APPENDIX A

SCREENING FORM & RESPONSE TO CITY COMMENTS

PARSONS

1223 Michael Street, Suite 100, Ottawa, Ontario, K1J 7T2
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City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	4-Aug-21
Project	Lepine Innes Development
Project Number	477947 - 01000

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

Module 1.1 - Description of Proposed Development	
Municipal Address	3490 Innes Road
Description of location	Located on the south side of Innes Road, midblock between Pagé Road and Boyer Road
Land Use	Residential or mixed use alternatives
Development Size	4 options. Up to 880 residential units or options with less units and addition of commercial and/or retirement building
Number of Accesses and Locations	Single access to Innes Rd via Lamarche Ave. Loop access to Lamarche Ave.
Development Phasing	3 phases
Buildout Year	Assumed 2022 for phase 1, 2028 for full buildout
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Townhomes or Apartments	
Development Size	873	Units
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers		
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	Yes	Innes Road currently has a bike lane and is proposed as future spine route. Isolated measures TP on Innes Rd
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	Yes	Part of Innes Arterial Maintstreet DPA
Location Trigger Met?	Yes	

Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection;	Yes	nearest loop access to Innes/Lamarche intersection on Lamarche Ave is 130 meters. Though currently unsignalized, it may be requred to be in future
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	
The development includes a drive-thru facility	Yes	Some options include drive-thru
Safety Trigger Met?	Yes	

APPENDIX B

TRAFFIC COUNT DATA

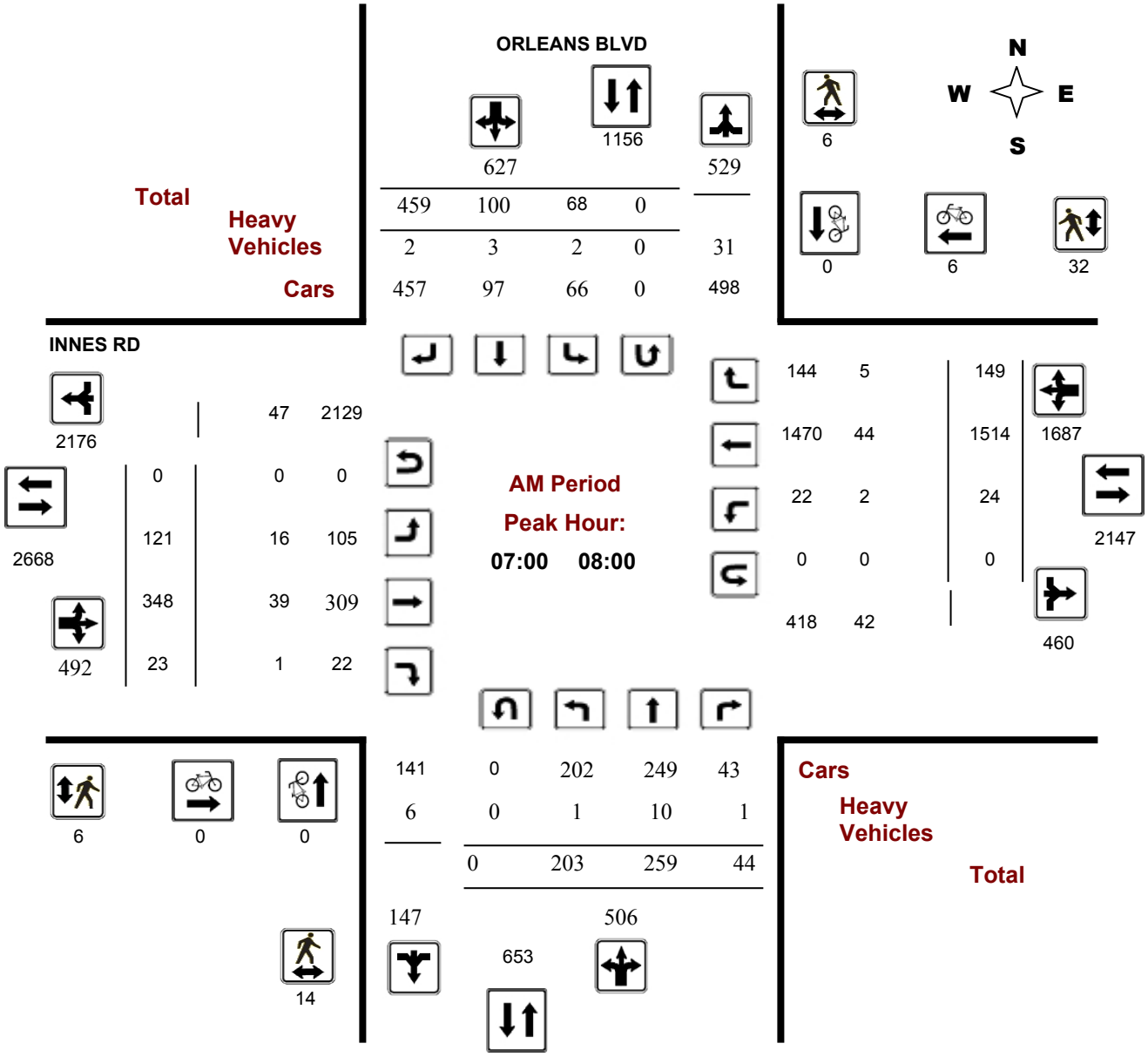
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

