according to TAC design guidelines. The 90 m storage length is based on an assumed 120 second signal cycle length. However, the actual signal cycle length may

be shorter, which would result in a shorter storage length according to the TAC design guidelines;

- The 95th percentile westbound left-turn queue at the Ogilvie/Elmlea/Site is approximately 90 m, which will not spill back and block the adjacent Ogilvie/Earl Armstrong Arena intersection (approximately 100 m between intersections); and
- If the westbound left-turn lane at this intersection is congested, drivers have the option to continue past the Ogilvie/Elmlea intersection and access the site via the alternative Ogilvie/Blair Place intersection. This is considered acceptable given:
  - The westbound left-turn lane storage at the Ogilvie/Blair Place intersection is approximately 75 m; and
  - The total amount of westbound left-turn lane storage required for all projected site-generated vehicles entering the site at the Ogilvie/Elmlea/Site and Ogilvie/Blair Place intersection is 80 m. The combined existing westbound left-turn storage at both site intersections is approximately 110 m.

- Eastbound right-turn lane – provide minimum 30 m storage lane (shown on attached Site Plan);
  - Based on the location of the adjacent to the west right-in/right-out site driveway on Ogilvie Road, there is insufficient distance for the required 30 m storage plus taper. As such, it is recommended to provide a reduced taper length as shown on the proposed Site Plan, while providing the required 30 m long storage lane.
- Northbound left-turn lanes – provide minimum 140 m in two lanes (shown on attached Site Plan); and
- Northbound through/right-turn lane – provide minimum 60 m of storage (shown on attached Site Plan).

Unsignalized Site Driveway Connections

With regard to the unsignalized site driveway connections to Blair Place and Ogilvie Road, they are projected to operate with acceptable delays of 10 to 15 seconds on-site and minimal delays on the public roadways. At the most southern site driveway connection to Blair Place, the proposed site driveway forms a four-legged intersection with the existing Canadian Tire driveway. Vehicles exiting the Canadian Tire site are projected to experience some queues and delays (LoS 'F'). As such, this intersection should be monitored when the site is developed and further traffic control in the form of all-way STOP may be required. The SYNCHRO model output of unsignalized study area intersections is provided within Appendix F.

With respect to the southern site driveway connection, it is located approximately 55 m south of the adjacent site driveway. According to the City's Private Approach By-Law, these driveways should be at least 75 m apart. However, the proponent has worked with the City to align this driveway with the existing Canadian Tire driveway along the west side of Blair Place to form a traditional four-legged intersection. Given this alignment represents a safer intersection configuration than previously proposed and given the Trinity site has three other proposed accesses, the distance between these two driveways is considered acceptable, however, a By-Law variance may be required, which can be pursued through the Site Plan Control process.

With regard to the northern site driveway connection to Blair Place, its proposed location is approximately 65 m south of Ogilvie Road, which does not meet the City's minimum requirement of 70 m. However, given the entire site will have four accesses, including an additional access further to the south on Blair

Place, site traffic will be distributed relatively evenly to all accesses. As there is currently two southbound lanes along Blair Place at this location, southbound through vehicles can use the curb lane to bypass any southbound left-turn queue. As such, southbound queues are not expected to spill back from this driveway onto Ogilvie Road.

With regard to the Blair Place roadway cross-section, from the southernmost site driveway to the northern most site driveway the roadway will be painted to provide a four-lane cross-section (2 lanes in each direction), taper for an additional northbound left-turn lane, and a painted median. North of the northernmost site driveway a third northbound lane is provided (double left-turn lanes). A break in the painted median is proposed at the northern site driveway to allow southbound left-turning vehicles access to the site. South of the southern site driveway, two southbound lanes and one northbound lane are proposed. On-street parking is proposed along the eastern side of the roadway south of the southern driveway.

With regard to the right-in/right-out site driveway connection to Ogilvie Road, it was approved as part of the Phase 1 development with a “pork chop” island disrupting a continuous eastbound right-turn lane along the site’s Ogilvie Road frontage. This “pork chop” has not yet been built and in the interim, it was agreed with the City that it should be replaced by a bulb-out/curb extension located at the southeast corner of the intersection. The curb extension will reinforce the right-in/right-out movement, but in a safer manner.

6.2 Projected 2022 Conditions at Five Years beyond Site Build-Out

Total projected 2022 volumes associated with the proposed development are illustrated in Figure 11. They were derived by superimposing ‘new’ site-generated volumes (Figure 8) and site-generated ‘pass-by’ volumes (Figure 9) onto projected 2022 baseline traffic volumes (Figure 7) and then the existing site-generated traffic volumes were removed.

The following Table 10 provides a summary of projected 2022 performances of study area intersections at 5-years beyond full site build-out. The projected 2022 intersection analysis includes the mitigative measures outlined in Section 6.1, including the recommended double northbound left-turn lanes at the Ogilvie/Elmlea/Site intersection. The SYNCHRO model output of projected conditions is provided within Appendix H.

Figure 11: Total Projected 2022 Peak Hour Traffic Volumes

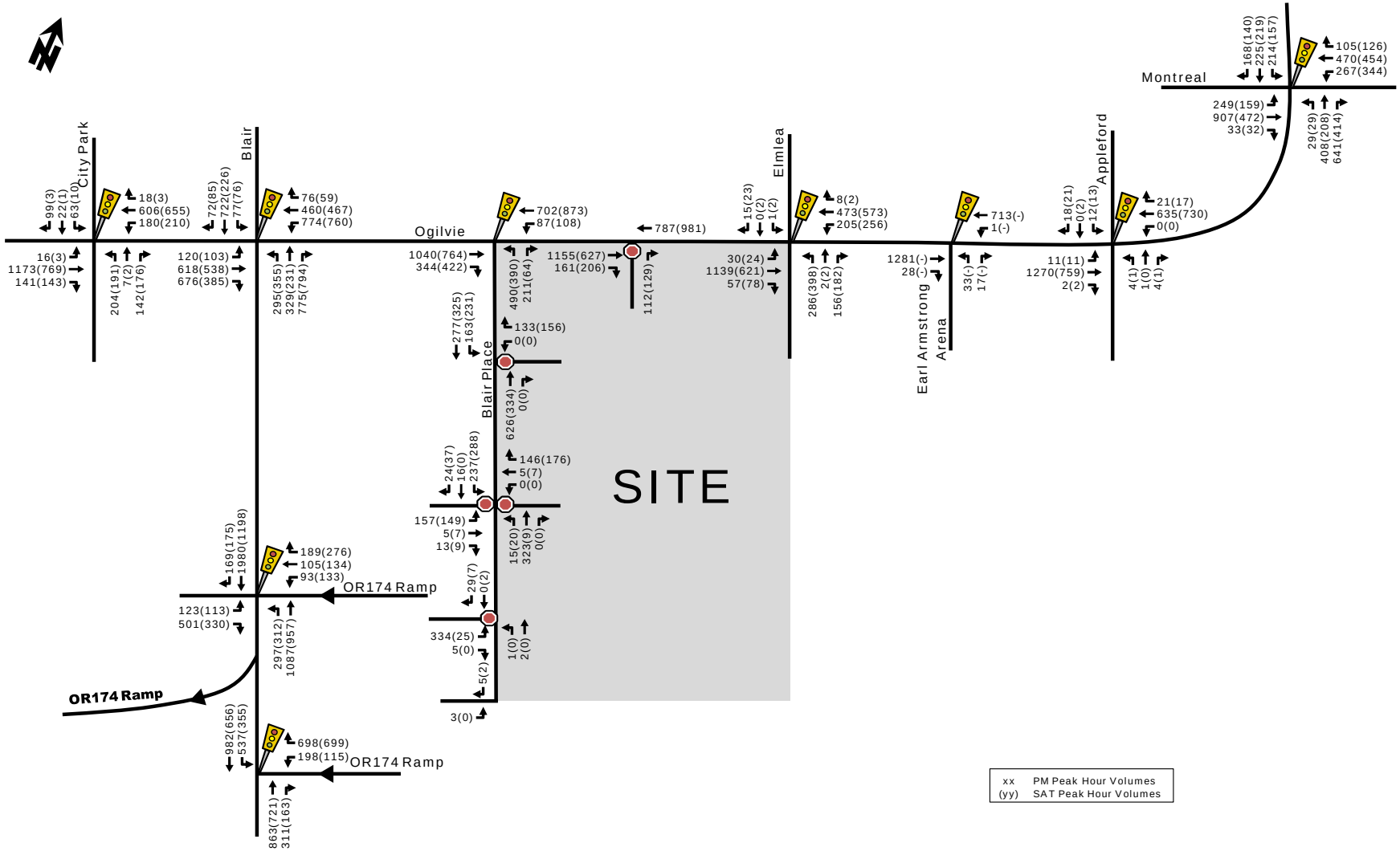


Table 10: Projected 2022 Performance of Study Area Intersections

Intersection	Weekday PM Peak [SAT Peak]					
	Critical Movement			Intersection 'as a whole'		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Ogilvie/City Park	D[C]	0.83[0.76]	NBL[NBL]	22.5[15.9]	C[A]	0.73[0.54]
Ogilvie/Blair Road	F[E]	1.03[0.92]	WBL[WBL]	52.0[37.5]	E[D]	0.98[0.81]
Ogilvie/Blair Place	C[A]	0.71[0.58]	NBL[NBL]	14.6[10.9]	A[A]	0.56[0.48]
Ogilvie/Elmlea/Site	C[D]	0.75[0.83]	NBL[NBL]	26.8[26.4]	C[A]	0.73[0.60]
Ogilvie/Earl Armstrong Arena	A[–]	0.51[–]	EBT[–]	9.1[–]	A[–]	0.42[–]
Ogilvie/Appleford	A[A]	0.51[0.32]	EBT[EBT]	6.8[3.0]	A[A]	0.50[0.31]
Ogilvie/Montreal	E[E]	0.92[0.91]	WBL[SBL]	43.4[33.1]	D[B]	0.86[0.67]
Blair/174 WB Off Ramp	E[B]	0.98[0.65]	EBR[NBL]	24.8[17.4]	D[A]	0.90[0.59]
Blair/174 EB On-Off Ramp[1]	D[B]	0.84[0.67]	NBT[SBL]	24.7[10.7]	D[A]	0.83[0.52]

Notes: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.
1 Southbound left-turn movement at the Blair/174 EB On-Off Ramp coded as a de-facto left-turn.

As shown in Table 10, with the previously mentioned signal modifications, the signalized study area intersections 'as a whole' are projected to operate at an acceptable LoS 'D' or better during both peak hours, with the exception of the Blair Road/Ogilvie intersection during the weekday afternoon peak hour, which is projected to continue to operate at capacity (LoS 'E').

With regard to the 'critical movements' at the Blair Road/Ogilvie intersection the southbound through and westbound left-turn movements are projected to operate at or above capacity (LoS 'E' or LoS 'F') during the weekday afternoon and Saturday peak hours. During the weekday afternoon and Saturday peak hours the westbound left-turn and southbound left-turn movements at the Ogilvie/Montreal intersection are projected to operate at capacity (LoS 'E'). During the afternoon peak hour, the eastbound right-turn movement (from the Gloucester Centre) is projected to operate at capacity (LoS 'E').

Ogilvie/Blair Road

Mitigative measures to improve the Ogilvie/Blair Road intersection include increasing the cycle length to 140 seconds during the afternoon peak hour. This is similar to the existing signal timing provided for the morning peak hour at this location and results in projected performance of LoS 'E' or better for all movements. During the Saturday peak hour, an increased cycle length to 130 seconds will result in acceptable performance for all movements. As the Blair Road/Ogilvie intersection is currently operating at or above capacity, mitigative measures to improve performance at this intersection should not be the responsibility of the proponent.

In addition, based on the projected traffic volumes, the westbound left-turn lane storage should be extended to provide as much additional storage as possible. Based on our measurements, the two left-turn lanes can be extended to 110 m with a 90 m taper.

Ogilvie/Montreal

A minor timing adjustment at the Ogilvie/Montreal intersection during the afternoon and Saturday peak hours will provide sufficient capacity for all movements given the projected 2022 traffic volumes. This

adjustment will likely be required as a result of increased background traffic and as such should not be the responsibility of the proponent.

Blair/OR174 WB Off Ramp

With regard to the Blair/OR174 WB Off Ramp intersection, the eastbound right-turn movement exiting the Gloucester Centre is the only movement projected to operate at capacity (LoS 'E'). All other movements on City roads are projected to operate at an acceptable LoS 'D' (v/c ≤ 0.90) or better at this location. As such, this is not the responsibility of the applicant.

6.3 Queueing Analysis at Signalized and Unsignalized Site Connections

With regard to the projected northbound queues, the City has expressed concern that a queue may extend too far south and either block entry into the site driveway to Blair Place, or a queue may spill back into the site and impact on-site operations (Ogilvie/Elmlea/Site intersection). Assuming the total projected 2022 traffic volumes depicted in Figure 11, the results of the queuing analysis for the two subject northbound movements are summarized in Tables 11 and 12.

Table 11: Projected Northbound Queues at the Ogilvie/Blair Place Intersection

Movement	PM Peak 50th Percentile Queue (m)	PM Peak 95th Percentile Queue (m)	SAT Peak 50th Percentile Queue (m)	SAT Peak 95th Percentile Queue (m)
Northbound Left-Turn	42.4	54.0	27.7	32.9
Northbound Right-Turn	21.5	40.1	0.0	7.4

Table 12: Projected Northbound Queues at the Ogilvie/Elmlea/Site Intersection

Movement	PM Peak 50th Percentile Queue (m)	PM Peak 95th Percentile Queue (m)	SAT Peak 50th Percentile Queue (m)	SAT Peak 95th Percentile Queue (m)
Northbound Left-Turn	32.3	46.8	45.1	66.4
Northbound Right-Turn	0.4	11.1	0.3	11.3

As noted in Table 11, the projected 95th percentile northbound queue at the Ogilvie/Blair Place intersection is 55 m. At the eastern Ogilvie Road/Elmlea/Site intersection, the 95th percentile northbound queue is projected to be 66 m, as noted in Table 12.

As 55 m of northbound storage is available on Blair Place and as the 95th percentile queue is projected to be 55 m, the proposed is considered acceptable.

With regard to the easterly signalized connection to Ogilvie Road (at Elmlea), the revised Site Plan provides approximately 160 m of storage for the double northbound left-turn. The estimated 95th percentile queue length is 60 m per lane, totaling 120 m of required storage. As the projected 95th percentile queue is less than the proposed amount of storage, the proposed revised driveway design at this location is considered acceptable. In addition, it should be noted that northbound left-turning vehicles will not block access to the revised northbound shared through/right-turn storage lane of approximately 65m.

7. Site Plan Review

7.1 On-Site

As an overview, the site as depicted in the Figure 2 Site Plan, is very well laid out from a transportation perspective.

Site Access and Vehicle Circulation

The proposed buildings are generally located along the boundaries of the site, which results in the parking being located in the centre. This allows for a very efficient layout of parking, circulation aisles and driveway connections to the adjacent roads. As shown on the Site Plan, there are four proposed driveway connections to the parking lot and all have significant throat lengths. The right-in/right-out connection to Ogilvie Road has a throat length of approximately 45 m along the west side and approximately 65 m along the east side. The south leg of the Ogilvie/Elmlea/Site intersection has a throat length of approximately 80 m. According to the TAC guidelines, the minimum suggested throat length for a >70,000 m^2 shopping centre is 75 m to an arterial roadway, however, the TAC guidelines do not account for multiple driveways serving one parking lot. With regard to the two driveway connections to Blair Place, the Site Plan has been modified since its initial submission by redesigning the parking module adjacent to Blair Place to increase the length of uninterrupted throat length. What is now shown on the Site Plan at this location results in the best combination of throat length, efficient access to parking and minimizing pedestrian/vehicle conflicts along the building's side and front.

With regard to the right-in/right-out connection to Ogilvie Road, the City has expressed concerns regarding the approximate 45 m inbound throat length. The City recommended a right-in only driveway connection to retail pads A1 and A2 to reduce vehicle turning movements along this entry drive aisle. However, we have been advised that this driveway connection to retail pads A1 and A2 is a fire truck route and cannot be narrowed. As such, as shown on the Site Plan, signage indicating that this access is 'inbound only' is recommended to reduce the amount of vehicle turning movements at this location. As noted, the TAC guidelines for throat length do not take into account the number of accesses provided at a particular site. As the proposed site will have multiple accesses connecting to adjacent streets, the proposed throat length is considered acceptable and will, in our opinion, operate safely and effectively.

With regard to vehicle access to and circulation around the warehouse membership club parcel, it is very efficient. Direct access is available to each of the west, north and east ends of the parking lot. This allows patrons to easily find a parking spot without driving past the front door of the building. The multiple access approach reduces on-site circulation, minimizes pedestrian/vehicle conflicts and facilitates easy exiting from the site.

As the warehouse membership club truck loading is located at the southeast corner of the building, trucks can easily access/egress the site via the east driveway connection to Ogilvie Road, thereby avoiding the majority of the on-site parking lot and minimizing pedestrian/vehicle conflicts.

Vehicle and Bicycle Parking

With regard to parking space and drive aisle dimensions, the minimum By-Law requirements of 2.6 m x 5.2 m and 6.7 m, respectively, are met. The Site Plan proposes parking space dimensions larger than the maximum. This will be addressed through a Minor Variance application.

A total of 773 on-site parking spaces are proposed for the warehouse membership club portion of the site. This amount of vehicle parking meets the City's minimum Zoning By-Law requirements. An additional 13 on-street parking spaces are proposed along the southern portion of Blair Place. The on-street parking along Blair Place is proposed because of the loss of parking that resulted in the realignment of the southern site driveway to Blair Place with the Canadian Tire driveway.

With regard to bicycle parking, a total of 30 bicycle parking spaces are proposed to serve the warehouse membership club, and are located close to the building's main entrance. This meets the City's Zonng By-Law requirements.

Gas Bar

With regard to the gas-bar, it is located at the southeast corner of the site with direct access/egress to Ogilvie Road via the site's most eastern north-south driveway. This keeps the gas-bar traffic to the periphery of the site and also minimizes pedestrian/vehicle conflicts.

The proposed gas-bar provides approximately 36.9 to 43.6 m of storage at each of the six fueling pump islands, for a total of approximately 240 m of storage. This amount of storage is sufficient for approximately 37 vehicles (plus the 18 vehicles at the pumps). In addition to this storage, there is an approximate 200 m long drive aisle along the eastern side of the site, south of the three-legged STOP controlled on-site intersection providing access to the Ogilvie/Elmlea signalized intersection. This 200 m drive aisle can store approximately 30 vehicles on-site.

Assuming an average time to process a vehicle at a fueling pump is approximately 3.5 to 4 minutes, a total of 270 to 300 veh/h can be processed with 18 fueling positions and no queues (i.e. as soon as one vehicle leaves, a new vehicle arrives). The projected vehicle trip-generation for the proposed gas-bar is approximately 240 veh/h which can be accommodated assuming a steady arrival of gas-bar patrons. However, when a 'surge' of patrons arrive at once (e.g. inbound from signalized intersections), on-site queuing may occur. Based on data at similar gas-bar sites, average queues range from approximately 35 to 40 vehicles and 95th percentile queues range from 50 to 55 vehicles (including vehicles at the fueling positions). Based on these related site statistics, the projected 95th percentile queue of approximately 55 vehicles can be accommodated within the gas-bar area (18 vehicles at pumps, 37 vehicles in queue) with no impact on site operations or site connections to Ogilvie Road or Blair Place.

Non-Auto Modes

The site also has a well-integrated pedestrian circulation system. Sidewalks are proposed on the frontages of all buildings and along the sides of most. These on-site sidewalk systems are directly linked to the existing sidewalks and bus stops along Ogilvie Road and Blair Place. Internal to the site, pedestrian crossing zones are delineated and signed at all on-site intersections where pedestrian volumes are projected to be highest.

It is noteworthy that there is a City-proposed multi-use pathway adjacent to the south site boundary parallel to OR174. When this pathway is constructed the site will be well connected to this pathway. Trinity will construct the connection to the pathway as part of the development of Phase 2.

As noted in Section 3.1, sidewalks currently exist on both sides of Ogilvie Road and on the west side of Blair Place. A 3.0 m multi-use pathway (MUP) is proposed along the east side of Blair Place from the

northern site driveway to Ogilvie Road in Phase 1. A surface easement was created for this proposed MUP. As part of Phase 2, the MUP will be extended along Blair Place to the path connection noted above.

Truck Circulation

With regard to truck docking areas, they tend to be on the periphery of the site, so that there is minimum conflict with on-site pedestrians and vehicle circulation. Adequate radii and space has been provided to accommodate all truck turn requirements. The Canadian Tire truck access is currently to/from Blair Place, as such, it is assumed that truck turning requirements are currently met at the adjacent Ogilvie/Blair Place intersection. This was confirmed with truck turning templates.

7.2 Ogilvie Road Frontage

In 2013, Trinity submitted for Site Plan Approval at this location with a previously proposed Site Plan. During this process, the City approved the relocation of the right-in/right-out driveway to Ogilvie Road, as well as its proposed right-turn lane. In addition, the proposed multi-use pathway along Ogilvie Road adjacent to the site was agreed upon.

Additional modifications to the Ogilvie Road frontage at the Ogilvie/Elmlea/Site intersection, as a result of the warehouse membership club component, include a proposed eastbound right-turn lane and the widening of the northbound approach.

8. Transportation Demand Management

The proposed Site Plan has the following elements that will encourage walking, cycling and transit modes compared to vehicular travel to the extent possible for a retail site.

- It is located in proximity to a rapid transit station with good pedestrian linkages available;
- It has an excellent system of on-site sidewalk and pedestrian crossings which connect well to all buildings and out to the bus routes on Ogilvie Road;
- Truck and gas-bar activity will be to the periphery of the site which minimizes pedestrian/vehicle conflicts;
- The centrally located drive aisles will minimize vehicular activity in front of the stores resulting in an enhanced pedestrian environment; and
- Bike racks are located throughout the site at very visible locations.

9. Findings, Conclusions and Recommendations

Based on the foregoing analysis, the following findings, conclusions and recommendations of this report are as follows:

- The subject site is located in close proximity to bus routes on Ogilvie Road and to the Blair rapid transit station, which will be the interim eastern terminus for the City's under-construction LRT system;

- The proposed redevelopment will replace the existing retail and is comprised of two development blocks consisting of retail and a coffee shop (Block A, Phase 1), and a warehouse membership club store and gas-bar (Block B, Phase 2);

- All study area intersections 'as a whole' currently operate at acceptable levels of service in the LoS 'A' to 'D' range during the weekday morning, afternoon and Saturday peak hours. With regard to 'critical movements', all operate acceptably except for the critical movements at the Ogilvie/Blair Road and Blair/OR174 WB Off-Ramps intersections during the weekday and/or weekend peak hours;

- Mitigative measures in the form of signal timing adjustments are recommended at the Blair Road/Ogilvie intersection and OR174 interchange ramps along Blair Road to achieve improved levels of service. In addition, an extension of the westbound left-turn lanes at the Ogilvie/Blair Road intersection is recommended to improve existing performance of the westbound left-turn movement. As this is an existing condition, these potential modifications are not considered to be the responsibility of the proponent;

- There have been anecdotal observations from the community of possible cut-through traffic on local streets located to the north of Ogilvie Road, possibly caused by peak period delays at the Blair Road/Ogilvie intersection. As no current data is available, it is recommended that the City consider examining this concern to validate the community's observations;

- As there is no consistent indicator for the background traffic growth (if any), a 1% annual growth rate has been assumed;

- Collision data indicates there are no current road safety issues on Ogilvie Road adjacent to the site, however, the OR174 WB off-ramp at Blair Road is currently experiencing a notable collision rate and further intersection safety observations may be required by the City;

- The existing site currently generates a two-way total of approximately 570 and 600 veh/h during the weekday afternoon and Saturday peak hours, respectively. This is attributable to the existing retail land uses such as the Beer Store, Shoppers Drug Mart, and Dollarama and these volumes are included in the current traffic counts at all the study area intersections;

- Accounting for the existing site-generated traffic, the projected **net** increase in site-generated vehicle traffic was calculated given the proposed land uses. The resultant projected **net** increase of 'new' site-generated trips is approximately 770 and 1,070 veh/h during the afternoon and Saturday peak hours, respectively. The resultant projected net increase of 'pass-by' site-generated trips is approximately 330 and 440 veh/h during the afternoon and Saturday peak hours, respectively;

- When the proposed redevelopment's **net** increase in peak hour traffic is distributed amongst the site's four parking lot driveway connections, the majority of study area intersections 'as a whole' continue to operate at acceptable levels of service during the afternoon and Saturday peak hours;

- The previously approved (Phase 1) eastbound right-turn lane and relocation of the right-in/right-out driveway connection to Ogilvie Road is incorporated into the Phase 2 Site Plan;

- Based on the projected 2017 traffic volumes, a double northbound left-turn lane is recommended at the site access at the signalized Ogilvie/Elmlea/Site intersection. The northbound approach lane will have to be widened to accommodate this three lane cross-section;

- An eastbound right-turn lane is proposed at the right-in/right-out connection to Ogilvie Road and at the Ogilvie/Elmlea/Site intersection. A bulb-out at the southeast corner of the right-in/right-out prohibits a continuous right-turn lane along the site's frontage, thereby improving traffic operations compared to the previously considered "pork chop" island;

- An approximate 17 m extension of the westbound left-turn lane at the Ogilvie/Elmlea/Site intersection is recommended;

- An extension of the westbound left-turn lane at the Blair Road/Ogilvie intersections is recommended to improve operations at this location. Based on the available space, both left-turn lanes can be extended to approximately 110 m of storage and 90 m of taper;

- The unsignalized site driveway connections to Blair Place and Ogilvie Road are projected to operate with acceptable delays and minimal queues, with the exception of the southern site driveway that is proposed to be aligned with the adjacent Canadian Tire site driveway. STOP control is recommended at this location for the driveway exits and monitoring may result in future traffic control in the form of all-way STOP;

- The northern site driveway connection to Blair Place is located approximately 65 m south of Ogilvie Road, which does not meet the City's By-Law requirements. However, as there are two southbound lanes at this location and the projected queueing along Blair Place will not block the site driveway the majority of the time, this location is considered acceptable;

- The Site Plan is very well laid out from a transportation perspective. Trucks and gas-bar traffic are generally kept to the periphery of the site, on-site sidewalks are prevalent and well connected, traffic flow in front of stores is minimized, bicycle parking is plentiful (40 spaces), and the minimum Zoning By-Law requirements are met with regard to parking space dimensions and drive aisle widths; and

- With regard to parking supply, the proposed amount of parking meets the City's minimum requirement.

Based on the foregoing, the proposed Phase 2 Site Plan is recommended from a transportation perspective. Please call if you have any questions.

Prepared By:

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Analyst, Transportation
Ottawa Operations

Reviewed By:

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

Appendix A

BA Group Warehouse Membership Club Site Trip Generation and Distribution

Memorandum

TO:

Renee Rutherford
Director of Real Estate
Development, Eastern Division
Costco Wholesale Corporation

FROM:
Margaret Briegmann, P.Eng.

PROJECT:
6436.59
Costco Gloucester

DATE:
May 6, 2015

SUBJECT: PROPOSED COSTCO GLOUCESTER RELOCATION
TRIP GENERATION AND TRIP DISTRIBUTION DATA

BA Group is retained to provide transportation consulting services related to the proposed relocation of the existing Costco warehouse from its existing location at 1900 Cyrville Road, to a site located at 2339 Ogilvie Road, in the City of Ottawa (Gloucester). A 4-island gas bar is also proposed to be incorporated as part of the site development and will complement the warehouse use.

This memorandum summarizes estimated trip generation and trip distribution for the proposed warehouse and gas bar relocation.

Background

BA Group's extensive experience on over seventy Costco projects including new warehouses, relocations, expansions and gas bar additions, makes us uniquely qualified to advise the project team on Costco trip generation and distribution.

Over the past 20 years, our work has included review of confidential warehouse and gas bar transaction data and an ongoing extensive data collection program. This has allowed us to undertake detailed analysis of warehouse and gas bar activity for all operating hours, in all months of the year, and to develop a database of Costco specific traffic characteristics.

Trip Generation

Trip generation estimates for the proposed warehouse and gas bar are based on BA Group archived data for the existing Costco Gloucester site and other comparable proxy Costco warehouse and gas bar sites, as follows:

- Total warehouse trip generation in the peak season (November/December) is based on data collected at the existing Costco Gloucester site in December, 2014. Detailed trip generation data is provided in **Appendix A.** The existing site generates in the order of 1,210/1,520 total two-way vehicle trips in the weekday afternoon/Saturday midday peak hours. This data is representative of peak operating conditions at the busiest Costco warehouse sites in Ontario.

- Based on trip generation data for 4-island gas bars in Ontario collected between 2010-2014, the proposed gas bar will generate approximately 240 total two-way trips in both the weekday afternoon/Saturday midday peak hours (not including interaction trips, i.e. customers who visit the warehouse and gas bar on the same trip). A summary of gas bar trip generation characteristics, including a description of typical interaction, pass-by/diverted link and primary trip characteristics for Costco gas bars, is provided in **Appendix B.** This information is based on surveys of over 1,000 gas bar customers at existing Costco warehouse and gas bar sites. We note that gas bars do not typically exhibit seasonal variation in traffic volume.

- Based on BA Group experience and archived data, trip generation for Costco warehouses and gas bars is more closely related to retail market trade area characteristics and site context rather than store size and format. Therefore, the trip generation is expressed as the total number of vehicle trips rather than typical average rates based on Gross Floor Area (GFA)

- By comparison, average trip generation rates available from the Institute of Transportation Engineers for Discount Clubs (Land Use Code 857) would result in total trip generation projections of 640/980 vehicle trips per hour for the weekday afternoon/Saturday midday peak hours (based on an average warehouse membership club GFA of 154,000sq.ft.). These total traffic volumes more closely reflect trip generation characteristics of warehouse membership clubs located in large retail nodes.

- We note that the trip generation estimate for the warehouse and gas bar represents a conservative estimate of trip generation because it does not account for expected spreading of demand as new sites open in overlapping catchment areas (i.e. new warehouse sites and/or gas bar additions). However, as a conservative estimate an allowance for 5% increase in warehouse activity with the addition of the gas bar has been adopted based on experience in other busy markets in North America.

- **The total trip generation estimate for the warehouse and gas bar (including an allowance for a 5% increase in warehouse activity) is in the order of 1,510/1,830 total two-way vehicle trips in the weekday afternoon/Saturday midday peak hours in the peak season.**

Table 1 below summarizes trip generation estimates for the warehouse and gas bar, including typical interaction and pass-by/diverted link characteristics. We note that further home based/non-home based adjustments for primary trips can be applied based on typical large format retail trip characteristics.

TABLE 1 TRIP GENERATION SUMMARY

	Weekday Afternoon Peak Hour			Saturday Midday Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Warehouse (Existing)	580	630	1,210	740	780	1,520
Increase due to Gas Bar Addition (5%)	-	-	60	-	-	70
Warehouse (Future)	**635**	**635**	**1,270**	**795**	**795**	**1,590**
Pass-by/Diverted Link (35%)	220	220	440	275	275	550
Primary (65%)	415	415	830	520	520	1,040
Gas Bar	240	240	480	240	240	480
Interaction (50%)	**120**	**120**	**240**	**120**	**120**	**240**
Pass-by/Diverted Link (40%)	95	95	190	95	95	190
Primary (10%)	25	25	50	25	25	50
Site Total	**755**	**755**	**1,510**	**915**	**915**	**1,830**
Site Net New Trips on the Road Network	440	440	880	545	545	1,090

Trip Distribution

Trip distribution for the subject site is based on BA Group archived data for the existing site which is based on confidential Costco market and membership data. **Table 2** below summarizes general trip distribution for home based primary trips. We note that distribution for non-home based primary trips and pass-by/diverted link trips for Costco is typically based on existing traffic distribution on the road network in the vicinity of the site.

TABLE 2 TRIP DISTRIBUTION – HOME BASED PRIMARY TRIPS

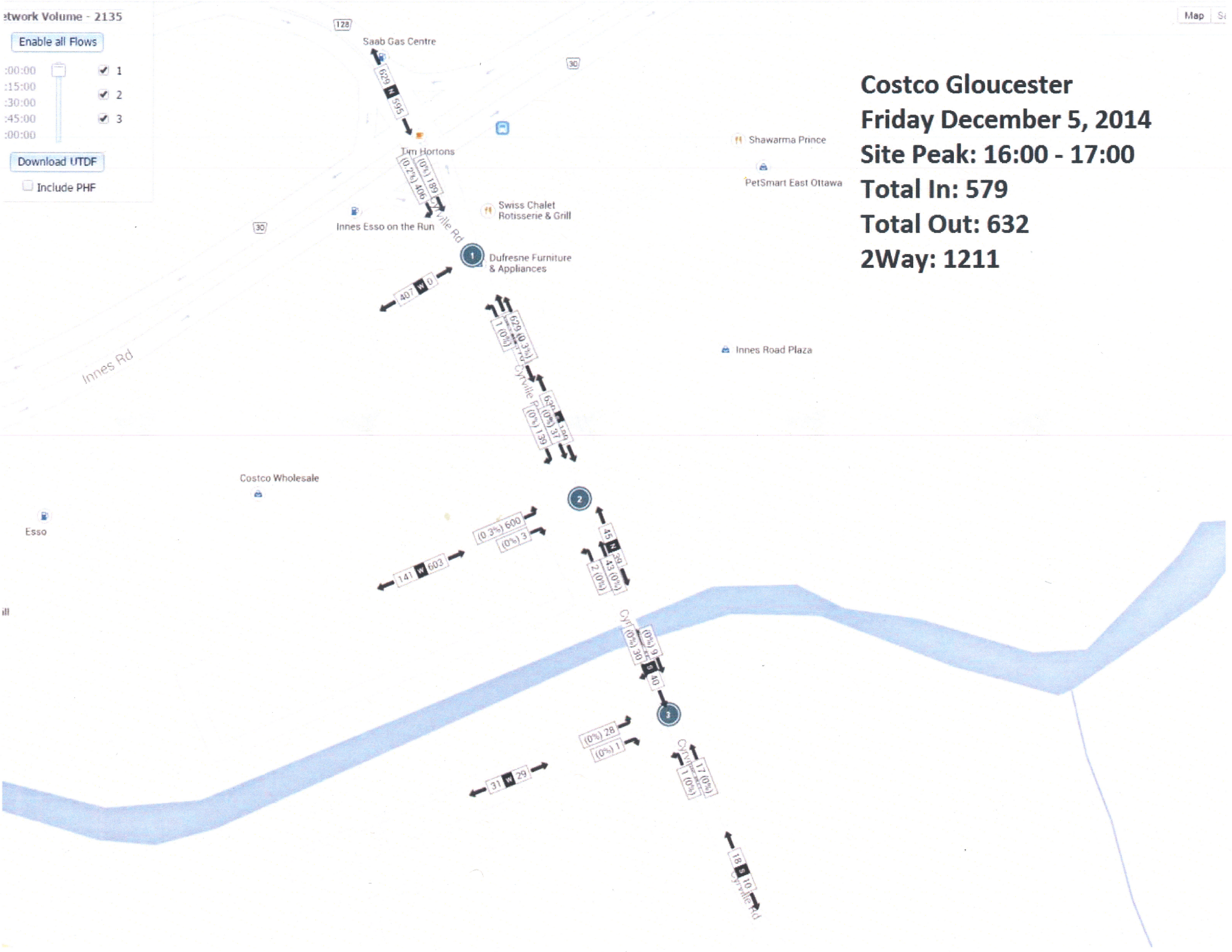
Zone	% Distribution
Ottawa/Vanier/Rockcliffe Park	31%
Gloucester	23%
Orleans	33%
Cumberland-Rockland	5%
Osgoode/Russell/Casselman	8%
Total	**100%**

The resultant traffic routing for the proposed site, based on a detailed analysis for each of the market areas (applying confidential market data for smaller zones based on postal code), is summarized in **Figure A1 (Appendix C)**.

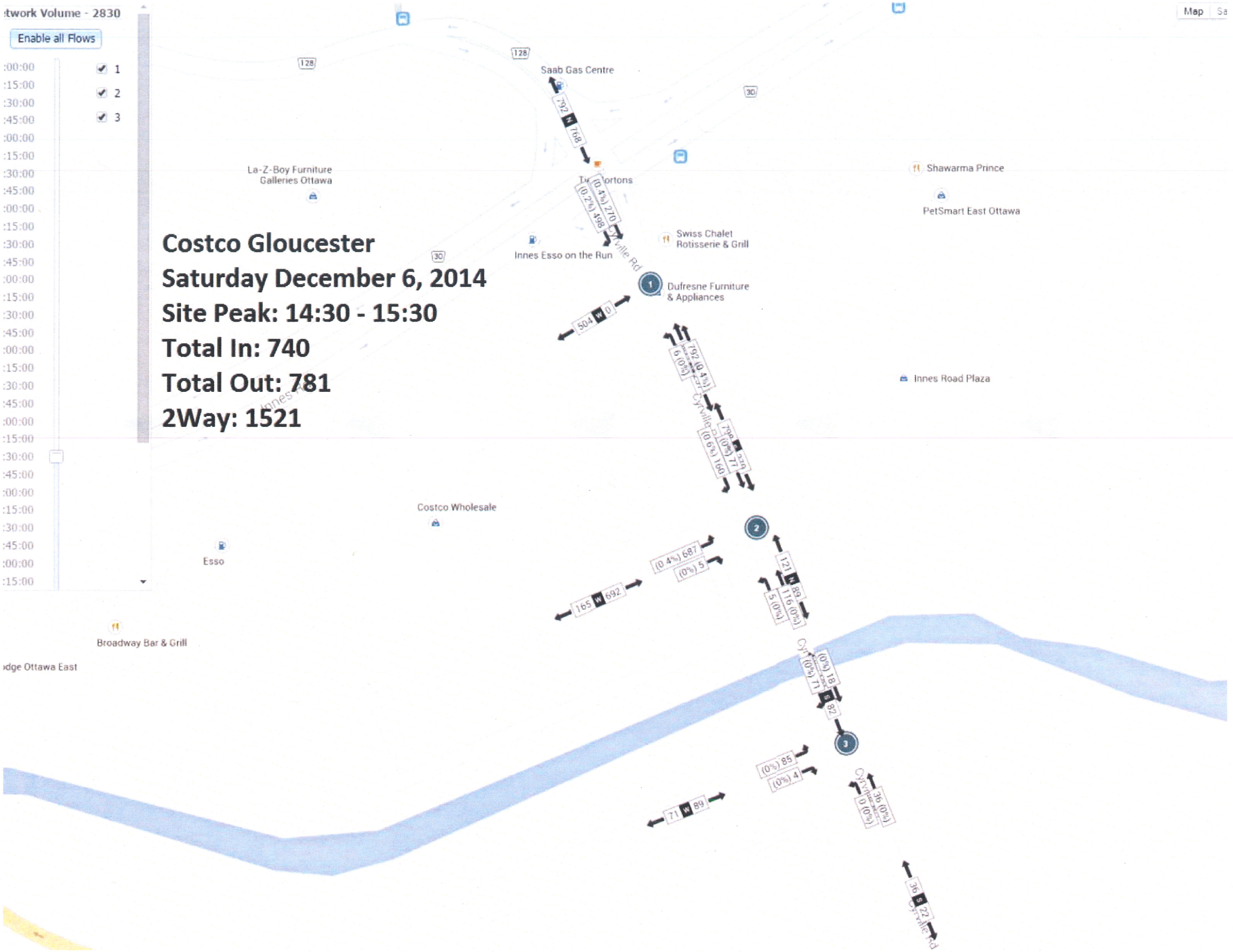
****

APPENDIX A:
Costco Gloucester Trip Generation

BA Consulting Group Ltd.
300 – 45 St. Clair Ave. W
Toronto ON M4V 1K9
TEL 416 961 7110
EMAIL bagroup@bagroup.com



Costco Gloucester
Friday December 5, 2014
Site Peak: 16:00 - 17:00
Total In: 579
Total Out: 632
2Way: 1211


twork Volume - 2830
Enable all Flows
1
2
3
Map
Costco Gloucester
Saturday December 6, 2014
Site Peak: 14:30 - 15:30
Total In: 740
Total Out: 781
2Way: 1521
Saab Gas Centre
La-Z-Boy Furniture Galleries Ottawa
Shawarma Prince
PetSmart East Ottawa
Innes Esso on the Run
Swiss Chalet Rotisserie & Grill
Dufresne Furniture & Appliances
Innes Road Plaza
Costco Wholesale
Esso
Broadway Bar & Grill
128
30

APPENDIX B:
Costco Gas Bar Traffic Characteristics

BA Consulting Group Ltd.
300 – 45 St. Clair Ave. W
Toronto ON M4V 1K9
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TECHNICAL BRIEF: COSTCO GAS BAR TRAFFIC CHARACTERISTICS (ONTARIO)

Gas Bar Operation

A Costco gas bar typically consists of three (3) or four (4) islands with two (2) dispensers on each island accessible from both sides, for a total of 12 to 16 fuelling positions. The gas bars operate one-way with queuing from one direction. They are open to Costco members only and are signed accordingly. Payment is accepted by debit or credit, and no other retail services are provided. Generally, one attendant is on duty to assist customers when necessary and to monitor operations.

Gas Bar Traffic Characteristics

The following traffic characteristics have been observed at Costco gas bars (based on customer surveys undertaken by BA Group):

50% of gas bar traffic is **interaction traffic** with the warehouse (i.e. of those who purchase gas, 50% also visit the Costco warehouse during the same trip, 35% visit the gas bar first).

25-35% of gas bar traffic is **diverted link traffic** - those customers who are already traveling on a main roadway in close proximity to the site, stop at the gas bar and continue on their trip.