INNES RD @ ORLEANS BLVD

Survey Date: Wednesday, May 03, 2017 **WO No:** 36978

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



Comments

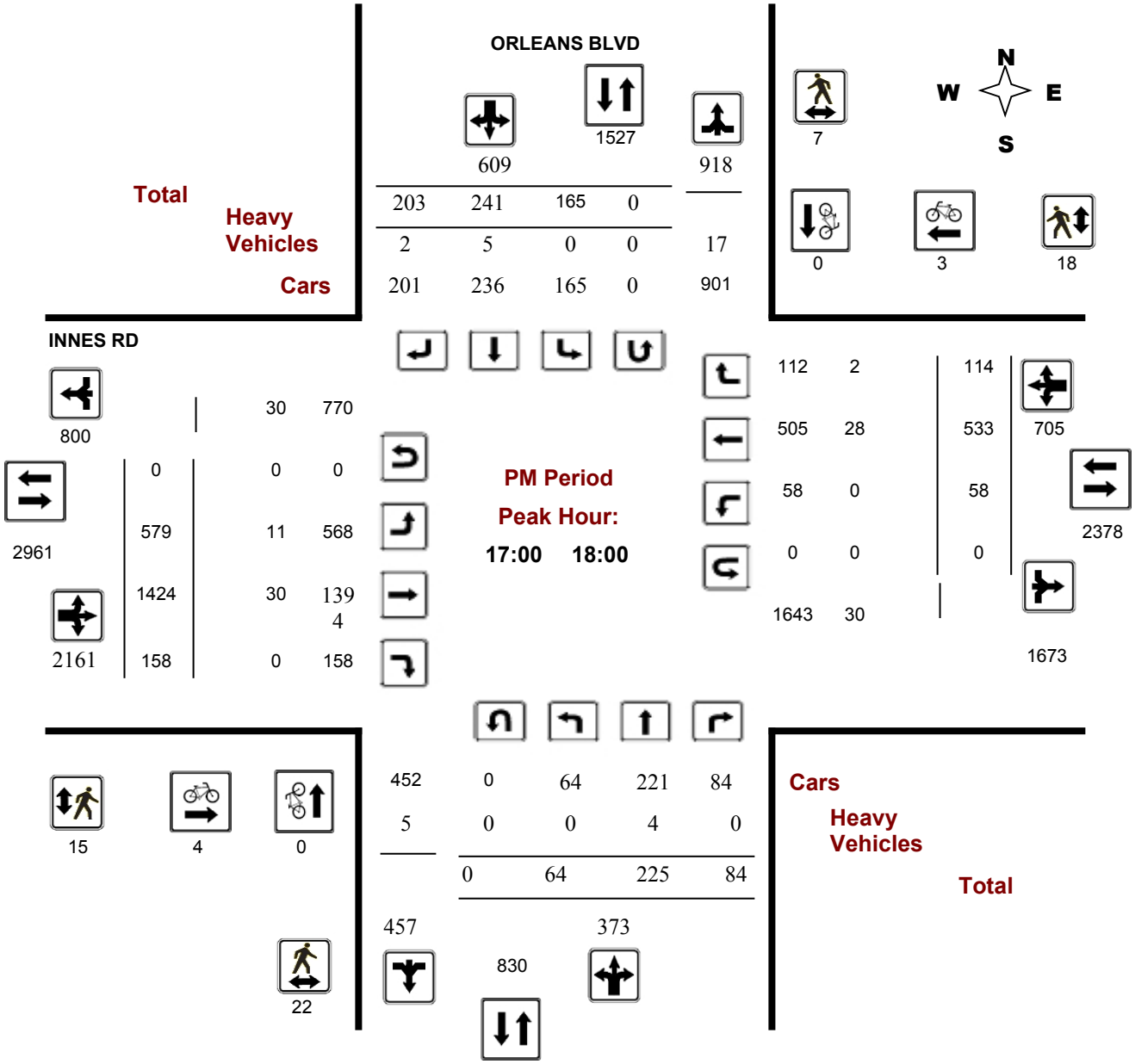
Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

INNES RD @ ORLEANS BLVD

Survey Date: Wednesday, May 03, 2017
Start Time: 07:00

WO No: 36978
Device: Miovision



Comments

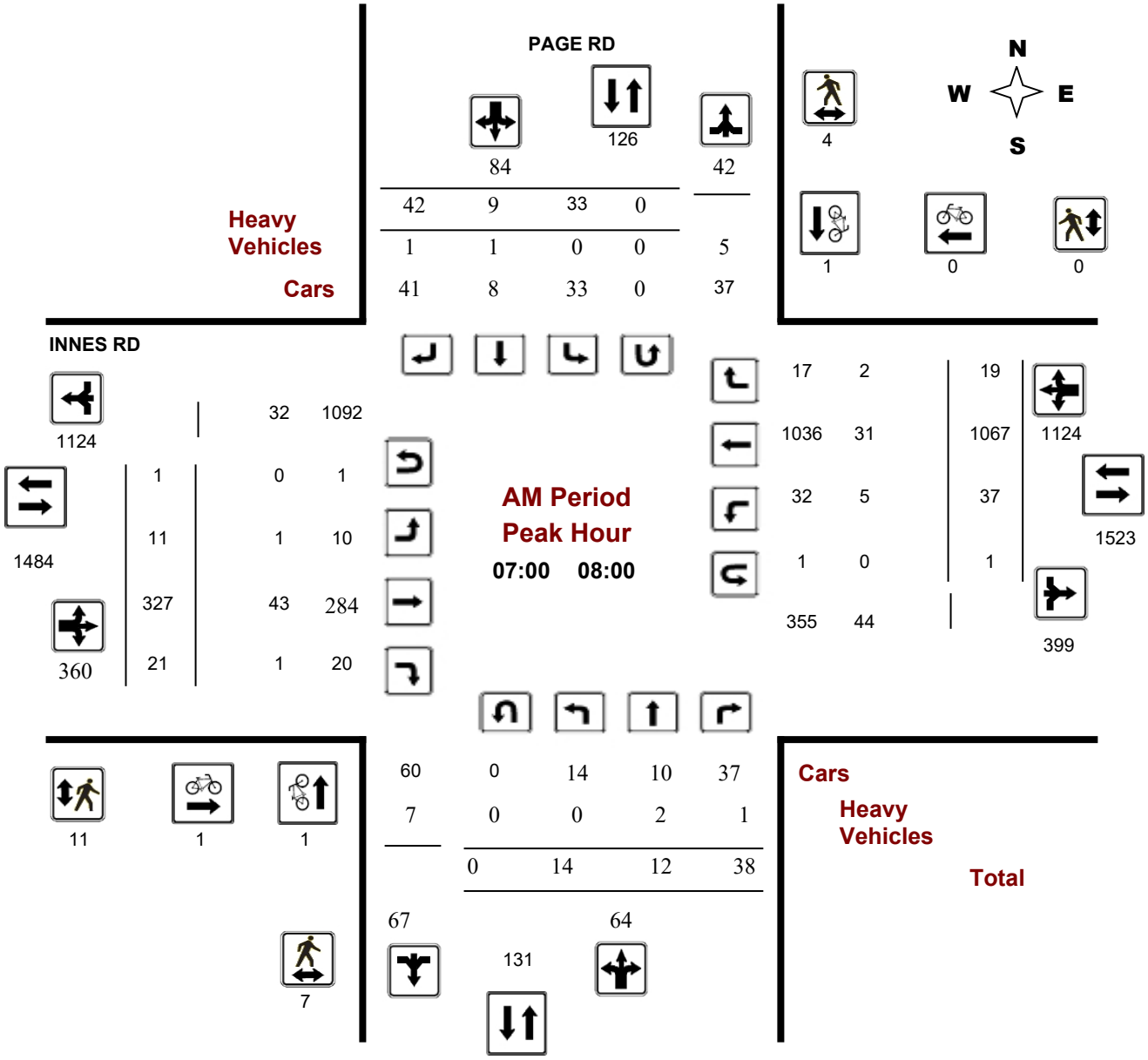
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ PAGE RD