15-20% of gas bar traffic is **pass-by traffic** - those customers who are already traveling on a main roadway immediately adjacent to the site, stop at the gas bar and continue on their trip.

An overall rate of 40-45% for diverted link and pass-by traffic is typically appropriate. Where a site is located on a low volume local or collector road, with good visibility from an arterial road in close proximity, the diverted link trips may govern. Generally this represents the same amount of traffic on site, but results in changes to traffic movements on adjacent roads.

5-10% of gas bar traffic is **primary traffic** – those customers who visit the gas bar only with no other destination on site and would not otherwise be travelling on the area road network – this represents new traffic on the road network.

Contact:
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APPENDIX C:
Costco Gloucester Trip Distribution

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EMAIL bagroup@bagroup.com

Date Plotted: May 1, 2015 Filename: P:\6436\59\Graphics\FigC1-00-TR.dwg

TRAFFIC ROUTING

BA Group

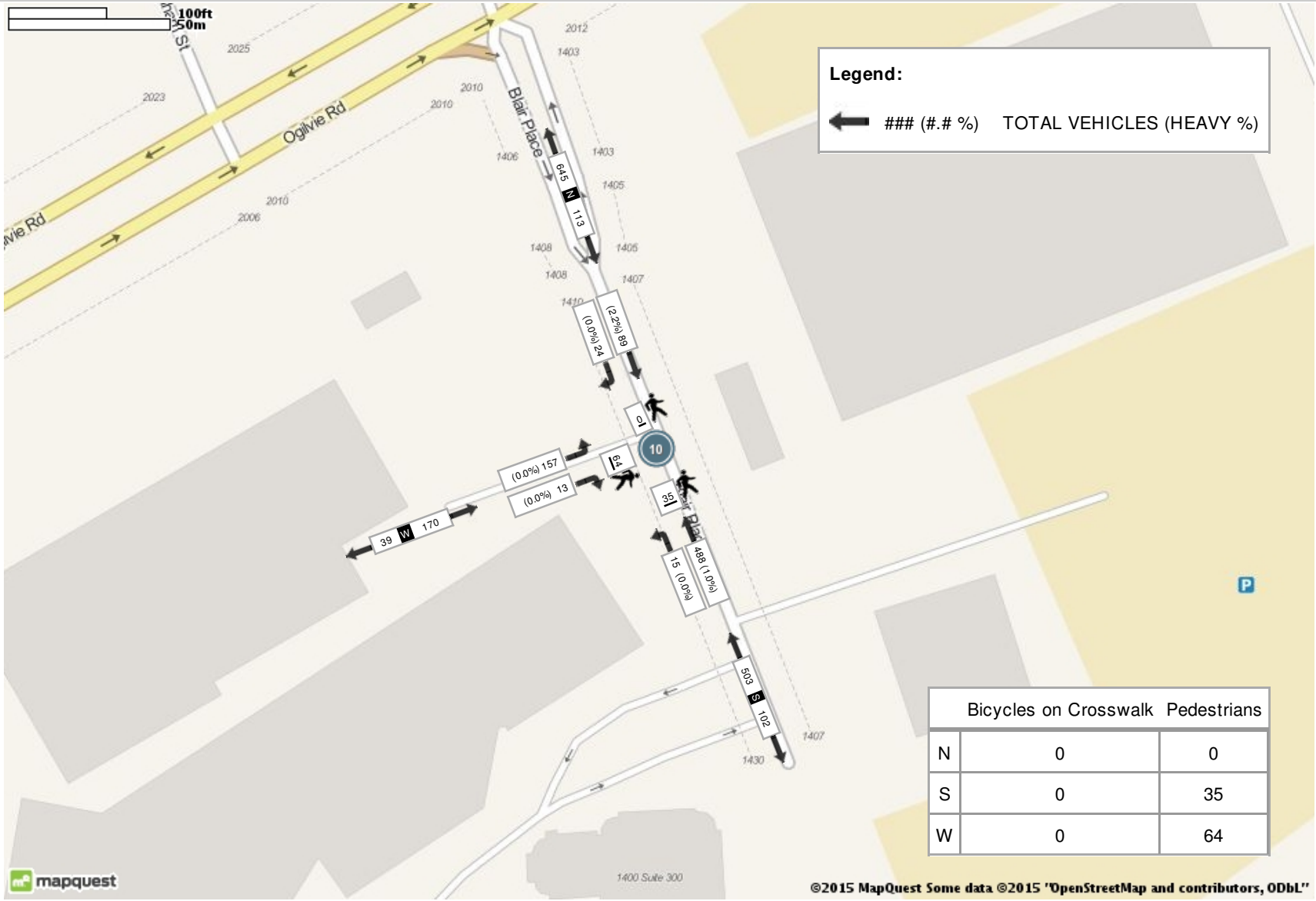
Costco Gloucester
6436-59 April 2015

Figure C1

Appendix B

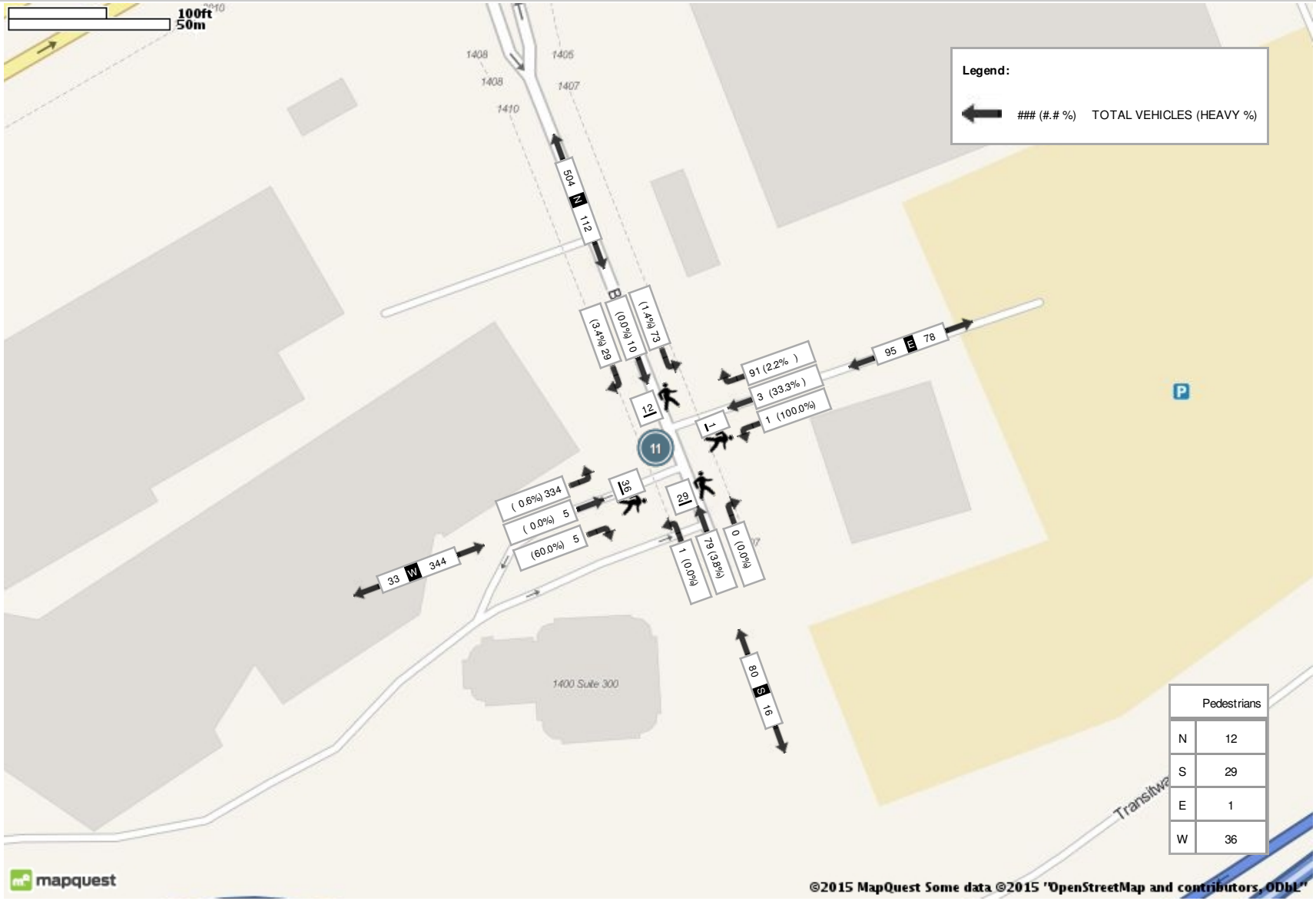
Current Study Area Intersection Counts

Peak Hour: 04:00 PM - 05:00 PM



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	35
W	0	64

Peak Hour: 04:00 PM - 05:00 PM



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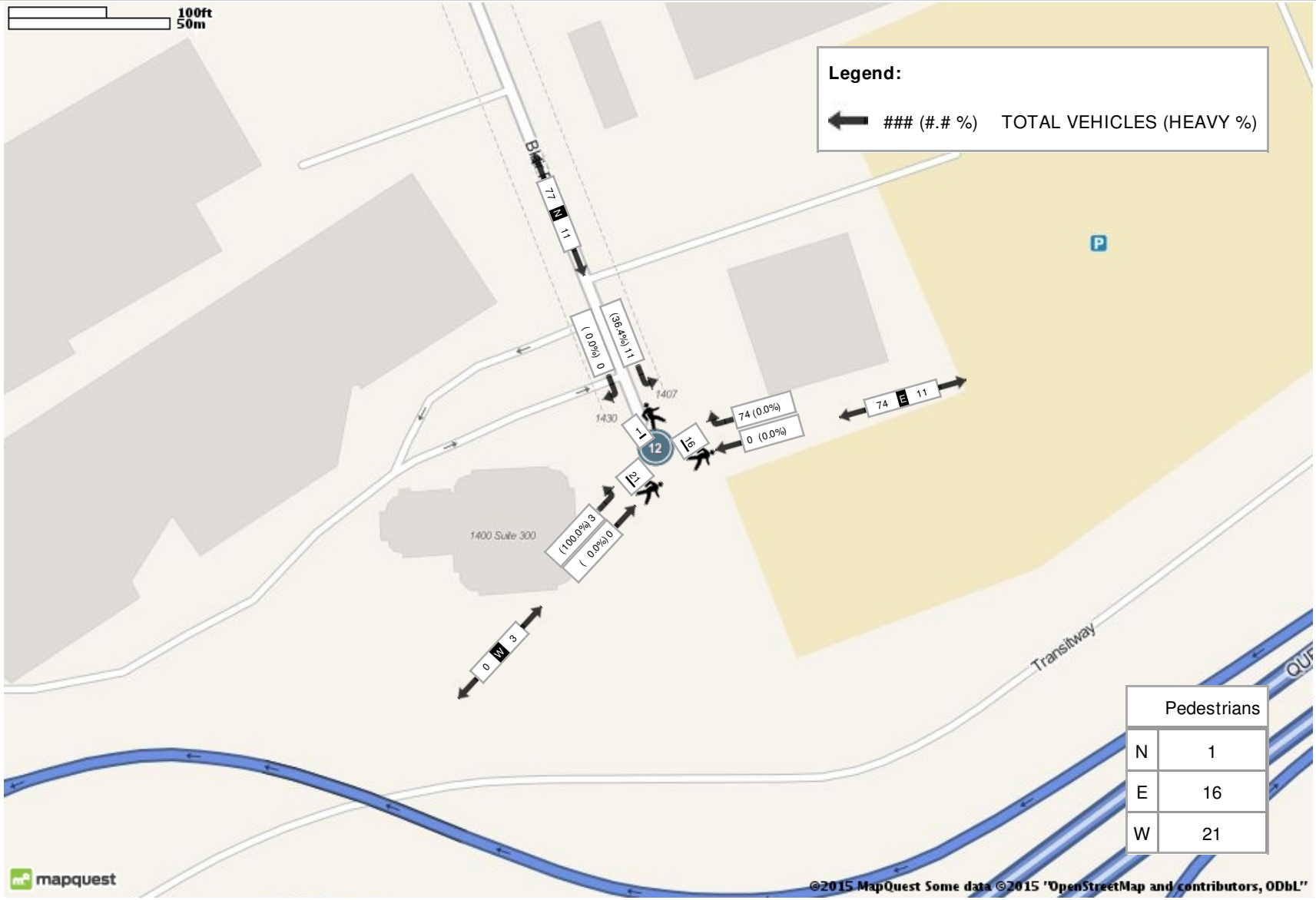
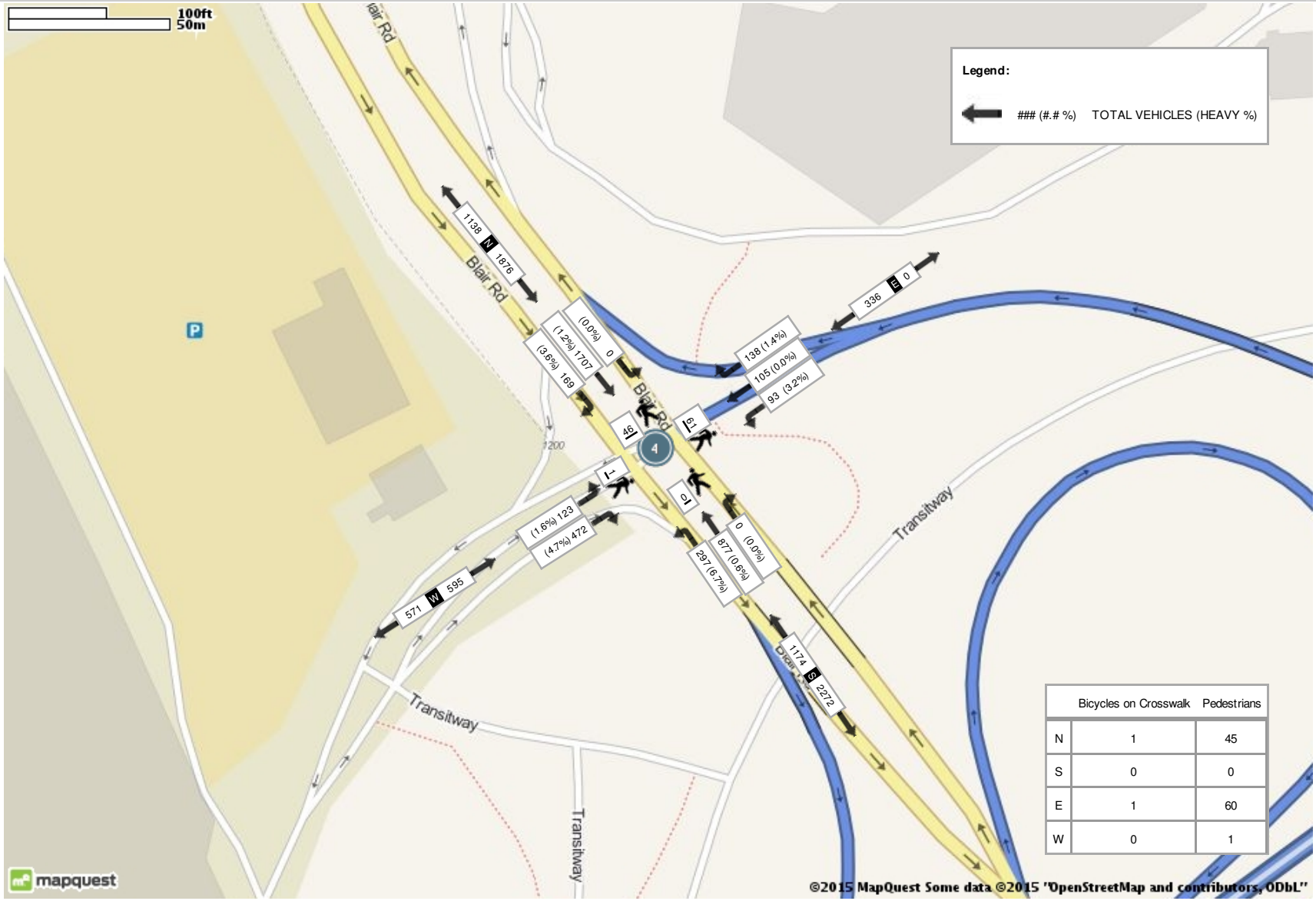
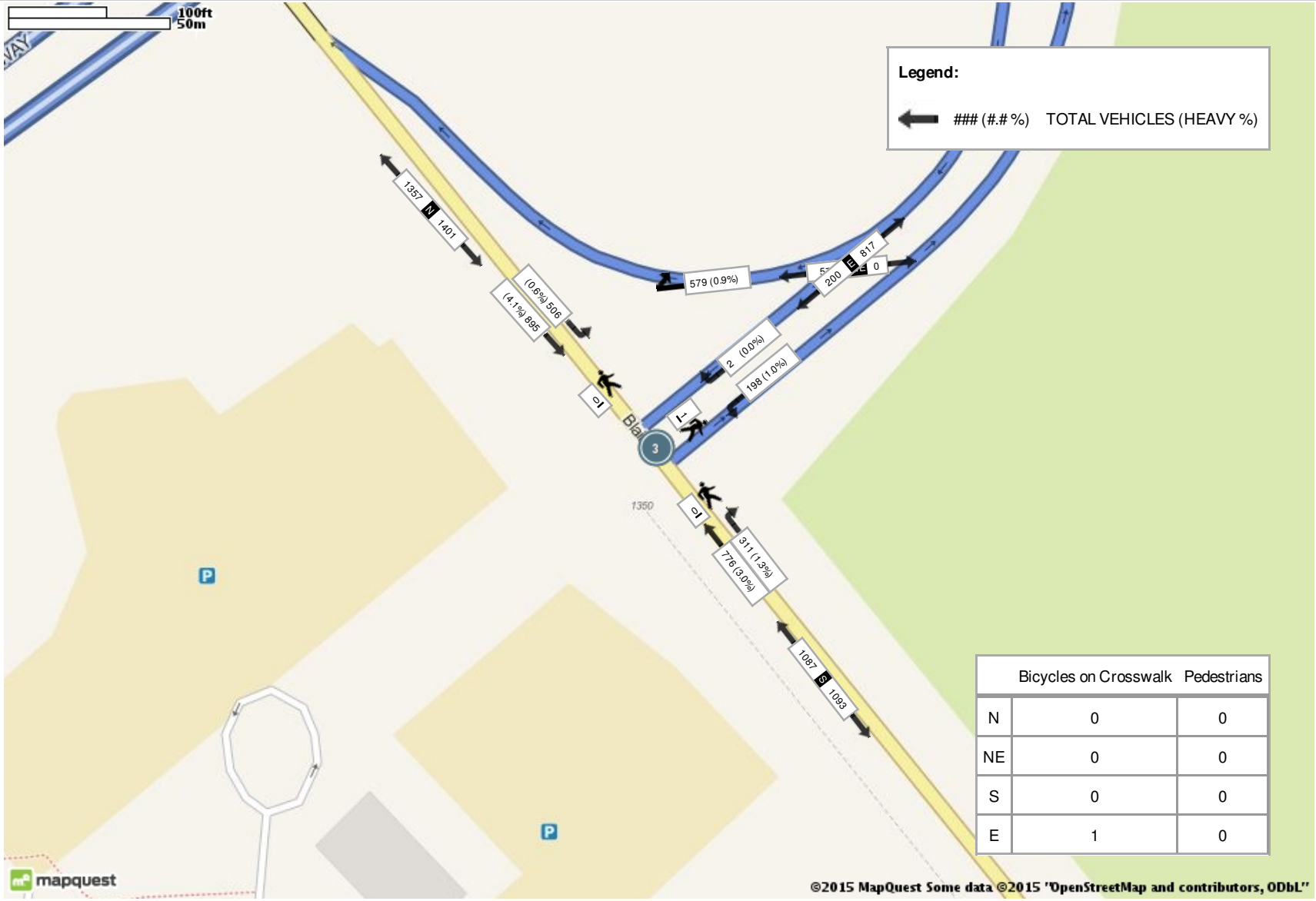


Peak Hour: 04:00 PM - 05:00 PM

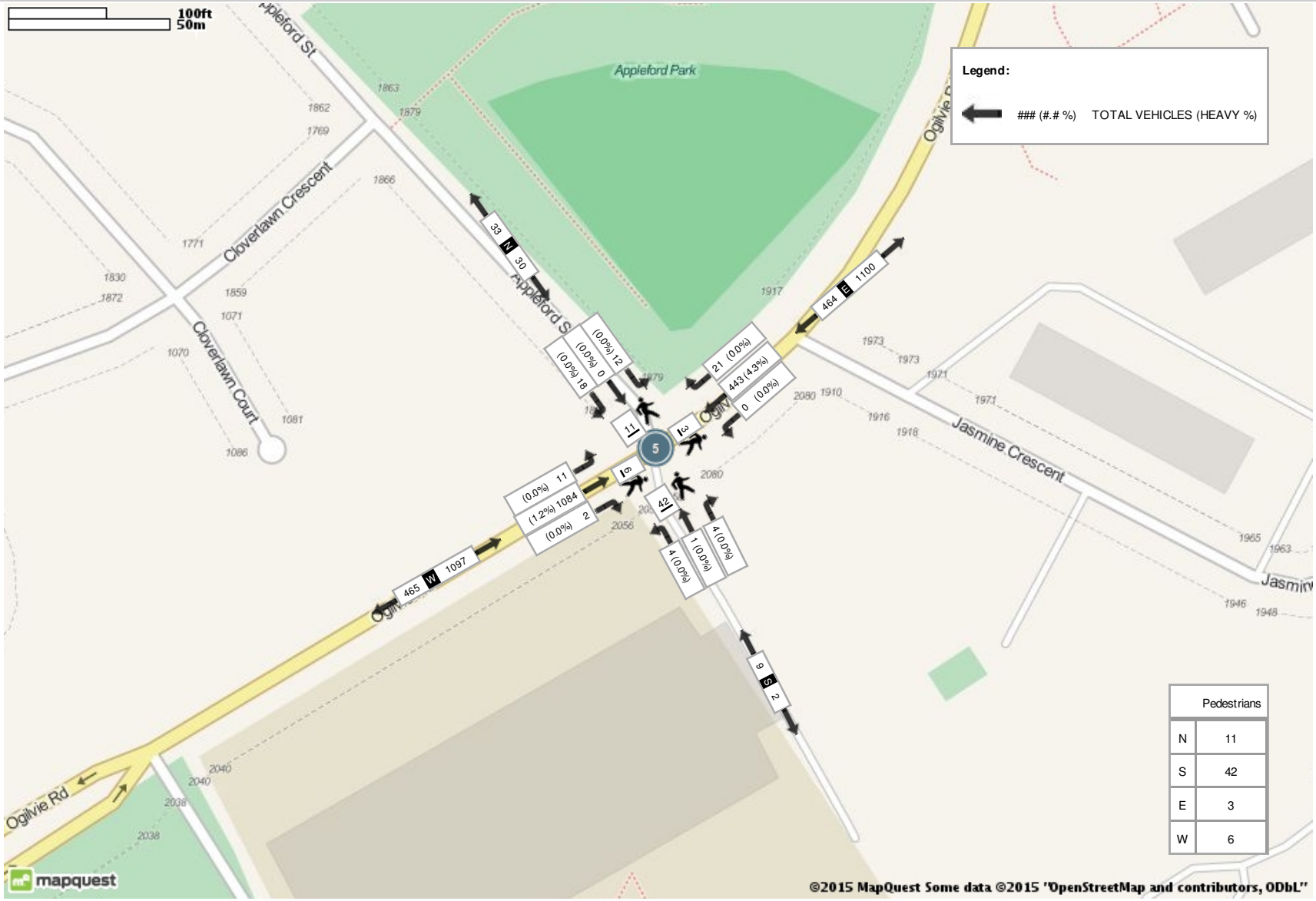


Peak Hour: 04:00 PM - 05:00 PM

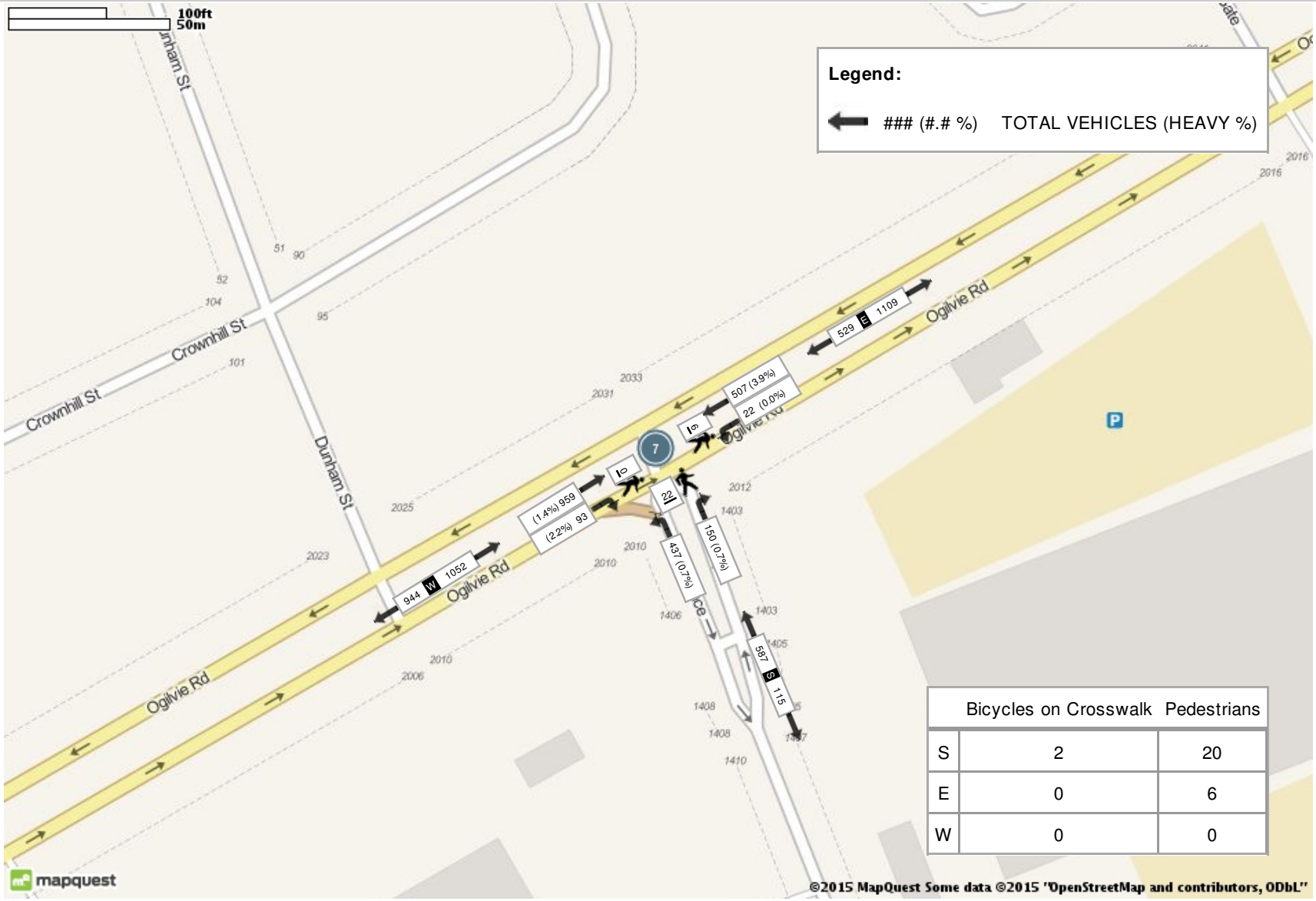


	Bicycles on Crosswalk	Pedestrians
N	0	0
NE	0	0
S	0	0
E	1	0

Peak Hour: 04:15 PM - 05:15 PM

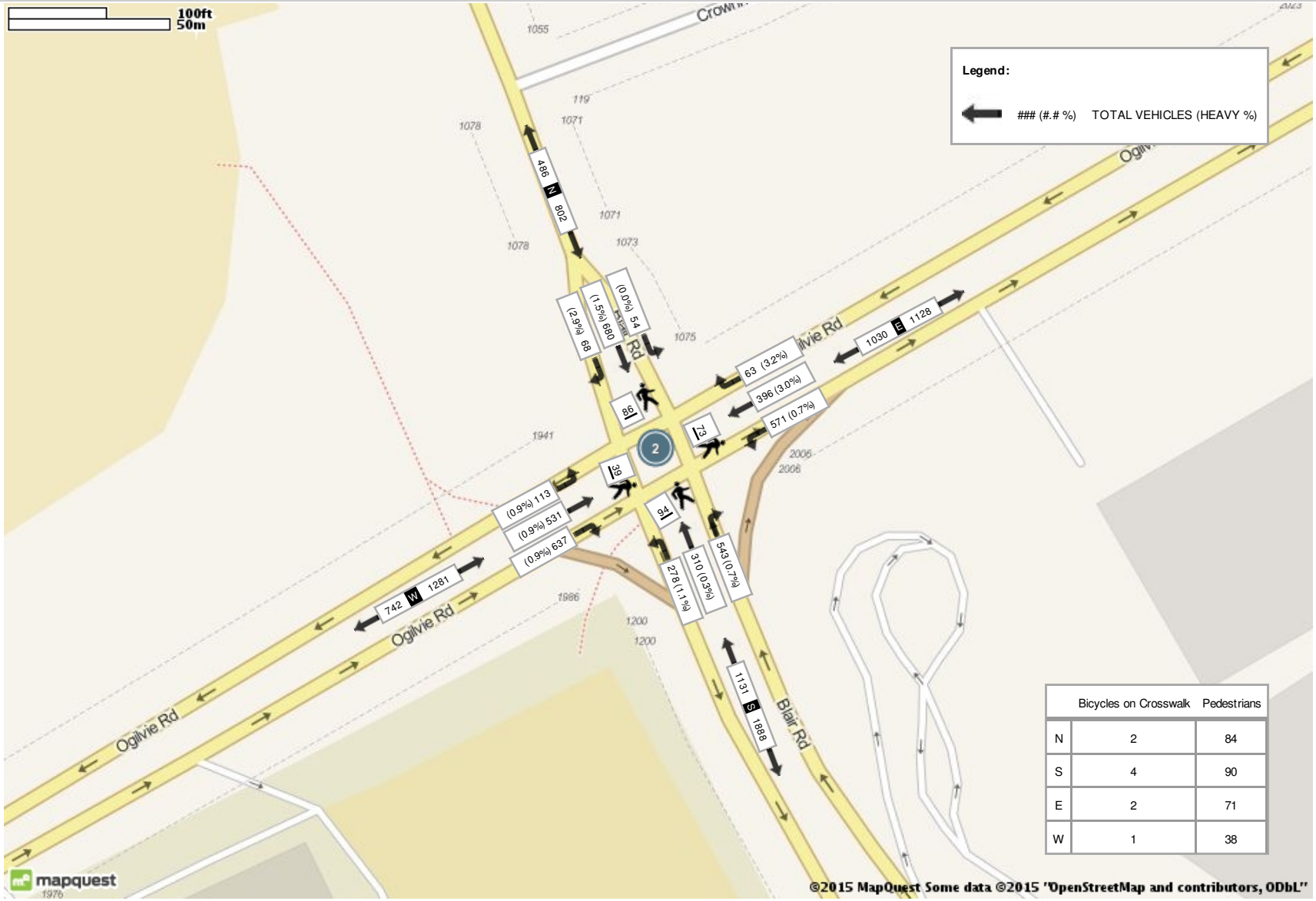


Peak Hour: 04:15 PM - 05:15 PM



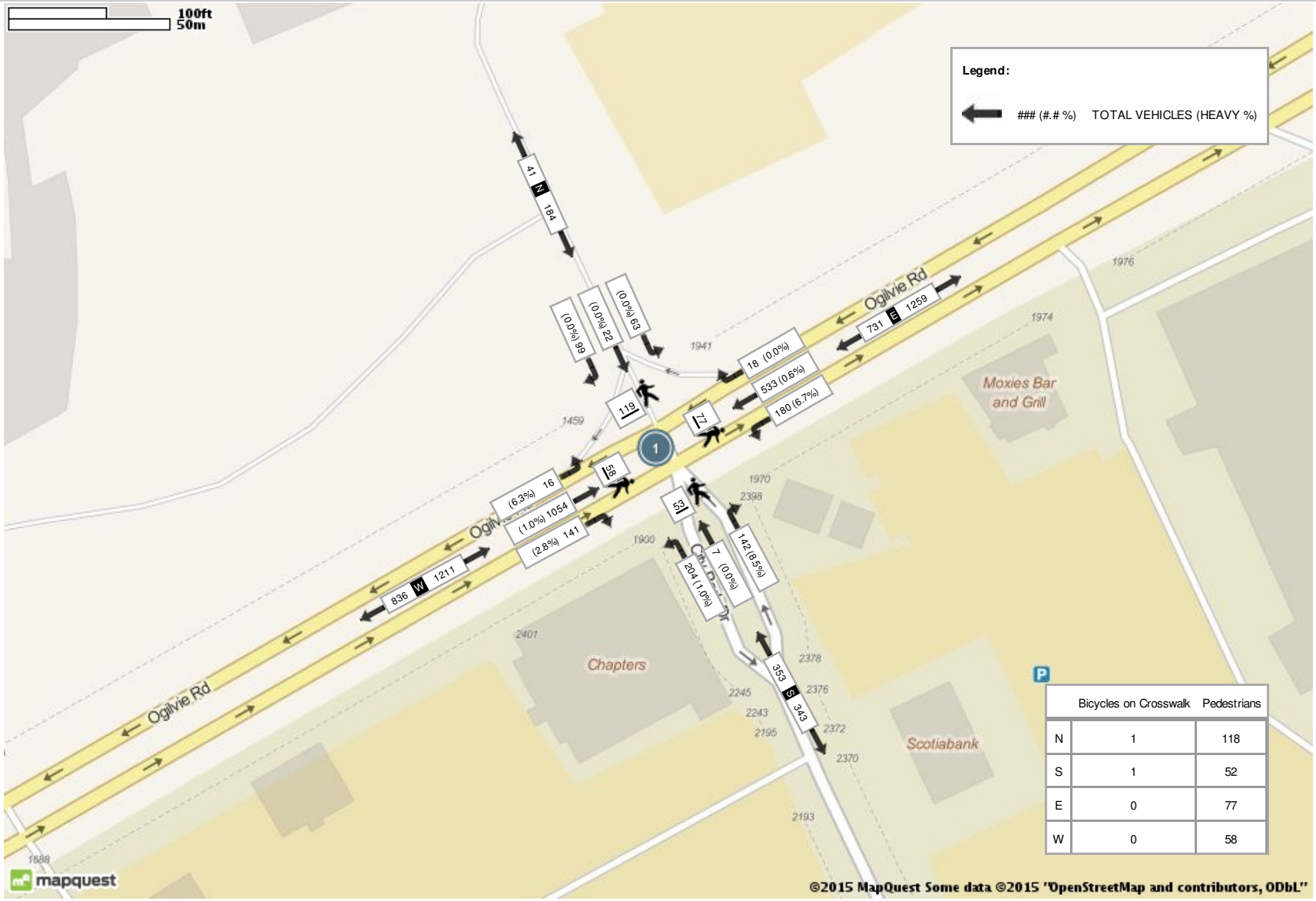
	Bicycles on Crosswalk	Pedestrians
S	2	20
E	0	6
W	0	0

Peak Hour: 04:00 PM - 05:00 PM



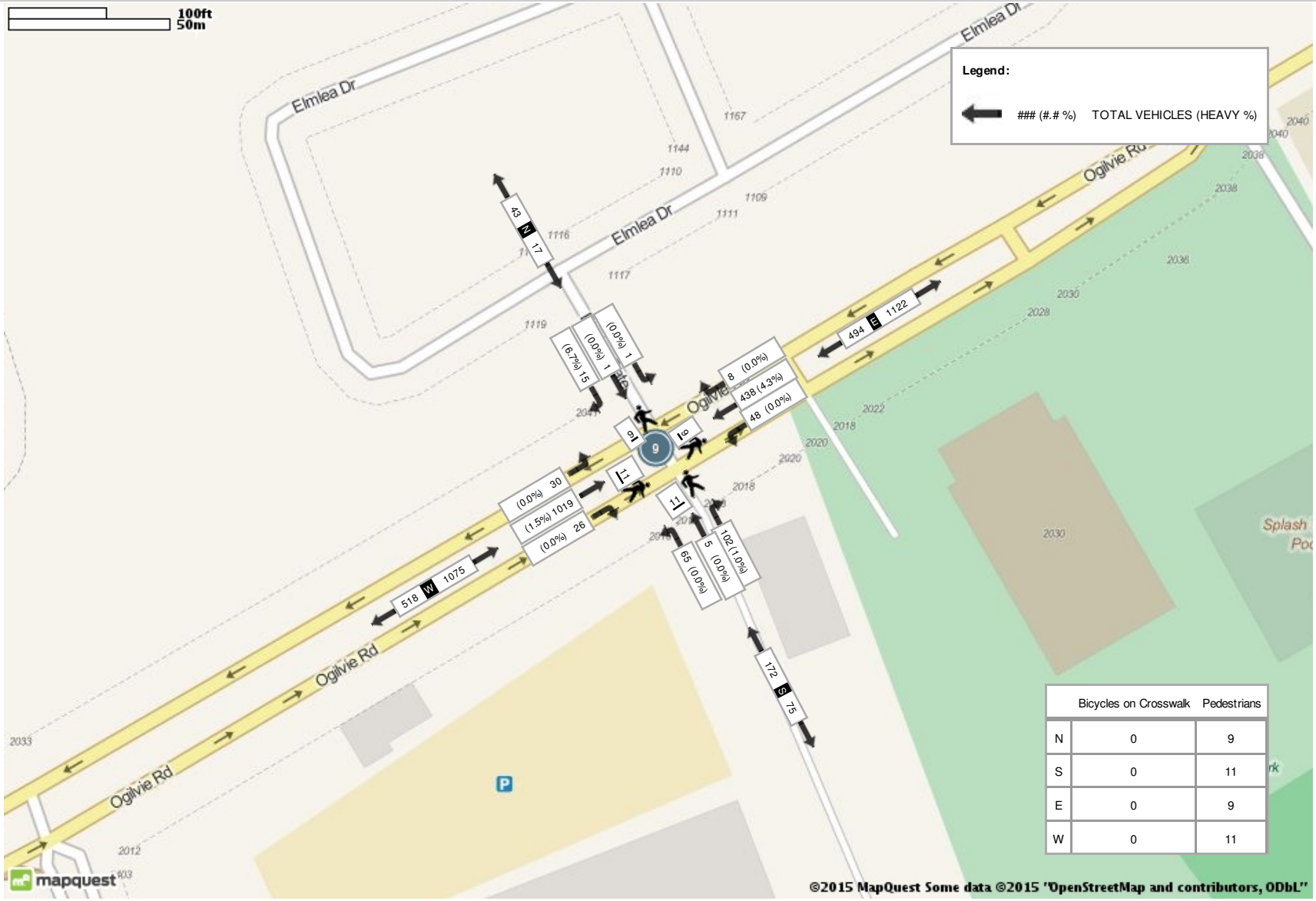
	Bicycles on Crosswalk	Pedestrians
N	2	84
S	4	90
E	2	71
W	1	38

Peak Hour: 04:00 PM - 05:00 PM



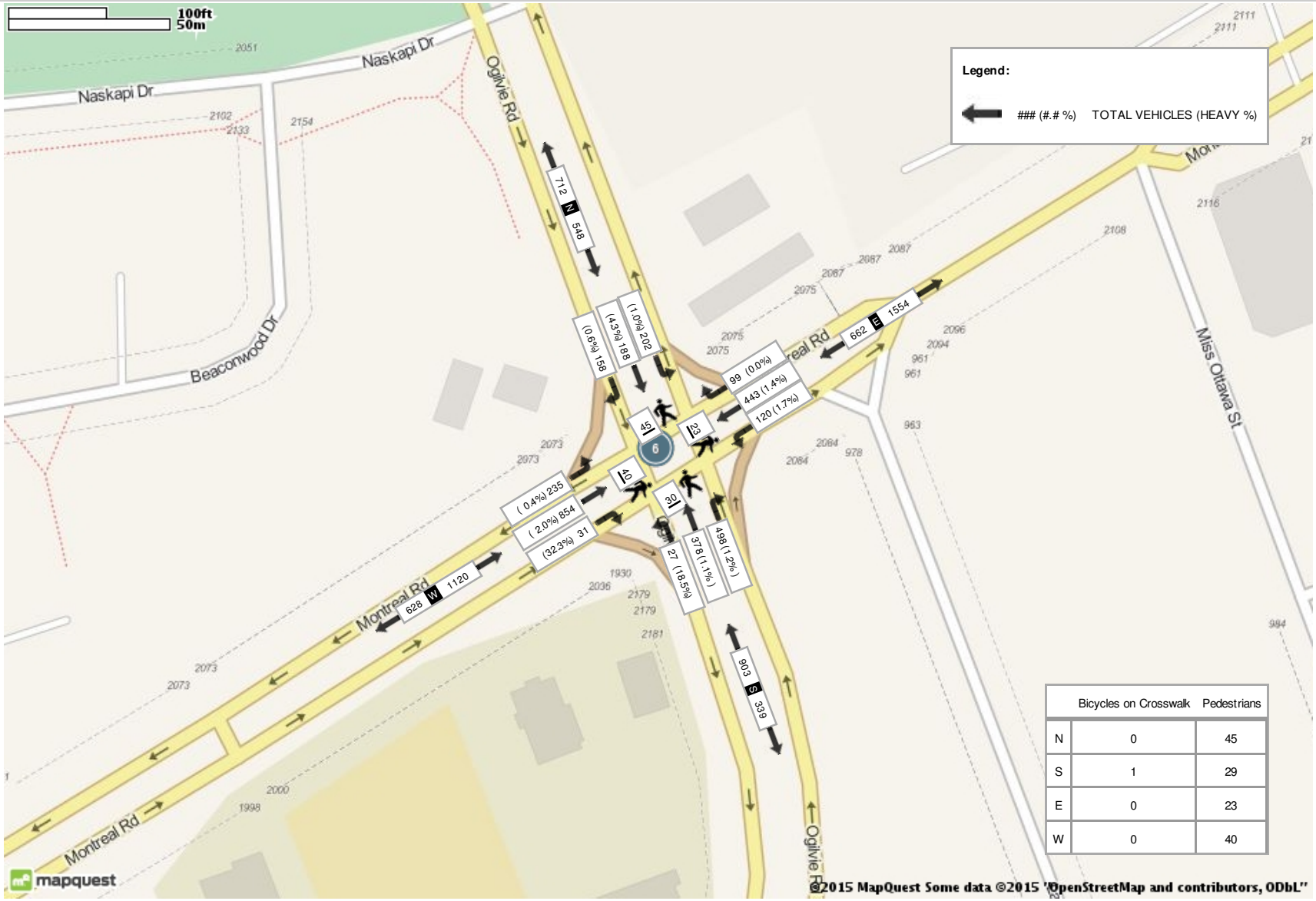
	Bicycles on Crosswalk	Pedestrians
N	1	118
S	1	52
E	0	77
W	0	58