Survey Date: Tuesday, January 08, 2019 **WO No:** 38221

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



Comments

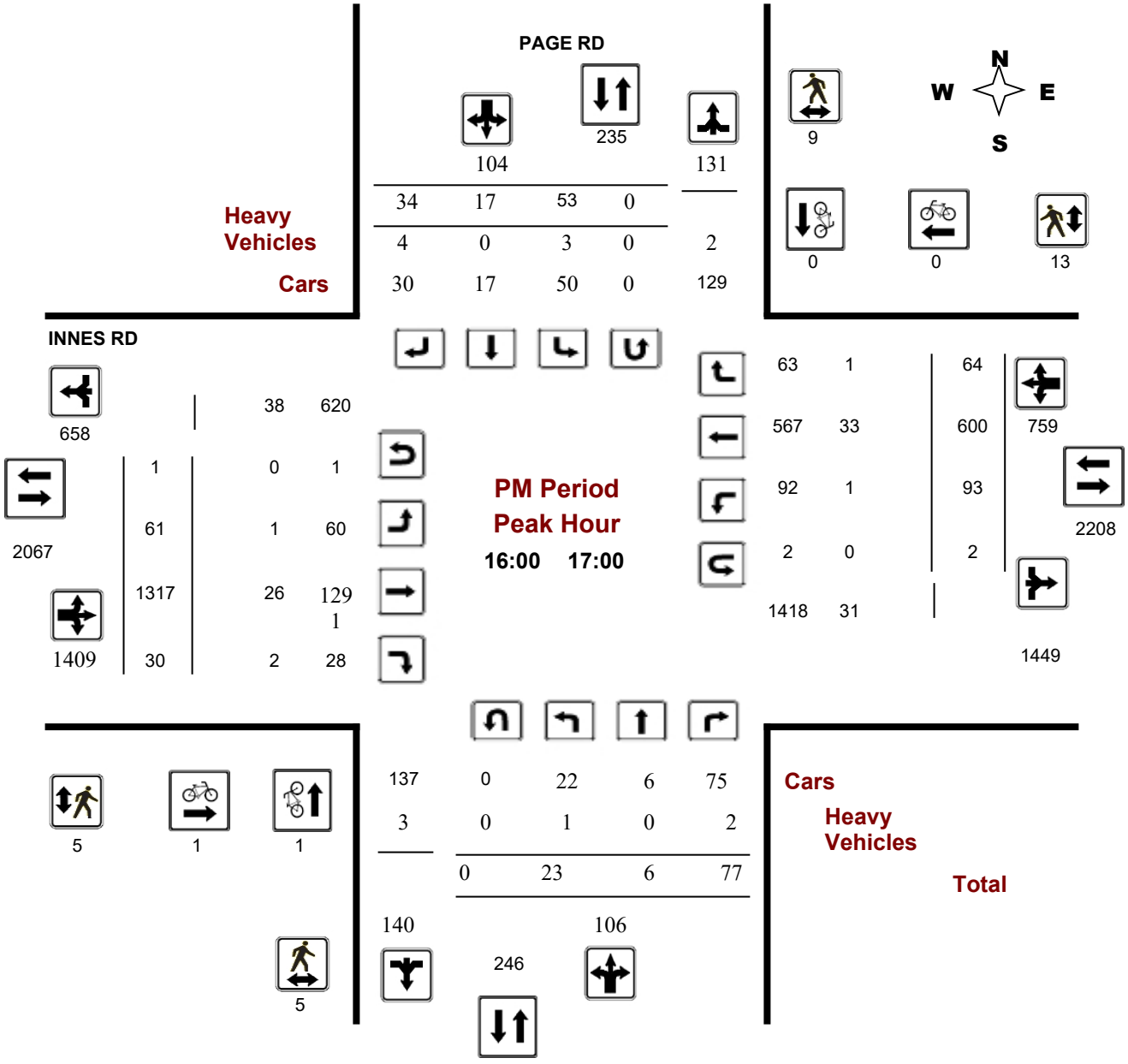
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ PAGE RD