Peak Hour: 04:15 PM - 05:15 PM



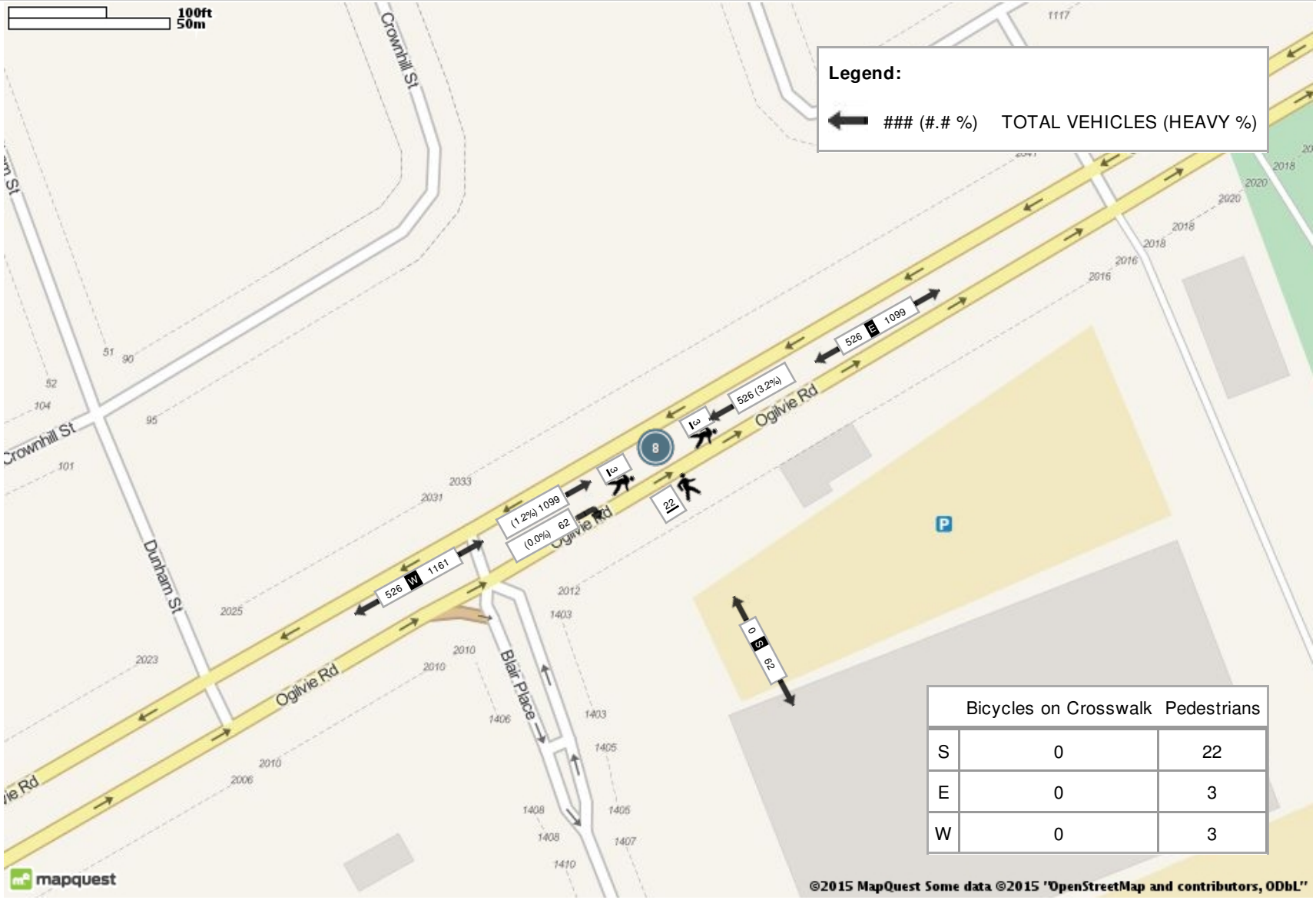
	Bicycles on Crosswalk	Pedestrians
N	0	9
S	0	11
E	0	9
W	0	11

Peak Hour: 04:15 PM - 05:15 PM



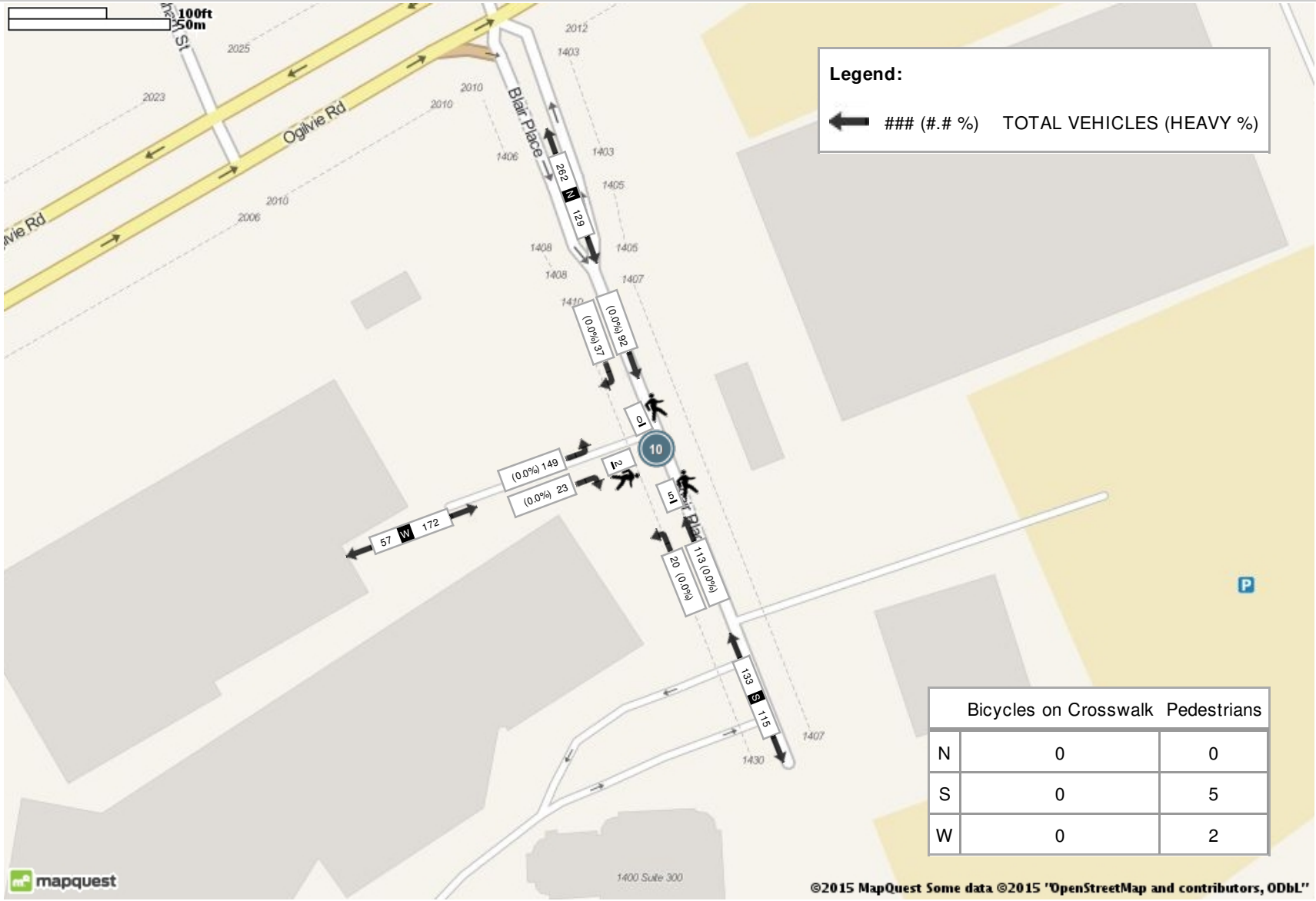
	Bicycles on Crosswalk	Pedestrians
N	0	45
S	1	29
E	0	23
W	0	40

Peak Hour: 04:30 PM - 05:30 PM



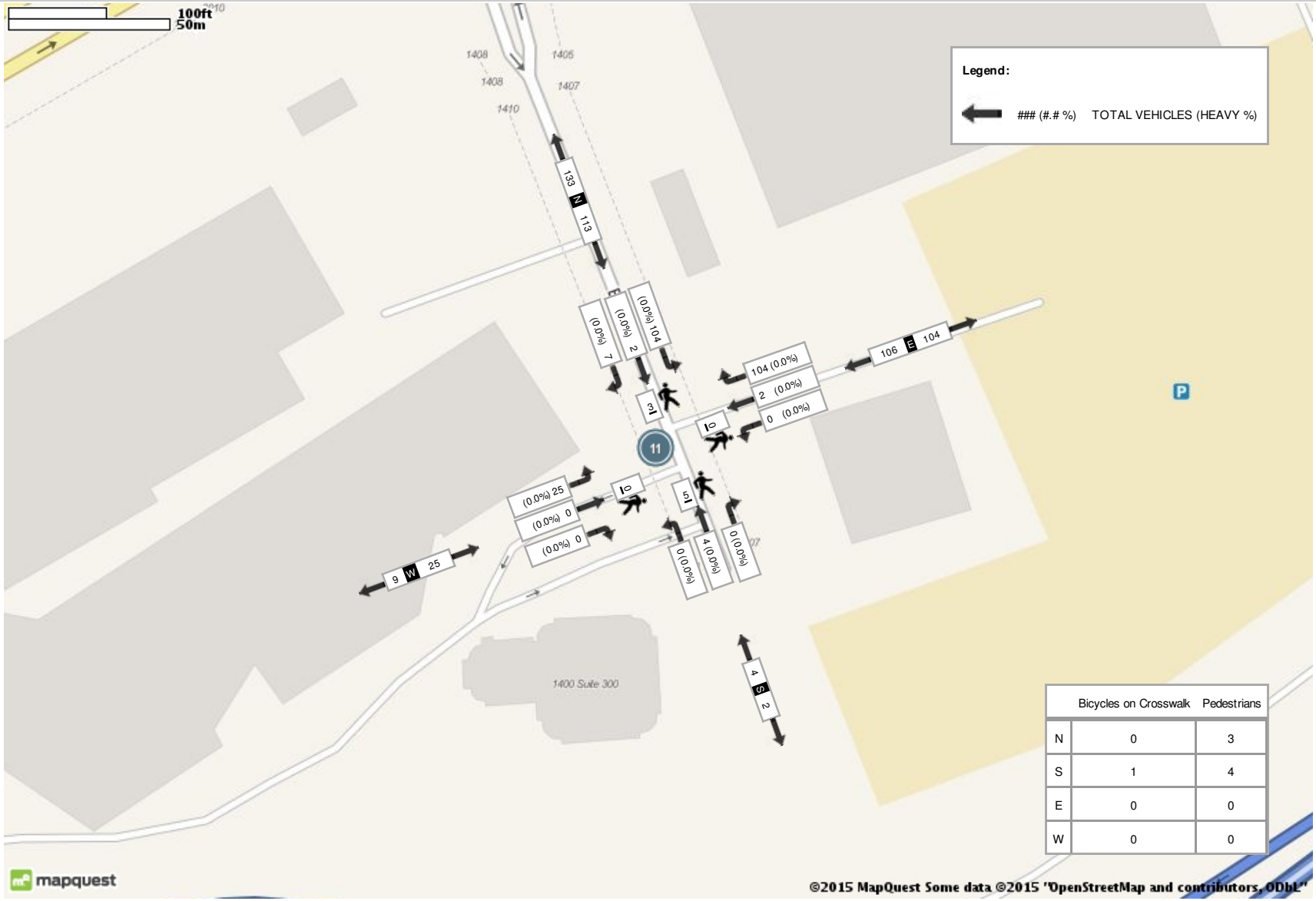
	Bicycles on Crosswalk	Pedestrians
S	0	22
E	0	3
W	0	3

Peak Hour: 12:45 PM - 01:45 PM



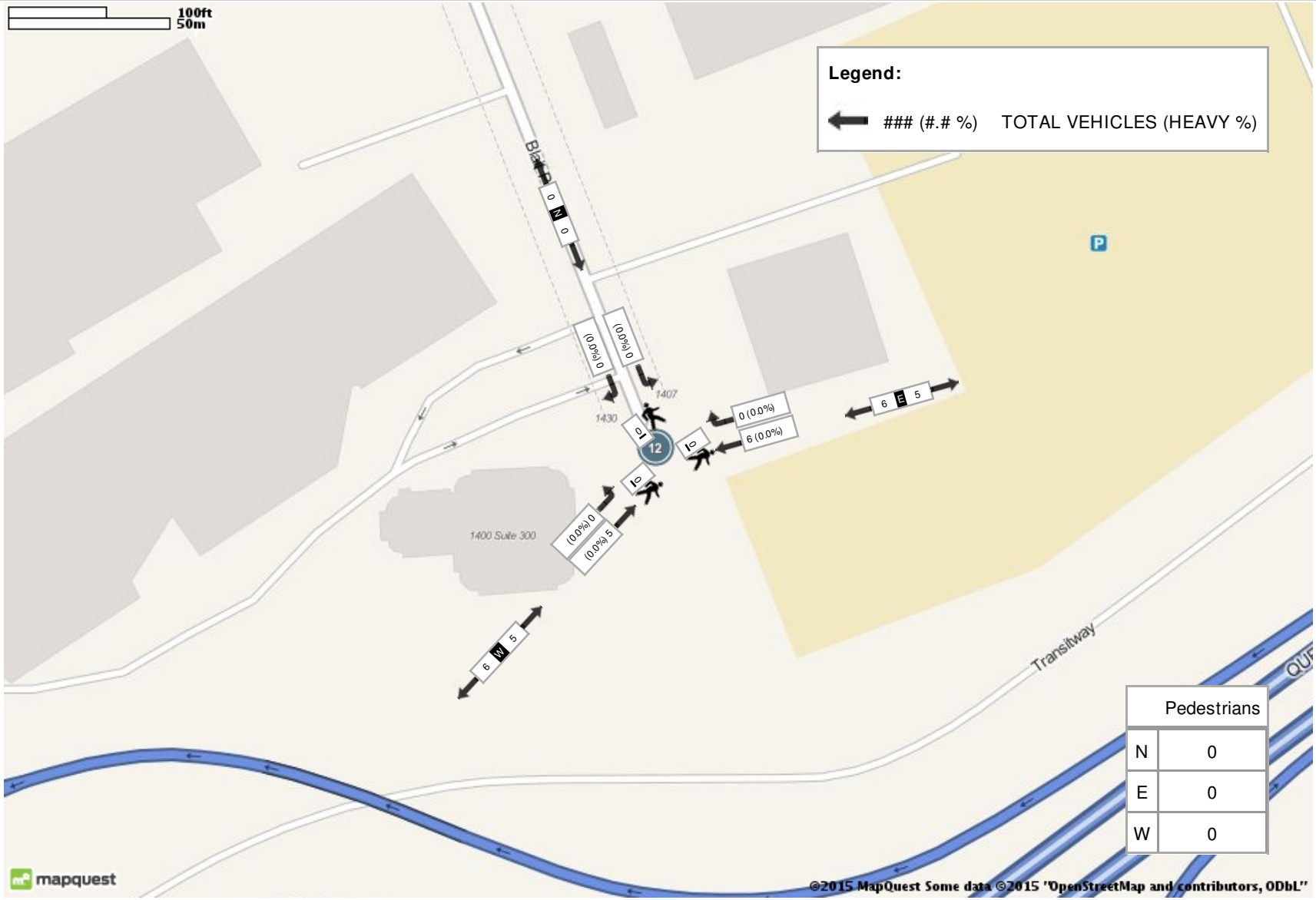
	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	5
W	0	2

Peak Hour: 12:45 PM - 01:45 PM



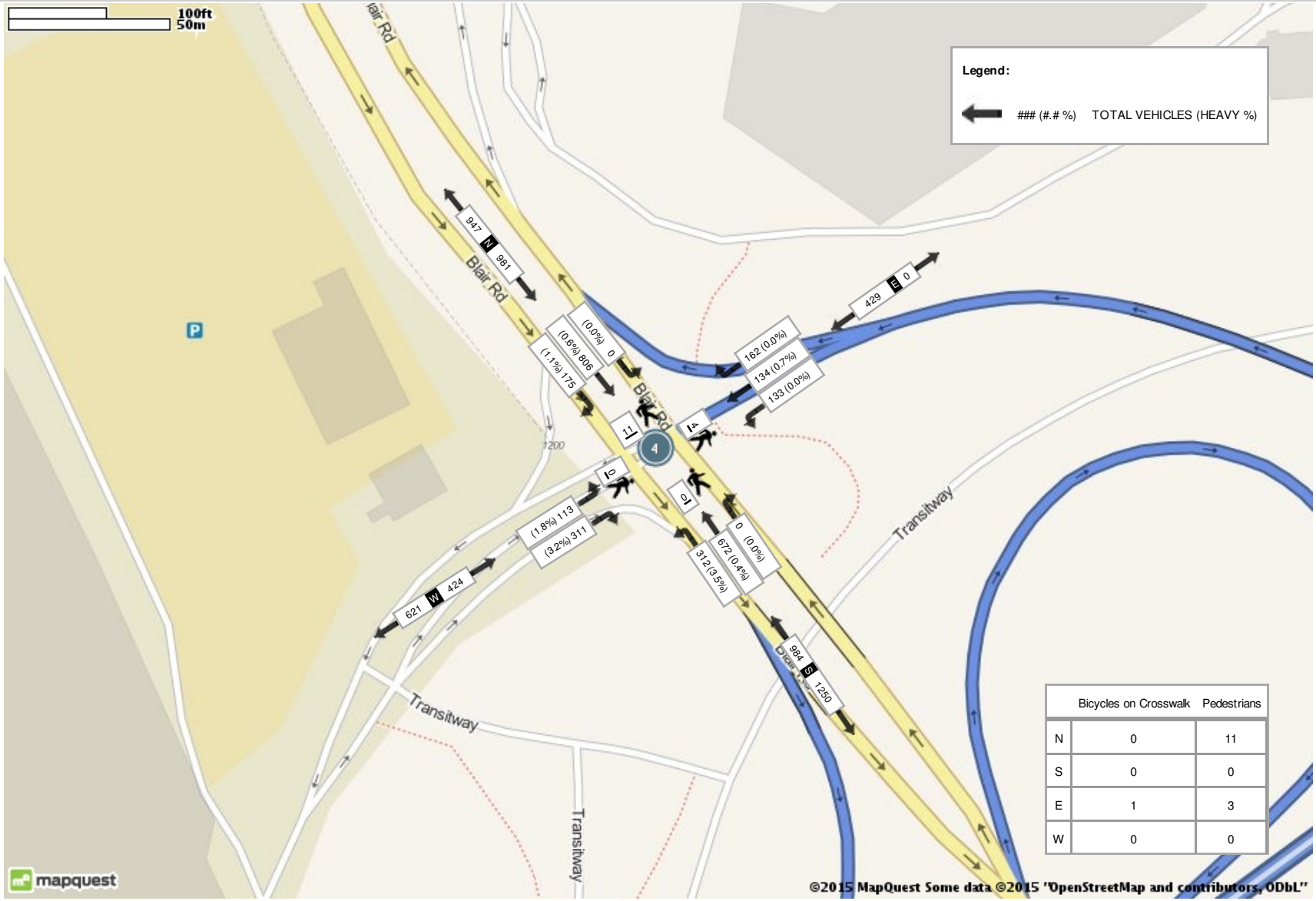
	Bicycles on Crosswalk	Pedestrians
N	0	3
S	1	4
E	0	0
W	0	0

Peak Hour: 02:00 PM - 03:00 PM



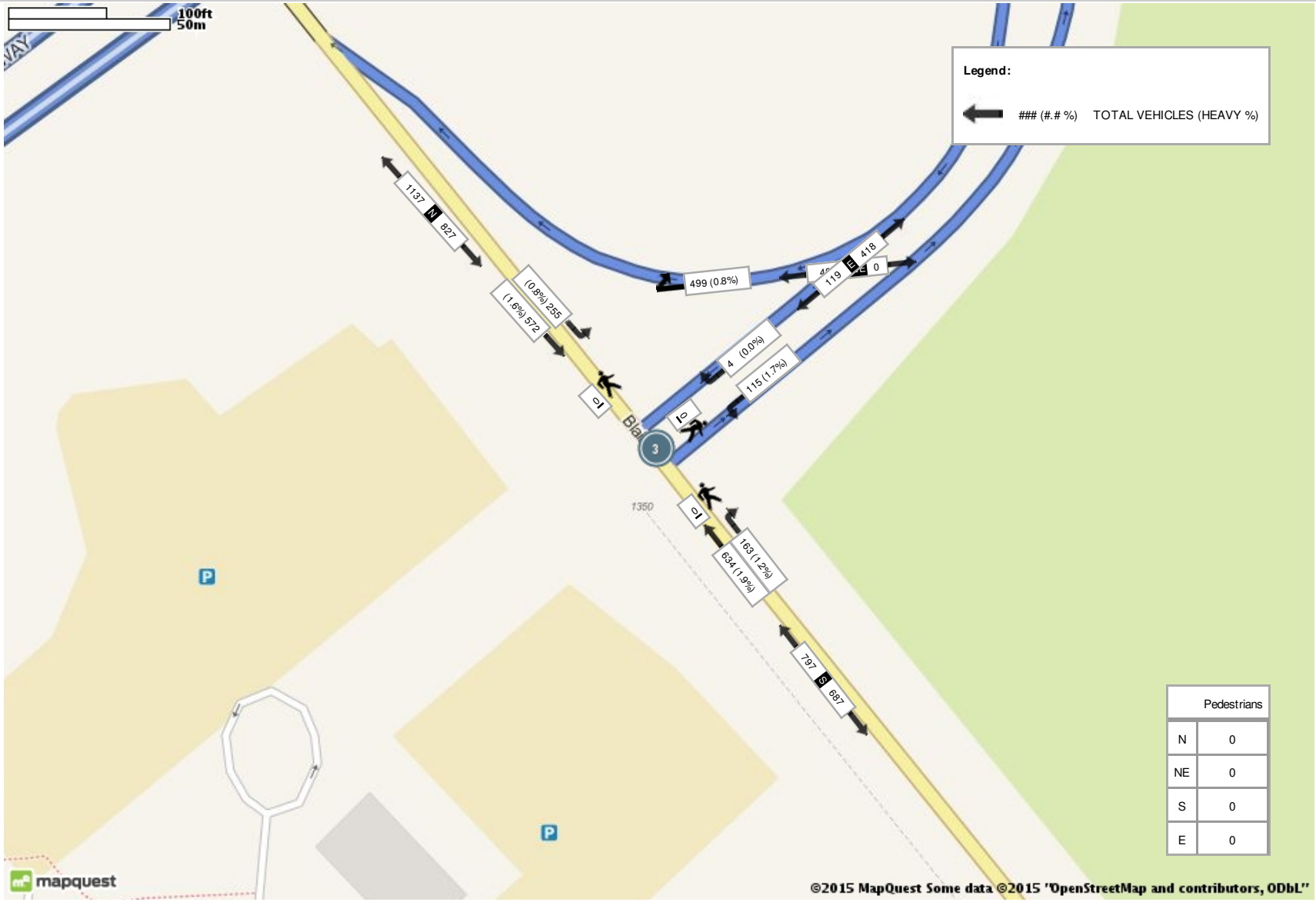
	Pedestrians
N	0
E	0
W	0

Peak Hour: 11:45 AM - 12:45 PM



	Bicycles on Crosswalk	Pedestrians
N	0	11
S	0	0
E	1	3
W	0	0

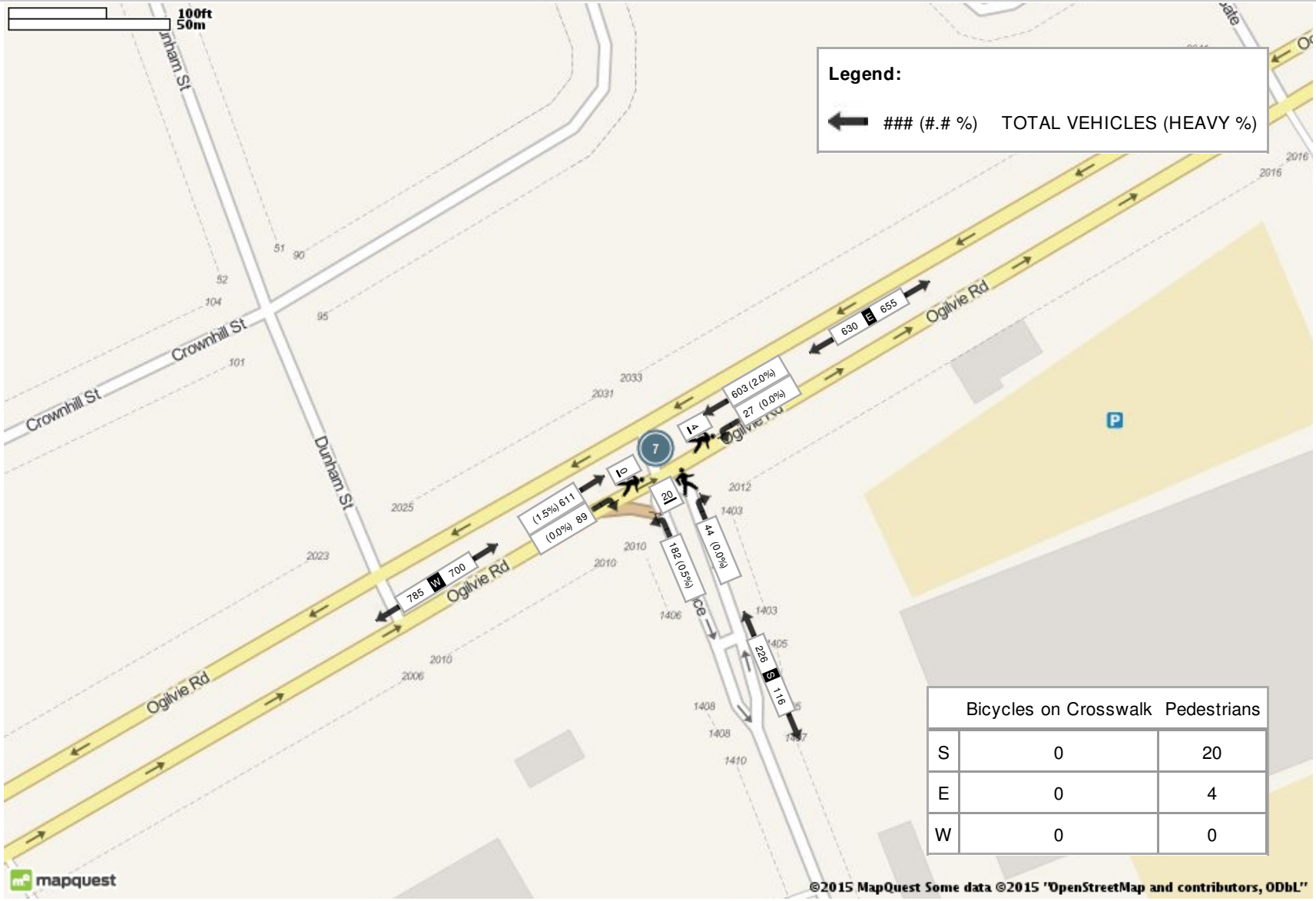
Peak Hour: 12:00 PM - 01:00 PM



Peak Hour: 11:45 AM - 12:45 PM

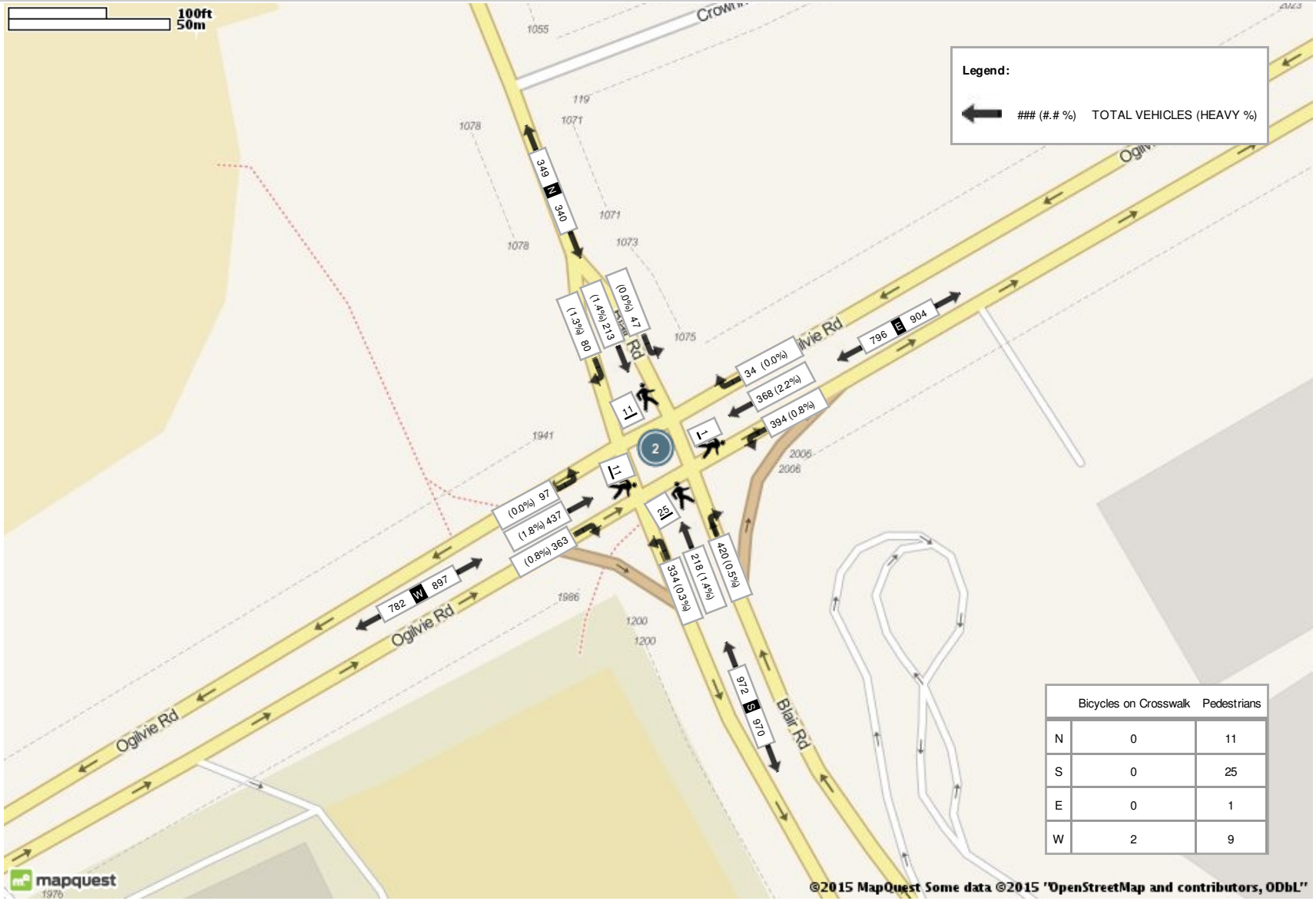
	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	33
E	0	0
W	0	5

Peak Hour: 11:45 AM - 12:45 PM



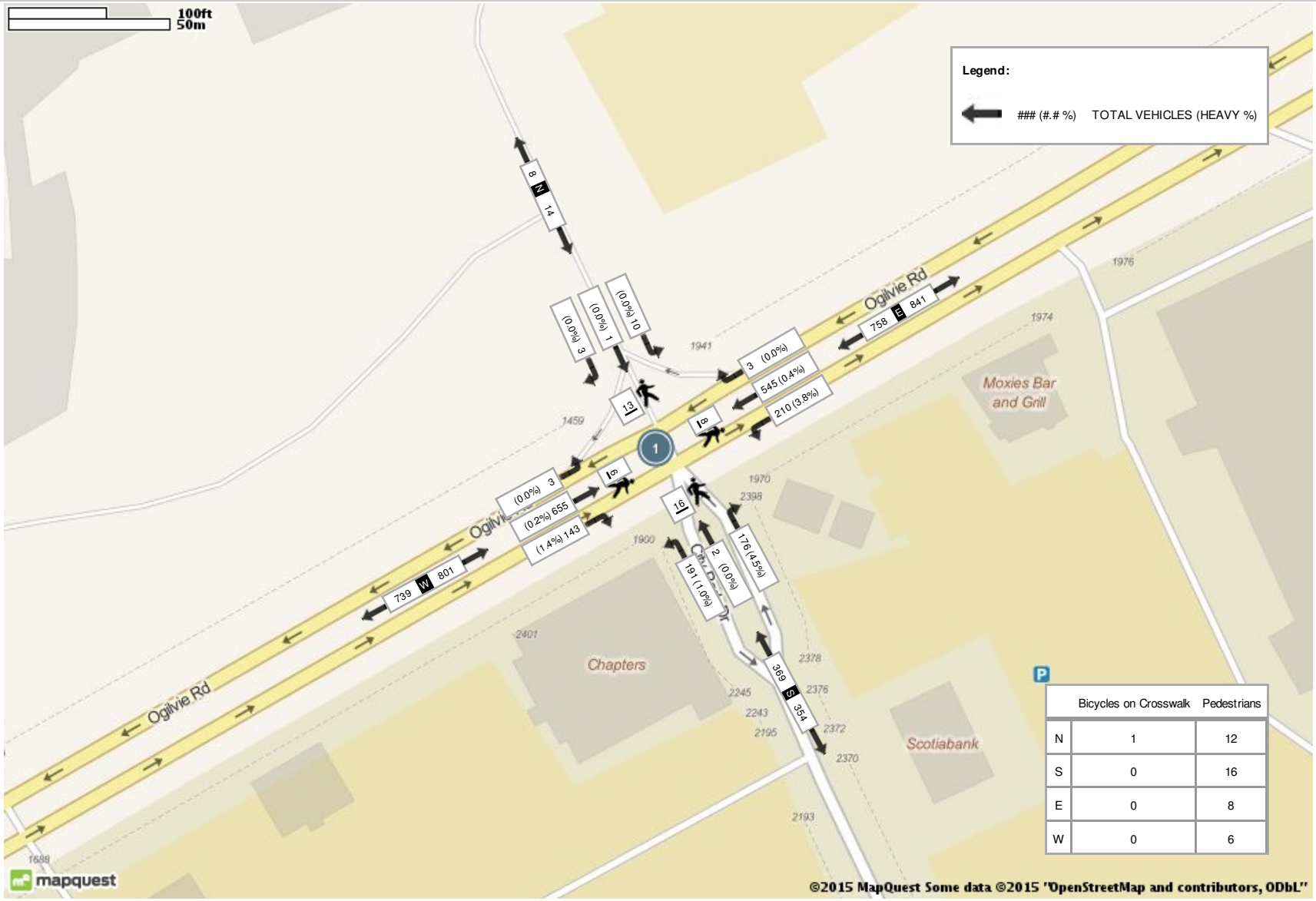
	Bicycles on Crosswalk	Pedestrians
S	0	20
E	0	4
W	0	0

Peak Hour: 12:45 PM - 01:45 PM



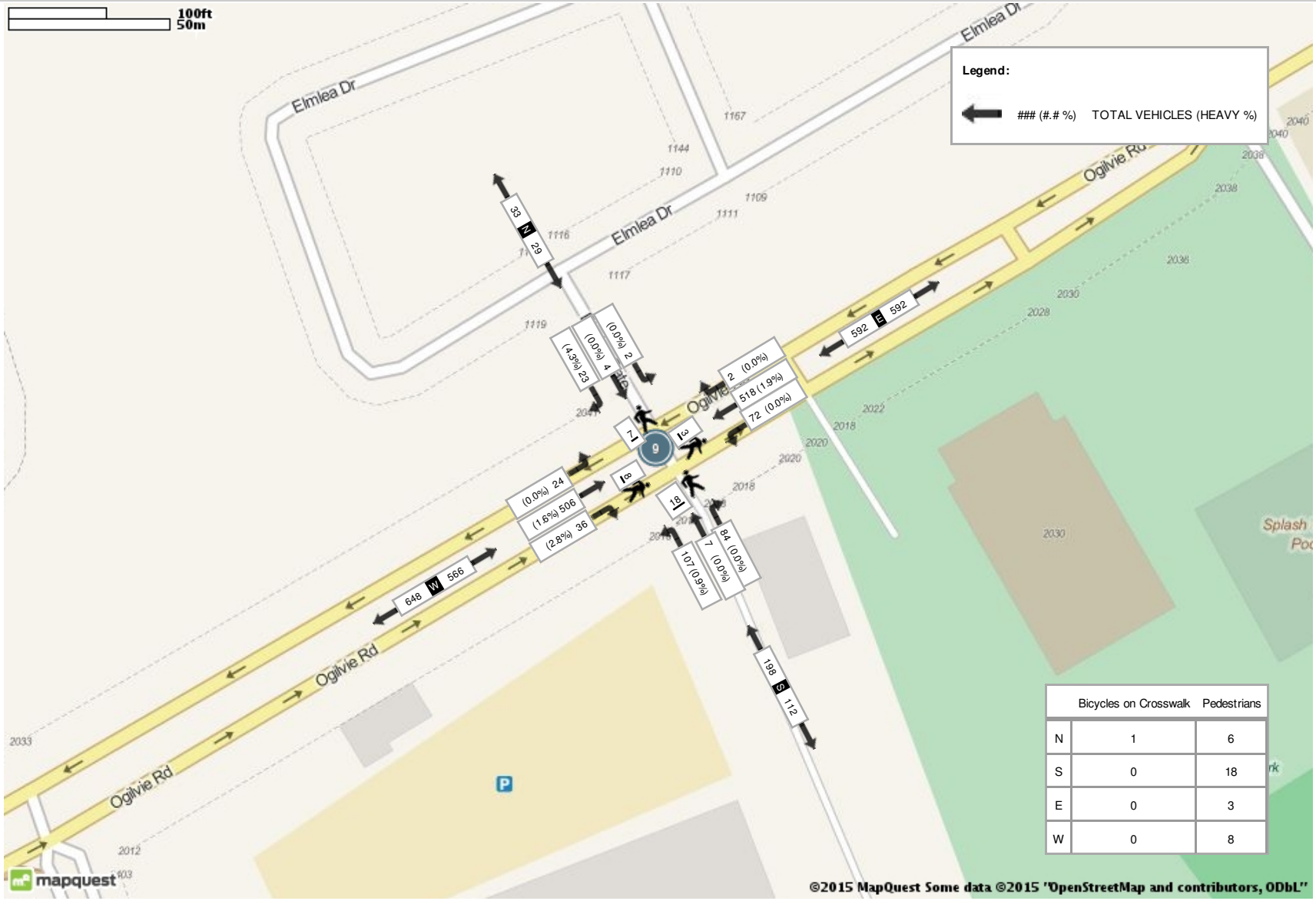
	Bicycles on Crosswalk	Pedestrians
N	0	11
S	0	25
E	0	1
W	2	9