Survey Date: Tuesday, January 08, 2019 **WO No:** 38221

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



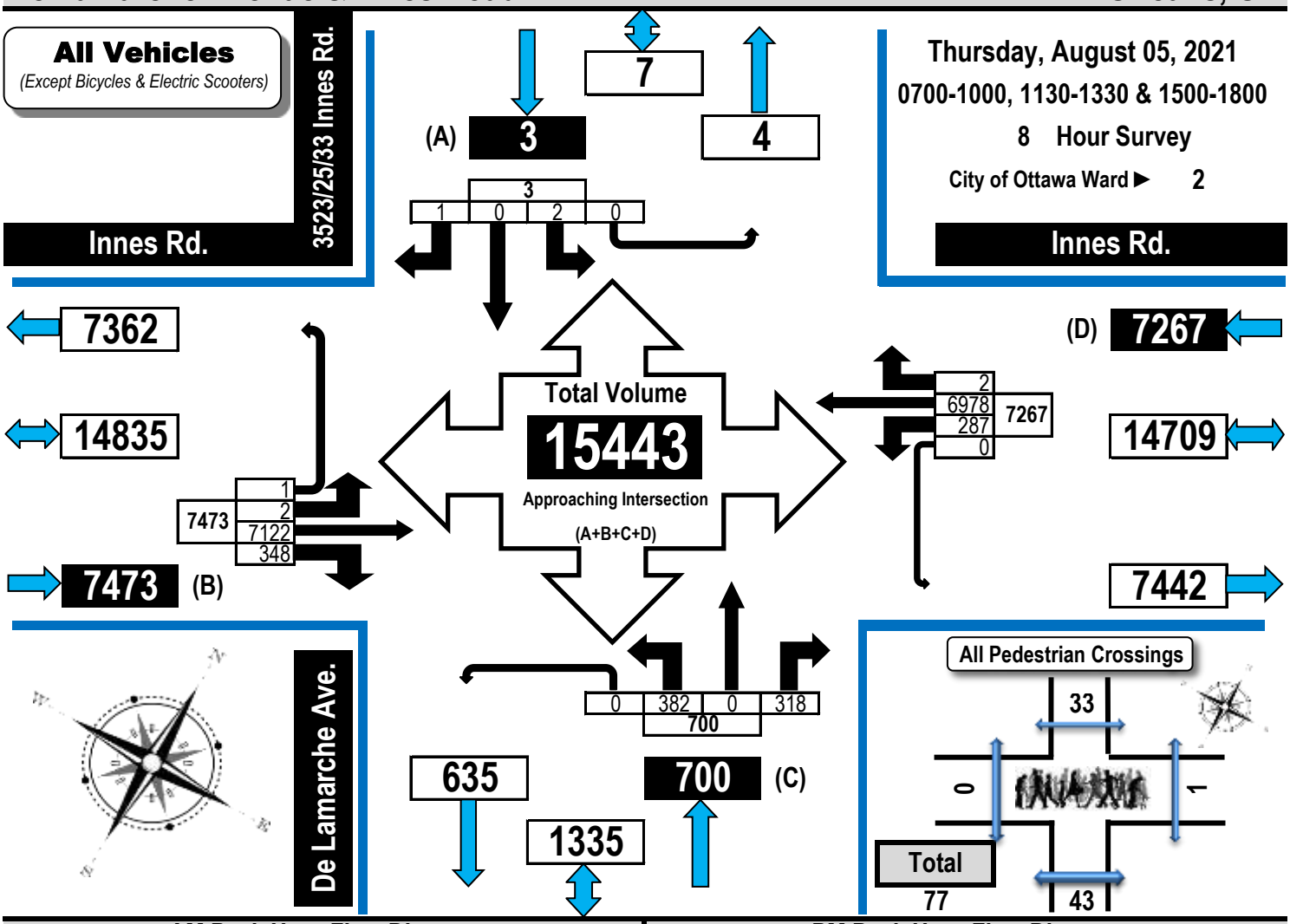
Comments

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

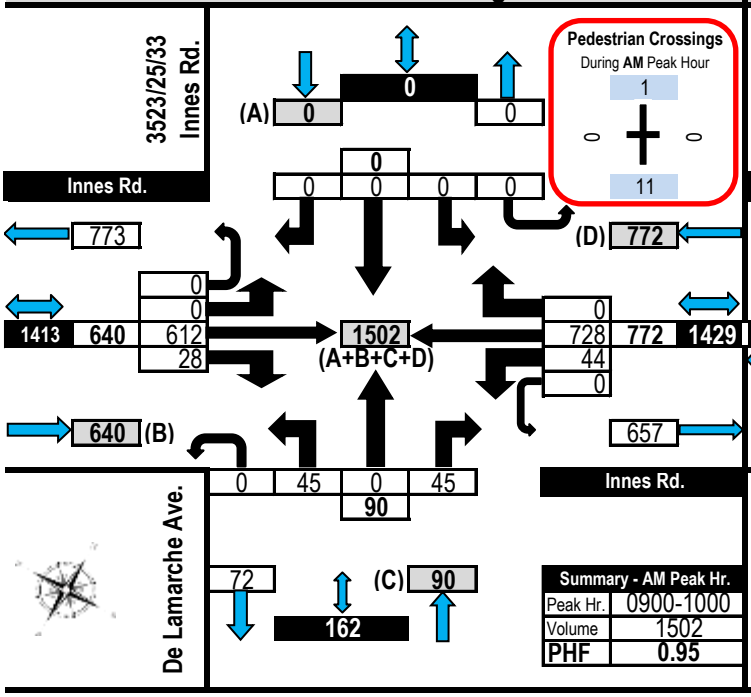
De Lamarche Avenue & Innes Road — Orléans, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Thursday, August 05, 2021
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 2

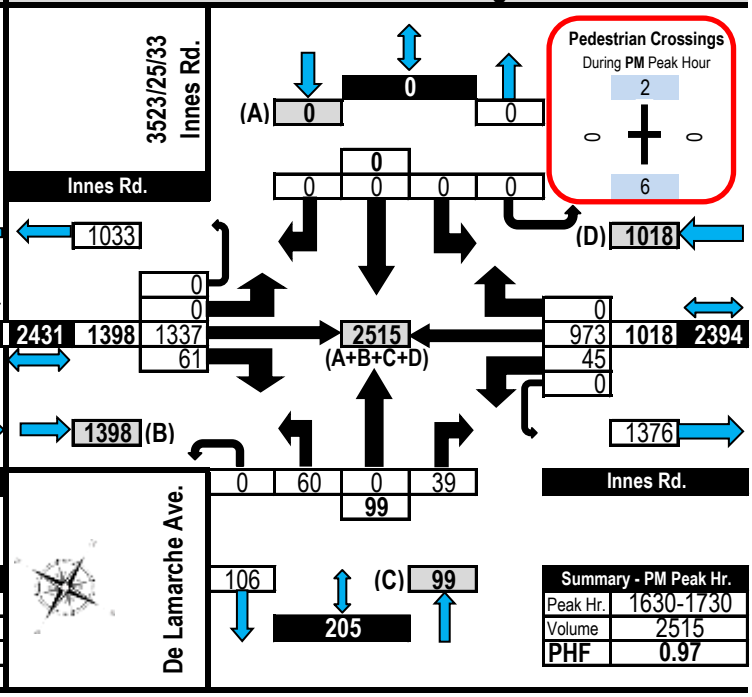


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0900-1000
Volume	1502
PHF	0.95

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1630-1730
Volume	2515
PHF	0.97