Peak Hour: 01:15 PM - 02:15 PM

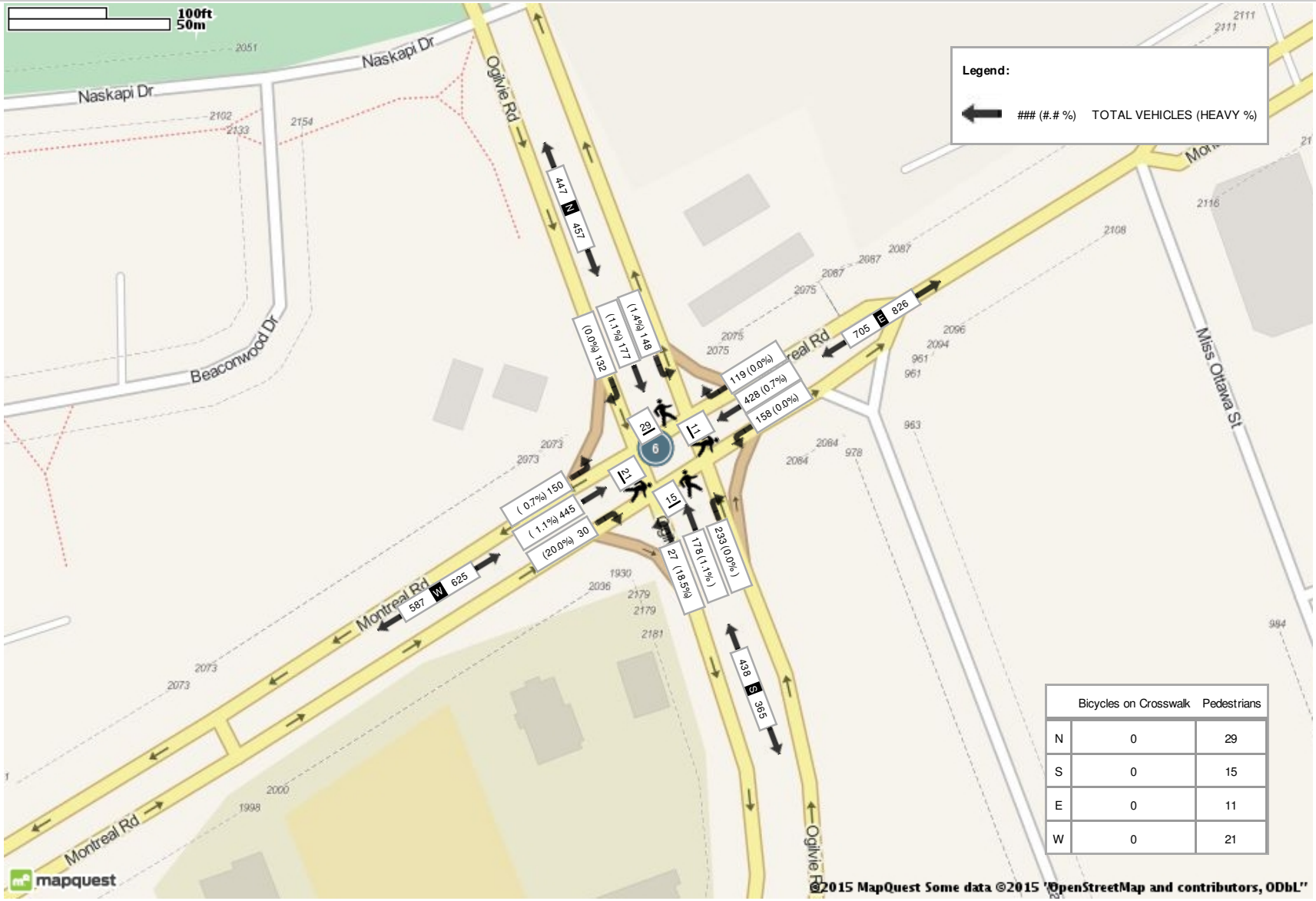


	Bicycles on Crosswalk	Pedestrians
N	1	12
S	0	16
E	0	8
W	0	6

Peak Hour: 11:30 AM - 12:30 PM

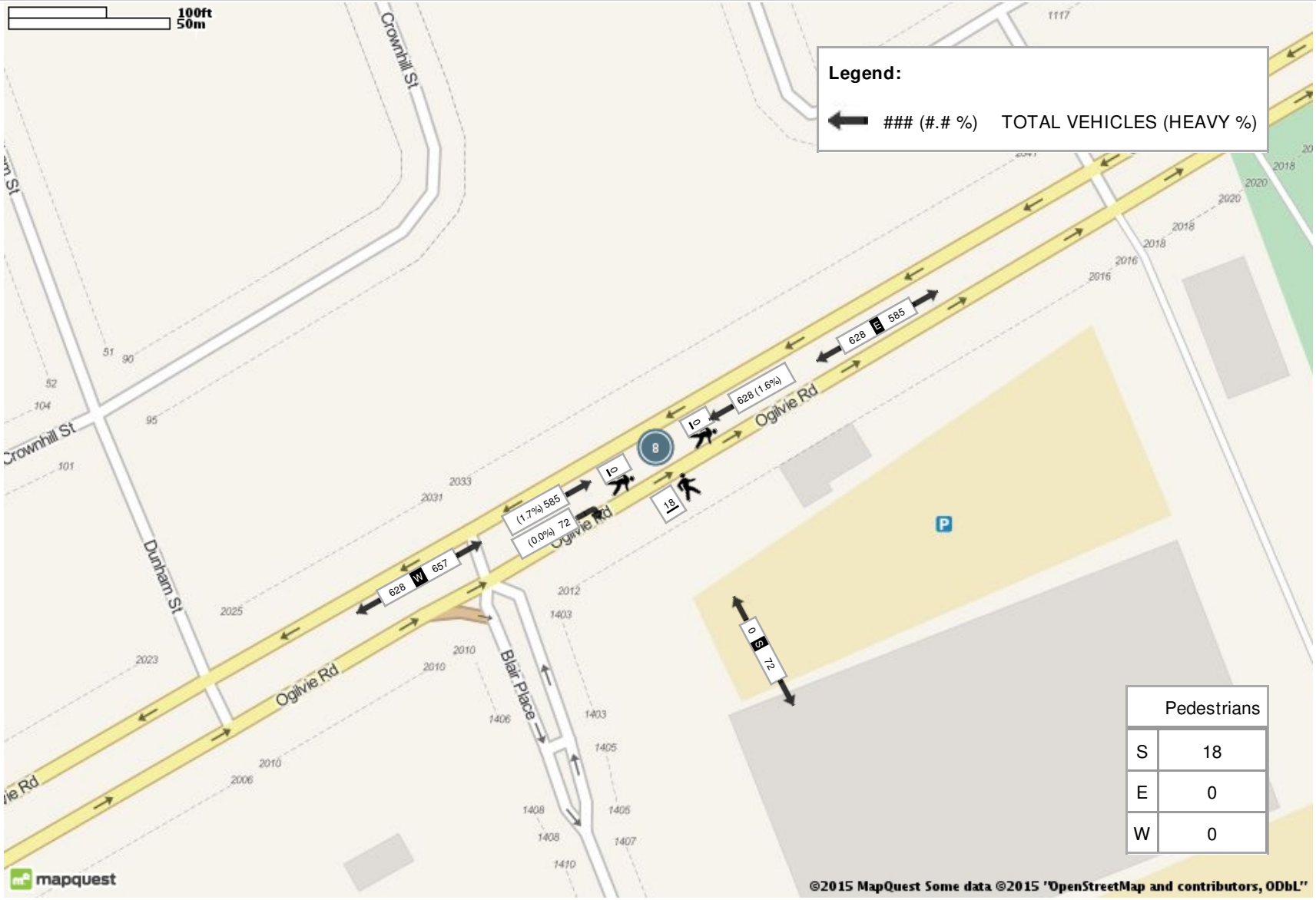


Peak Hour: 01:00 PM - 02:00 PM



	Bicycles on Crosswalk	Pedestrians
N	0	29
S	0	15
E	0	11
W	0	21

Peak Hour: 11:45 AM - 12:45 PM



Appendix C

SYNCHRO Capacity Analysis: Existing Conditions and Modifications

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	89	449	61	87	916	121	76	35	4	3		
Lane Group Flow (vph)	94	473	64	92	964	127	80	106	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												
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)	28.9	28.9	28.9	28.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	57.0	57.0	57.0	57.0	57.0	57.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%	31.1%	31.1%	31.1%	31.1%	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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	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)	67.8	67.8	67.8	67.8	67.8	67.8	13.2	13.2	13.2	13.2		
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.75	0.75	0.15	0.15	0.15	0.15		
v/c Ratio	0.26	0.19	0.07	0.15	0.38	0.13	0.47	0.37	0.02	0.17		
Control Delay	9.1	5.2	2.1	6.7	6.4	1.8	43.0	17.4	29.8	13.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.1	5.2	2.1	6.7	6.4	1.8	43.0	17.4	29.8	13.1		
LOS	A	A	A	A	A	A	D	B	C	B		
Approach Delay		5.5			5.9			28.4		14.6		
Approach LOS		A			A			C		B		
Queue Length 50th (m)	4.4	10.9	0.0	3.9	26.8	0.0	13.2	5.8	0.6	0.5		
Queue Length 95th (m)	19.1	27.7	4.7	15.1	63.3	6.9	24.0	17.8	3.1	8.1		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	360	2555	963	595	2555	978	278	422	281	352		
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	0.26	0.19	0.07	0.15	0.38	0.13	0.29	0.25	0.01	0.11		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 5 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.0 — Intersection LOS: A
Intersection Capacity Utilization 67.3% — ICU Level of Service C
Analysis Period (min) 15

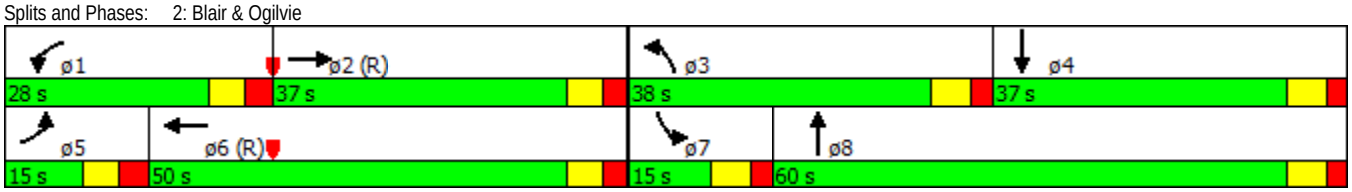
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	51	286	179	309	449	553	575	380	53	306
Lane Group Flow (vph)	54	301	188	325	501	582	605	400	56	422
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	15.0	37.0		28.0	50.0	38.0	60.0		15.0	37.0
Total Split (%)	10.7%	26.4%		20.0%	35.7%	27.1%	42.9%		10.7%	26.4%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	7.8	38.3	140.0	18.5	51.6	28.7	51.5	140.0	8.0	28.3
Actuated g/C Ratio	0.06	0.27	1.00	0.13	0.37	0.20	0.37	1.00	0.06	0.20
v/c Ratio	0.57	0.32	0.13	0.75	0.41	0.86	0.92	0.27	0.58	0.63
Control Delay	88.0	44.1	0.2	76.3	32.2	67.6	63.0	0.4	88.0	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0
Total Delay	88.0	44.1	0.2	76.3	32.2	67.6	65.3	0.4	88.0	51.7
LOS	F	D	A	E	C	E	E	A	F	D
Approach Delay		33.3			49.5		49.8			56.0
Approach LOS		C			D		D			E
Queue Length 50th (m)	14.8	37.1	0.0	45.1	62.2	80.2	155.5	0.0	15.3	51.2
Queue Length 95th (m)	#31.2	52.2	0.0	64.5	57.2	100.1	#223.0	0.0	#31.3	69.7
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	99	928	1464	497	1231	739	681	1483	102	731
Starvation Cap Reductn	0	0	0	0	0	0	25	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	0.55	0.32	0.13	0.65	0.41	0.79	0.92	0.27	0.55	0.58

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 48.0 — Intersection LOS: D
Intersection Capacity Utilization 91.5% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

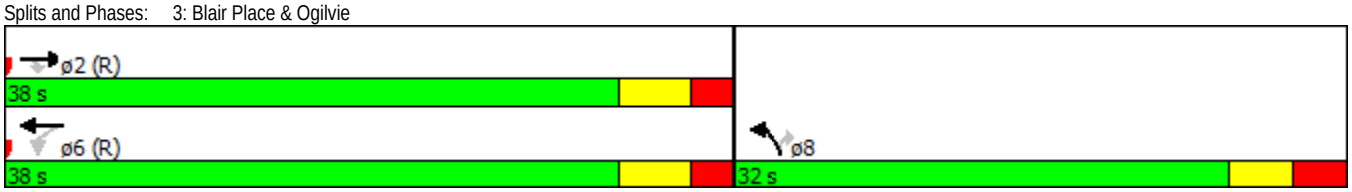
Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	441	194	41	650	81	18
Lane Group Flow (vph)	464	204	43	684	85	19
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	38.0	38.0	38.0	38.0	32.0	32.0
Total Split (%)	54.3%	54.3%	54.3%	54.3%	45.7%	45.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	49.1	49.1	49.1	49.1	13.2	13.2
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.19	0.19
v/c Ratio	0.20	0.18	0.07	0.29	0.14	0.06
Control Delay	10.2	6.3	1.3	1.8	22.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	6.3	1.3	1.8	22.2	8.9
LOS	B	A	A	A	C	A
Approach Delay	9.0			1.7	19.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	33.2	17.3	0.5	4.2	5.1	0.0
Queue Length 95th (m)	54.5	32.5	0.7	3.1	7.6	3.7
Internal Link Dist (m)	325.3			203.4	117.8	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2376	1104	604	2376	1211	563
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.18	0.07	0.29	0.07	0.03

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 53 (76%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Blair Place & Ogilvie

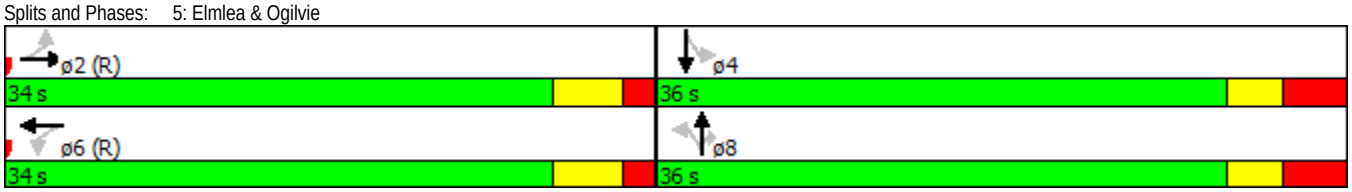


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	12	412	29	659	14	1	11	3	0
Lane Group Flow (vph)	13	454	31	699	0	16	12	0	28
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	6	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.5	27.5	27.5	27.5	35.4	35.4	35.4	35.4	35.4
Total Split (s)	34.0	34.0	34.0	34.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	48.6%	48.6%	48.6%	48.6%	51.4%	51.4%	51.4%	51.4%	51.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5		6.4	6.4		6.4
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	57.4	57.4	57.4	57.4		13.8	13.8		13.8
Actuated g/C Ratio	0.82	0.82	0.82	0.82		0.20	0.20		0.20
v/c Ratio	0.02	0.16	0.04	0.25		0.06	0.04		0.09
Control Delay	10.3	6.4	0.9	0.7		19.5	0.9		4.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	10.3	6.4	0.9	0.7		19.5	0.9		4.9
LOS	B	A	A	A		B	A		A
Approach Delay		6.5		0.7		11.6			4.9
Approach LOS		A		A		B			A
Queue Length 50th (m)	0.0	0.0	0.0	0.0		1.9	0.0		0.0
Queue Length 95th (m)	5.6	42.1	0.6	3.6		4.4	0.7		3.2
Internal Link Dist (m)		203.4		114.6		35.4			53.1
Turn Bay Length (m)	30.0		44.0				25.0		
Base Capacity (vph)	564	2760	715	2778		541	653		652
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.16	0.04	0.25		0.03	0.02		0.04

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 45 (64%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 3.2 — Intersection LOS: A
Intersection Capacity Utilization 53.7% — ICU Level of Service A
Analysis Period (min) 15

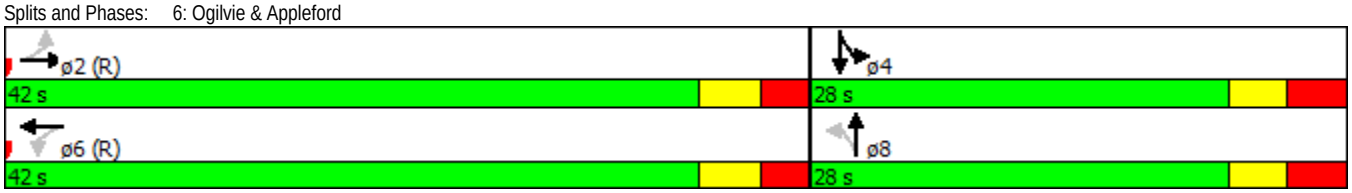
Splits and Phases: 5: Elmlea & Ogilvie



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Volume (vph)	7	308	8	652	5	0	1
Lane Group Flow (vph)	0	344	0	714	0	6	31
Turn Type	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases		2		6		8!	4
Permitted Phases	2		6		8		
Detector Phase	2	2	6	6	8	8	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	33.9	28.2	28.2	28.2
Total Split (s)	42.0	42.0	42.0	42.0	28.0	28.0	28.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.2	3.2	3.2
Lost Time Adjust (s)		0.0		0.0		0.0	0.0
Total Lost Time (s)		5.9		5.9		6.2	6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)		54.4		54.4		12.4	12.4
Actuated g/C Ratio		0.78		0.78		0.18	0.18
v/c Ratio		0.14		0.29		0.02	0.10
Control Delay		5.0		5.3		0.2	16.9
Queue Delay		0.0		0.0		0.0	0.0
Total Delay		5.0		5.3		0.2	16.9
LOS		A		A		A	B
Approach Delay		5.0		5.3		0.2	16.9
Approach LOS		A		A		A	B
Queue Length 50th (m)		1.4		16.2		0.0	2.3
Queue Length 95th (m)		49.0		40.0		0.0	7.1
Internal Link Dist (m)		241.5		819.8		59.6	163.8
Turn Bay Length (m)							
Base Capacity (vph)		2470		2492		444	520
Starvation Cap Reductn		0		0		0	0
Spillback Cap Reductn		0		0		0	0
Storage Cap Reductn		0		0		0	0
Reduced v/c Ratio		0.14		0.29		0.01	0.06

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 5.6	Intersection LOS: A
Intersection Capacity Utilization 44.1%	ICU Level of Service A
Analysis Period (min) 15	
! Phase conflict between lane groups.	

Splits and Phases: 6: Ogilvie & Appleford

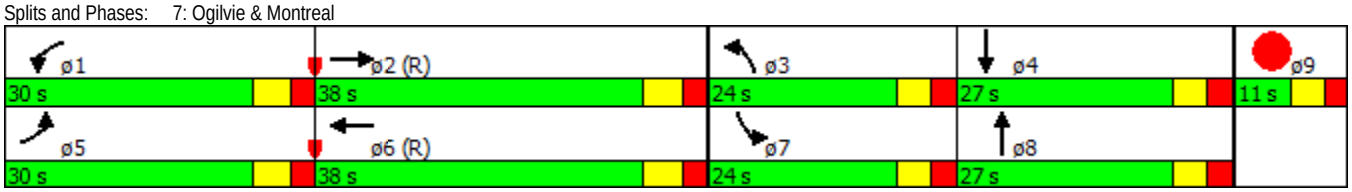


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	421	13	208	871	167	26	168	116	140	289	268
Lane Group Flow (vph)	186	443	14	219	917	176	27	177	122	147	304	282
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	30.0	38.0		30.0	38.0		24.0	27.0		24.0	27.0	
Total Split (%)	23.1%	29.2%		23.1%	29.2%		18.5%	20.8%		18.5%	20.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	19.4	55.2	130.0	21.9	57.7	130.0	7.6	13.5	130.0	15.5	26.0	130.0
Actuated g/C Ratio	0.15	0.42	1.00	0.17	0.44	1.00	0.06	0.10	1.00	0.12	0.20	1.00
v/c Ratio	0.74	0.31	0.01	0.77	0.61	0.12	0.28	0.50	0.08	0.73	0.45	0.19
Control Delay	69.4	28.0	0.0	68.6	32.1	0.2	64.8	59.4	0.1	75.6	48.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	28.0	0.0	68.6	32.1	0.2	64.8	59.4	0.1	75.6	48.2	0.3
LOS	E	C	A	E	C	A	E	E	A	E	D	A
Approach Delay		39.4			33.9			37.7			35.3	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	46.1	38.7	0.0	54.2	92.1	0.0	6.8	23.2	0.0	36.5	38.2	0.0
Queue Length 95th (m)	67.5	64.7	0.0	76.6	#143.6	0.0	16.3	32.6	0.0	58.5	49.1	0.0
Internal Link Dist (m)		142.5			267.6			819.8			148.0	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	318	1440	1489	328	1505	1493	238	547	1490	238	678	1486
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.31	0.01	0.67	0.61	0.12	0.11	0.32	0.08	0.62	0.45	0.19

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 85 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 35.8 Intersection LOS: D
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

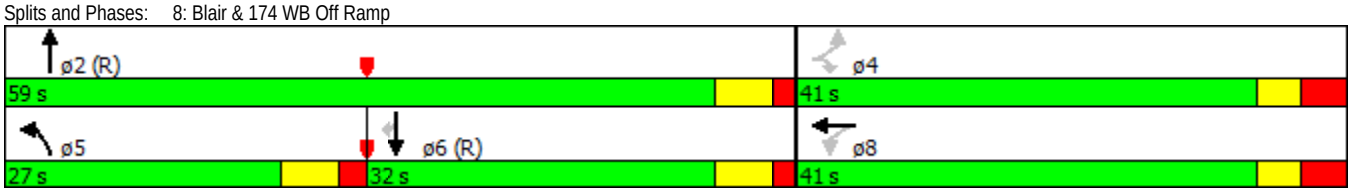
Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	86	152	223	171	449	248	1275	640	86
Lane Group Flow (vph)	91	160	235	180	473	261	1342	674	91
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	41.0	41.0	41.0	41.0		27.0	59.0	32.0	32.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%		27.0%	59.0%	32.0%	32.0%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.2	20.2	20.2	20.2	100.0	13.2	66.9	47.3	47.3
Actuated g/C Ratio	0.20	0.20	0.20	0.20	1.00	0.13	0.67	0.47	0.47
v/c Ratio	0.45	0.37	0.69	0.50	0.32	0.60	0.59	0.29	0.12
Control Delay	40.3	7.1	46.5	38.9	0.6	46.6	11.5	18.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	7.1	46.5	38.9	0.6	46.6	11.5	18.2	3.3
LOS	D	A	D	D	A	D	B	B	A
Approach Delay				20.5			17.2	16.5	
Approach LOS				C			B	B	
Queue Length 50th (m)	15.8	0.0	43.1	31.6	0.0	24.9	64.6	27.6	0.0
Queue Length 95th (m)	27.1	14.0	59.0	45.1	0.0	35.8	114.9	47.1	7.4
Internal Link Dist (m)				106.2			115.3	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	342	624	579	610	1482	677	2267	2304	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.26	0.41	0.30	0.32	0.39	0.59	0.29	0.12

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

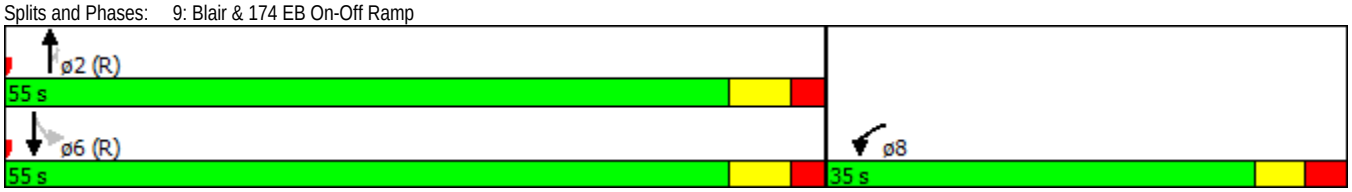
Splits and Phases: 8: Blair & 174 WB Off Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	275	874	697	106	130	557
Lane Group Flow (vph)	289	920	734	112	137	586
Turn Type	Prot	Free	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	25.3		30.5	30.5	30.5	30.5
Total Split (s)	35.0		55.0	55.0	55.0	55.0
Total Split (%)	38.9%		61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	20.5	90.0	56.7	56.7	56.7	56.7
Actuated g/C Ratio	0.23	1.00	0.63	0.63	0.63	0.63
v/c Ratio	0.75	0.61	0.34	0.11	0.34	0.52
Control Delay	44.0	1.9	9.2	2.2	12.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	1.9	9.2	2.2	12.5	12.4
LOS	D	A	A	A	B	B
Approach Delay	12.0		8.3			12.4
Approach LOS	B		A			B
Queue Length 50th (m)	46.7	0.0	28.5	0.0	10.1	50.5
Queue Length 95th (m)	66.5	0.0	47.6	6.8	26.6	94.6
Internal Link Dist (m)	112.2		134.0			208.0
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	540	1498	2134	996	399	1123
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.34	0.11	0.34	0.52

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

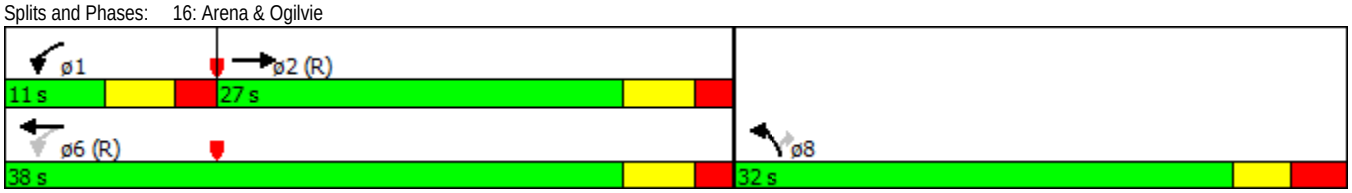
Splits and Phases: 9: Blair & 174 EB On-Off Ramp



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	398	11	656	26	9
Lane Group Flow (vph)	448	12	691	27	9
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.8	10.8	25.8	32.0	32.0
Total Split (s)	27.0	11.0	38.0	32.0	32.0
Total Split (%)	38.6%	15.7%	54.3%	45.7%	45.7%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.0
All-Red Time (s)	2.1	2.1	2.1	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	55.9	54.6	58.1	13.2	13.2
Actuated g/C Ratio	0.80	0.78	0.83	0.19	0.19
v/c Ratio	0.17	0.02	0.25	0.08	0.03
Control Delay	5.5	2.5	3.2	21.1	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	2.5	3.2	21.1	10.4
LOS	A	A	A	C	B
Approach Delay	5.5		3.2	18.4	
Approach LOS	A		A	B	
Queue Length 50th (m)	0.0	0.0	0.0	3.1	0.0
Queue Length 95th (m)	21.6	m1.7	52.7	6.7	2.6
Internal Link Dist (m)	114.6		241.5	57.1	
Turn Bay Length (m)		35.0			20.0
Base Capacity (vph)	2674	672	2813	629	561
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.25	0.04	0.02

Intersection Summary		
Cycle Length: 70		
Actuated Cycle Length: 70		
Offset: 49 (70%), Referenced to phase 2:EBT and 6:WBTL, Start of Green		
Natural Cycle: 70		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.25		
Intersection Signal Delay: 4.5	Intersection LOS: A	
Intersection Capacity Utilization 38.2%	ICU Level of Service A	
Analysis Period (min) 15		
m Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 16: Arena & Ogilvie



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	16	1054	141	180	533	18	204	7	63	22		
Lane Group Flow (vph)	17	1109	148	189	561	19	215	156	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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	52.0	52.0	52.0	15.0	67.0	67.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	52.0%	52.0%	52.0%	15.0%	67.0%	67.0%	28.0%	28.0%	28.0%	28.0%	5%	5%
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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	48.7	48.7	48.7	63.4	63.4	63.4	23.2	23.2	23.2	23.2		
Actuated g/C Ratio	0.49	0.49	0.49	0.63	0.63	0.63	0.23	0.23	0.23	0.23		
v/c Ratio	0.05	0.67	0.21	0.68	0.26	0.03	0.83	0.36	0.28	0.31		
Control Delay	15.6	22.8	3.4	23.2	8.8	0.1	62.9	8.7	34.6	11.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.6	22.8	3.4	23.2	8.8	0.1	62.9	8.7	34.6	11.3		
LOS	B	C	A	C	A	A	E	A	C	B		
Approach Delay		20.4			12.1			40.1		19.2		
Approach LOS		C			B			D		B		
Queue Length 50th (m)	1.8	87.7	0.0	14.8	24.5	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	5.7	111.3	10.1	#36.2	33.2	0.0	#82.5	16.9	23.0	18.3		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	338	1651	716	284	2149	720	268	437	247	424		
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	0.67	0.21	0.67	0.26	0.03	0.80	0.36	0.27	0.30		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 6 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

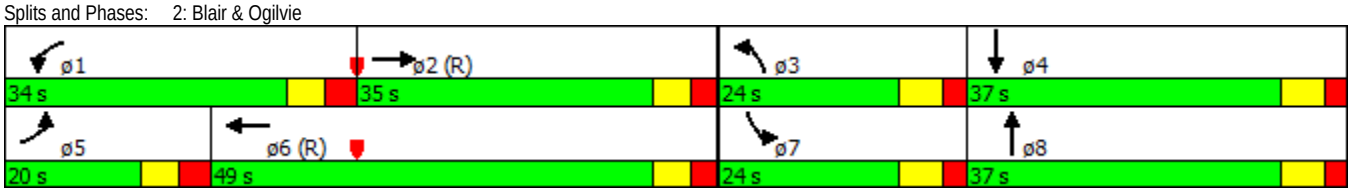
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	113	531	637	571	396	278	310	543	54	680
Lane Group Flow (vph)	119	559	671	601	483	293	326	572	57	788
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	20.0	35.0		34.0	49.0	24.0	37.0		24.0	37.0
Total Split (%)	15.4%	26.9%		26.2%	37.7%	18.5%	28.5%		18.5%	28.5%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	12.3	29.5	130.0	26.3	43.5	15.8	40.7	130.0	9.7	32.2
Actuated g/C Ratio	0.09	0.23	1.00	0.20	0.33	0.12	0.31	1.00	0.07	0.25
v/c Ratio	0.75	0.73	0.46	0.90	0.44	0.73	0.58	0.39	0.45	0.95
Control Delay	84.3	53.2	1.1	68.5	34.5	58.2	40.5	1.3	67.9	69.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	53.2	1.1	68.5	34.5	58.2	40.5	1.3	67.9	69.4
LOS	F	D	A	E	C	E	D	A	E	E
Approach Delay		30.0			53.4		26.0			69.3
Approach LOS		C			D		C			E
Queue Length 50th (m)	30.0	70.9	0.0	77.4	49.7	37.9	74.4	4.5	14.2	105.3
Queue Length 95th (m)	#56.4	91.5	0.0	#106.4	65.7	45.9	110.5	9.5	27.4	#149.6
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	172	768	1457	687	1088	442	559	1466	228	828
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	0.69	0.73	0.46	0.87	0.44	0.66	0.58	0.39	0.25	0.95

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 42.0 — Intersection LOS: D
Intersection Capacity Utilization 93.2% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	959	93	22	507	437	150
Lane Group Flow (vph)	1009	98	23	534	460	158
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	59.2	59.2	59.2	59.2	18.6	18.6
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.21	0.21
v/c Ratio	0.45	0.10	0.08	0.24	0.68	0.41
Control Delay	9.0	2.0	3.7	3.8	37.6	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	2.0	3.7	3.8	37.6	15.4
LOS	A	A	A	A	D	B
Approach Delay	8.4			3.8	31.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	38.4	0.0	0.7	8.3	38.5	8.9
Queue Length 95th (m)	66.4	5.9	2.0	11.5	47.8	22.9
Internal Link Dist (m)	325.3			203.4	84.4	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2229	989	292	2229	942	496
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.10	0.08	0.24	0.49	0.32

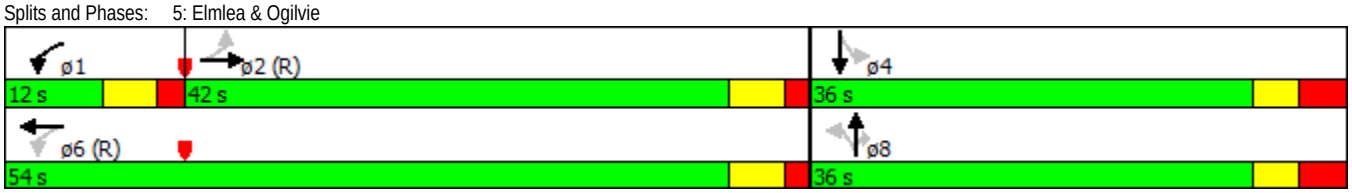
Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 52.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Blair Place & Ogilvie

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	30	1019	48	438	65	5	102	1	1
Lane Group Flow (vph)	32	1100	51	469	0	73	107	0	18
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.5	27.5	10.5	33.8	35.4	35.4	35.4	35.4	35.4
Total Split (s)	42.0	42.0	12.0	54.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	46.7%	46.7%	13.3%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5		6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	60.9	60.9	67.1	68.2		14.3	14.3		14.3
Actuated g/C Ratio	0.68	0.68	0.75	0.76		0.16	0.16		0.16
v/c Ratio	0.06	0.48	0.15	0.18		0.36	0.33		0.07
Control Delay	7.9	8.1	6.6	4.6		36.4	8.3		13.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	7.9	8.1	6.6	4.6		36.4	8.3		13.5
LOS	A	A	A	A		D	A		B
Approach Delay		8.1		4.8		19.7			13.5
Approach LOS		A		A		B			B
Queue Length 50th (m)	1.5	26.9	3.0	16.1		12.1	0.0		0.3
Queue Length 95th (m)	m3.8	113.8	6.3	18.2		19.1	10.7		4.8
Internal Link Dist (m)		203.4		120.1		35.4			53.1
Turn Bay Length (m)	30.0		44.0				25.0		
Base Capacity (vph)	578	2284	355	2560		423	560		508
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	44	0	0		0	1		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.06	0.49	0.14	0.18		0.17	0.19		0.04

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 15 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.48		
Intersection Signal Delay: 8.4	Intersection LOS: A	
Intersection Capacity Utilization 71.5%	ICU Level of Service C	
Analysis Period (min) 15		
m Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 5: Elmlea & Ogilvie



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	1084	443	4	1	12	0
Lane Group Flow (vph)	0	1155	488	0	9	0	32
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	62.0	62.0	62.0	28.0	28.0	28.0	28.0
Total Split (%)	68.9%	68.9%	68.9%	31.1%	31.1%	31.1%	31.1%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		74.4	74.4		12.4		12.4
Actuated g/C Ratio		0.83	0.83		0.14		0.14
v/c Ratio		0.43	0.18		0.05		0.14
Control Delay		5.7	3.6		24.8		11.3
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		5.7	3.6		24.8		11.3
LOS		A	A		C		B
Approach Delay		5.7	3.6		24.8		11.3
Approach LOS		A	A		C		B
Queue Length 50th (m)		85.2	9.9		0.8		0.0
Queue Length 95th (m)		0.5	24.3		4.3		6.4
Internal Link Dist (m)		236.0	802.6		34.7		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2659	2779		346		365
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.43	0.18		0.03		0.09

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 46 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 5.3	Intersection LOS: A
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

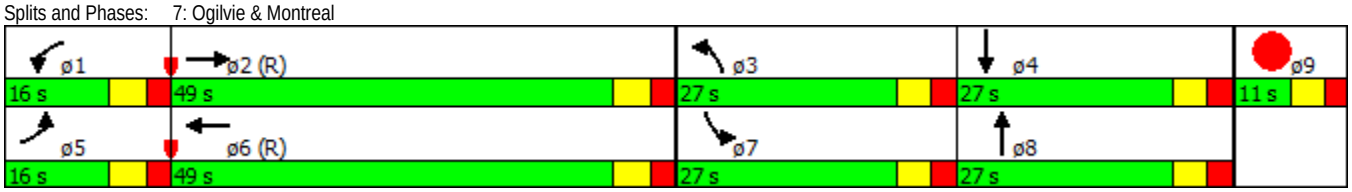
Splits and Phases: 6: Ogilvie & Appleford

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	854	31	120	443	99	27	378	498	202	188	158
Lane Group Flow (vph)	247	899	33	126	466	104	28	398	524	213	198	166
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	16.0	49.0		16.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	12.3%	37.7%		12.3%	37.7%		20.8%	20.8%		20.8%	20.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	24.5	50.1	130.0	17.3	42.8	130.0	7.7	19.2	130.0	19.6	35.7	130.0
Actuated g/C Ratio	0.19	0.39	1.00	0.13	0.33	1.00	0.06	0.15	1.00	0.15	0.27	1.00
v/c Ratio	0.77	0.69	0.02	0.56	0.42	0.07	0.28	0.80	0.35	0.84	0.21	0.11
Control Delay	68.3	38.1	0.0	62.4	35.3	0.1	64.7	65.8	0.7	80.3	37.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	38.1	0.0	62.4	35.3	0.1	64.7	65.8	0.7	80.3	37.7	0.2
LOS	E	D	A	E	D	A	E	E	A	F	D	A
Approach Delay		43.4			35.0			29.8			42.6	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	62.5	104.7	0.0	30.6	48.7	0.0	7.0	51.8	0.0	52.8	21.0	0.0
Queue Length 95th (m)	#110.8	135.0	0.0	49.8	64.2	0.0	16.8	69.3	0.0	#88.4	32.2	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	319	1305	1485	225	1116	1478	277	547	1488	277	931	1481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.69	0.02	0.56	0.42	0.07	0.10	0.73	0.35	0.77	0.21	0.11

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 37.7 Intersection LOS: D
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	123	472	93	105	138	297	877	1707	169
Lane Group Flow (vph)	129	497	98	111	145	313	923	1797	178
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	36.0	36.0	36.0	36.0		31.0	94.0	63.0	63.0
Total Split (%)	27.7%	27.7%	27.7%	27.7%		23.8%	72.3%	48.5%	48.5%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	22.4	22.4	22.4	22.4	130.0	17.6	94.7	70.7	70.7
Actuated g/C Ratio	0.17	0.17	0.17	0.17	1.00	0.14	0.73	0.54	0.54
v/c Ratio	0.65	0.93	0.34	0.36	0.10	0.70	0.37	0.68	0.20
Control Delay	64.4	41.2	48.3	48.8	0.1	62.3	7.8	25.2	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	64.4	41.2	48.3	48.8	0.1	62.3	7.8	25.3	9.9
LOS	E	D	D	D	A	E	A	C	A
Approach Delay				28.7			21.6	23.9	
Approach LOS				C			C	C	
Queue Length 50th (m)	30.5	45.3	21.8	24.8	0.0	40.0	44.4	92.5	9.2
Queue Length 95th (m)	49.7	#100.9	36.9	40.6	0.0	53.1	62.5	m105.7	m13.7
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	257	598	380	400	1478	622	2469	2648	875
Starvation Cap Reductn	0	0	0	0	0	0	0	113	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	0.50	0.83	0.26	0.28	0.10	0.50	0.37	0.71	0.20

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 50 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 90.4%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 8: Blair & 174 WB Off Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	198	581	776	311	506	895
Lane Group Flow (vph)	208	612	817	327	533	942
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	25.3		30.5	30.5	16.2	30.5
Total Split (s)	30.0		52.0	52.0	28.0	80.0
Total Split (%)	27.3%		47.3%	47.3%	25.5%	72.7%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	18.3	110.0	45.5	45.5	79.4	78.9
Actuated g/C Ratio	0.17	1.00	0.41	0.41	0.72	0.72
v/c Ratio	0.74	0.40	0.58	0.41	0.89	0.74
Control Delay	58.7	0.8	27.0	3.9	36.3	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	0.8	27.0	3.9	36.3	14.8
LOS	E	A	C	A	D	B
Approach Delay	15.5		20.4			22.6
Approach LOS	B		C			C
Queue Length 50th (m)	42.7	0.0	69.9	0.0	65.9	107.7
Queue Length 95th (m)	64.4	0.0	89.3	16.1	#146.2	188.4
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	365	1517	1402	805	600	1279
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.40	0.58	0.41	0.89	0.74

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	1094	1	516	33	17
Lane Group Flow (vph)	1181	1	543	35	18
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.8	11.0	26.8	32.0	32.0
Total Split (s)	47.0	11.0	58.0	32.0	32.0
Total Split (%)	52.2%	12.2%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.0
All-Red Time (s)	2.1	2.1	2.1	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	71.5	71.4	73.7	13.2	13.2
Actuated g/C Ratio	0.79	0.79	0.82	0.15	0.15
v/c Ratio	0.44	0.00	0.20	0.14	0.08
Control Delay	2.1	12.0	6.0	32.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	2.1	12.0	6.0	32.1	12.8
LOS	A	B	A	C	B
Approach Delay	2.1		6.0	25.5	
Approach LOS	A		A	C	
Queue Length 50th (m)	1.9	0.0	11.4	5.6	0.0
Queue Length 95th (m)	8.4	m0.6	43.4	11.2	4.8
Internal Link Dist (m)	120.1		236.0	41.3	
Turn Bay Length (m)		35.0			20.0
Base Capacity (vph)	2678	347	2776	489	444
Starvation Cap Reductn	218	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.00	0.20	0.07	0.04

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 25 (28%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 16: Arena & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	3	655	143	210	545	3	191	2	10	1		
Lane Group Flow (vph)	3	689	151	221	574	3	201	187	11	4		
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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	42.0	42.0	42.0	15.0	57.0	57.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	46.7%	46.7%	46.7%	16.7%	63.3%	63.3%	31.1%	31.1%	31.1%	31.1%	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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	43.5	43.5	43.5	58.8	58.8	58.8	17.8	17.8	17.8	17.8		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.20	0.20	0.20	0.20		
v/c Ratio	0.01	0.42	0.20	0.48	0.26	0.00	0.76	0.42	0.06	0.01		
Control Delay	15.7	17.4	3.7	11.1	7.7	0.0	52.0	7.8	27.5	19.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.7	17.4	3.7	11.1	7.7	0.0	52.0	7.8	27.5	19.5		
LOS	B	B	A	B	A	A	D	A	C	B		
Approach Delay		15.0			8.6			30.7		25.4		
Approach LOS		B			A			C		C		
Queue Length 50th (m)	0.3	39.3	0.0	13.4	19.2	0.0	32.7	0.3	1.5	0.1		
Queue Length 95th (m)	2.0	61.9	10.9	29.4	34.6	0.0	54.2	15.8	5.6	2.7		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	371	1639	774	465	2213	969	322	499	243	377		
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	0.01	0.42	0.20	0.48	0.26	0.00	0.62	0.37	0.05	0.01		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.6 — Intersection LOS: B
Intersection Capacity Utilization 64.5% — ICU Level of Service C
Analysis Period (min) 15