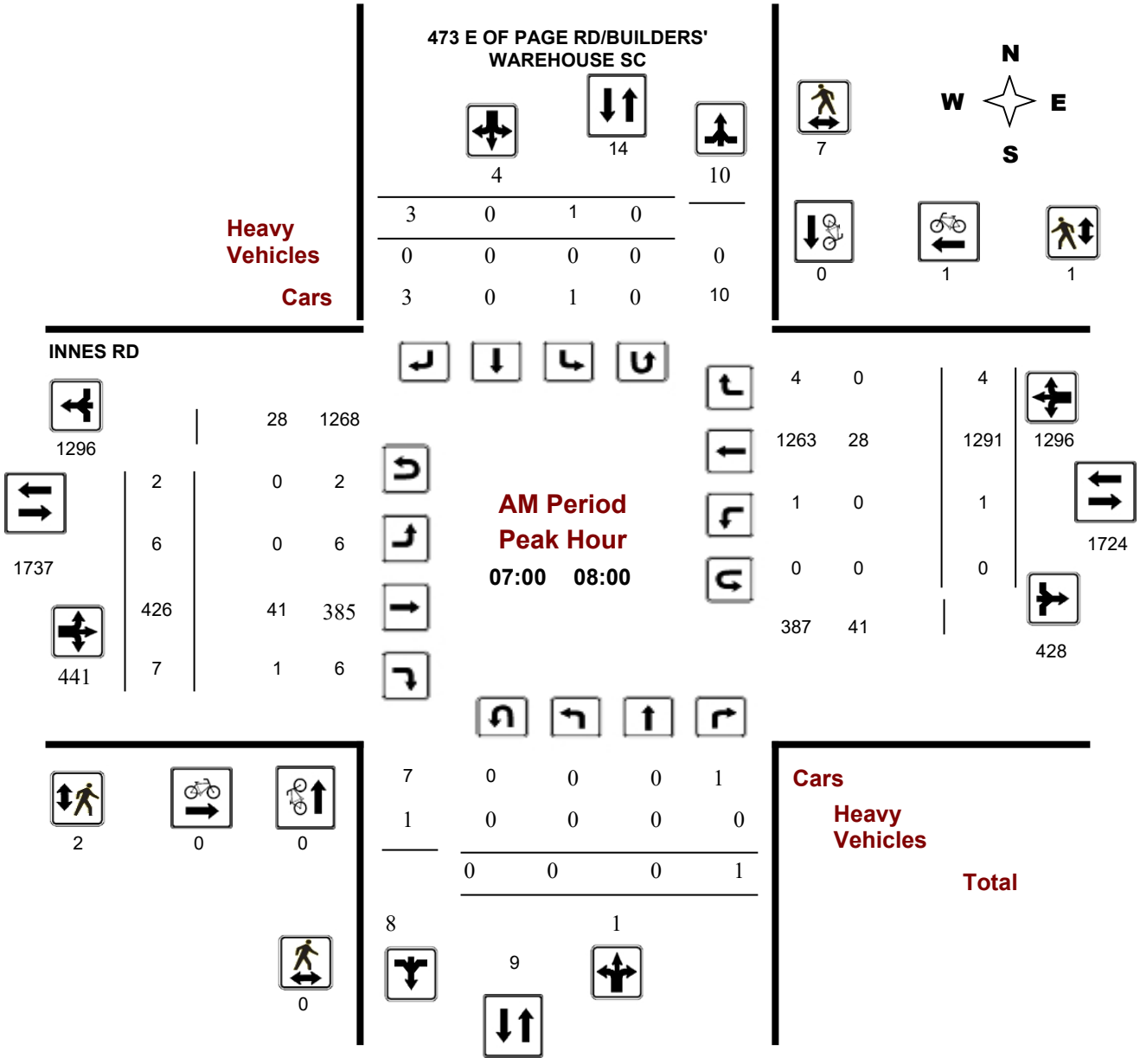
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ 473 E OF PAGE RD/BUILDERS' WAREHOUS