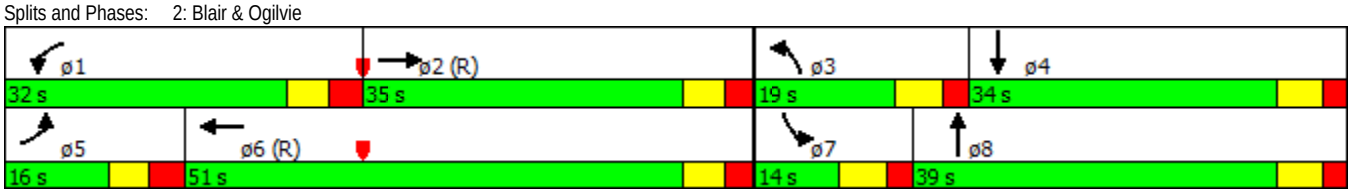
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	97	437	363	394	368	334	218	420	47	213
Lane Group Flow (vph)	102	460	382	415	423	352	229	442	49	308
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	16.0	35.0		32.0	51.0	19.0	39.0		14.0	34.0
Total Split (%)	13.3%	29.2%		26.7%	42.5%	15.8%	32.5%		11.7%	28.3%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	11.8	43.9	120.0	20.3	52.4	12.5	24.9	120.0	7.1	17.1
Actuated g/C Ratio	0.10	0.37	1.00	0.17	0.44	0.10	0.21	1.00	0.06	0.14
v/c Ratio	0.61	0.37	0.26	0.75	0.29	1.03	0.62	0.30	0.49	0.62
Control Delay	68.3	31.1	0.4	55.9	23.2	108.9	51.1	0.5	71.5	46.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	31.1	0.4	55.9	23.2	108.9	51.1	0.5	71.5	46.3
LOS	E	C	A	E	C	F	D	A	E	D
Approach Delay		22.7			39.4		49.1			49.8
Approach LOS		C			D		D			D
Queue Length 50th (m)	23.0	40.6	0.0	48.4	32.5	~45.6	51.8	0.0	11.3	31.8
Queue Length 95th (m)	#51.7	67.2	0.0	62.2	49.5	#75.2	69.8	0.0	24.1	41.5
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	167	1240	1487	691	1461	342	483	1498	105	772
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	0.61	0.37	0.26	0.60	0.29	1.03	0.47	0.30	0.47	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 38.7 Intersection LOS: D
Intersection Capacity Utilization 80.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	611	89	27	603	182	44
Lane Group Flow (vph)	643	94	28	635	192	46
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	43.0	43.0	43.0	43.0	32.0	32.0
Total Split (%)	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	49.5	49.5	49.5	49.5	13.3	13.3
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.18	0.18
v/c Ratio	0.29	0.09	0.06	0.28	0.33	0.15
Control Delay	6.8	2.3	4.8	4.7	27.2	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	2.3	4.8	4.7	27.2	8.1
LOS	A	A	A	A	C	A
Approach Delay	6.2			4.7	23.5	
Approach LOS	A			A	C	
Queue Length 50th (m)	14.2	0.0	0.6	10.6	13.0	0.0
Queue Length 95th (m)	39.6	6.5	3.5	19.5	16.3	6.2
Internal Link Dist (m)	325.3			203.4	117.8	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2236	998	476	2236	1131	543
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.09	0.06	0.28	0.17	0.08

Intersection Summary

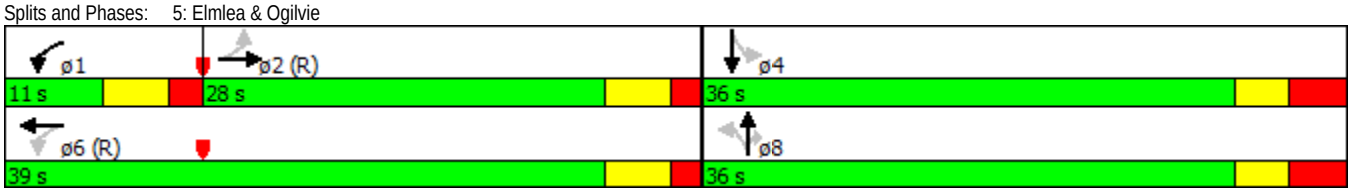
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 8.1 — Intersection LOS: A
Intersection Capacity Utilization 43.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Blair Place & Ogilvie

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	24	506	72	518	107	7	84	2	4
Lane Group Flow (vph)	25	571	76	547	0	120	88	0	30
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.5	27.5	10.5	33.8	35.4	35.4	35.4	35.4	35.4
Total Split (s)	28.0	28.0	11.0	39.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	37.3%	37.3%	14.7%	52.0%	48.0%	48.0%	48.0%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5		6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	42.6	42.6	51.1	52.2		15.2	15.2		15.2
Actuated g/C Ratio	0.57	0.57	0.68	0.70		0.20	0.20		0.20
v/c Ratio	0.06	0.30	0.14	0.23		0.47	0.22		0.09
Control Delay	9.4	8.0	3.7	3.8		30.3	3.5		10.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	9.4	8.0	3.7	3.8		30.3	3.5		10.0
LOS	A	A	A	A		C	A		A
Approach Delay		8.1		3.7		18.9			10.0
Approach LOS		A		A		B			A
Queue Length 50th (m)	1.0	11.2	0.9	3.4		15.9	0.0		0.7
Queue Length 95th (m)	3.1	16.5	3.1	32.0		22.6	5.3		5.2
Internal Link Dist (m)		203.4		380.1		35.4			53.1
Turn Bay Length (m)	30.0		44.0				25.0		
Base Capacity (vph)	452	1906	529	2358		502	660		620
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.06	0.30	0.14	0.23		0.24	0.13		0.05

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 11 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Elmlea & Ogilvie

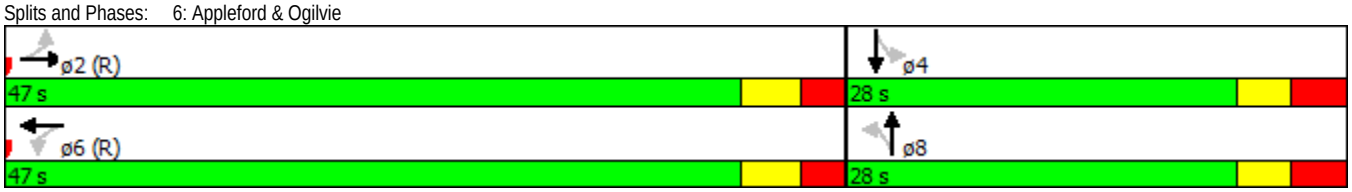


Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	540	493	1	0	13	2
Lane Group Flow (vph)	0	582	537	0	2	0	38
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	47.0	47.0	47.0	28.0	28.0	28.0	28.0
Total Split (%)	62.7%	62.7%	62.7%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		59.4	59.4		12.4		12.4
Actuated g/C Ratio		0.79	0.79		0.17		0.17
v/c Ratio		0.23	0.20		0.01		0.15
Control Delay		6.4	4.5		0.0		15.6
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		6.4	4.5		0.0		15.6
LOS		A	A		A		B
Approach Delay		6.4	4.5		0.0		15.6
Approach LOS		A	A		A		B
Queue Length 50th (m)		31.5	11.2		0.0		2.0
Queue Length 95th (m)		56.6	28.1		0.0		7.9
Internal Link Dist (m)		380.1	802.6		38.9		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2528	2669		442		431
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.23	0.20		0.00		0.09

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 45 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.23
Intersection Signal Delay: 5.8 — Intersection LOS: A
Intersection Capacity Utilization 44.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Appleford & Ogilvie

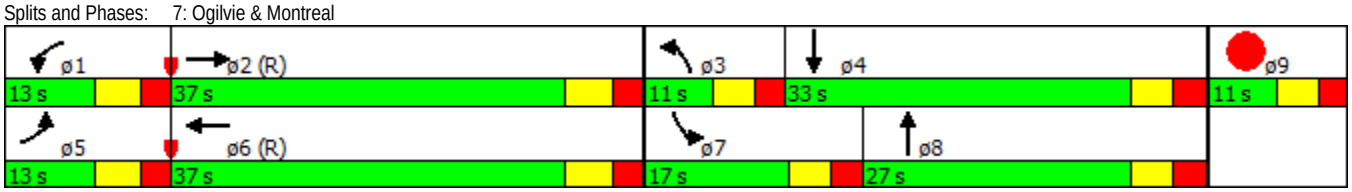


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	445	30	158	428	119	27	178	233	148	177	132
Lane Group Flow (vph)	158	468	32	166	451	125	28	187	245	156	186	139
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	13.0	37.0		13.0	37.0		11.0	27.0		17.0	33.0	
Total Split (%)	12.4%	35.2%		12.4%	35.2%		10.5%	25.7%		16.2%	31.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	20.7	35.2	105.0	21.8	36.3	105.0	5.3	12.9	105.0	11.2	23.2	105.0
Actuated g/C Ratio	0.20	0.34	1.00	0.21	0.35	1.00	0.05	0.12	1.00	0.11	0.22	1.00
v/c Ratio	0.47	0.41	0.02	0.47	0.39	0.08	0.33	0.45	0.16	0.86	0.25	0.09
Control Delay	43.8	28.4	0.0	43.1	27.5	0.1	58.8	45.4	0.2	86.2	35.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	28.4	0.0	43.1	27.5	0.1	58.8	45.4	0.2	86.2	35.1	0.1
LOS	D	C	A	D	C	A	E	D	A	F	D	A
Approach Delay		30.7			26.4			22.2			41.6	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	29.3	36.5	0.0	30.6	34.5	0.0	5.6	19.3	0.0	31.8	17.9	0.0
Queue Length 95th (m)	50.4	56.1	0.0	52.8	54.1	0.0	14.7	27.2	0.0	#66.9	24.8	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	334	1135	1492	351	1170	1486	85	678	1494	182	871	1489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.41	0.02	0.47	0.39	0.08	0.33	0.28	0.16	0.86	0.21	0.09

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 42 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 29.9 Intersection LOS: C
Intersection Capacity Utilization 66.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

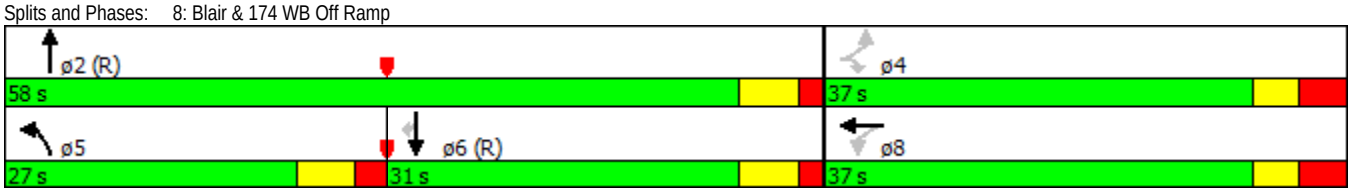
Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	113	311	133	134	162	312	672	806	175
Lane Group Flow (vph)	119	327	140	141	171	328	707	848	184
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	37.0	37.0	37.0	37.0		27.0	58.0	31.0	31.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%		28.4%	61.1%	32.6%	32.6%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	16.9	16.9	16.9	16.9	95.0	14.7	65.2	44.1	44.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	1.00	0.15	0.69	0.46	0.46
v/c Ratio	0.57	0.61	0.46	0.44	0.11	0.65	0.30	0.38	0.23
Control Delay	44.4	8.4	38.2	37.4	0.2	52.9	5.2	19.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	8.4	38.2	37.4	0.2	52.9	5.2	19.2	4.5
LOS	D	A	D	D	A	D	A	B	A
Approach Delay				23.5			20.3	16.6	
Approach LOS				C			C	B	
Queue Length 50th (m)	20.7	0.0	23.9	24.0	0.0	32.0	14.5	34.0	0.0
Queue Length 95th (m)	31.1	18.0	33.9	33.7	0.0	42.0	25.7	62.6	14.8
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	375	705	538	567	1494	712	2325	2259	801
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	0.32	0.46	0.26	0.25	0.11	0.46	0.30	0.38	0.23

Intersection Summary			
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 23 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 65.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Blair & 174 WB Off Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	503	634	163	255	572
Lane Group Flow (vph)	121	529	667	172	268	602
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	10.0
Minimum Split (s)	25.3		30.5	30.5	11.0	30.5
Total Split (s)	25.0		55.0	55.0	15.0	70.0
Total Split (%)	26.3%		57.9%	57.9%	15.8%	73.7%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	12.6	95.0	48.5	48.5	70.1	69.6
Actuated g/C Ratio	0.13	1.00	0.51	0.51	0.74	0.73
v/c Ratio	0.54	0.35	0.39	0.20	0.45	0.46
Control Delay	47.1	0.6	15.0	2.6	14.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	0.6	15.0	2.6	14.1	13.0
LOS	D	A	B	A	B	B
Approach Delay	9.3		12.4			13.3
Approach LOS	A		B			B
Queue Length 50th (m)	21.2	0.0	37.3	0.0	18.4	38.3
Queue Length 95th (m)	36.3	0.0	50.0	9.5	56.4	141.5
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	333	1517	1730	858	598	1306
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.35	0.39	0.20	0.45	0.46

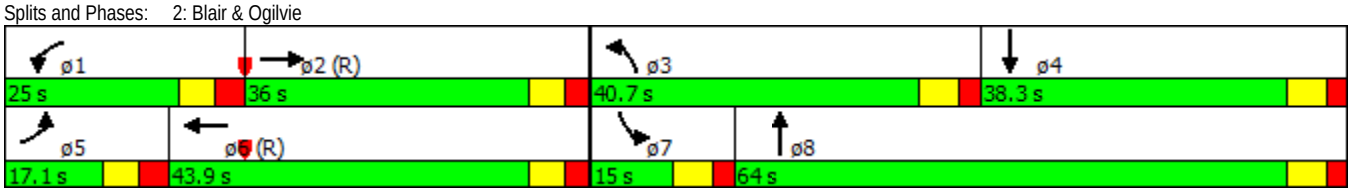
Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 88 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	51	286	179	309	449	553	575	380	53	306
Lane Group Flow (vph)	54	301	188	325	501	582	605	400	56	422
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	17.1	36.0		25.0	43.9	40.7	64.0		15.0	38.3
Total Split (%)	12.2%	25.7%		17.9%	31.4%	29.1%	45.7%		10.7%	27.4%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	8.9	37.7	140.0	17.4	48.7	29.5	53.2	140.0	8.0	29.2
Actuated g/C Ratio	0.06	0.27	1.00	0.12	0.35	0.21	0.38	1.00	0.06	0.21
v/c Ratio	0.50	0.33	0.13	0.80	0.43	0.84	0.89	0.27	0.58	0.61
Control Delay	79.2	44.8	0.2	81.0	34.8	64.6	57.1	0.4	88.0	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Total Delay	79.2	44.8	0.2	81.0	34.8	64.6	58.7	0.4	88.0	50.3
LOS	E	D	A	F	C	E	E	A	F	D
Approach Delay		32.8			53.0		46.2			54.7
Approach LOS		C			D		D			D
Queue Length 50th (m)	14.6	37.5	0.0	45.1	63.5	80.1	153.9	0.0	15.3	50.8
Queue Length 95th (m)	28.9	52.7	0.0	#65.0	58.1	97.4	199.2	0.0	#31.3	68.8
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	124	912	1464	431	1163	803	732	1483	102	762
Starvation Cap Reductn	0	0	0	0	0	0	39	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	0.44	0.33	0.13	0.75	0.43	0.72	0.87	0.27	0.55	0.55

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 46.9		Intersection LOS: D	
Intersection Capacity Utilization 91.5%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Blair & Ogilvie

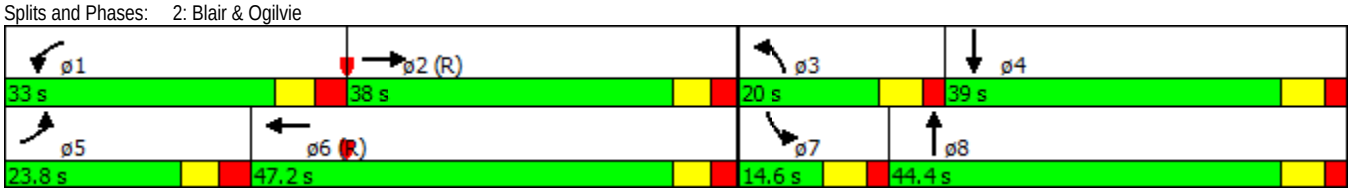


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	113	531	637	571	396	278	310	543	54	680
Lane Group Flow (vph)	119	559	671	601	483	293	326	572	57	788
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	23.8	38.0		33.0	47.2	20.0	44.4		14.6	39.0
Total Split (%)	18.3%	29.2%		25.4%	36.3%	15.4%	34.2%		11.2%	30.0%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	13.8	32.4	130.0	25.7	44.3	13.4	40.5	130.0	7.7	32.3
Actuated g/C Ratio	0.11	0.25	1.00	0.20	0.34	0.10	0.31	1.00	0.06	0.25
v/c Ratio	0.66	0.66	0.46	0.92	0.44	0.86	0.59	0.39	0.57	0.95
Control Delay	73.3	48.6	1.1	72.3	34.3	76.8	38.0	1.6	81.6	68.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.3	48.6	1.1	72.3	34.3	76.8	38.0	1.6	81.6	68.7
LOS	E	D	A	E	C	E	D	A	F	E
Approach Delay		27.1			55.4		30.1			69.5
Approach LOS		C			E		C			E
Queue Length 50th (m)	29.6	68.7	0.0	78.2	49.3	38.9	74.6	5.4	14.4	103.8
Queue Length 95th (m)	48.9	88.6	0.0	#109.9	67.2	#59.8	106.8	14.1	#30.4	#142.3
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	221	844	1457	662	1107	341	556	1466	105	836
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	0.54	0.66	0.46	0.91	0.44	0.86	0.59	0.39	0.54	0.94

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 42.8 — Intersection LOS: D
Intersection Capacity Utilization 93.2% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie

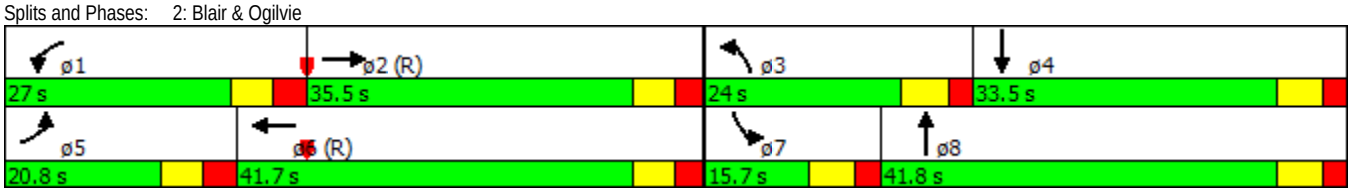


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	97	437	363	394	368	334	218	420	47	213
Lane Group Flow (vph)	102	460	382	415	423	352	229	442	49	308
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	20.8	35.5		27.0	41.7	24.0	41.8		15.7	33.5
Total Split (%)	17.3%	29.6%		22.5%	34.8%	20.0%	34.8%		13.1%	27.9%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	11.8	41.4	120.0	19.2	48.8	16.4	27.5	120.0	8.0	16.7
Actuated g/C Ratio	0.10	0.34	1.00	0.16	0.41	0.14	0.23	1.00	0.07	0.14
v/c Ratio	0.61	0.39	0.26	0.79	0.31	0.78	0.56	0.30	0.43	0.63
Control Delay	67.3	33.0	0.4	59.7	26.4	63.0	46.6	0.5	65.4	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.3	33.0	0.4	59.7	26.4	63.0	46.6	0.5	65.4	47.1
LOS	E	C	A	E	C	E	D	A	E	D
Approach Delay		23.5			42.9		32.3			49.6
Approach LOS		C			D		C			D
Queue Length 50th (m)	23.3	43.3	0.0	48.4	34.5	41.3	49.9	0.0	11.2	31.9
Queue Length 95th (m)	41.0	67.1	0.0	65.7	56.2	57.4	67.1	0.0	23.8	41.5
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	198	1170	1487	565	1361	479	524	1498	129	758
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	0.39	0.26	0.73	0.31	0.73	0.44	0.30	0.38	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 34.5 — Intersection LOS: C
Intersection Capacity Utilization 80.4% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Blair & Ogilvie



Appendix D

Background Traffic Growth Analysis

Blair / Ogilvie
8 hrs

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2006	Thursday 17 August	3925	4356	9959	9187	7261	9011	7695	6286	57680
2008	Friday 20 June	4351	4222	9720	9539	7739	8736	7679	6992	58978
2010	Monday 7 June	4061	3480	7684	9248	7793	6996	6289	6103	51654

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	4356	3925	8281	57680				
2008	4222	4351	8573	58978	-3.1%	10.9%	3.5%	2.3%
2010	3480	4061	7541	51654	-17.6%	-6.7%	-12.0%	-12.4%

Regression Estimate	2006	4457	4044	8502
Regression Estimate	2010	3581	4180	7762
Average Annual Change		**-5.32%**	**0.83%**	**-2.25%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	7695	6286	13981	57680				
2008	7679	6992	14671	58978	-0.2%	11.2%	4.9%	2.3%
2010	6289	6103	12392	51654	-18.1%	-12.7%	-15.5%	-12.4%

Regression Estimate	2006	7924	6552	14476
Regression Estimate	2010	6518	6369	12887
Average Annual Change		**-4.77%**	**-0.71%**	**-2.87%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	9011	7261	16272	57680				
2008	8736	7739	16475	58978	-3.1%	6.6%	1.2%	2.3%
2010	6996	7793	14789	51654	-19.9%	0.7%	-10.2%	-12.4%

Regression Estimate	2006	9255	7332	16587
Regression Estimate	2010	7240	7864	15104
Average Annual Change		**-5.95%**	**1.77%**	**-2.31%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	9959	9187	19146	57680				
2008	9720	9539	19259	58978	-2.4%	3.8%	0.6%	2.3%
2010	7684	9248	16932	51654	-20.9%	-3.1%	-12.1%	-12.4%

Regression Estimate	2006	10259	9294	19553
Regression Estimate	2010	7984	9355	17339
Average Annual Change		**-6.08%**	**0.16%**	**-2.96%**

Blair / Ogilvie
AM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2006	Thursday 17 August	372	615	1336	736	854	627	341	925	5806
2008	Friday 20 June	391	617	1448	780	1132	825	499	1248	6940
2010	Monday 7 June	392	597	1451	829	1123	766	451	1225	6834

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	615	372	987	5806				
2008	617	391	1008	6940	0.3%	5.1%	2.1%	19.5%
2010	597	392	989	6834	-3.2%	0.3%	-1.9%	-1.5%

Regression Estimate	2006	619	375	994
Regression Estimate	2010	601	395	996
Average Annual Change		**-0.74%**	**1.31%**	**0.05%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	341	925	1266	5806				
2008	499	1248	1747	6940	46.3%	34.9%	38.0%	19.5%
2010	451	1225	1676	6834	-9.6%	-1.8%	-4.1%	-1.5%

Regression Estimate	2006	375	983	1358
Regression Estimate	2010	485	1283	1768
Average Annual Change		**6.64%**	**6.89%**	**6.82%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	627	854	1481	5806				
2008	825	1132	1957	6940	31.6%	32.6%	32.1%	19.5%
2010	766	1123	1889	6834	-7.2%	-0.8%	-3.5%	-1.5%

Regression Estimate	2006	670	902	1572
Regression Estimate	2010	809	1171	1980
Average Annual Change		**4.83%**	**6.74%**	**5.94%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	1336	736	2072	5806				
2008	1448	780	2228	6940	8.4%	6.0%	7.5%	19.5%
2010	1451	829	2280	6834	0.2%	6.3%	2.3%	-1.5%

Regression Estimate	2006	1354	735	2089
Regression Estimate	2010	1469	828	2297
Average Annual Change		**2.06%**	**3.02%**	**2.40%**

Blair / Ogilvie
PM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2006	Thursday 17 August	698	855	1837	1826	1085	2098	2043	884	11326
2008	Friday 20 June	787	700	1649	1773	1124	1644	1535	978	10190
2010	Monday 7 June	732	365	741	1726	1132	1196	1299	617	7808

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	855	698	1553	11326				
2008	700	787	1487	10190	-18.1%	12.8%	-4.2%	-10.0%
2010	365	732	1097	7808	-47.9%	-7.0%	-26.2%	-23.4%

Regression Estimate	2006	885	722	1607
Regression Estimate	2010	395	756	1151
Average Annual Change		**-18.26%**	**1.16%**	**-8.00%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	2043	884	2927	11326				
2008	1535	978	2513	10190	-24.9%	10.6%	-14.1%	-10.0%
2010	1299	617	1916	7808	-15.4%	-36.9%	-23.8%	-23.4%

Regression Estimate	2006	1998	960	2958
Regression Estimate	2010	1254	693	1947
Average Annual Change		**-10.99%**	**-7.83%**	**-9.93%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2006	2098	1085	3183	11326				
2008	1644	1124	2768	10190	-21.6%	3.6%	-13.0%	-10.0%
2010	1196	1132	2328	7808	-27.3%	0.7%	-15.9%	-23.4%

Regression Estimate	2006	2097	1090	3187
Regression Estimate	2010	1195	1137	2332
Average Annual Change		**-13.12%**	**1.06%**	**-7.51%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2006	1837	1826	3663	11326				
2008	1649	1773	3422	10190	-10.2%	-2.9%	-6.6%	-10.0%
2010	741	1726	2467	7808	-55.1%	-2.7%	-27.9%	-23.4%

Regression Estimate	2006	1957	1825	3782
Regression Estimate	2010	861	1725	2586
Average Annual Change		**-18.56%**	**-1.40%**	**-9.07%**

Appendix E

Collision Data and Analysis

APPLEFORD ST & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **5**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
1	2011-04-14	Thu	16:16	Clear	Daylight	Rear end	P.D. only	V1 E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 E	Dry	Stopped	Pick-up truck	Other motor vehicle	
2	2012-01-19	Thu	12:20	Snow	Daylight	Rear end	P.D. only	V1 S	Ice	Slowing or	Automobile, station	Other motor vehicle	0
								V2 S	Ice	Stopped	Automobile, station	Other motor vehicle	
3	2012-01-20	Fri	15:44	Clear	Daylight	Sideswipe	P.D. only	V1 W	Wet	Changing lanes	Automobile, station	Other motor vehicle	0
								V2 W	Wet	Going ahead	Passenger van	Other motor vehicle	
4	2012-01-26	Thu	09:00	Clear	Daylight	Rear end	Non-fatal	V1 W	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2 W	Wet	Stopped	Automobile, station	Other motor vehicle	
5	2013-09-25	We	12:11	Clear	Daylight	Rear end	Non-fatal	V1 W	Dry	Slowing or	Truck and trailer	Other motor vehicle	0
								V2 W	Dry	Stopped	Automobile, station	Other motor vehicle	

BATHGATE DR & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **12**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
6	2011-01-27	Thu	12:05	Clear	Daylight	Rear end	P.D. only	V1 S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 S	Dry	Stopped	Pick-up truck	Other motor vehicle	
7	2011-12-27	Tue	18:51	Rain	Dark	Angle	P.D. only	V1 W	Loose snow	Turning right	Automobile, station	Other motor vehicle	0
								V2 S	Loose snow	Stopped	Automobile, station	Other motor vehicle	
								V3 S	Loose snow	Stopped	Passenger van	Other motor vehicle	
8	2011-12-28	We	22:20	Clear	Dark	Sideswipe	P.D. only	V1 W	Ice	Going ahead	Automobile, station	Other motor vehicle	0
								V2 W	Ice	Going ahead	Automobile, station	Other motor vehicle	
9	2012-02-24	Fri	15:00	Snow	Daylight	Turning	P.D. only	V1 W	Loose snow	Turning left	Pick-up truck	Other motor vehicle	0
								V2 E	Loose snow	Going ahead	Automobile, station	Other motor vehicle	
10	2012-03-11	Sun	13:52	Clear	Daylight	Rear end	P.D. only	V1 W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 W	Dry	Slowing or	Automobile, station	Other motor vehicle	
11	2012-10-01	Mo	11:00	Clear	Daylight	Rear end	Non-fatal	V1 E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2 E	Dry	Stopped	Pick-up truck	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

12	2012-12-13	Thu	09:39	Clear	Daylight	Turning	P.D. only	V1	N	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Turning right	Automobile, station	Other motor vehicle	
13	2013-05-29	We	13:24	Clear	Daylight	Angle	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Pick-up truck	Other motor vehicle	
14	2013-06-07	Fri	21:30	Rain	Dark	Angle	P.D. only	V1	W	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Turning left	Automobile, station	Other motor vehicle	
15	2013-08-23	Fri	07:45	Clear	Daylight	Angle	P.D. only	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Going ahead	Pick-up truck	Other motor vehicle	
16	2013-10-11	Fri	14:00	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Slowing or	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Stopped	Automobile, station	Other motor vehicle	
17	2013-12-12	Thu	17:00	Clear	Dark	Rear end	P.D. only	V1	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Slowing or	Pick-up truck	Other motor vehicle	
								V3	E	Dry	Stopped	Automobile, station	Other motor vehicle	

BLAIR PL & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **14**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
18	2011-08-15	Mo	10:00	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
19	2011-11-23	We	08:07	Snow	Daylight	Single vehicle	P.D. only	V1	E	Loose snow	Turning right	Automobile, station	Skidding/Sliding	0
20	2011-12-12	Mo	07:16	Snow	Dawn	Angle	P.D. only	V1	E	Dry	Slowing or	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Going ahead	Automobile, station	Other motor vehicle	
21	2012-02-27	Mo	13:07	Snow	Daylight	Other	P.D. only	V1	N	Packed snow	Turning right	Truck - closed	Other motor vehicle	0
								V2	W	Packed snow	Stopped	Pick-up truck	Other motor vehicle	
								V3	W	Packed snow	Stopped	Pick-up truck	Other motor vehicle	
22	2012-03-03	Sat	16:44	Clear	Daylight	Angle	P.D. only	V1	E	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Wet	Turning left	Automobile, station	Other motor vehicle	
23	2012-06-20	We	16:07	Clear	Daylight	Sideswipe	P.D. only	V1	E	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

24	2012-06-20	We	15:40	Clear	Daylight	Turning	Non-fatal	V1	W	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
25	2012-06-27	We	10:45	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Stopped	Pick-up truck	Other motor vehicle	
26	2012-09-10	Mo	16:01	Clear	Daylight	Angle	P.D. only	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Pick-up truck	Other motor vehicle	
27	2012-09-10	Mo	17:34	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Stopped	Automobile, station	Other motor vehicle	
28	2012-12-06	Thu	19:20	Clear	Dark	Other	P.D. only	V1	S	Dry	Reversing	Pick-up truck	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
29	2013-01-19	Sat	09:59	Snow	Daylight	Rear end	P.D. only	V1	E	Loose snow	Turning right	Pick-up truck	Other motor vehicle	0
								V2	E	Loose snow	Turning right	Automobile, station	Other motor vehicle	
30	2013-03-28	Thu	15:47	Clear	Daylight	Rear end	Non-fatal	V1	W	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Slowing or	Automobile, station	Other motor vehicle	
								V3	W	Dry	Stopped	Pick-up truck	Other motor vehicle	
31	2013-11-14	Thu	12:36	Clear	Daylight	Single vehicle	P.D. only	V1	E	Dry	Turning right	Automobile, station	Curb	0

BLAIR RD & BLAIR RD RAMP 15

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **38**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
32	2011-01-01	Sat	02:35	Clear	Dark	Other	P.D. only	V1	S	Wet	Turning left	Automobile, station	Curb	0
								V2	W	Wet	Stopped	Automobile, station	Other motor vehicle	
33	2011-01-31	Mo	00:00	Clear	Unknown	Rear end	P.D. only	V1	N	Dry	Going ahead	Passenger van	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
34	2011-02-08	Tue	13:20	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Turning left	Snow plow	Other motor vehicle	0
								V2	S	Dry	Going ahead	Municipal transit bus	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

35	2011-04-28	Thu	12:54	Clear	Daylight	Turning	P.D. only	V1	N	Dry	Going ahead	Pick-up truck	Other motor vehicle		0
								V2	S	Dry	Turning left	Automobile, station	Other motor vehicle		
36	2011-05-10	Tue	14:04	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
37	2011-05-16	Mo	11:10	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
38	2011-07-11	Mo	12:13	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Skidding/Sliding		0
								V2	S	Wet	Turning left	Automobile, station	Other motor vehicle		
39	2011-07-27	We	16:12	Clear	Daylight	Rear end	Non-fatal	V1	S	Dry	Going ahead	Passenger van	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
								V3	S	Dry	Stopped	Automobile, station	Other motor vehicle		
40	2011-08-12	Fri	14:22	Clear	Daylight	Turning	P.D. only	V1	N	Dry	Slowing or	Pick-up truck	Other motor vehicle		0
								V2	S	Dry	Turning left	Police vehicle	Other motor vehicle		
41	2011-09-20	Tue	13:51	Clear	Daylight	Single vehicle	P.D. only	V1	E	Dry	Turning right	Automobile, station	Curb		0
42	2011-10-03	Mo	07:12	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Pick-up truck	Other motor vehicle		
43	2011-10-15	Sat	16:43	Rain	Daylight	Sideswipe	P.D. only	V1	S	Wet	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
44	2011-10-20	Thu	19:22	Rain	Dark	Turning	P.D. only	V1	S	Wet	Turning left	Automobile, station	Other motor vehicle		0
								V2	N	Wet	Going ahead	Automobile, station	Other motor vehicle		
45	2011-10-24	Mo	18:01	Rain	Dark	Rear end	P.D. only	V1	N	Wet	Slowing or	Pick-up truck	Skidding/Sliding		0
								V2	N	Wet	Stopped	Automobile, station	Other motor vehicle		
46	2012-02-26	Sun	18:30	Clear	Dark	Angle	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
	COMMENTS: EXACT LOCATION UNKNOWN														
47	2012-03-03	Sat	10:48	Clear	Daylight	Rear end	P.D. only	V1	E	Wet	Turning right	Truck - closed	Other motor vehicle		0
								V2	E	Wet	Turning right	Pick-up truck	Other motor vehicle		
48	2012-03-05	Mo	15:09	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	N	Dry	Slowing or	Passenger van	Other motor vehicle		
49	2012-05-22	Tue	16:40	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		

(Note: Time of Day = "00:00" represents unknown collision time

50	2012-05-25	Fri	14:30	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Going ahead	Automobile, station	Other motor vehicle		
51	2012-06-24	Sun	14:52	Rain	Daylight	Rear end	P.D. only	V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		0
								V1	S	Wet	Going ahead	Pick-up truck	Other motor vehicle		
52	2012-09-06	Thu	16:00	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Stopped	Pick-up truck	Other motor vehicle		
53	2012-09-11	Tue	17:47	Clear	Daylight	Rear end	Non-fatal	V1	S	Dry	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Stopped	Passenger van	Other motor vehicle		
54	2012-10-10	We	14:40	Clear	Daylight	Single vehicle	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Skidding/Sliding		0
55	2012-10-19	Fri	07:00	Rain	Dawn	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
56	2012-12-05	We	16:45	Clear	Dusk	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Going ahead	Automobile, station	Other motor vehicle		
	COMMENTS: EXACT LOCATION UNKNOWN.														
57	2013-03-13	We	15:30	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Turning left	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Turning left	Automobile, station	Other motor vehicle		
58	2013-03-22	Fri	09:29	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Tow truck	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
59	2013-03-22	Fri	09:15	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
60	2013-04-24	We	16:03	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Turning left	Truck - closed	Other motor vehicle		
61	2013-06-07	Fri	12:15	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Skidding/Sliding		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
62	2013-06-11	Tue	19:24	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
63	2013-06-22	Sat	12:49	Rain	Daylight	Single vehicle	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Skidding/Sliding		0
64	2013-07-12	Fri	10:16	Clear	Daylight	Rear end	Non-fatal	V1	N	Dry	Going ahead	Delivery van	Other motor vehicle		0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle		
65	2013-07-27	Sat	10:43	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Skidding/Sliding		0
								V2	S	Dry	Slowing or	Automobile, station	Other motor vehicle		

(Note: Time of Day = "00:00" represents unknown collision time

66	2013-07-27	Sat	14:45	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Going ahead	Automobile, station	Other motor vehicle	
67	2013-08-01	Thu	12:56	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Stopped	Pick-up truck	Other motor vehicle	
68	2013-09-12	Thu	17:23	Rain	Daylight	Turning	P.D. only	V1	N	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Turning left	Automobile, station	Other motor vehicle	
								V3	S	Wet	Stopped	Automobile, station	Other motor vehicle	
69	2013-10-26	Sat	13:49	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Slowing or	Passenger van	Other motor vehicle	

BLAIR RD & BLAIR RD RAMP 36

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **79**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
70	2011-01-14	Fri	11:28	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Pick-up truck	Other motor vehicle	
71	2011-01-15	Sat	20:30	Snow	Dark	Turning	P.D. only	V1	E	Loose snow	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Loose snow	Going ahead	Delivery van	Other motor vehicle	
72	2011-02-09	We	08:00	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Slowing or	Pick-up truck	Skidding/Sliding	0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle	
73	2011-02-10	Thu	09:15	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Slowing or	Automobile, station	Other motor vehicle	
74	2011-03-04	Fri	13:23	Clear	Daylight	Single vehicle	Non-fatal	V1	E	Dry	Turning left	Municipal transit bus	Pedestrian	1
75	2011-04-05	Tue	20:45	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
76	2011-04-13	We	12:40	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
77	2011-04-15	Fri	20:51	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Turning right	Passenger van	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

78	2011-05-29	Sun	16:17	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
79	2011-06-01	We	18:45	Clear	Daylight	Angle	Non-fatal	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
80	2011-07-12	Tue	08:31	Clear	Daylight	Angle	P.D. only	V1	W	Dry	Going ahead	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Going ahead	Passenger van	Other motor vehicle		
81	2011-07-13	We	10:15	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Turning right	Automobile, station	Other motor vehicle		
82	2011-07-19	Tue	12:30	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Truck - dump	Other motor vehicle		0
								V2	S	Dry	Going ahead	Automobile, station	Other motor vehicle		
83	2011-08-14	Sun	20:50	Rain	Dusk	Turning	Non-fatal	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	N	Wet	Turning left	Automobile, station	Other motor vehicle		
84	2011-08-18	Thu	18:27	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Turning right	Pick-up truck	Other motor vehicle		
85	2011-08-25	Thu	06:21	Rain	Daylight	Rear end	P.D. only	V1	N	Wet	Turning left	Municipal transit bus	Other motor vehicle		0
								V2	N	Wet	Turning left	Pick-up truck	Other motor vehicle		
86	2011-10-03	Mo	15:36	Rain	Daylight	Angle	P.D. only	V1	N	Wet	Slowing or	Passenger van	Other motor vehicle		0
								V2	W	Wet	Going ahead	Pick-up truck	Other motor vehicle		
87	2011-10-04	Tue	19:13	Clear	Dark	Rear end	P.D. only	V1	S	Dry	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Stopped	Pick-up truck	Other motor vehicle		
88	2011-10-28	Fri	19:18	Clear	Dark	Rear end	P.D. only	V1	N	Dry	Changing lanes	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Turning left	Municipal transit bus	Other motor vehicle		
89	2011-11-14	Mo	17:23	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Turning right	Pick-up truck	Other motor vehicle		
90	2011-11-16	We	18:45	Clear	Dark	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle		
91	2011-11-26	Sat	16:40	Clear	Dusk	Sideswipe	P.D. only	V1	N	Dry	Going ahead	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Going ahead	Automobile, station	Other motor vehicle		

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92	2011-11-29	Tue	08:20	Rain	Daylight	Rear end	P.D. only	V1	W	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning left	Automobile, station	Other motor vehicle	
93	2011-11-29	Tue	14:56	Rain	Daylight	Rear end	Non-fatal	V1	S	Wet	Slowing or	Passenger van	Skidding/Sliding	0
								V2	S	Wet	Stopped	Pick-up truck	Other motor vehicle	
94	2011-12-12	Mo	12:43	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle	
95	2011-12-17	Sat	20:02	Clear	Dark	Turning	P.D. only	V1	E	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
96	2011-12-20	Tue	18:30	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Passenger van	Other motor vehicle	
97	2011-12-23	Fri	18:52	Snow	Dark	Angle	Non-fatal	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Going ahead	Passenger van	Other motor vehicle	
98	2011-12-23	Fri	17:59	Clear	Dark	Angle	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Passenger van	Other motor vehicle	
99	2012-01-30	Mo	15:23	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
100	2012-03-08	Thu	19:10	Rain	Dark	Turning	P.D. only	V1	S	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	N	Wet	Turning left	Pick-up truck	Other motor vehicle	
101	2012-03-08	Thu	18:50	Rain	Dark	Angle	P.D. only	V1	S	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	W	Wet	Going ahead	Pick-up truck	Other motor vehicle	
102	2012-03-15	Thu	11:34	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
103	2012-04-21	Sat	15:01	Rain	Daylight	Rear end	P.D. only	V1	N	Wet	Turning left	Automobile, station	Skidding/Sliding	0
								V2	N	Wet	Turning left	Automobile, station	Other motor vehicle	
104	2012-05-16	We	08:45	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
105	2012-06-21	Thu	06:20	Clear	Daylight	Rear end	Non-fatal	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	

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106	2012-07-01	Sun	16:53	Clear	Daylight	Turning	Non-fatal	V1	S	Dry	Going ahead	Passenger van	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
107	2012-07-03	Tue	19:14	Rain	Daylight	Single vehicle	P.D. only	V1	E	Wet	Turning right	Automobile, station	Skidding/Sliding	0
108	2012-07-07	Sat	14:45	Clear	Daylight	Turning	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
109	2012-07-11	We	17:39	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Turning right	Pick-up truck	Other motor vehicle	
110	2012-07-12	Thu	21:30	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Passenger van	Other motor vehicle	
111	2012-08-24	Fri	12:03	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Pick-up truck	Other motor vehicle	
112	2012-08-31	Fri	10:45	Clear	Daylight	Other	P.D. only	V1	W	Dry	Turning left	Pick-up truck	Curb	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
113	2012-09-13	Thu	07:01	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
114	2012-09-14	Fri	11:40	Rain	Daylight	Rear end	P.D. only	V1	W	Wet	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning right	Pick-up truck	Other motor vehicle	
115	2012-09-21	Fri	22:48	Clear	Dark	Angle	Non-fatal	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
116	2012-10-10	We	08:40	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
117	2012-11-15	Thu	15:10	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning left	Passenger van	Other motor vehicle	0
								V2	W	Dry	Turning left	Passenger van	Other motor vehicle	
118	2012-11-15	Thu	09:50	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
119	2012-11-21	We	10:44	Clear	Daylight	Angle	P.D. only	V1	N	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Going ahead	Passenger van	Other motor vehicle	
120	2012-11-27	Tue	11:53	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	

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121	2013-01-01	Tue	10:07	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Turning left	Pick-up truck	Other motor vehicle		
122	2013-01-23	We	13:38	Clear	Daylight	Angle	Non-fatal	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Passenger van	Other motor vehicle		
123	2013-01-23	We	08:20	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Slowing or	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Going ahead	Pick-up truck	Other motor vehicle		
124	2013-01-29	Tue	17:25	Rain	Dusk	Rear end	P.D. only	V1	N	Wet	Slowing or	Pick-up truck	Other motor vehicle		0
								V2	N	Wet	Stopped	Automobile, station	Other motor vehicle		
								V3	N	Wet	Stopped	Automobile, station	Other motor vehicle		
125	2013-02-08	Fri	15:06	Snow	Daylight	Angle	P.D. only	V1	W	Loose snow	Turning right	Automobile, station	Other motor vehicle		0
								V2	N	Loose snow	Going ahead	Municipal transit bus	Other motor vehicle		
126	2013-02-22	Fri	11:30	Clear	Daylight	Other	P.D. only	V1	N	Dry	Reversing	Pick-up truck	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
127	2013-03-20	We	19:13	Clear	Dark	Rear end	P.D. only	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
128	2013-04-11	Thu	14:21	Clear	Daylight	Turning	Non-fatal	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Turning left	Passenger van	Other motor vehicle		
129	2013-05-06	Mo	07:43	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Pick-up truck	Other motor vehicle		0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle		
130	2013-05-13	Mo	16:10	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Changing lanes	Pick-up truck	Other motor vehicle		0
								V2	S	Dry	Going ahead	Automobile, station	Other motor vehicle		
131	2013-06-14	Fri	09:32	Clear	Daylight	Angle	P.D. only	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Pick-up truck	Other motor vehicle		
132	2013-06-21	Fri	16:10	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
133	2013-06-24	Mo	06:30	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Turning left	Pick-up truck	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		

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134	2013-07-07	Sun	16:17	Rain	Daylight	Sideswipe	P.D. only	V1	N	Wet	Changing lanes	Passenger van	Other motor vehicle	0
								V2	N	Wet	Changing lanes	Passenger van	Other motor vehicle	
135	2013-09-25	We	07:05	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
136	2013-09-30	Mo	09:57	Clear	Daylight	Rear end	Non-fatal	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
137	2013-10-17	Thu	07:30	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning right	Pick-up truck	Other motor vehicle	
138	2013-10-17	Thu	00:26	Clear	Dark	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle	
139	2013-10-21	Mo	15:29	Clear	Daylight	Rear end	P.D. only	V1	N	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	N	Wet	Turning left	Pick-up truck	Other motor vehicle	
140	2013-10-28	Mo	08:00	Rain	Daylight	Rear end	P.D. only	V1	N	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	N	Wet	Slowing or	Automobile, station	Other motor vehicle	
141	2013-10-31	Thu	19:26	Rain	Dark	Rear end	Non-fatal	V1	S	Wet	Slowing or	Passenger van	Other motor vehicle	0
								V2	S	Wet	Stopped	Pick-up truck	Other motor vehicle	
142	2013-11-21	Thu	14:49	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning right	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle	
143	2013-11-26	Tue	21:56	Snow	Dark	Turning	P.D. only	V1	E	Loose snow	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Loose snow	Going ahead	Automobile, station	Other motor vehicle	
144	2013-11-30	Sat	09:45	Clear	Daylight	Rear end	P.D. only	V1	W	Wet	Turning right	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning right	Automobile, station	Other motor vehicle	
145	2013-12-14	Sat	21:50	Snow	Dark	Single vehicle	P.D. only	V1	W	Ice	Going ahead	Automobile, station	Skidding/Sliding	0
146	2013-12-18	We	19:21	Snow	Dark	Rear end	P.D. only	V1	N	Loose snow	Turning left	Automobile, station	Other motor vehicle	0
								V2	N	Loose snow	Turning left	Pick-up truck	Other motor vehicle	
								V3	N	Loose snow	Turning left	Automobile, station	Other motor vehicle	
147	2013-12-20	Fri	15:44	Snow	Daylight	Turning	P.D. only	V1	E	Loose snow	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Loose snow	Going ahead	Pick-up truck	Other motor vehicle	
148	2013-12-20	Fri	10:08	Snow	Daylight	Turning	P.D. only	V1	E	Slush	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Slush	Going ahead	Automobile, station	Other motor vehicle	

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BLAIR RD & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **57**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
149	2011-01-18	Tue	07:53	Snow	Dawn	Rear end	P.D. only	V1 E	Wet	Turning right	Automobile, station	Other motor vehicle	0
								V2 E	Wet	Turning right	Automobile, station	Other motor vehicle	
150	2011-02-18	Fri	15:00	Unknow	Daylight	Sideswipe	P.D. only	V1 N	Unknown	Turning left	Automobile, station	Other motor vehicle	0
								V2 N	Unknown	Turning left	Automobile, station	Other motor vehicle	
151	2011-03-22	Tue	16:20	Clear	Daylight	Rear end	P.D. only	V1 E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2 E	Dry	Turning right	Pick-up truck	Other motor vehicle	
152	2011-04-16	Sat	22:55	Rain	Dark	Turning	P.D. only	V1 W	Wet	Making U-Turn	Automobile, station	Other motor vehicle	0
								V2 W	Wet	Turning left	Pick-up truck	Other motor vehicle	
153	2011-05-08	Sun	22:10	Clear	Dark	Turning	Non-fatal	V1 E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2 W	Dry	Turning left	Automobile, station	Other motor vehicle	
154	2011-05-09	Mo	16:00	Clear	Daylight	Rear end	P.D. only	V1 E	Dry	Turning right	Truck - dump	Other motor vehicle	0
								V2 E	Dry	Turning right	Automobile, station	Other motor vehicle	
155	2011-06-04	Sat	15:17	Clear	Daylight	Turning	P.D. only	V1 S	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 N	Dry	Turning left	Automobile, station	Other motor vehicle	
156	2011-07-14	Thu	14:50	Clear	Daylight	Rear end	P.D. only	V1 N	Dry	Going ahead	Truck - dump	Other motor vehicle	0
								V2 N	Dry	Stopped	Automobile, station	Other motor vehicle	
157	2011-07-24	Sun	20:26	Clear	Dusk	Angle	P.D. only	V1 S	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2 W	Dry	Going ahead	Automobile, station	Other motor vehicle	
158	2011-08-26	Fri	15:44	Clear	Daylight	Rear end	P.D. only	V1 S	Dry	Going ahead	Other	Other motor vehicle	0
								V2 S	Dry	Stopped	Automobile, station	Other motor vehicle	
159	2011-09-04	Sun	08:23	Rain	Daylight	Angle	P.D. only	V1 E	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2 S	Wet	Going ahead	Automobile, station	Other motor vehicle	
160	2011-09-09	Fri	16:00	Clear	Daylight	Rear end	P.D. only	V1 N	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2 N	Dry	Stopped	Automobile, station	Other motor vehicle	

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161	2011-10-14	Fri	13:27	Clear	Daylight	Rear end	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Turning right	Pick-up truck	Other motor vehicle	
162	2011-10-14	Fri	19:25	Rain	Dark	Rear end	P.D. only	V1	E	Wet	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Turning left	Passenger van	Other motor vehicle	
163	2011-11-23	We	06:30	Snow	Dark	Single vehicle	P.D. only	V1	E	Loose snow	Turning right	Automobile, station	Skidding/Sliding	0
164	2011-12-11	Sun	14:48	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Pick-up truck	Other motor vehicle	0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle	
								V3	N	Dry	Turning right	Automobile, station	Other motor vehicle	
165	2011-12-20	Tue	12:07	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Turning left	Pick-up truck	Other motor vehicle	
166	2012-01-02	Mo	12:06	Clear	Daylight	Angle	Non-fatal	V1	E	Wet	Going ahead	Automobile, station	Skidding/Sliding	0
								V2	N	Wet	Turning left	Automobile, station	Other motor vehicle	
167	2012-01-17	Tue	09:18	Snow	Daylight	Sideswipe	P.D. only	V1	W	Wet	Turning left	Pick-up truck	Other motor vehicle	0
								V2	W	Wet	Turning left	Municipal transit bus	Other motor vehicle	
168	2012-02-17	Fri	07:33	Clear	Daylight	Rear end	P.D. only	V1	N	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	N	Wet	Going ahead	Passenger van	Other motor vehicle	
169	2012-02-24	Fri	15:30	Snow	Daylight	Single vehicle	P.D. only	V1	N	Loose snow	Turning right	Automobile, station	Fire hydrant	0
170	2012-04-16	Mo	17:37	Rain	Daylight	Rear end	P.D. only	V1	W	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Stopped	Automobile, station	Other motor vehicle	
171	2012-05-04	Fri	16:39	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Slowing or	Pick-up truck	Other motor vehicle	0
								V2	N	Dry	Stopped	Pick-up truck	Other motor vehicle	
172	2012-05-11	Fri	15:35	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Going ahead	School bus	Other motor vehicle	0
								V2	W	Dry	Stopped	Automobile, station	Other motor vehicle	
								V3	W	Dry	Stopped	Pick-up truck	Other motor vehicle	
173	2012-07-17	Tue	10:40	Rain	Daylight	Rear end	P.D. only	V1	N	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Wet	Stopped	Automobile, station	Other motor vehicle	
								V3	N	Dry	Stopped	Pick-up truck	Other motor vehicle	

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174	2012-08-30	Thu	10:22	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Going ahead	Truck and trailer	Other motor vehicle	0
								V2	W	Dry	Stopped	Passenger van	Other motor vehicle	
175	2012-09-20	Thu	08:30	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
								V3	N	Dry	Stopped	Delivery van	Other motor vehicle	
176	2012-09-24	Mo	10:00	Clear	Daylight	Angle	P.D. only	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
177	2012-10-03	We	19:15	Clear	Dark	Rear end	P.D. only	V1	E	Dry	Turning right	Passenger van	Other motor vehicle	0
								V2	E	Dry	Turning right	Automobile, station	Other motor vehicle	
178	2012-12-13	Thu	12:47	Clear	Daylight	Sideswipe	P.D. only	V1	W	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
								V3	W	Dry	Turning left	Automobile, station	Other motor vehicle	
179	2013-01-06	Sun	11:09	Snow	Daylight	Rear end	Non-fatal	V1	W	Slush	Turning left	Pick-up truck	Other motor vehicle	0
								V2	W	Slush	Turning left	Pick-up truck	Other motor vehicle	
								V3	W	Slush	Turning left	Automobile, station	Other motor vehicle	
180	2013-01-06	Sun	09:19	Snow	Daylight	Sideswipe	P.D. only	V1	W	Packed snow	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Packed snow	Stopped	Pick-up truck	Other motor vehicle	
181	2013-01-10	Thu	17:20	Clear	Dusk	Rear end	P.D. only	V1	W	Dry	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Stopped	Automobile, station	Other motor vehicle	
								V3	W	Dry	Stopped	Automobile, station	Other motor vehicle	
								V4	W	Dry	Stopped	Passenger van	Other motor vehicle	
								V5	W	Dry	Stopped	Automobile, station	Other motor vehicle	
182	2013-01-15	Tue	11:54	Clear	Daylight	Rear end	Non-fatal	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
183	2013-01-22	Tue	09:00	Clear	Daylight	Rear end	P.D. only	V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	0
								V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	
184	2013-01-28	Mo	14:03	Snow	Daylight	Single vehicle	Non-fatal	V1	W	Wet	Turning left	Passenger van	Pedestrian	1
185	2013-02-05	Tue	20:32	Snow	Dark	Turning	P.D. only	V1	E	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning left	Pick-up truck	Other motor vehicle	
186	2013-02-17	Sun	09:05	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning left	Passenger van	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

187	2013-02-26	Tue	17:15	Clear	Daylight	Sideswipe	P.D. only	V1	W	Dry	Changing lanes	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle		
188	2013-03-21	Thu	08:00	Clear	Daylight	Rear end	P.D. only	V1	N	Wet	Turning left	Automobile, station	Other motor vehicle		0
								V2	N	Wet	Turning left	Passenger van	Other motor vehicle		
189	2013-05-23	Thu	17:29	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Going ahead	Passenger van	Other motor vehicle		0
								V2	N	Dry	Stopped	Passenger van	Other motor vehicle		
								V3	N	Dry	Stopped	Pick-up truck	Other motor vehicle		
190	2013-06-01	Sat	10:12	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle		
191	2013-06-06	Thu	12:15	Rain	Daylight	Rear end	P.D. only	V1	N	Wet	Slowing or	Pick-up truck	Other motor vehicle		0
								V2	N	Wet	Stopped	Automobile, station	Other motor vehicle		
192	2013-06-27	Thu	18:00	Clear	Daylight	Rear end	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Turning right	Automobile, station	Other motor vehicle		
193	2013-06-28	Fri	17:15	Rain	Daylight	Rear end	P.D. only	V1	W	Wet	Going ahead	Pick-up truck	Other motor vehicle		0
								V2	W	Wet	Slowing or	Automobile, station	Other motor vehicle		
194	2013-06-28	Fri	09:09	Rain	Daylight	Rear end	Non-fatal	V1	N	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	N	Wet	Stopped	Automobile, station	Other motor vehicle		
								V3	N	Wet	Stopped	Automobile, station	Other motor vehicle		
195	2013-07-24	We	17:58	Clear	Daylight	Turning	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle		
196	2013-07-25	Thu	12:35	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle		
197	2013-09-06	Fri	17:04	Clear	Daylight	Rear end	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Turning right	Automobile, station	Other motor vehicle		
198	2013-09-09	Mo	10:05	Clear	Daylight	Rear end	Non-fatal	V1	N	Dry	Turning right	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle		
199	2013-10-03	Thu	13:00	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Dry	Slowing or	Automobile, station	Other motor vehicle		
								V3	S	Dry	Stopped	Pick-up truck	Other motor vehicle		
200	2013-11-04	Mo	14:25	Clear	Daylight	Rear end	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Turning right	Pick-up truck	Other motor vehicle		

(Note: Time of Day = "00:00" represents unknown collision time

201	2013-12-04	We	15:45	Clear	Daylight	Rear end	P.D. only	V1	E	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Turning right	Pick-up truck	Other motor vehicle	
202	2013-12-14	Sat	21:24	Snow	Dark	Angle	P.D. only	V1	E	Loose snow	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Loose snow	Going ahead	Pick-up truck	Other motor vehicle	
203	2013-12-16	Mo	11:43	Clear	Daylight	Rear end	Non-fatal	V1	S	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle	
204	2013-12-18	We	08:35	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Stopped	Automobile, station	Other motor vehicle	
205	2013-12-23	Mo	10:49	Clear	Daylight	Sideswipe	P.D. only	V1	W	Wet	Overtaking	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning left	Truck - tractor	Other motor vehicle	

CITY PARK DR E & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **16**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
206	2011-02-24	Thu	08:15	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Turning right	Municipal transit bus	Other motor vehicle	0
								V2	S	Dry	Turning right	Municipal transit bus	Other motor vehicle	
207	2011-04-17	Sun	12:27	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
208	2011-04-21	Thu	23:30	Clear	Dark	Turning	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
209	2011-08-17	We	16:00	Clear	Daylight	Turning	P.D. only	V1	W	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	
210	2011-08-25	Thu	13:43	Clear	Daylight	Angle	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
211	2011-12-26	Mo	23:32	Clear	Dark	Rear end	P.D. only	V1	E	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Stopped	Automobile, station	Other motor vehicle	
								V3	E	Wet	Stopped	Passenger van	Other motor vehicle	
	COMMENTS: EXACT LOCATION UNKNOWN													
212	2012-03-31	Sat	10:30	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Stopped	Automobile, station	Other motor vehicle	
	COMMENTS: EXACT LOCATION UNKNOWN													
213	2012-05-20	Sun	13:50	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Turning left	Passenger van	Other motor vehicle	0
								V2	W	Dry	Turning left	Pick-up truck	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

214	2012-08-10	Fri	12:14	Clear	Daylight	Rear end	P.D. only	V1	E	Wet	Going ahead	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Stopped	Passenger van	Other motor vehicle	
215	2012-09-04	Tue	15:44	Rain	Daylight	Sideswipe	P.D. only	V1	W	Wet	Slowing or	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Slowing or	Automobile, station	Other motor vehicle	
216	2012-09-24	Mo	17:49	Clear	Daylight	Turning	P.D. only	V1	W	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
								V3	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
217	2012-11-19	Mo	11:35	Clear	Daylight	Turning	P.D. only	V1	W	Dry	Turning left	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle	
218	2012-11-27	Tue	22:36	Clear	Dark	Angle	P.D. only	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
219	2012-12-18	Tue	18:52	Snow	Dark	Turning	P.D. only	V1	W	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Going ahead	Passenger van	Other motor vehicle	
220	2013-06-02	Sun	10:53	Clear	Daylight	Turning	Non-fatal	V1	W	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Wet	Going ahead	Automobile, station	Other motor vehicle	
221	2013-09-22	Sun	15:49	Clear	Daylight	Single vehicle	Non-fatal	V1	S	Dry	Going ahead	Automobile, station	Pedestrian	2

ELMLEA GT & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **14**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR		SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
222	2011-08-21	Sun	15:03	Rain	Daylight	Rear end	Non-fatal	V1	W	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Wet	Turning left	Pick-up truck	Other motor vehicle	
223	2011-10-23	Sun	16:33	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Going ahead	Passenger van	Other motor vehicle	0
								V2	W	Dry	Turning left	Passenger van	Other motor vehicle	
224	2011-10-29	Sat	19:54	Clear	Dark	Turning	Non-fatal	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
225	2011-11-10	Thu	17:17	Clear	Dark	Rear end	Non-fatal	V1	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	E	Dry	Stopped	Automobile, station	Other motor vehicle	
								V3	E	Dry	Stopped	Motorcycle	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

226	2011-11-25	Fri	18:40	Clear	Dark	Turning	Non-fatal	V1	W	Dry	Turning left	Automobile, station	Cyclist	0
								V2	E	Dry	Going ahead	Bicycle	Other motor vehicle	
227	2012-01-18	We	10:39	Clear	Daylight	Angle	P.D. only	V1	E	Packed snow	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Packed snow	Going ahead	Automobile, station	Other motor vehicle	
228	2012-01-21	Sat	11:29	Clear	Daylight	Angle	P.D. only	V1	W	Wet	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	N	Wet	Going ahead	Automobile, station	Other motor vehicle	
229	2012-02-18	Sat	18:45	Clear	Dark	Turning	P.D. only	V1	N	Wet	Turning left	Automobile, station	Other motor vehicle	0
								V2	S	Wet	Going ahead	Automobile, station	Other motor vehicle	
230	2012-04-21	Sat	07:48	Rain	Daylight	Rear end	P.D. only	V1	W	Wet	Slowing or	Automobile, station	Skidding/Sliding	0
								V2	W	Wet	Stopped	Pick-up truck	Other motor vehicle	
231	2012-08-04	Sat	10:45	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Going ahead	Pick-up truck	Other motor vehicle	0
								V2	W	Dry	Turning left	Passenger van	Other motor vehicle	
232	2012-08-15	We	18:09	Clear	Daylight	Turning	P.D. only	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
233	2013-04-02	Tue	14:30	Clear	Daylight	Angle	Non-fatal	V1	E	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning left	Pick-up truck	Other motor vehicle	
234	2013-04-14	Sun	14:36	Clear	Daylight	Rear end	Non-fatal	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle	
235	2013-12-15	Sun	14:57	Snow	Daylight	Rear end	P.D. only	V1	E	Loose snow	Slowing or	Automobile, station	Other motor vehicle	0
								V2	E	Loose snow	Stopped	Pick-up truck	Other motor vehicle	

MONTREAL RD & OGILVIE RD

Former Municipality: **Gloucester** Traffic Control: **Traffic signal** Number of Collisions: **37**

	DATE	DAY	TIME	ENV	LIGHT	IMPACT TYPE	CLASS	DIR	SURFACE COND'N	VEHICLE MANOEUVRE	VEHICLE TYPE	FIRST EVENT	No. PED
236	2011-02-11	Fri	16:44	Clear	Daylight	Rear end	Non-fatal	V1	N	Dry	Turning right	Passenger van	Other motor vehicle	0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle	
237	2011-02-18	Fri	16:58	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Changing lanes	Passenger van	Other motor vehicle	0
								V2	W	Dry	Stopped	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

238	2011-02-19	Sat	16:28	Snow	Daylight	Rear end	P.D. only	V1	N	Loose snow	Turning right	Automobile, station	Other motor vehicle		0
								V2	N	Loose snow	Turning right	Automobile, station	Other motor vehicle		
239	2011-02-24	Thu	10:30	Clear	Daylight	Rear end	P.D. only	V1	S	Dry	Going ahead	Pick-up truck	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
240	2011-03-01	Tue	11:45	Clear	Daylight	Turning	P.D. only	V1	N	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	N	Dry	Going ahead	Passenger van	Other motor vehicle		
241	2011-03-13	Sun	14:20	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Turning left	Automobile, station	Other motor vehicle		
242	2011-07-13	We	12:05	Clear	Daylight	Rear end	P.D. only	V1	W	Dry	Slowing or	Police vehicle	Other motor vehicle		0
								V2	W	Dry	Stopped	Automobile, station	Other motor vehicle		
243	2011-07-24	Sun	12:32	Clear	Daylight	Angle	Non-fatal	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
244	2011-07-30	Sat	21:20	Clear	Dark	Rear end	P.D. only	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Changing lanes	Automobile, station	Other motor vehicle		
245	2011-11-02	We	17:00	Unknow	Dusk	Turning	P.D. only	V1	U	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	U	Dry	Going ahead	Delivery van	Other motor vehicle		
246	2011-11-23	We	15:40	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle		
247	2012-03-21	We	16:20	Clear	Daylight	Rear end	Non-fatal	V1	E	Dry	Slowing or	Automobile, station	Skidding/Sliding		0
								V2	E	Dry	Slowing or	Automobile, station	Other motor vehicle		
248	2012-04-04	We	16:30	Clear	Daylight	Rear end	Non-fatal	V1	W	Dry	Turning right	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Turning right	Automobile, station	Other motor vehicle		
249	2012-04-28	Sat	15:35	Clear	Daylight	Turning	Non-fatal	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
250	2012-05-16	We	13:00	Rain	Daylight	Rear end	P.D. only	V1	S	Wet	Slowing or	Passenger van	Other motor vehicle		0
								V2	S	Wet	Stopped	Automobile, station	Other motor vehicle		
251	2012-05-29	Tue	06:48	Clear	Daylight	Angle	Non-fatal	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	W	Wet	Going ahead	Automobile, station	Other motor vehicle		
252	2012-06-24	Sun	13:44	Clear	Daylight	Turning	Non-fatal	V1	N	Wet	Turning left	Pick-up truck	Skidding/Sliding		0
								V2	S	Wet	Going ahead	Automobile, station	Other motor vehicle		
253	2012-06-25	Mo	14:45	Clear	Daylight	Rear end	P.D. only	V1	S	Wet	Going ahead	Automobile, station	Other motor vehicle		0
								V2	S	Wet	Stopped	Pick-up truck	Other motor vehicle		

(Note: Time of Day = "00:00" represents unknown collision time

254	2012-07-09	Mo	08:30	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle	
255	2012-09-28	Fri	10:00	Clear	Daylight	Turning	P.D. only	V1	N	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Going ahead	Automobile, station	Other motor vehicle	
256	2012-10-01	Mo	16:00	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Turning right	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Turning right	Automobile, station	Other motor vehicle	
257	2012-10-12	Fri	15:50	Clear	Daylight	Sideswipe	P.D. only	V1	W	Dry	Changing lanes	Automobile, station	Other motor vehicle	0
								V2	W	Dry	Turning left	Automobile, station	Other motor vehicle	
258	2012-10-26	Fri	10:43	Clear	Daylight	Other	P.D. only	V1	S	Dry	Reversing	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Stopped	Automobile, station	Other motor vehicle	
259	2012-11-14	We	15:06	Clear	Daylight	Other	P.D. only	V1	S	Dry	Reversing	Truck - tractor	Other motor vehicle	0
								V2	N	Dry	Turning left	Automobile, station	Other motor vehicle	
260	2012-11-16	Fri	17:56	Clear	Dark	Sideswipe	Non-fatal	V1	W	Dry	Changing lanes	Passenger van	Other motor vehicle	0
								V2	W	Dry	Turning left	Pick-up truck	Other motor vehicle	
261	2013-01-24	Thu	07:55	Clear	Daylight	Rear end	P.D. only	V1	E	Ice	Turning right	Automobile, station	Other motor vehicle	0
								V2	E	Ice	Turning right	Automobile, station	Other motor vehicle	
262	2013-02-20	We	15:53	Snow	Daylight	Single vehicle	Non-fatal	V1	S	Loose snow	Slowing or	Municipal transit bus	Pedestrian	1
263	2013-04-02	Tue	14:39	Clear	Daylight	Rear end	P.D. only	V1	N	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Stopped	Pick-up truck	Other motor vehicle	
264	2013-07-04	Thu	16:20	Clear	Daylight	Sideswipe	P.D. only	V1	E	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	E	Dry	Turning left	Automobile, station	Other motor vehicle	
265	2013-07-24	We	11:10	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Turning left	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Turning left	Automobile, station	Other motor vehicle	
266	2013-07-28	Sun	16:21	Clear	Daylight	Angle	P.D. only	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	N	Dry	Going ahead	Automobile, station	Other motor vehicle	
								V3	N	Dry	Going ahead	Passenger van	Other motor vehicle	
267	2013-08-23	Fri	02:02	Clear	Dark	Angle	Non-fatal	V1	W	Dry	Going ahead	Automobile, station	Other motor vehicle	0
								V2	S	Dry	Turning left	Automobile, station	Other motor vehicle	

(Note: Time of Day = "00:00" represents unknown collision time

268	2013-08-23	Fri	16:08	Clear	Daylight	Sideswipe	P.D. only	V1	W	Dry	Unknown	Unknown	Other motor vehicle		0
								V2	W	Dry	Going ahead	Automobile, station	Other motor vehicle		
269	2013-09-03	Tue	15:19	Clear	Daylight	Other	P.D. only	V1	N	Dry	Reversing	Delivery van	Other motor vehicle		0
								V2	S	Dry	Stopped	Automobile, station	Other motor vehicle		
270	2013-09-09	Mo	15:35	Clear	Daylight	Sideswipe	P.D. only	V1	S	Dry	Going ahead	Delivery van	Other motor vehicle		0
								V2	S	Dry	Stopped	Municipal transit bus	Other motor vehicle		
271	2013-10-15	Tue	18:08	Clear	Daylight	Sideswipe	P.D. only	V1	N	Dry	Merging	Pick-up truck	Other motor vehicle		0
								V2	N	Dry	Going ahead	Passenger van	Other motor vehicle		
272	2013-11-07	Thu	20:13	Clear	Dark	Angle	P.D. only	V1	S	Dry	Going ahead	Automobile, station	Other motor vehicle		0
								V2	E	Dry	Going ahead	Automobile, station	Other motor vehicle		

(Note: Time of Day = "00:00" represents unknown collision time

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	116	33	25	24	0	9	0	8	215	79%
Non-fatal injury	28	14	1	10	0	4	0	0	57	21%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**144**	**47**	**26**	**34**	**0**	**13**	**0**	**8**	**272**	100%
	#1 or 53%	#2 or 17%	#4 or 10%	#3 or 13%	#7 or 0%	#5 or 5%	#7 or 0%	#6 or 3%		

CITY PARK DR E/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	16	23,370	1095	**0.63**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	4	5	1	1	0	0	0	0	11	69%
Non-fatal injury	1	2	0	1	0	1	0	0	5	31%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**7**	**1**	**2**	**0**	**1**	**0**	**0**	**16**	100%
	31%	44%	6%	13%	0%	6%	0%	0%		

BLAIR RD/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	57	42,309	1095	**1.23**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	33	4	6	4	0	2	0	0	49	86%
Non-fatal injury	5	1	0	1	0	1	0	0	8	14%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**38**	**5**	**6**	**5**	**0**	**3**	**0**	**0**	**57**	100%
	67%	9%	11%	9%	0%	5%	0%	0%		

BLAIR RD/BLAIR RD RAMP 36

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	79	32,764	1095	**2.20**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	38	12	4	7	0	2	0	2	65	82%
Non-fatal injury	5	4	0	4	0	1	0	0	14	18%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**43**	**16**	**4**	**11**	**0**	**3**	**0**	**2**	**79**	100%
	54%	20%	5%	14%	0%	4%	0%	3%		

BLAIR PL/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	14	24,105	1095	**0.53**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	1	1	3	0	2	0	2	10	71%
Non-fatal injury	3	1	0	0	0	0	0	0	4	29%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**4**	**2**	**1**	**3**	**0**	**2**	**0**	**2**	**14**	100%
	29%	14%	7%	21%	0%	14%	0%	14%		

BLAIR RD/BLAIR RD RAMP 15

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	38	29,531	1095	**1.18**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	21	4	5	1	0	3	0	1	35	92%
Non-fatal injury	3	0	0	0	0	0	0	0	3	8%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**24**	**4**	**5**	**1**	**0**	**3**	**0**	**1**	**38**	100%
	63%	11%	13%	3%	0%	8%	0%	3%		

MONTREAL RD/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	37	32,338	1095	**1.04**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	12	3	6	2	0	0	0	3	26	70%
Non-fatal injury	4	2	1	3	0	1	0	0	11	30%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**16**	**5**	**7**	**5**	**0**	**1**	**0**	**3**	**37**	100%
	43%	14%	19%	14%	0%	3%	0%	8%		

BATHGATE DR/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	12	n/a	1095	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	3	2	1	4	0	0	0	0	10	83%
Non-fatal injury	2	0	0	0	0	0	0	0	2	17%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**2**	**1**	**4**	**0**	**0**	**0**	**0**	**12**	100%
	42%	17%	8%	33%	0%	0%	0%	0%		

ELMLEA GT/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	14	18,040	1095	**0.71**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	2	2	0	2	0	0	0	0	6	43%
Non-fatal injury	3	4	0	1	0	0	0	0	8	57%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**6**	**0**	**3**	**0**	**0**	**0**	**0**	**14**	100%
	36%	43%	0%	21%	0%	0%	0%	0%		

APPLEFORD ST/OGILVIE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2011-2013	5	16,285	1095	**0.28**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	2	0	1	0	0	0	0	0	3	60%
Non-fatal injury	2	0	0	0	0	0	0	0	2	40%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	100%
	80%	0%	20%	0%	0%	0%	0%	0%		

Appendix F

SYNCHRO Capacity Analysis: Projected 2017 Conditions and Modifications

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	16	1119	141	180	578	18	204	7	63	22		
Lane Group Flow (vph)	17	1178	148	189	608	19	215	156	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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	52.0	52.0	52.0	15.0	67.0	67.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	52.0%	52.0%	52.0%	15.0%	67.0%	67.0%	28.0%	28.0%	28.0%	28.0%	5%	5%
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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	48.6	48.6	48.6	63.4	63.4	63.4	23.2	23.2	23.2	23.2		
Actuated g/C Ratio	0.49	0.49	0.49	0.63	0.63	0.63	0.23	0.23	0.23	0.23		
v/c Ratio	0.05	0.71	0.21	0.73	0.28	0.03	0.83	0.36	0.28	0.31		
Control Delay	15.6	24.0	3.4	29.7	9.0	0.1	62.9	8.7	34.6	11.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.6	24.0	3.4	29.7	9.0	0.1	62.9	8.7	34.6	11.3		
LOS	B	C	A	C	A	A	E	A	C	B		
Approach Delay		21.6			13.5			40.1		19.2		
Approach LOS		C			B			D		B		
Queue Length 50th (m)	1.8	96.1	0.0	14.8	27.1	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	5.7	121.7	10.1	#44.1	36.2	0.0	#82.5	16.9	23.0	18.3		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	325	1648	715	265	2149	720	268	437	247	424		
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	0.71	0.21	0.71	0.28	0.03	0.80	0.36	0.27	0.30		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 6 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 92.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

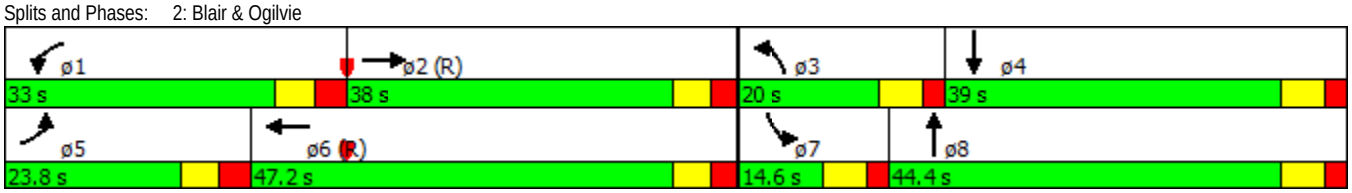
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	114	590	643	745	440	281	313	747	75	687
Lane Group Flow (vph)	120	621	677	784	540	296	329	786	79	796
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	23.8	38.0		33.0	47.2	20.0	44.4		14.6	39.0
Total Split (%)	18.3%	29.2%		25.4%	36.3%	15.4%	34.2%		11.2%	30.0%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	13.9	31.6	130.0	26.3	44.0	13.5	37.9	130.0	8.0	32.4
Actuated g/C Ratio	0.11	0.24	1.00	0.20	0.34	0.10	0.29	1.00	0.06	0.25
v/c Ratio	0.67	0.75	0.46	1.18	0.49	0.87	0.63	0.54	0.76	0.95
Control Delay	73.1	52.3	1.1	140.8	35.5	78.7	39.1	4.2	100.2	69.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.1	52.3	1.1	140.8	35.5	78.7	39.1	4.2	100.2	69.5
LOS	E	D	A	F	D	E	D	A	F	E
Approach Delay		29.6			97.9		27.9			72.3
Approach LOS		C			F		C			E
Queue Length 50th (m)	29.9	78.0	0.0	~124.1	56.4	39.3	75.4	25.7	20.3	105.3
Queue Length 95th (m)	49.5	99.3	0.0	#162.3	75.9	#61.2	107.0	66.2	#46.4	#144.6
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	221	824	1457	665	1099	341	520	1466	105	836
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	0.54	0.75	0.46	1.18	0.49	0.87	0.63	0.54	0.75	0.95

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 54.5 — Intersection LOS: D
Intersection Capacity Utilization 98.7% — ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	991	344	87	676	490	211
Lane Group Flow (vph)	1043	362	92	712	516	222
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	57.8	57.8	57.8	57.8	20.0	20.0
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22	0.22
v/c Ratio	0.48	0.34	0.34	0.33	0.71	0.56
Control Delay	9.8	1.9	8.9	5.4	37.5	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	1.9	8.9	5.4	37.5	22.8
LOS	A	A	A	A	D	C
Approach Delay	7.8			5.8	33.1	
Approach LOS	A			A	C	
Queue Length 50th (m)	44.2	0.0	5.5	22.2	42.4	19.6
Queue Length 95th (m)	69.6	10.6	m12.3	31.6	54.0	38.2
Internal Link Dist (m)	325.3			98.8	45.5	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2178	1063	269	2178	942	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.34	0.34	0.33	0.55	0.45

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: Blair Place & Ogilvie

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	30	1086	205	450	286	2	156	1	0
Lane Group Flow (vph)	32	1203	216	482	0	303	164	0	17
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.5	27.5	10.5	33.8	35.4	35.4	35.4	35.4	35.4
Total Split (s)	42.0	42.0	12.0	54.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	46.7%	46.7%	13.3%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5		6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	36.8	36.8	52.7	52.7		25.4	25.4		25.4
Actuated g/C Ratio	0.41	0.41	0.59	0.59		0.28	0.28		0.28
v/c Ratio	0.09	0.87	0.79	0.24		0.85	0.32		0.03
Control Delay	12.6	27.6	47.0	9.2		52.3	7.7		0.1
Queue Delay	0.0	2.3	0.0	0.0		0.0	0.0		0.0
Total Delay	12.6	29.9	47.0	9.2		52.3	7.7		0.1
LOS	B	C	D	A		D	A		A
Approach Delay		29.5		20.9		36.6			0.1
Approach LOS		C		C		D			A
Queue Length 50th (m)	2.0	101.3	20.1	20.7		47.9	3.2		0.0
Queue Length 95th (m)	m4.6	#139.0	#72.7	14.7		#83.0	16.2		0.0
Internal Link Dist (m)		80.7		120.1		35.4			53.1
Turn Bay Length (m)	30.0		44.0				25.0		
Base Capacity (vph)	344	1376	275	1981		415	581		558
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	85	0	0		0	3		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.09	0.93	0.79	0.24		0.73	0.28		0.03

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 15 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.2 — Intersection LOS: C
Intersection Capacity Utilization 83.8% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Elmlea & Ogilvie

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	1214	612	4	1	12	0
Lane Group Flow (vph)	0	1292	666	0	9	0	32
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	62.0	62.0	62.0	28.0	28.0	28.0	28.0
Total Split (%)	68.9%	68.9%	68.9%	31.1%	31.1%	31.1%	31.1%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		74.4	74.4		12.4		12.4
Actuated g/C Ratio		0.83	0.83		0.14		0.14
v/c Ratio		0.49	0.24		0.05		0.14
Control Delay		2.9	3.9		24.8		11.3
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		2.9	3.9		24.8		11.3
LOS		A	A		C		B
Approach Delay		2.9	3.9		24.8		11.3
Approach LOS		A	A		C		B
Queue Length 50th (m)		8.1	14.6		0.8		0.0
Queue Length 95th (m)		0.4	34.3		4.3		6.4
Internal Link Dist (m)		236.0	802.6		34.7		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2655	2785		346		365
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.49	0.24		0.03		0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 46 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 3.5 — Intersection LOS: A
Intersection Capacity Utilization 63.9% — ICU Level of Service B
Analysis Period (min) 15

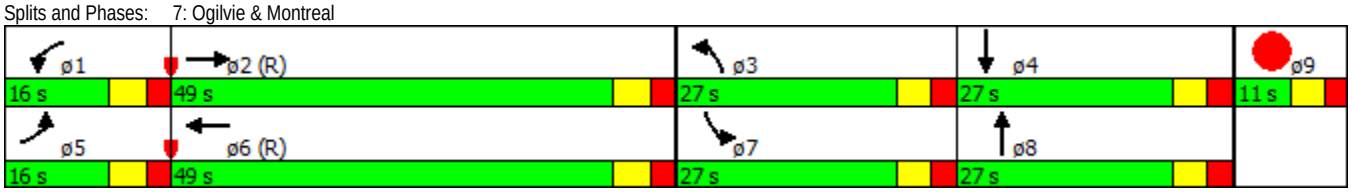
Splits and Phases: 6: Ogilvie & Appleford

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	863	31	261	447	100	27	389	615	204	215	160
Lane Group Flow (vph)	249	908	33	275	471	105	28	409	647	215	226	168
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	16.0	49.0		16.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	12.3%	37.7%		12.3%	37.7%		20.8%	20.8%		20.8%	20.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	24.3	42.8	130.0	24.3	42.8	130.0	7.7	19.4	130.0	19.6	36.0	130.0
Actuated g/C Ratio	0.19	0.33	1.00	0.19	0.33	1.00	0.06	0.15	1.00	0.15	0.28	1.00
v/c Ratio	0.79	0.81	0.02	0.87	0.42	0.07	0.28	0.81	0.43	0.84	0.24	0.11
Control Delay	69.8	46.9	0.0	78.8	35.4	0.1	64.7	66.4	0.9	81.0	38.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	46.9	0.0	78.8	35.4	0.1	64.7	66.4	0.9	81.0	38.0	0.2
LOS	E	D	A	E	D	A	E	E	A	F	D	A
Approach Delay		50.4			45.1			27.3			42.7	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	63.4	111.9	0.0	71.3	49.3	0.0	7.0	53.3	0.0	53.4	24.1	0.0
Queue Length 95th (m)	#111.8	137.6	0.0	#127.8	64.8	0.0	16.8	71.2	0.0	#90.0	36.1	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	316	1116	1485	316	1116	1478	277	547	1488	277	938	1481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.81	0.02	0.87	0.42	0.07	0.10	0.75	0.43	0.78	0.24	0.11

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 41.2 — Intersection LOS: D
Intersection Capacity Utilization 86.9% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	123	477	93	105	182	297	1042	1892	169
Lane Group Flow (vph)	129	502	98	111	192	313	1097	1992	178
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	52.0	52.0	52.0	52.0		23.0	78.0	55.0	55.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%		17.7%	60.0%	42.3%	42.3%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	29.2	29.2	29.2	29.2	130.0	16.6	87.9	64.9	64.9
Actuated g/C Ratio	0.22	0.22	0.22	0.22	1.00	0.13	0.68	0.50	0.50
v/c Ratio	0.50	0.90	0.26	0.28	0.13	0.75	0.48	0.82	0.22
Control Delay	47.8	41.1	39.8	40.3	0.2	66.1	12.7	35.7	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	41.1	39.8	40.3	0.2	66.1	12.7	35.7	16.4
LOS	D	D	D	D	A	E	B	D	B
Approach Delay				21.0			24.5	34.1	
Approach LOS				C			C	C	
Queue Length 50th (m)	29.0	62.1	20.8	23.7	0.0	40.0	65.2	129.4	15.0
Queue Length 95th (m)	41.4	93.5	30.8	33.9	0.0	55.9	113.3	m#201.0	m19.3
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	403	708	589	620	1478	441	2293	2432	802
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	0.32	0.71	0.17	0.18	0.13	0.71	0.48	0.82	0.22

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 50 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green		
Natural Cycle: 100		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.90		
Intersection Signal Delay: 31.2	Intersection LOS: C	
Intersection Capacity Utilization 94.5%	ICU Level of Service F	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		
m Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 8: Blair & 174 WB Off Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	198	698	823	311	537	936
Lane Group Flow (vph)	208	735	866	327	565	985
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	25.3		30.5	30.5	16.2	30.5
Total Split (s)	30.0		52.0	52.0	28.0	80.0
Total Split (%)	27.3%		47.3%	47.3%	25.5%	72.7%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	18.3	110.0	45.5	45.5	79.4	78.9
Actuated g/C Ratio	0.17	1.00	0.41	0.41	0.72	0.72
v/c Ratio	0.74	0.48	0.62	0.41	0.97	0.77
Control Delay	58.7	1.1	27.8	3.9	53.3	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	1.1	27.8	3.9	53.3	16.3
LOS	E	A	C	A	D	B
Approach Delay	13.8		21.2			29.8
Approach LOS	B		C			C
Queue Length 50th (m)	42.7	0.0	75.6	0.0	81.7	118.6
Queue Length 95th (m)	64.4	0.0	96.1	16.1	#170.3	209.5
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	365	1517	1402	805	582	1279
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.48	0.62	0.41	0.97	0.77

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 22.9 Intersection LOS: C
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	1225	1	686	33	17
Lane Group Flow (vph)	1318	1	722	35	18
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.8	11.0	26.8	32.0	32.0
Total Split (s)	47.0	11.0	58.0	32.0	32.0
Total Split (%)	52.2%	12.2%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.0
All-Red Time (s)	2.1	2.1	2.1	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	71.5	71.4	73.7	13.2	13.2
Actuated g/C Ratio	0.79	0.79	0.82	0.15	0.15
v/c Ratio	0.49	0.00	0.26	0.14	0.08
Control Delay	3.3	12.0	7.1	32.1	12.8
Queue Delay	0.1	0.0	0.0	0.0	0.0
Total Delay	3.4	12.0	7.1	32.1	12.8
LOS	A	B	A	C	B
Approach Delay	3.4		7.2	25.5	
Approach LOS	A		A	C	
Queue Length 50th (m)	4.2	0.0	16.2	5.6	0.0
Queue Length 95th (m)	m14.4	m0.5	67.3	11.2	4.8
Internal Link Dist (m)	120.1		236.0	41.3	
Turn Bay Length (m)		35.0			20.0
Base Capacity (vph)	2681	305	2776	489	444
Starvation Cap Reductn	238	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.00	0.26	0.07	0.04

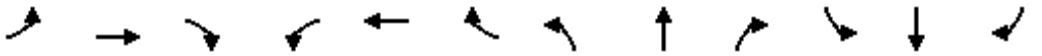
Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 25 (28%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 56.2%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 16: Arena & Ogilvie

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1098	161	0	760	0	112
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)	1156	169	0	800	0	118
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	123			105		
pX, platoon unblocked			0.85		0.88	0.85
vC, conflicting volume			1325		1556	578
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1040		1086	165
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	84
cM capacity (veh/h)			568		186	727

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	578	578	169	400	400	118
Volume Left	0	0	0	0	0	0
Volume Right	0	0	169	0	0	118
cSH	1700	1700	1700	1700	1700	727
Volume to Capacity	0.34	0.34	0.10	0.24	0.24	0.16
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS						B
Approach Delay (s)	0.0			0.0		10.9
Approach LOS						B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	157	5	13	0	5	146	15	323	0	237	16	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			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)	165	5	14	0	5	154	16	340	0	249	17	25
Pedestrians		64										
Lane Width (m)		3.7										
Walking Speed (m/s)		1.2										
Percent Blockage		5										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											121	
pX, platoon unblocked												
vC, conflicting volume	1120	964	93	904	977	340	106			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1120	964	93	904	977	340	106			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	97	98	100	97	78	99			80		
cM capacity (veh/h)	107	190	911	200	187	702	1404			1219		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	184	159	356	249	42
Volume Left	165	0	16	249	0
Volume Right	14	154	0	0	25
cSH	116	643	1404	1219	1700
Volume to Capacity	1.59	0.25	0.01	0.20	0.02
Queue Length 95th (m)	103.7	7.4	0.3	5.8	0.0
Control Delay (s)	370.6	12.4	0.4	8.7	0.0
Lane LOS	F	B	A	A	
Approach Delay (s)	370.6	12.4	0.4	7.5	
Approach LOS	F	B			

Intersection Summary				
Average Delay	73.3			
Intersection Capacity Utilization	66.1%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	133	626	0	163	277
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	140	659	0	172	292
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						69
pX, platoon unblocked						
vC, conflicting volume	1148	220			659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1148	220			659	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	82			81	
cM capacity (veh/h)	157	784			925	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	140	264	264	132	269	194
Volume Left	0	0	0	0	172	0
Volume Right	140	0	0	0	0	0
cSH	784	1700	1700	1700	925	1700
Volume to Capacity	0.18	0.16	0.16	0.08	0.19	0.11
Queue Length 95th (m)	4.9	0.0	0.0	0.0	5.2	0.0
Control Delay (s)	10.6	0.0	0.0	0.0	6.9	0.0
Lane LOS	B				A	
Approach Delay (s)	10.6	0.0			4.0	
Approach LOS	B					

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	3	736	143	210	626	3	191	2	10	1		
Lane Group Flow (vph)	3	775	151	221	659	3	201	187	11	4		
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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	42.0	42.0	42.0	15.0	57.0	57.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	46.7%	46.7%	46.7%	16.7%	63.3%	63.3%	31.1%	31.1%	31.1%	31.1%	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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	43.5	43.5	43.5	58.8	58.8	58.8	17.8	17.8	17.8	17.8		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.20	0.20	0.20	0.20		
v/c Ratio	0.01	0.47	0.20	0.52	0.30	0.00	0.76	0.42	0.06	0.01		
Control Delay	16.0	18.2	3.7	12.1	8.0	0.0	52.0	7.8	27.5	19.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	16.0	18.2	3.7	12.1	8.0	0.0	52.0	7.8	27.5	19.5		
LOS	B	B	A	B	A	A	D	A	C	B		
Approach Delay		15.8			9.0			30.7		25.4		
Approach LOS		B			A			C		C		
Queue Length 50th (m)	0.3	45.7	0.0	13.4	22.7	0.0	32.7	0.3	1.5	0.1		
Queue Length 95th (m)	2.0	71.1	10.9	29.4	40.4	0.0	54.2	15.8	5.6	2.7		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	342	1639	774	429	2213	969	322	499	243	377		
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	0.01	0.47	0.20	0.52	0.30	0.00	0.62	0.37	0.05	0.01		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.8 — Intersection LOS: B
Intersection Capacity Utilization 66.8% — ICU Level of Service C
Analysis Period (min) 15

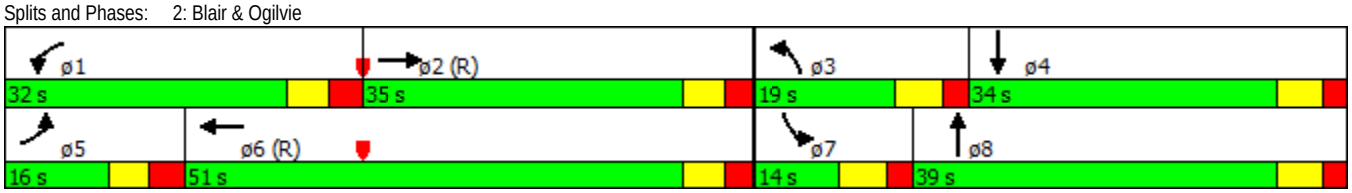
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	98	515	367	740	448	337	220	772	73	215
Lane Group Flow (vph)	103	542	386	779	532	355	232	813	77	311
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	16.0	35.0		32.0	51.0	19.0	39.0		14.0	34.0
Total Split (%)	13.3%	29.2%		26.7%	42.5%	15.8%	32.5%		11.7%	28.3%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	11.8	28.6	120.0	35.5	52.2	12.5	22.3	120.0	7.4	17.2
Actuated g/C Ratio	0.10	0.24	1.00	0.30	0.44	0.10	0.19	1.00	0.06	0.14
v/c Ratio	0.62	0.67	0.26	0.80	0.37	1.04	0.70	0.54	0.74	0.62
Control Delay	68.2	46.2	0.4	47.2	24.2	111.0	56.6	1.4	93.1	46.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	46.2	0.4	47.2	24.2	111.0	56.6	1.4	93.1	46.4
LOS	E	D	A	D	C	F	E	A	F	D
Approach Delay		31.3			37.9		38.4			55.7
Approach LOS		C			D		D			E
Queue Length 50th (m)	23.2	61.2	0.0	85.8	42.7	~46.3	52.4	0.0	18.1	32.1
Queue Length 95th (m)	#52.2	80.3	0.0	#145.2	62.8	#76.2	70.7	0.0	#42.7	42.1
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			100.0		130.0			30.0	
Base Capacity (vph)	168	807	1487	972	1451	342	483	1498	105	772
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	0.61	0.67	0.26	0.80	0.37	1.04	0.48	0.54	0.73	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 38.1 — Intersection LOS: D
Intersection Capacity Utilization 91.0% — ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	732	422	108	842	390	64
Lane Group Flow (vph)	771	444	114	886	411	67
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	43.0	43.0	43.0	43.0	32.0	32.0
Total Split (%)	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	46.7	46.7	46.7	46.7	16.1	16.1
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.21	0.21
v/c Ratio	0.37	0.41	0.30	0.42	0.58	0.18
Control Delay	8.5	2.4	7.4	5.7	29.0	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	2.4	7.4	5.7	29.0	6.8
LOS	A	A	A	A	C	A
Approach Delay	6.3			5.9	25.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	23.2	0.0	4.0	18.6	27.7	0.0
Queue Length 95th (m)	48.9	13.2	m13.3	m43.5	32.9	7.4
Internal Link Dist (m)	325.3			100.3	41.5	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2110	1079	377	2110	1131	557
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.41	0.30	0.42	0.36	0.12

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: Blair Place & Ogilvie

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	24	595	256	546	398	2	182	2	2
Lane Group Flow (vph)	25	708	269	577	0	421	192	0	28
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2	1	6		8			4
Permitted Phases	2		6		8		8	4	
Detector Phase	2	2	1	6	8	8	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	27.5	27.5	10.5	33.8	35.4	35.4	35.4	35.4	35.4
Total Split (s)	28.0	28.0	11.0	39.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	37.3%	37.3%	14.7%	52.0%	48.0%	48.0%	48.0%	48.0%	48.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.8	1.8	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5		6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	22.5	22.5	35.3	35.3		27.8	27.8		27.8
Actuated g/C Ratio	0.30	0.30	0.47	0.47		0.37	0.37		0.37
v/c Ratio	0.11	0.70	0.91	0.36		0.91	0.29		0.05
Control Delay	14.6	21.1	54.0	10.0		47.9	5.6		7.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	14.6	21.1	54.0	10.0		47.9	5.6		7.1
LOS	B	C	D	B		D	A		A
Approach Delay		20.9		24.0		34.7			7.1
Approach LOS		C		C		C			A
Queue Length 50th (m)	2.0	45.1	~27.2	27.5		52.8	3.2		0.3
Queue Length 95th (m)	m3.9	26.2	#74.4	17.6		#102.8	14.9		4.8
Internal Link Dist (m)		79.1		380.1		35.4			53.1
Turn Bay Length (m)	30.0		44.0				25.0		
Base Capacity (vph)	231	1007	294	1594		494	683		612
Starvation Cap Reductn	0	0	0	0		0	0		0
Spillback Cap Reductn	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0		0	0		0
Reduced v/c Ratio	0.11	0.70	0.91	0.36		0.85	0.28		0.05

Intersection Summary

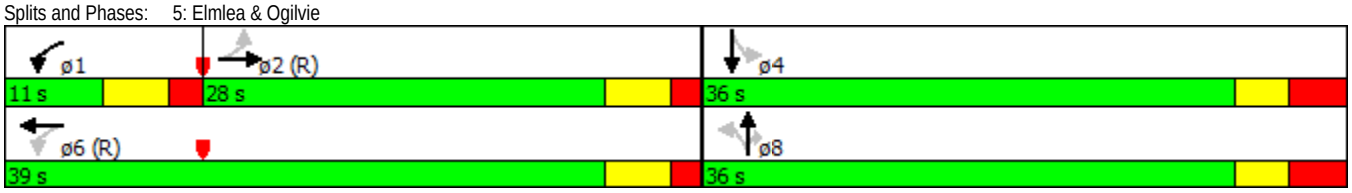
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 11 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 25.7 — Intersection LOS: C
Intersection Capacity Utilization 79.7% — ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 5: Elmlea & Ogilvie

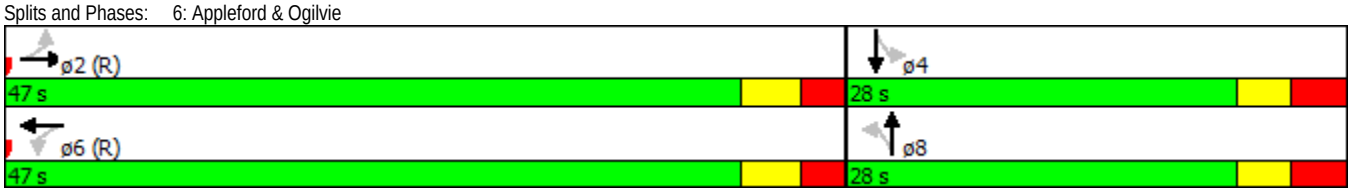


Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	731	705	1	0	13	2
Lane Group Flow (vph)	0	783	760	0	2	0	38
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	47.0	47.0	47.0	28.0	28.0	28.0	28.0
Total Split (%)	62.7%	62.7%	62.7%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		59.4	59.4		12.4		12.4
Actuated g/C Ratio		0.79	0.79		0.17		0.17
v/c Ratio		0.31	0.28		0.01		0.15
Control Delay		3.0	4.9		0.0		15.6
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		3.0	4.9		0.0		15.6
LOS		A	A		A		B
Approach Delay		3.0	4.9		0.0		15.6
Approach LOS		A	A		A		B
Queue Length 50th (m)		3.4	17.4		0.0		2.0
Queue Length 95th (m)		69.6	41.7		0.0		7.9
Internal Link Dist (m)		380.1	802.6		38.9		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2528	2672		442		431
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.31	0.28		0.00		0.09

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 45 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 4.3 — Intersection LOS: A
Intersection Capacity Utilization 49.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Appleford & Ogilvie

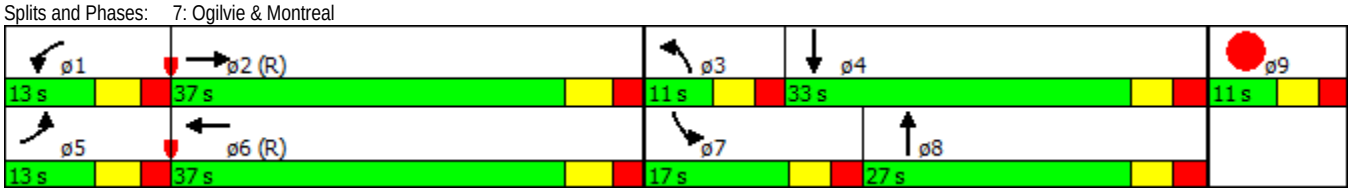


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	449	30	336	432	120	27	199	402	149	210	133
Lane Group Flow (vph)	160	473	32	354	455	126	28	209	423	157	221	140
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	13.0	37.0		13.0	37.0		11.0	27.0		17.0	33.0	
Total Split (%)	12.4%	35.2%		12.4%	35.2%		10.5%	25.7%		16.2%	31.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	21.0	30.8	105.0	25.8	35.6	105.0	5.3	13.3	105.0	11.2	23.6	105.0
Actuated g/C Ratio	0.20	0.29	1.00	0.25	0.34	1.00	0.05	0.13	1.00	0.11	0.22	1.00
v/c Ratio	0.47	0.48	0.02	0.85	0.40	0.08	0.33	0.49	0.28	0.87	0.29	0.09
Control Delay	43.5	32.4	0.0	59.1	28.1	0.1	58.8	45.9	0.5	86.8	35.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	32.4	0.0	59.1	28.1	0.1	58.8	45.9	0.5	86.8	35.3	0.1
LOS	D	C	A	E	C	A	E	D	A	F	D	A
Approach Delay		33.5			36.0			17.3			41.4	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	29.6	41.6	0.0	67.8	35.4	0.0	5.6	21.5	0.0	32.0	21.3	0.0
Queue Length 95th (m)	51.1	56.8	0.0	#143.7	54.6	0.0	14.7	29.8	0.0	#67.8	29.0	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	339	994	1492	416	1148	1486	85	678	1494	182	874	1489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.48	0.02	0.85	0.40	0.08	0.33	0.31	0.28	0.86	0.25	0.09

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 42 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 32.0 Intersection LOS: C
Intersection Capacity Utilization 76.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

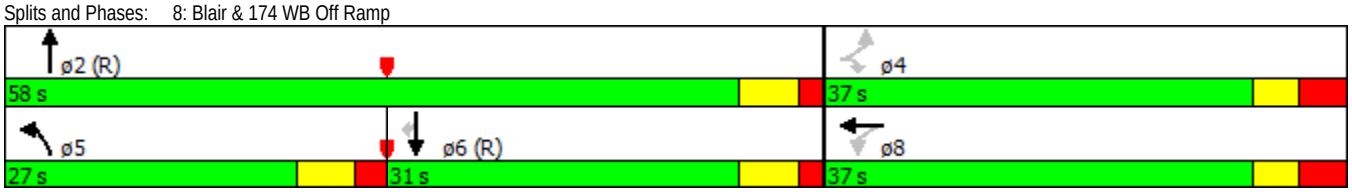
Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	113	314	133	134	268	312	923	1156	175
Lane Group Flow (vph)	119	331	140	141	282	328	972	1217	184
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	37.0	37.0	37.0	37.0		27.0	58.0	31.0	31.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%		28.4%	61.1%	32.6%	32.6%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	16.9	16.9	16.9	16.9	95.0	14.7	65.2	44.1	44.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	1.00	0.15	0.69	0.46	0.46
v/c Ratio	0.57	0.61	0.46	0.44	0.19	0.65	0.42	0.54	0.23
Control Delay	44.4	8.4	38.2	37.4	0.3	51.6	5.8	21.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	8.4	38.2	37.4	0.3	51.6	5.8	21.6	4.5
LOS	D	A	D	D	A	D	A	C	A
Approach Delay				19.0			17.3	19.4	
Approach LOS				B			B	B	
Queue Length 50th (m)	20.7	0.0	23.9	24.0	0.0	31.7	21.8	53.7	0.0
Queue Length 95th (m)	31.1	18.2	33.9	33.7	0.0	42.1	38.7	#98.2	14.8
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	375	708	538	567	1494	712	2325	2259	801
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	0.32	0.47	0.26	0.25	0.19	0.46	0.42	0.54	0.23

Intersection Summary			
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 23 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 8: Blair & 174 WB Off Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	699	688	163	355	627
Lane Group Flow (vph)	121	736	724	172	374	660
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	10.0
Minimum Split (s)	25.3		30.5	30.5	11.0	30.5
Total Split (s)	25.0		55.0	55.0	15.0	70.0
Total Split (%)	26.3%		57.9%	57.9%	15.8%	73.7%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	12.6	95.0	48.5	48.5	70.1	69.6
Actuated g/C Ratio	0.13	1.00	0.51	0.51	0.74	0.73
v/c Ratio	0.54	0.49	0.42	0.20	0.65	0.51
Control Delay	47.1	1.1	15.4	2.6	23.5	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	1.1	15.4	2.6	23.5	14.8
LOS	D	A	B	A	C	B
Approach Delay	7.6		12.9			18.0
Approach LOS	A		B			B
Queue Length 50th (m)	21.2	0.0	41.4	0.0	45.2	59.5
Queue Length 95th (m)	36.3	0.0	54.8	9.5	#96.7	158.1
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	333	1517	1730	858	573	1306
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.49	0.42	0.20	0.65	0.51

Intersection Summary

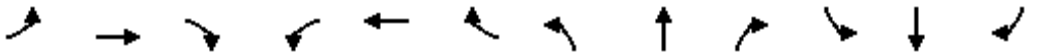
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 88 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 13.2 — Intersection LOS: B
Intersection Capacity Utilization 64.8% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	597	206	0	948	0	129
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)	628	217	0	998	0	136
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	124			103		
pX, platoon unblocked			0.93		0.96	0.93
vC, conflicting volume			845		1127	314
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			686		715	115
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	84
cM capacity (veh/h)			842		349	852

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	314	314	217	499	499	136
Volume Left	0	0	0	0	0	0
Volume Right	0	0	217	0	0	136
cSH	1700	1700	1700	1700	1700	852
Volume to Capacity	0.18	0.18	0.13	0.29	0.29	0.16
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	4.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.0
Lane LOS						B
Approach Delay (s)	0.0			0.0		10.0
Approach LOS						B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	149	7	9	0	7	176	20	9	0	288	0	37
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			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)	157	7	9	0	7	185	21	9	0	303	0	39
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											122	
pX, platoon unblocked												
vC, conflicting volume	866	677	19	671	697	9	39			9		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	866	677	19	671	697	9	39			9		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	17	98	99	100	97	83	99			81		
cM capacity (veh/h)	188	300	1059	305	292	1072	1571			1610		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	174	193	31	303	39
Volume Left	157	0	21	303	0
Volume Right	9	185	0	0	39
cSH	200	973	1571	1610	1700
Volume to Capacity	0.87	0.20	0.01	0.19	0.02
Queue Length 95th (m)	50.1	5.6	0.3	5.3	0.0
Control Delay (s)	82.2	9.6	5.1	7.8	0.0
Lane LOS	F	A	A	A	
Approach Delay (s)	82.2	9.6	5.1	6.9	
Approach LOS	F	A			

Intersection Summary				
Average Delay	25.2			
Intersection Capacity Utilization	53.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	156	334	0	231	325
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	164	352	0	243	342
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						66
pX, platoon unblocked						
vC, conflicting volume	1009	117			352	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1009	117			352	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	82			80	
cM capacity (veh/h)	189	913			1204	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	164	141	141	70	357	228
Volume Left	0	0	0	0	243	0
Volume Right	164	0	0	0	0	0
cSH	913	1700	1700	1700	1204	1700
Volume to Capacity	0.18	0.08	0.08	0.04	0.20	0.13
Queue Length 95th (m)	5.0	0.0	0.0	0.0	5.7	0.0
Control Delay (s)	9.8	0.0	0.0	0.0	6.6	0.0
Lane LOS	A				A	
Approach Delay (s)	9.8	0.0			4.0	
Approach LOS	A					

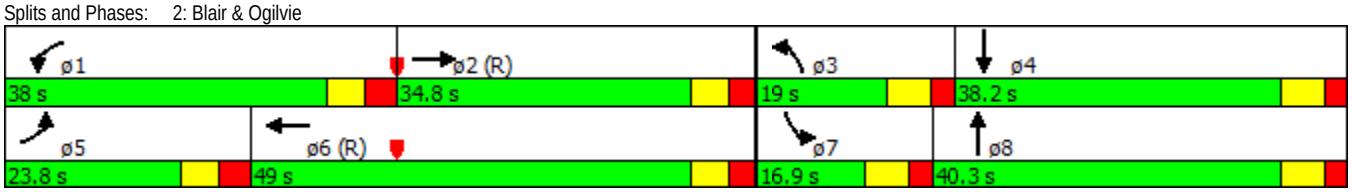
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	114	590	643	745	440	281	313	747	75	687
Lane Group Flow (vph)	120	621	677	784	540	296	329	786	79	796
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	23.8	34.8		38.0	49.0	19.0	40.3		16.9	38.2
Total Split (%)	18.3%	26.8%		29.2%	37.7%	14.6%	31.0%		13.0%	29.4%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	13.9	28.4	130.0	31.2	45.7	12.5	37.3	130.0	9.6	31.7
Actuated g/C Ratio	0.11	0.22	1.00	0.24	0.35	0.10	0.29	1.00	0.07	0.24
v/c Ratio	0.67	0.84	0.46	0.99	0.47	0.94	0.64	0.54	0.64	0.98
Control Delay	73.1	60.0	1.1	79.8	34.0	93.1	40.9	4.2	81.0	74.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.1	60.0	1.1	79.8	34.0	93.1	40.9	4.2	81.0	74.4
LOS	E	E	A	E	C	F	D	A	F	E
Approach Delay		33.0			61.1		31.4			75.0
Approach LOS		C			E		C			E
Queue Length 50th (m)	29.9	80.7	0.0	103.9	55.2	38.0	78.5	25.7	19.9	106.2
Queue Length 95th (m)	49.5	#107.2	0.0	#144.9	74.2	#64.8	111.5	66.2	#38.4	#147.5
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			140.0		130.0			30.0	
Base Capacity (vph)	221	740	1457	789	1141	316	512	1466	135	816
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	0.54	0.84	0.46	0.99	0.47	0.94	0.64	0.54	0.59	0.98

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 47.2 — Intersection LOS: D
Intersection Capacity Utilization 98.7% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie

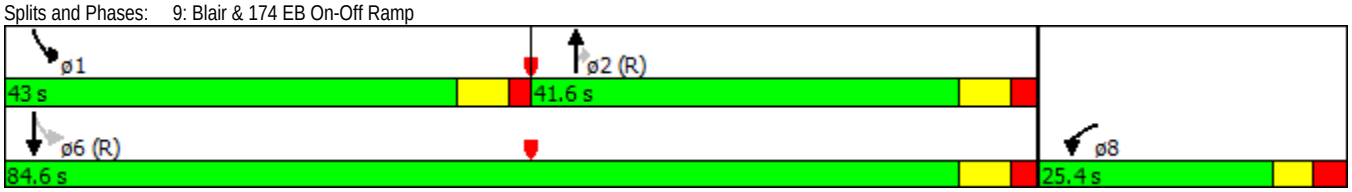


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	198	698	823	311	537	936
Lane Group Flow (vph)	208	735	866	327	565	985
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	25.3		30.5	30.5	16.2	30.5
Total Split (s)	25.4		41.6	41.6	43.0	84.6
Total Split (%)	23.1%		37.8%	37.8%	39.1%	76.9%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	17.1	110.0	35.1	35.1	80.6	80.1
Actuated g/C Ratio	0.16	1.00	0.32	0.32	0.73	0.73
v/c Ratio	0.79	0.48	0.80	0.47	0.82	0.76
Control Delay	65.9	1.1	41.0	5.5	34.1	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	1.1	41.0	5.5	34.1	14.5
LOS	E	A	D	A	C	B
Approach Delay	15.4		31.2			21.7
Approach LOS	B		C			C
Queue Length 50th (m)	42.6	0.0	89.0	0.0	89.3	119.5
Queue Length 95th (m)	#72.9	0.0	113.1	19.1	#151.0	177.9
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	294	1517	1081	695	688	1298
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.48	0.80	0.47	0.82	0.76

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.2 — Intersection LOS: C
Intersection Capacity Utilization 82.7% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

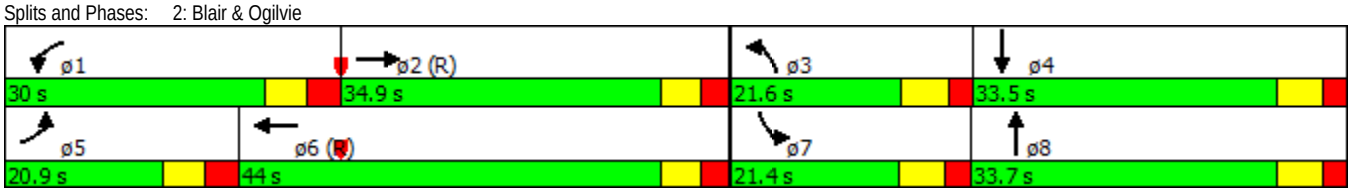


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	98	515	367	740	448	337	220	772	73	215
Lane Group Flow (vph)	103	542	386	779	532	355	232	813	77	311
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	20.9	34.9		30.0	44.0	21.6	33.7		21.4	33.5
Total Split (%)	17.4%	29.1%		25.0%	36.7%	18.0%	28.1%		17.8%	27.9%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	11.9	28.5	120.0	32.6	49.2	14.9	24.6	120.0	10.7	17.8
Actuated g/C Ratio	0.10	0.24	1.00	0.27	0.41	0.12	0.20	1.00	0.09	0.15
v/c Ratio	0.61	0.67	0.26	0.87	0.39	0.87	0.64	0.54	0.51	0.61
Control Delay	67.1	46.4	0.4	54.4	27.1	73.4	52.8	1.4	63.0	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	46.4	0.4	54.4	27.1	73.4	52.8	1.4	63.0	45.3
LOS	E	D	A	D	C	E	D	A	E	D
Approach Delay		31.3			43.3		28.2			48.8
Approach LOS		C			D		C			D
Queue Length 50th (m)	23.5	61.3	0.0	89.2	44.2	42.8	52.5	0.0	17.6	31.9
Queue Length 95th (m)	41.1	80.3	0.0	#153.8	69.3	#67.2	74.8	0.0	31.9	42.1
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			140.0		130.0			30.0	
Base Capacity (vph)	200	805	1487	893	1366	413	417	1498	210	758
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	0.67	0.26	0.87	0.39	0.86	0.56	0.54	0.37	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.7 — Intersection LOS: D
Intersection Capacity Utilization 91.0% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Appendix G

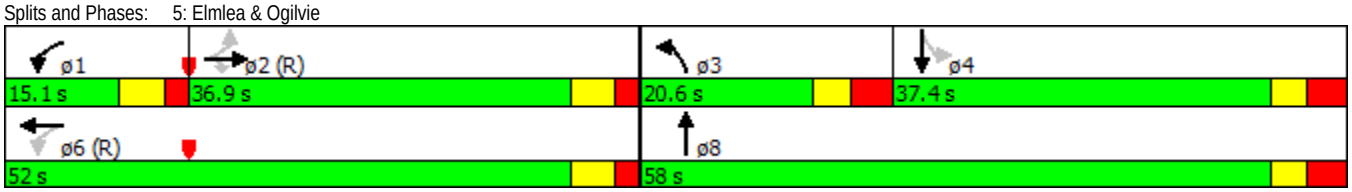
SYNCHRO Capacity Analysis: Ogilvie/Elmlea Projected Intersection Options

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	30	1086	57	205	450	286	2	1	0
Lane Group Flow (vph)	32	1143	60	216	482	301	166	0	17
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	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
Minimum Split (s)	33.7	33.7	33.7	10.7	33.7	16.4	37.4	37.4	37.4
Total Split (s)	36.9	36.9	36.9	15.1	52.0	20.6	58.0	37.4	37.4
Total Split (%)	33.5%	33.5%	33.5%	13.7%	47.3%	18.7%	52.7%	34.0%	34.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	52.4	52.4	52.4	73.7	73.7	13.5	24.2		14.2
Actuated g/C Ratio	0.48	0.48	0.48	0.67	0.67	0.12	0.22		0.13
v/c Ratio	0.08	0.71	0.08	0.64	0.21	0.75	0.36		0.05
Control Delay	23.0	28.8	0.2	26.6	10.2	58.8	5.7		0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	23.0	28.8	0.2	26.6	10.2	58.8	5.7		0.3
LOS	C	C	A	C	B	E	A		A
Approach Delay		27.3			15.3		39.9		0.3
Approach LOS		C			B		D		A
Queue Length 50th (m)	3.0	82.8	0.0	14.6	12.6	32.3	0.4		0.0
Queue Length 95th (m)	13.0	#196.5	0.0	#82.1	48.5	46.8	11.1		0.0
Internal Link Dist (m)		80.7			120.1		116.7		53.1
Turn Bay Length (m)	30.0		75.0	44.0					
Base Capacity (vph)	401	1614	772	340	2264	424	785		520
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.08	0.71	0.08	0.64	0.21	0.71	0.21		0.03

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 26.1 — Intersection LOS: C
Intersection Capacity Utilization 76.5% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Elmlea & Ogilvie

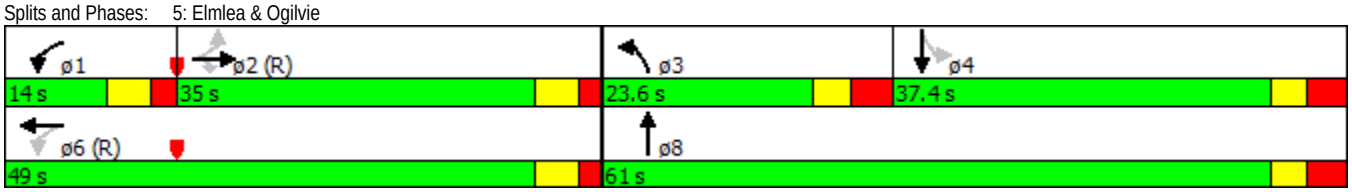


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	24	595	78	256	546	398	2	2	2
Lane Group Flow (vph)	25	626	82	269	577	419	194	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	33.7	33.7	33.7	10.7	33.7	11.4	37.4	37.4	37.4
Total Split (s)	35.0	35.0	35.0	14.0	49.0	23.6	61.0	37.4	37.4
Total Split (%)	31.8%	31.8%	31.8%	12.7%	44.5%	21.5%	55.5%	34.0%	34.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	43.2	43.2	43.2	67.2	67.2	16.7	30.7		14.2
Actuated g/C Ratio	0.39	0.39	0.39	0.61	0.61	0.15	0.28		0.13
v/c Ratio	0.08	0.47	0.12	0.54	0.28	0.84	0.35		0.13
Control Delay	27.4	28.5	0.4	20.9	13.4	61.2	4.6		16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	27.4	28.5	0.4	20.9	13.4	61.2	4.6		16.9
LOS	C	C	A	C	B	E	A		B
Approach Delay		25.3			15.8		43.3		16.9
Approach LOS		C			B		D		B
Queue Length 50th (m)	3.6	55.6	0.0	26.8	30.6	45.3	0.3		0.8
Queue Length 95th (m)	11.2	83.4	0.0	#89.9	62.0	#67.8	11.3		7.3
Internal Link Dist (m)		79.1			115.1		117.3		53.1
Turn Bay Length (m)	30.0		75.0	44.0					
Base Capacity (vph)	302	1330	656	497	2067	514	839		438
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.08	0.47	0.13	0.54	0.28	0.82	0.23		0.06

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 26.5 — Intersection LOS: C
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Elmlea & Ogilvie

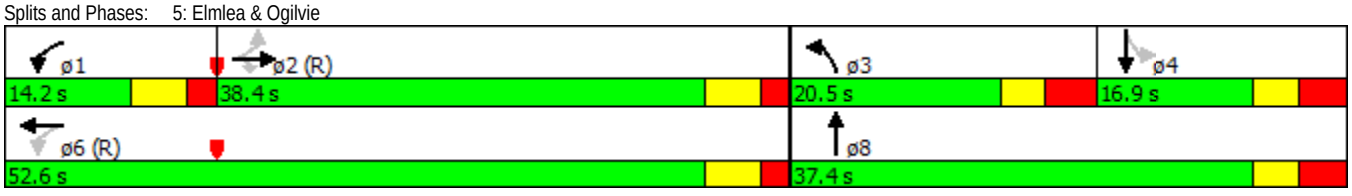


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	30	1086	57	205	450	286	2	1	0
Lane Group Flow (vph)	32	1143	60	216	482	301	166	0	17
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	36.7	36.7	36.7	10.7	36.7	11.4	37.4	16.4	16.4
Total Split (s)	38.4	38.4	38.4	14.2	52.6	20.5	37.4	16.9	16.9
Total Split (%)	42.7%	42.7%	42.7%	15.8%	58.4%	22.8%	41.6%	18.8%	18.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	42.4	42.4	42.4	58.5	58.5	12.7	19.4		10.1
Actuated g/C Ratio	0.47	0.47	0.47	0.65	0.65	0.14	0.22		0.11
v/c Ratio	0.08	0.72	0.08	0.73	0.22	0.65	0.37		0.05
Control Delay	17.6	21.5	0.3	39.8	8.2	43.4	6.2		0.3
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.1		0.0
Total Delay	17.6	21.7	0.3	39.8	8.2	43.4	6.3		0.3
LOS	B	C	A	D	A	D	A		A
Approach Delay		20.6			18.0		30.2		0.3
Approach LOS		C			B		C		A
Queue Length 50th (m)	2.3	55.3	0.0	13.3	2.7	25.4	0.3		0.0
Queue Length 95th (m)	m7.8	#134.0	m0.3	#63.5	36.1	38.0	12.8		0.0
Internal Link Dist (m)		80.7			120.1		116.7		53.1
Turn Bay Length (m)	30.0		75.0	44.0					
Base Capacity (vph)	398	1598	787	295	2200	515	621		326
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	86	0	0	0	0	62		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.08	0.76	0.08	0.73	0.22	0.58	0.30		0.05

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 21.5 — Intersection LOS: C
Intersection Capacity Utilization 76.5% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Elmlea & Ogilvie



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	24	595	78	256	546	398	2	2	2
Lane Group Flow (vph)	25	626	82	269	577	419	194	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	33.7	33.7	33.7	10.7	33.7	11.4	37.4	16.4	16.4
Total Split (s)	33.9	33.9	33.9	17.1	51.0	22.6	39.0	16.4	16.4
Total Split (%)	37.7%	37.7%	37.7%	19.0%	56.7%	25.1%	43.3%	18.2%	18.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	40.2	40.2	40.2	56.2	56.2	15.1	21.7		10.0
Actuated g/C Ratio	0.45	0.45	0.45	0.62	0.62	0.17	0.24		0.11
v/c Ratio	0.07	0.41	0.11	0.58	0.27	0.76	0.38		0.15
Control Delay	20.6	20.4	0.3	15.5	9.6	45.2	5.6		19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	20.6	20.4	0.3	15.5	9.6	45.2	5.6		19.0
LOS	C	C	A	B	A	D	A		B
Approach Delay		18.2			11.5		32.7		19.0
Approach LOS		B			B		C		B
Queue Length 50th (m)	2.1	33.4	0.0	15.1	17.2	35.4	0.3		0.6
Queue Length 95th (m)	8.9	64.6	0.0	42.3	40.8	50.8	13.3		8.3
Internal Link Dist (m)		79.1			115.1		117.3		53.1
Turn Bay Length (m)	30.0		75.0	44.0					
Base Capacity (vph)	344	1514	748	475	2115	591	665		183
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.07	0.41	0.11	0.57	0.27	0.71	0.29		0.15

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 19.6 — Intersection LOS: B
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Elmlea & Ogilvie

Appendix H

SYNCHRO Capacity Analysis: 2022 Projected Conditions and Modifications

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	16	1173	141	180	606	18	204	7	63	22		
Lane Group Flow (vph)	17	1235	148	189	638	19	215	156	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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	52.0	52.0	52.0	15.0	67.0	67.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	52.0%	52.0%	52.0%	15.0%	67.0%	67.0%	28.0%	28.0%	28.0%	28.0%	5%	5%
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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	48.5	48.5	48.5	63.4	63.4	63.4	23.2	23.2	23.2	23.2		
Actuated g/C Ratio	0.48	0.48	0.48	0.63	0.63	0.63	0.23	0.23	0.23	0.23		
v/c Ratio	0.05	0.75	0.21	0.77	0.30	0.03	0.83	0.36	0.28	0.31		
Control Delay	15.6	25.2	3.4	36.3	9.1	0.1	62.9	8.7	34.6	11.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.6	25.2	3.4	36.3	9.1	0.1	62.9	8.7	34.6	11.3		
LOS	B	C	A	D	A	A	E	A	C	B		
Approach Delay		22.7			14.9			40.1		19.2		
Approach LOS		C			B			D		B		
Queue Length 50th (m)	1.8	103.4	0.0	16.5	28.7	0.0	37.9	1.0	10.1	3.3		
Queue Length 95th (m)	5.7	130.7	10.1	#50.3	38.1	0.0	#82.5	16.9	23.0	18.3		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	317	1644	713	251	2149	720	268	437	247	424		
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	0.75	0.21	0.75	0.30	0.03	0.80	0.36	0.27	0.30		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.5 — Intersection LOS: C
Intersection Capacity Utilization 93.9% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: City Park & Ogilvie

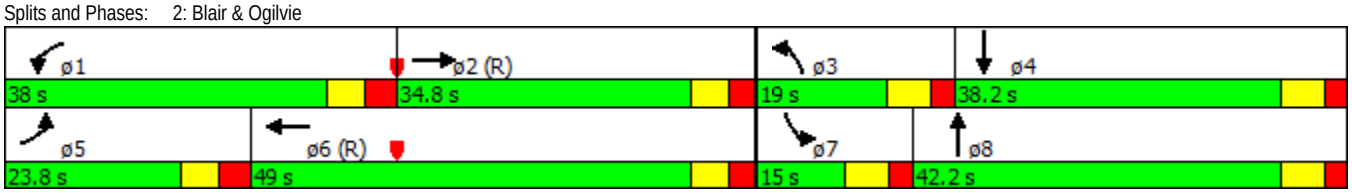
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	120	618	676	774	460	295	329	775	77	722
Lane Group Flow (vph)	126	651	712	815	564	311	346	816	81	836
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	23.8	34.8		38.0	49.0	19.0	42.2		15.0	38.2
Total Split (%)	18.3%	26.8%		29.2%	37.7%	14.6%	32.5%		11.5%	29.4%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	14.1	28.4	130.0	31.2	45.5	12.5	35.9	130.0	8.3	31.7
Actuated g/C Ratio	0.11	0.22	1.00	0.24	0.35	0.10	0.28	1.00	0.06	0.24
v/c Ratio	0.68	0.88	0.49	1.03	0.50	0.98	0.70	0.56	0.75	1.02
Control Delay	74.2	63.5	1.2	88.9	34.7	108.7	50.6	4.2	97.5	85.5
Queue Delay	0.0	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	63.5	1.2	104.7	34.7	108.7	50.6	4.2	97.5	85.5
LOS	E	E	A	F	C	F	D	A	F	F
Approach Delay		34.6			76.1		37.2			86.6
Approach LOS		C			E		D			F
Queue Length 50th (m)	31.4	85.6	0.0	~115.3	58.5	43.5	63.2	33.8	20.7	~119.1
Queue Length 95th (m)	51.5	#116.1	0.0	#154.0	78.0	#72.3	90.7	54.9	#46.6	#159.2
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			140.0		130.0			30.0	
Base Capacity (vph)	221	740	1457	789	1134	316	491	1466	110	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	14	32	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.88	0.49	1.08	0.50	0.98	0.70	0.56	0.74	1.02

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 104 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 55.3	Intersection LOS: E
Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1040	344	87	702	490	211
Lane Group Flow (vph)	1095	362	92	739	516	222
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	57.8	57.8	57.8	57.8	20.0	20.0
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22	0.22
v/c Ratio	0.50	0.34	0.37	0.34	0.71	0.57
Control Delay	10.1	1.9	14.4	8.5	37.5	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	1.9	14.4	8.5	37.5	24.8
LOS	B	A	B	A	D	C
Approach Delay	8.1			9.1	33.7	
Approach LOS	A			A	C	
Queue Length 50th (m)	47.5	0.0	6.7	27.7	42.4	21.5
Queue Length 95th (m)	74.6	10.6	21.1	44.9	54.0	40.1
Internal Link Dist (m)	325.3			98.8	45.5	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2178	1063	249	2178	942	483
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.34	0.37	0.34	0.55	0.46

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

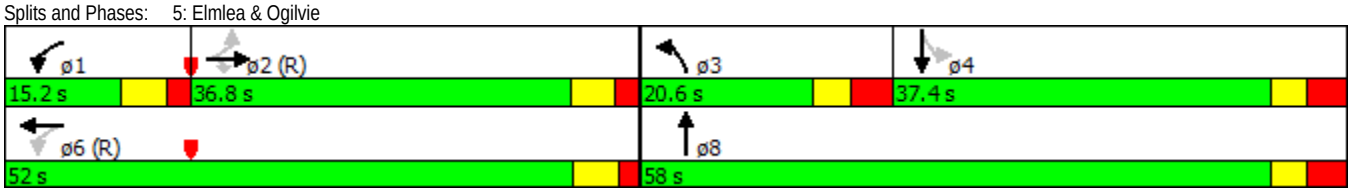
Splits and Phases: 3: Blair Place & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	30	1139	57	205	473	286	2	1	0
Lane Group Flow (vph)	32	1199	60	216	506	301	166	0	17
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	33.7	33.7	33.7	10.7	33.5	11.4	37.4	37.4	37.4
Total Split (s)	36.8	36.8	36.8	15.2	52.0	20.6	58.0	37.4	37.4
Total Split (%)	33.5%	33.5%	33.5%	13.8%	47.3%	18.7%	52.7%	34.0%	34.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	1.8	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.5	6.4	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	52.5	52.5	52.5	73.7	73.9	13.5	24.2		14.2
Actuated g/C Ratio	0.48	0.48	0.48	0.67	0.67	0.12	0.22		0.13
v/c Ratio	0.08	0.74	0.08	0.66	0.22	0.75	0.36		0.05
Control Delay	23.1	29.7	0.2	31.1	10.2	58.8	5.7		0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	23.1	29.7	0.2	31.1	10.2	58.8	5.7		0.3
LOS	C	C	A	C	B	E	A		A
Approach Delay		28.2			16.4		39.9		0.3
Approach LOS		C			B		D		A
Queue Length 50th (m)	3.0	89.2	0.0	19.0	13.2	32.3	0.4		0.0
Queue Length 95th (m)	13.1	#210.6	0.0	#86.0	50.8	46.8	11.1		0.0
Internal Link Dist (m)		80.7			120.1		104.3		53.1
Turn Bay Length (m)	30.0		75.0	60.0					
Base Capacity (vph)	392	1616	773	325	2270	424	785		520
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.08	0.74	0.08	0.66	0.22	0.71	0.21		0.03

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 26.8 — Intersection LOS: C
Intersection Capacity Utilization 78.1% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Elmlea & Ogilvie



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	1270	635	4	1	12	0
Lane Group Flow (vph)	0	1351	690	0	9	0	32
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	62.0	62.0	62.0	28.0	28.0	28.0	28.0
Total Split (%)	68.9%	68.9%	68.9%	31.1%	31.1%	31.1%	31.1%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		74.4	74.4		12.4		12.4
Actuated g/C Ratio		0.83	0.83		0.14		0.14
v/c Ratio		0.51	0.25		0.05		0.14
Control Delay		2.2	3.9		24.8		11.3
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		2.2	3.9		24.8		11.3
LOS		A	A		C		B
Approach Delay		2.2	3.9		24.8		11.3
Approach LOS		A	A		C		B
Queue Length 50th (m)		0.3	15.3		0.8		0.0
Queue Length 95th (m)		7.6	35.8		4.3		6.4
Internal Link Dist (m)		236.0	802.6		34.7		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2655	2785		346		365
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.51	0.25		0.03		0.09

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 25 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 3.0	Intersection LOS: A
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

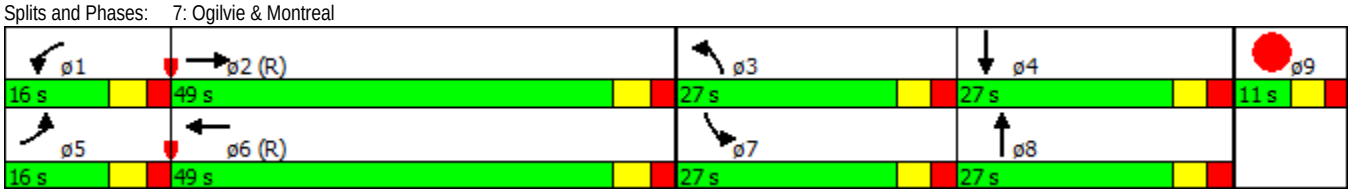
Splits and Phases: 6: Ogilvie & Appleford

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	907	33	267	470	105	29	408	641	214	225	168
Lane Group Flow (vph)	262	955	35	281	495	111	31	429	675	225	237	177
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	16.0	49.0		16.0	49.0		27.0	27.0		27.0	27.0	
Total Split (%)	12.3%	37.7%		12.3%	37.7%		20.8%	20.8%		20.8%	20.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	23.5	42.8	130.0	23.5	42.8	130.0	7.9	19.8	130.0	20.0	36.6	130.0
Actuated g/C Ratio	0.18	0.33	1.00	0.18	0.33	1.00	0.06	0.15	1.00	0.15	0.28	1.00
v/c Ratio	0.86	0.86	0.02	0.92	0.44	0.08	0.30	0.83	0.45	0.87	0.25	0.12
Control Delay	77.9	49.6	0.0	87.3	35.8	0.1	65.2	67.9	1.0	83.7	37.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.9	49.6	0.0	87.3	35.8	0.1	65.2	67.9	1.0	83.7	37.9	0.2
LOS	E	D	A	F	D	A	E	E	A	F	D	A
Approach Delay		54.1			47.6			28.0			43.6	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	67.4	119.9	0.0	~76.7	52.3	0.0	7.8	56.2	0.0	56.3	25.3	0.0
Queue Length 95th (m)	#119.8	147.2	0.0	#131.0	68.3	0.0	17.7	74.6	0.0	#96.4	37.8	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	306	1116	1485	306	1116	1478	277	547	1488	277	954	1481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.86	0.02	0.92	0.44	0.08	0.11	0.78	0.45	0.81	0.25	0.12

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 43.4 Intersection LOS: D
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	123	501	93	105	189	297	1087	1980	169
Lane Group Flow (vph)	129	527	98	111	199	313	1144	2084	178
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	40.0	40.0	40.0	40.0		21.0	90.0	69.0	69.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%		16.2%	69.2%	53.1%	53.1%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	32.7	32.7	32.7	32.7	130.0	14.4	84.4	63.6	63.6
Actuated g/C Ratio	0.25	0.25	0.25	0.25	1.00	0.11	0.65	0.49	0.49
v/c Ratio	0.44	0.98	0.23	0.25	0.13	0.86	0.52	0.88	0.22
Control Delay	46.4	63.8	40.2	40.4	0.2	79.1	13.2	14.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Total Delay	46.4	63.8	40.2	40.4	0.2	79.1	13.2	14.7	0.7
LOS	D	E	D	D	A	E	B	B	A
Approach Delay				20.7			27.4	13.6	
Approach LOS				C			C	B	
Queue Length 50th (m)	27.9	89.6	19.9	22.7	0.0	41.1	77.0	115.5	1.1
Queue Length 95th (m)	47.5	#161.7	35.3	38.8	0.0	#64.2	93.1	m115.9	m1.4
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	296	542	432	455	1478	369	2200	2381	796
Starvation Cap Reductn	0	0	0	0	0	0	0	89	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	0.44	0.97	0.23	0.24	0.13	0.85	0.52	0.91	0.22

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 130		
Offset: 52 (40%), Referenced to phase 2:NBT and 6:SBT, Start of Green		
Natural Cycle: 100		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.98		
Intersection Signal Delay: 24.8	Intersection LOS: C	
Intersection Capacity Utilization 97.9%	ICU Level of Service F	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		
m Volume for 95th percentile queue is metered by upstream signal.		

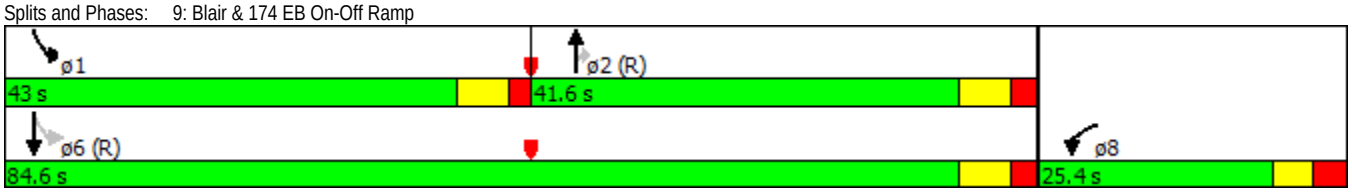
Splits and Phases: 8: Blair & 174 WB Off Ramp

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	198	698	863	311	537	982
Lane Group Flow (vph)	208	735	908	327	565	1034
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	25.3		30.5	30.5	16.2	30.5
Total Split (s)	25.4		41.6	41.6	43.0	84.6
Total Split (%)	23.1%		37.8%	37.8%	39.1%	76.9%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	17.1	110.0	35.1	35.1	80.6	80.1
Actuated g/C Ratio	0.16	1.00	0.32	0.32	0.73	0.73
v/c Ratio	0.79	0.48	0.84	0.47	0.84	0.80
Control Delay	65.9	1.1	43.2	5.5	36.9	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	1.1	43.2	5.5	36.9	16.3
LOS	E	A	D	A	D	B
Approach Delay	15.4		33.2			23.6
Approach LOS	B		C			C
Queue Length 50th (m)	42.6	0.0	95.0	0.0	93.5	133.7
Queue Length 95th (m)	#72.9	0.0	120.2	19.1	#156.7	202.5
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	294	1517	1081	695	676	1298
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.48	0.84	0.47	0.84	0.80

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Blair & 174 EB On-Off Ramp



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	1281	1	713	33	17
Lane Group Flow (vph)	1377	1	751	35	18
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.8	11.0	26.8	32.0	32.0
Total Split (s)	47.0	11.0	58.0	32.0	32.0
Total Split (%)	52.2%	12.2%	64.4%	35.6%	35.6%
Yellow Time (s)	3.7	3.7	3.7	3.0	3.0
All-Red Time (s)	2.1	2.1	2.1	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	71.5	71.4	73.7	13.2	13.2
Actuated g/C Ratio	0.79	0.79	0.82	0.15	0.15
v/c Ratio	0.51	0.00	0.27	0.14	0.08
Control Delay	9.2	7.0	4.1	32.1	12.8
Queue Delay	0.3	0.0	0.0	0.0	0.0
Total Delay	9.5	7.0	4.1	32.1	12.8
LOS	A	A	A	C	B
Approach Delay	9.5		4.1	25.5	
Approach LOS	A		A	C	
Queue Length 50th (m)	40.7	0.0	17.0	5.6	0.0
Queue Length 95th (m)	#155.6	m0.2	34.3	11.2	4.8
Internal Link Dist (m)	120.1		236.0	41.3	
Turn Bay Length (m)		35.0			20.0
Base Capacity (vph)	2682	287	2776	489	444
Starvation Cap Reductn	593	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.00	0.27	0.07	0.04

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 24 (27%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

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

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

Splits and Phases: 16: Arena & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	ø3	ø7
Lane Configurations												
Volume (vph)	3	769	143	210	655	3	191	2	10	1		
Lane Group Flow (vph)	3	809	151	221	689	3	201	187	11	4		
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)	28.9	28.9	28.9	10.9	28.9	28.9	27.5	27.5	27.5	27.5	5.0	5.0
Total Split (s)	42.0	42.0	42.0	15.0	57.0	57.0	28.0	28.0	28.0	28.0	5.0	5.0
Total Split (%)	46.7%	46.7%	46.7%	16.7%	63.3%	63.3%	31.1%	31.1%	31.1%	31.1%	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)	2.2	2.2	2.2	2.2	2.2	2.2	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)	5.9	5.9	5.9	5.9	5.9	5.9	6.5	6.5	6.5	6.5		
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)	43.5	43.5	43.5	58.8	58.8	58.8	17.8	17.8	17.8	17.8		
Actuated g/C Ratio	0.48	0.48	0.48	0.65	0.65	0.65	0.20	0.20	0.20	0.20		
v/c Ratio	0.01	0.49	0.20	0.54	0.31	0.00	0.76	0.42	0.06	0.01		
Control Delay	16.0	18.5	3.7	12.6	8.1	0.0	52.0	7.8	27.5	19.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	16.0	18.5	3.7	12.6	8.1	0.0	52.0	7.8	27.5	19.5		
LOS	B	B	A	B	A	A	D	A	C	B		
Approach Delay		16.2			9.2			30.7		25.4		
Approach LOS		B			A			C		C		
Queue Length 50th (m)	0.3	48.4	0.0	13.4	24.1	0.0	32.7	0.3	1.5	0.1		
Queue Length 95th (m)	2.0	74.8	10.9	29.4	42.5	0.0	54.2	15.8	5.6	2.7		
Internal Link Dist (m)		271.4			353.6			68.6		78.4		
Turn Bay Length (m)	48.0		130.0	100.0		55.0			30.0			
Base Capacity (vph)	333	1639	774	416	2213	969	322	499	243	377		
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	0.01	0.49	0.20	0.53	0.31	0.00	0.62	0.37	0.05	0.01		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.9 — Intersection LOS: B
Intersection Capacity Utilization 67.8% — ICU Level of Service C
Analysis Period (min) 15

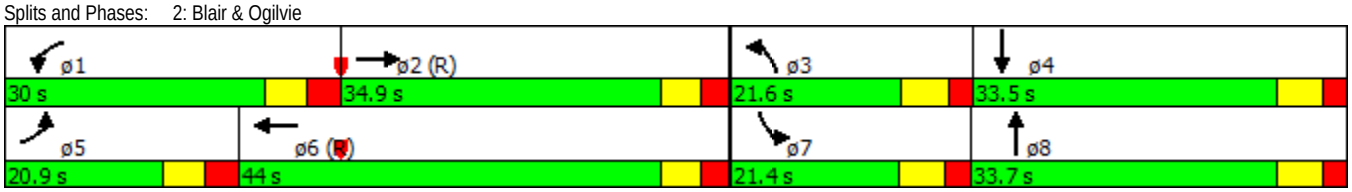
Splits and Phases: 1: City Park & Ogilvie

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	103	538	385	760	467	355	231	794	76	226
Lane Group Flow (vph)	108	566	405	800	554	374	243	836	80	327
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	20.9	34.9		30.0	44.0	21.6	33.7		21.4	33.5
Total Split (%)	17.4%	29.1%		25.0%	36.7%	18.0%	28.1%		17.8%	27.9%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	12.1	28.5	120.0	31.8	48.2	15.1	25.2	120.0	10.9	18.4
Actuated g/C Ratio	0.10	0.24	1.00	0.26	0.40	0.13	0.21	1.00	0.09	0.15
v/c Ratio	0.63	0.70	0.27	0.92	0.41	0.91	0.65	0.56	0.52	0.62
Control Delay	67.9	47.4	0.5	60.0	28.0	78.0	52.9	1.5	63.4	45.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	47.4	0.5	60.0	28.0	78.0	52.9	1.5	63.4	45.5
LOS	E	D	A	E	C	E	D	A	E	D
Approach Delay		31.8			46.9		29.8			49.0
Approach LOS		C			D		C			D
Queue Length 50th (m)	24.6	64.5	0.0	93.4	47.3	45.4	55.0	0.0	18.2	33.7
Queue Length 95th (m)	43.0	84.1	0.0	#159.6	72.4	#72.2	78.4	0.0	33.2	44.3
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			140.0		130.0			30.0	
Base Capacity (vph)	201	805	1487	871	1338	413	421	1498	210	758
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	0.54	0.70	0.27	0.92	0.41	0.91	0.58	0.56	0.38	0.43

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 37.5 — Intersection LOS: D
Intersection Capacity Utilization 92.4% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie

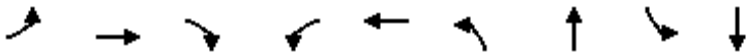


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	764	422	108	873	390	64
Lane Group Flow (vph)	804	444	114	919	411	67
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases		2	6			8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.0	26.0	16.0	16.0	32.2	32.2
Total Split (s)	43.0	43.0	43.0	43.0	32.0	32.0
Total Split (%)	57.3%	57.3%	57.3%	57.3%	42.7%	42.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.3	2.3	2.3	2.3	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	46.7	46.7	46.7	46.7	16.1	16.1
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.21	0.21
v/c Ratio	0.38	0.41	0.31	0.44	0.58	0.18
Control Delay	8.6	2.4	11.7	9.1	29.0	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	2.4	11.7	9.1	29.0	6.8
LOS	A	A	B	A	C	A
Approach Delay	6.4			9.4	25.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	24.5	0.0	6.3	29.3	27.7	0.0
Queue Length 95th (m)	51.5	13.2	22.5	61.0	32.9	7.4
Internal Link Dist (m)	325.3			100.3	41.5	
Turn Bay Length (m)			80.0			50.0
Base Capacity (vph)	2110	1079	362	2110	1131	557
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.41	0.31	0.44	0.36	0.12

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 10.9 — Intersection LOS: B
Intersection Capacity Utilization 58.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Blair Place & Ogilvie

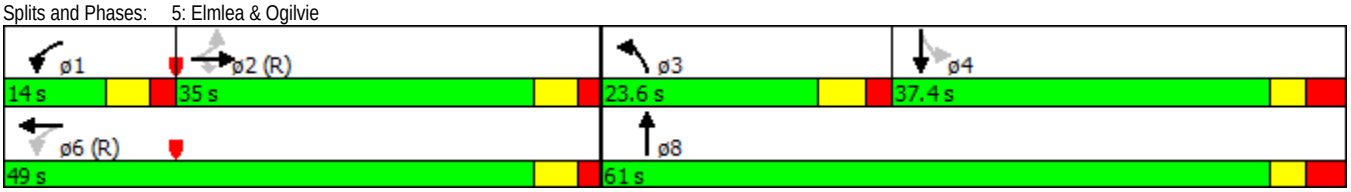


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	24	621	78	256	573	398	2	2	2
Lane Group Flow (vph)	25	654	82	269	605	419	194	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Prot	NA	Perm	NA
Protected Phases		2		1	6	3	8		4
Permitted Phases	2		2	6				4	
Detector Phase	2	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	33.7	33.7	33.7	10.7	33.7	11.0	37.4	37.4	37.4
Total Split (s)	35.0	35.0	35.0	14.0	49.0	23.6	61.0	37.4	37.4
Total Split (%)	31.8%	31.8%	31.8%	12.7%	44.5%	21.5%	55.5%	34.0%	34.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7	6.0	6.4		6.4
Lead/Lag	Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	42.4	42.4	42.4	67.3	67.3	17.0	30.6		14.2
Actuated g/C Ratio	0.39	0.39	0.39	0.61	0.61	0.15	0.28		0.13
v/c Ratio	0.09	0.50	0.13	0.55	0.29	0.83	0.35		0.13
Control Delay	27.6	29.4	0.4	21.2	13.5	59.6	4.7		16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	27.6	29.4	0.4	21.2	13.5	59.6	4.7		16.9
LOS	C	C	A	C	B	E	A		B
Approach Delay		26.2			15.8		42.2		16.9
Approach LOS		C			B		D		B
Queue Length 50th (m)	3.6	59.2	0.0	26.8	32.5	45.1	0.3		0.8
Queue Length 95th (m)	11.2	87.7	0.0	#92.8	65.2	#66.4	11.3		7.3
Internal Link Dist (m)		79.1			110.1		114.8		53.1
Turn Bay Length (m)	30.0		75.0	60.0					
Base Capacity (vph)	288	1305	644	493	2073	526	839		438
Starvation Cap Reductn	0	0	0	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0	0	0		0
Reduced v/c Ratio	0.09	0.50	0.13	0.55	0.29	0.80	0.23		0.06

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 26.4 — Intersection LOS: C
Intersection Capacity Utilization 72.5% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Elmlea & Ogilvie

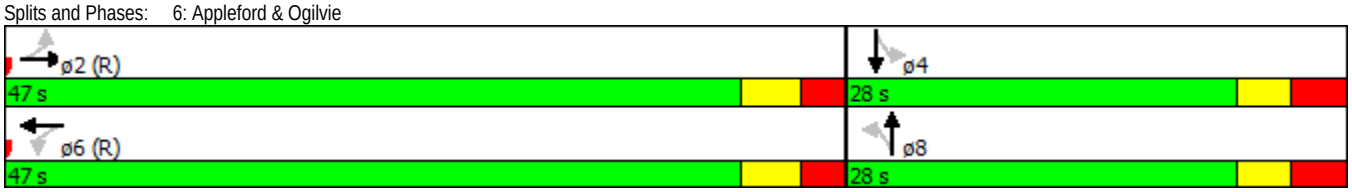


Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	11	759	730	1	0	13	2
Lane Group Flow (vph)	0	813	786	0	2	0	38
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			8		4	
Detector Phase	2	2	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	33.9	33.9	33.9	28.2	28.2	28.2	28.2
Total Split (s)	47.0	47.0	47.0	28.0	28.0	28.0	28.0
Total Split (%)	62.7%	62.7%	62.7%	37.3%	37.3%	37.3%	37.3%
Yellow Time (s)	3.3	3.3	3.3	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	3.2	3.2	3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0		0.0
Total Lost Time (s)		5.9	5.9		6.2		6.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		59.4	59.4		12.4		12.4
Actuated g/C Ratio		0.79	0.79		0.17		0.17
v/c Ratio		0.32	0.29		0.01		0.15
Control Delay		0.6	5.0		0.0		15.6
Queue Delay		0.0	0.0		0.0		0.0
Total Delay		0.6	5.0		0.0		15.6
LOS		A	A		A		B
Approach Delay		0.6	5.0		0.0		15.6
Approach LOS		A	A		A		B
Queue Length 50th (m)		1.3	18.2		0.0		2.0
Queue Length 95th (m)		0.5	43.4		0.0		7.9
Internal Link Dist (m)		246.0	802.6		38.9		163.8
Turn Bay Length (m)							
Base Capacity (vph)		2528	2675		442		431
Starvation Cap Reductn		0	0		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.32	0.29		0.00		0.09

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 3.0 — Intersection LOS: A
Intersection Capacity Utilization 50.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Appleford & Ogilvie

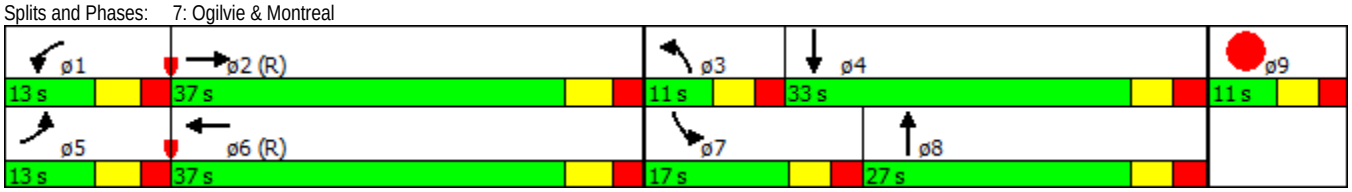


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	472	32	344	454	126	29	208	414	157	219	140
Lane Group Flow (vph)	167	497	34	362	478	133	31	219	436	165	231	147
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	13.0	37.0		13.0	37.0		11.0	27.0		17.0	33.0	
Total Split (%)	12.4%	35.2%		12.4%	35.2%		10.5%	25.7%		16.2%	31.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	21.9	30.8	105.0	25.6	34.4	105.0	5.3	13.4	105.0	11.3	23.8	105.0
Actuated g/C Ratio	0.21	0.29	1.00	0.24	0.33	1.00	0.05	0.13	1.00	0.11	0.23	1.00
v/c Ratio	0.47	0.50	0.02	0.88	0.43	0.09	0.36	0.51	0.29	0.91	0.30	0.10
Control Delay	43.0	32.8	0.0	62.7	29.2	0.1	60.5	46.1	0.5	93.7	35.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	32.8	0.0	62.7	29.2	0.1	60.5	46.1	0.5	93.7	35.3	0.1
LOS	D	C	A	E	C	A	E	D	A	F	D	A
Approach Delay		33.7			37.7			17.8			43.5	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	30.8	44.1	0.0	70.1	38.1	0.0	6.3	22.6	0.0	33.9	22.3	0.0
Queue Length 95th (m)	53.0	59.9	0.0	#147.5	57.5	0.0	16.0	31.2	0.0	#72.0	30.1	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	354	994	1492	412	1111	1486	85	678	1494	182	876	1489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.50	0.02	0.88	0.43	0.09	0.36	0.32	0.29	0.91	0.26	0.10

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal

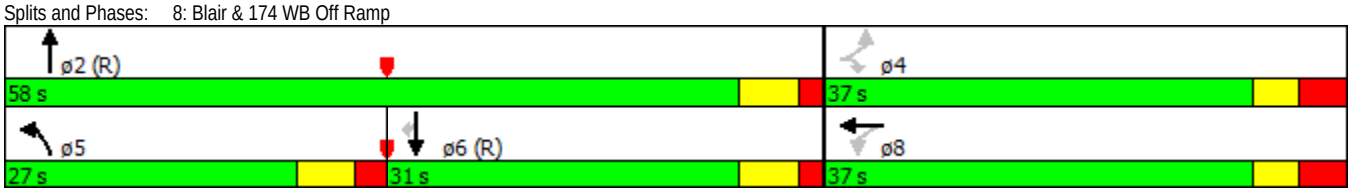


Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Volume (vph)	113	330	133	134	276	312	957	1198	175
Lane Group Flow (vph)	119	347	140	141	291	328	1007	1261	184
Turn Type	Perm	Perm	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases				8		5	2	6	
Permitted Phases	4	4	8		Free				6
Detector Phase	4	4	8	8		5	2	6	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0		5.0	10.0	10.0	10.0
Minimum Split (s)	36.8	36.8	36.8	36.8		11.4	30.1	30.1	30.1
Total Split (s)	37.0	37.0	37.0	37.0		27.0	58.0	31.0	31.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%		28.4%	61.1%	32.6%	32.6%
Yellow Time (s)	3.3	3.3	3.3	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.5	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
Total Lost Time (s)	6.8	6.8	6.8	6.8		6.4	6.1	6.1	6.1
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	16.9	16.9	16.9	16.9	95.0	14.7	65.2	44.1	44.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	1.00	0.15	0.69	0.46	0.46
v/c Ratio	0.57	0.63	0.46	0.44	0.19	0.65	0.43	0.56	0.23
Control Delay	44.4	8.5	38.2	37.4	0.3	38.9	6.1	22.0	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	8.5	38.2	37.4	0.3	38.9	6.1	22.0	4.5
LOS	D	A	D	D	A	D	A	C	A
Approach Delay				18.7			14.2	19.8	
Approach LOS				B			B	B	
Queue Length 50th (m)	20.7	0.0	23.9	24.0	0.0	21.3	14.1	56.4	0.0
Queue Length 95th (m)	31.1	18.5	33.9	33.7	0.0	40.4	92.7	#107.9	14.8
Internal Link Dist (m)				106.2			116.5	190.9	
Turn Bay Length (m)	80.0		120.0		25.0	95.0			70.0
Base Capacity (vph)	375	718	538	567	1494	712	2325	2259	801
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	0.32	0.48	0.26	0.25	0.19	0.46	0.43	0.56	0.23

Intersection Summary

Cycle Length: 95
Actuated Cycle Length: 95
Offset: 52 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 17.4 — Intersection LOS: B
Intersection Capacity Utilization 73.3% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Blair & 174 WB Off Ramp



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	115	699	721	163	355	656
Lane Group Flow (vph)	121	736	759	172	374	691
Turn Type	Prot	Free	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		Free		2	6	
Detector Phase	8		2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	5.0	10.0
Minimum Split (s)	25.3		30.5	30.5	11.0	30.5
Total Split (s)	25.0		55.0	55.0	15.0	70.0
Total Split (%)	26.3%		57.9%	57.9%	15.8%	73.7%
Yellow Time (s)	3.3		4.2	4.2	4.2	4.2
All-Red Time (s)	3.0		2.3	2.3	1.8	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3		6.5	6.5	6.0	6.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None		C-Max	C-Max	Max	C-Max
Act Effct Green (s)	12.6	95.0	48.5	48.5	70.1	69.6
Actuated g/C Ratio	0.13	1.00	0.51	0.51	0.74	0.73
v/c Ratio	0.54	0.49	0.44	0.20	0.67	0.53
Control Delay	47.1	1.1	15.7	2.6	15.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	1.1	15.7	2.6	15.8	8.4
LOS	D	A	B	A	B	A
Approach Delay	7.6		13.3			11.0
Approach LOS	A		B			B
Queue Length 50th (m)	21.2	0.0	44.0	0.0	27.4	93.2
Queue Length 95th (m)	36.3	0.0	58.0	9.5	#49.0	30.7
Internal Link Dist (m)	112.2		134.0			206.7
Turn Bay Length (m)		60.0		85.0		
Base Capacity (vph)	333	1517	1730	858	557	1306
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.49	0.44	0.20	0.67	0.53

Intersection Summary

Cycle Length: 95
Actuated Cycle Length: 95
Offset: 88 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.7 — Intersection LOS: B
Intersection Capacity Utilization 65.8% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Blair & 174 EB On-Off Ramp

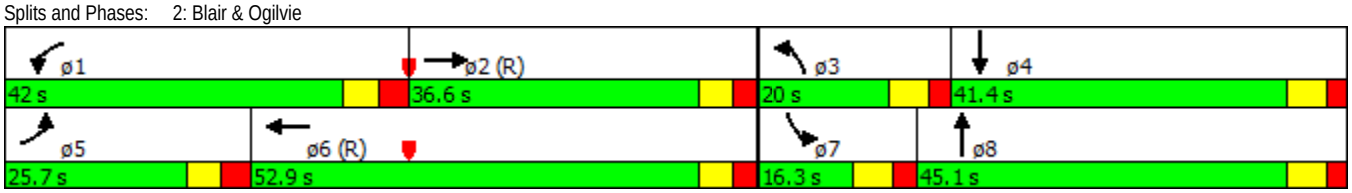
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	120	618	676	774	460	295	329	775	77	722
Lane Group Flow (vph)	126	651	712	815	564	311	346	816	81	836
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	25.7	36.6		42.0	52.9	20.0	45.1		16.3	41.4
Total Split (%)	18.4%	26.1%		30.0%	37.8%	14.3%	32.2%		11.6%	29.6%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	15.1	30.2	140.0	35.2	50.3	13.5	39.0	140.0	9.4	34.9
Actuated g/C Ratio	0.11	0.22	1.00	0.25	0.36	0.10	0.28	1.00	0.07	0.25
v/c Ratio	0.69	0.89	0.49	0.99	0.49	0.98	0.70	0.56	0.72	1.00
Control Delay	78.9	68.7	1.2	80.1	36.2	108.4	54.0	1.5	96.1	83.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	68.7	1.2	80.1	36.2	108.4	54.0	1.5	96.1	83.6
LOS	E	E	A	F	D	F	D	A	F	F
Approach Delay		37.3			62.2		36.4			84.7
Approach LOS		D			E		D			F
Queue Length 50th (m)	34.0	92.8	0.0	116.5	62.3	45.0	86.5	0.0	22.3	~122.5
Queue Length 95th (m)	54.5	#124.6	0.0	#158.2	82.9	#75.0	121.6	0.0	#46.4	#166.7
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			110.0		130.0			30.0	
Base Capacity (vph)	228	731	1457	826	1161	317	496	1466	118	833
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	0.55	0.89	0.49	0.99	0.49	0.98	0.70	0.56	0.69	1.00

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 51.8	Intersection LOS: D
Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Blair & Ogilvie

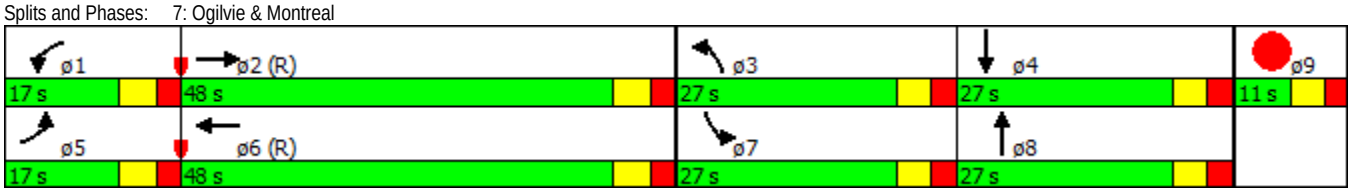


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	249	907	33	267	470	105	29	408	641	214	225	168
Lane Group Flow (vph)	262	955	35	281	495	111	31	429	675	225	237	177
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	17.0	48.0		17.0	48.0		27.0	27.0		27.0	27.0	
Total Split (%)	13.1%	36.9%		13.1%	36.9%		20.8%	20.8%		20.8%	20.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	24.5	41.8	130.0	24.5	41.8	130.0	7.9	19.8	130.0	20.0	36.6	130.0
Actuated g/C Ratio	0.19	0.32	1.00	0.19	0.32	1.00	0.06	0.15	1.00	0.15	0.28	1.00
v/c Ratio	0.82	0.88	0.02	0.88	0.45	0.08	0.30	0.83	0.45	0.87	0.25	0.12
Control Delay	72.5	51.9	0.0	79.8	36.7	0.1	65.2	67.9	1.0	83.7	37.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	51.9	0.0	79.8	36.7	0.1	65.2	67.9	1.0	83.7	37.9	0.2
LOS	E	D	A	E	D	A	E	E	A	F	D	A
Approach Delay		54.8			45.8			28.0			43.6	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	66.7	121.4	0.0	72.5	52.9	0.0	7.8	56.2	0.0	56.3	25.3	0.0
Queue Length 95th (m)	#116.3	#151.3	0.0	#127.5	69.2	0.0	17.7	74.6	0.0	#96.4	37.8	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	319	1090	1485	319	1090	1478	277	547	1488	277	954	1481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.88	0.02	0.88	0.45	0.08	0.11	0.78	0.45	0.81	0.25	0.12

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 43.2 Intersection LOS: D
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal

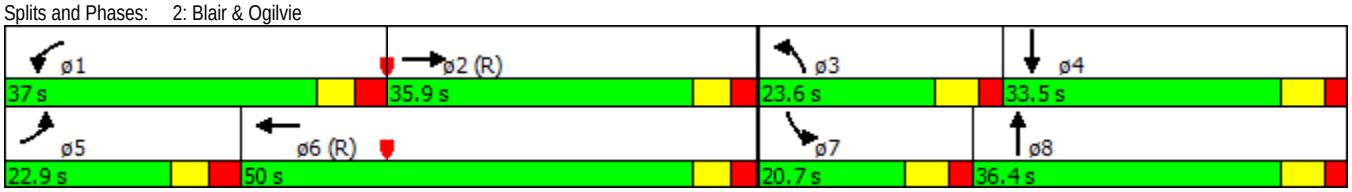


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	103	538	385	760	467	355	231	794	76	226
Lane Group Flow (vph)	108	566	405	800	554	374	243	836	80	327
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Free	Prot	NA
Protected Phases	5	2		1	6	3	8		7	4
Permitted Phases			Free					Free		
Detector Phase	5	2		1	6	3	8		7	4
Switch Phase										
Minimum Initial (s)	5.0	10.0		5.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.8	34.4		11.8	34.4	11.5	33.5		11.5	33.5
Total Split (s)	22.9	35.9		37.0	50.0	23.6	36.4		20.7	33.5
Total Split (%)	17.6%	27.6%		28.5%	38.5%	18.2%	28.0%		15.9%	25.8%
Yellow Time (s)	3.7	3.7		3.7	3.7	4.2	4.2		4.2	4.2
All-Red Time (s)	3.1	2.7		3.1	2.7	2.3	2.3		2.3	2.3
Lost Time Adjust (s)	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	6.4	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None		None	None
Act Effct Green (s)	13.0	30.8	130.0	37.4	55.2	16.8	27.2	130.0	11.1	18.8
Actuated g/C Ratio	0.10	0.24	1.00	0.29	0.42	0.13	0.21	1.00	0.09	0.14
v/c Ratio	0.64	0.70	0.27	0.85	0.39	0.88	0.65	0.56	0.56	0.66
Control Delay	72.7	51.3	0.5	53.6	28.0	77.6	56.7	1.5	71.0	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	51.3	0.5	53.6	28.0	77.6	56.7	1.5	71.0	52.3
LOS	E	D	A	D	C	E	E	A	E	D
Approach Delay		34.4			43.1		30.3			55.9
Approach LOS		C			D		C			E
Queue Length 50th (m)	26.9	71.3	0.0	96.7	49.3	49.0	60.1	0.0	19.9	37.9
Queue Length 95th (m)	45.3	91.8	0.0	#153.4	75.4	#74.2	83.5	0.0	35.7	49.4
Internal Link Dist (m)		353.6			325.3		190.9			179.1
Turn Bay Length (m)	65.0			140.0		130.0			30.0	
Base Capacity (vph)	209	803	1487	945	1413	432	423	1498	185	699
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	0.70	0.27	0.85	0.39	0.87	0.57	0.56	0.43	0.47

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.8 — Intersection LOS: D
Intersection Capacity Utilization 92.4% — ICU Level of Service F
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Blair & Ogilvie



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	472	32	344	454	126	29	208	414	157	219	140
Lane Group Flow (vph)	167	497	34	362	478	133	31	219	436	165	231	147
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			Free			Free			Free
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.0	27.2		11.0	27.2		10.7	27.0		10.7	27.0	
Total Split (s)	13.0	36.0		13.0	36.0		12.0	27.0		18.0	33.0	
Total Split (%)	12.4%	34.3%		12.4%	34.3%		11.4%	25.7%		17.1%	31.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.3	2.5		2.3	2.5		2.4	2.7		2.4	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.2		6.0	6.2		5.7	6.0		5.7	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	21.9	29.8	105.0	25.8	33.7	105.0	6.1	13.4	105.0	12.0	24.0	105.0
Actuated g/C Ratio	0.21	0.28	1.00	0.25	0.32	1.00	0.06	0.13	1.00	0.11	0.23	1.00
v/c Ratio	0.47	0.52	0.02	0.87	0.44	0.09	0.32	0.51	0.29	0.85	0.30	0.10
Control Delay	43.0	33.9	0.0	61.3	29.9	0.1	56.1	46.1	0.5	81.7	35.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	33.9	0.0	61.3	29.9	0.1	56.1	46.1	0.5	81.7	35.2	0.1
LOS	D	C	A	E	C	A	E	D	A	F	D	A
Approach Delay		34.4			37.5			17.6			39.8	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	30.8	44.8	0.0	70.1	38.7	0.0	6.2	22.6	0.0	33.5	22.3	0.0
Queue Length 95th (m)	53.0	60.7	0.0	#147.5	58.3	0.0	15.8	31.2	0.0	#68.6	30.1	0.0
Internal Link Dist (m)		204.7			244.5			802.6			131.3	
Turn Bay Length (m)	55.0		35.0	90.0		40.0	40.0		25.0	50.0		30.0
Base Capacity (vph)	354	962	1492	416	1087	1486	101	678	1494	198	882	1489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.52	0.02	0.87	0.44	0.09	0.31	0.32	0.29	0.83	0.26	0.10

Intersection Summary

Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Ogilvie & Montreal