Survey Date: Thursday, January 31, 2019 **WO No:** 38223

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



Comments

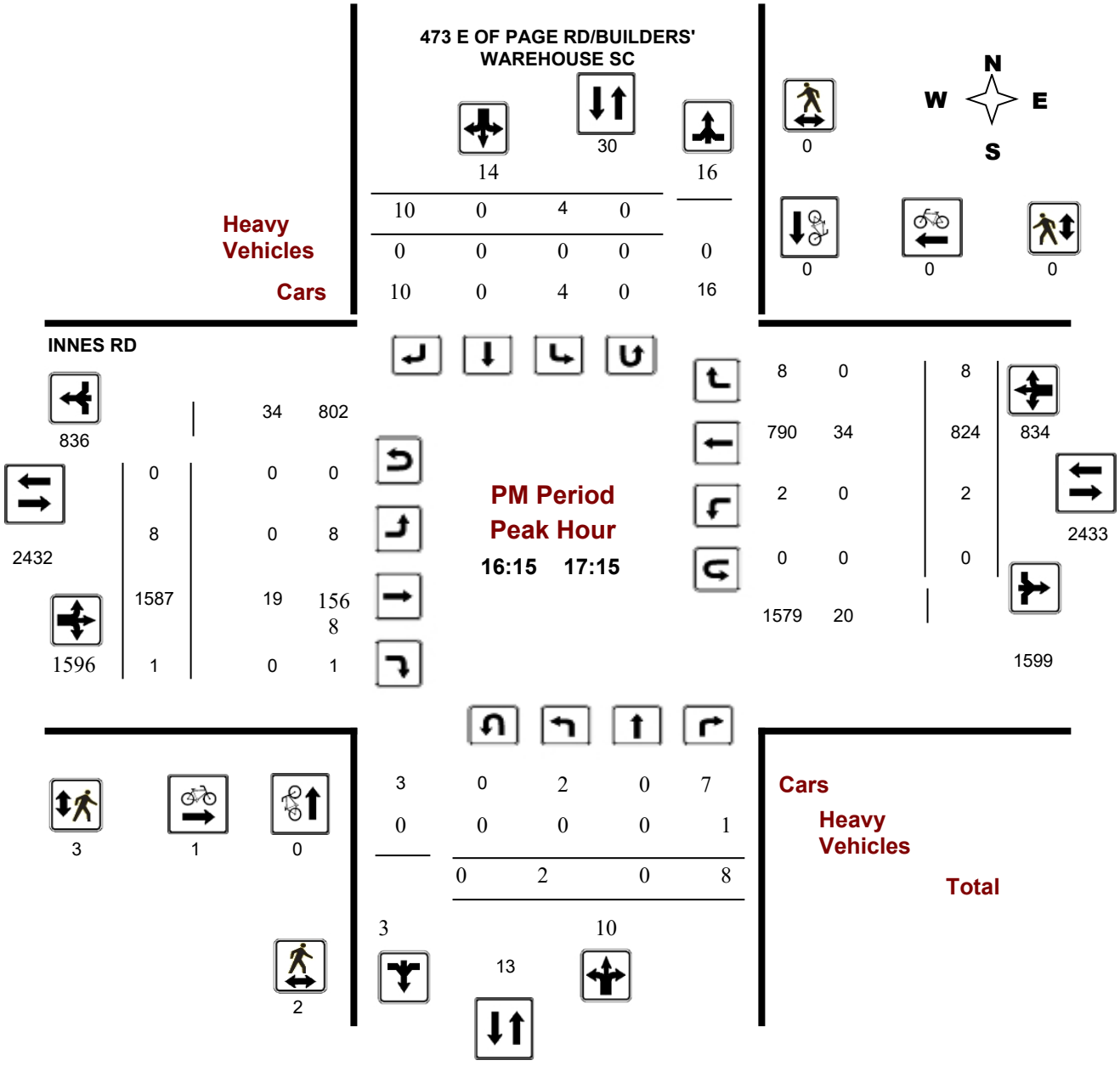
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ 473 E OF PAGE RD/BUILDERS' WAREHOUS

Survey Date: Thursday, January 31, 2019 **WO No:** 38223

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



Comments

APPENDIX C

COLLISION DATA

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	52	16	13	12	0	6	0	1	100	74%
Non-fatal injury	15	9	1	4	0	6	0	0	35	26%
Non-reportable	1	0	0	0	0	0	0	0	1	1%
Total	**68**	**25**	**14**	**16**	**0**	**12**	**0**	**1**	**136**	100%
	#1 or 50%	#2 or 18%	#4 or 10%	#3 or 12%	#7 or 0%	#5 or 9%	#7 or 0%	#6 or 1%		

INNES RD/ORLEANS BLVD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	68	40,237	1825	**0.93**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	27	12	4	5	0	1	0	0	49	72%
Non-fatal injury	8	6	0	2	0	3	0	0	19	28%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**35**	**18**	**4**	**7**	**0**	**4**	**0**	**0**	**68**	100%
	51%	26%	6%	10%	0%	6%	0%	0%		

INNES RD/PAGE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	31	28,278	1825	**0.60**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	11	3	2	2	0	2	0	1	21	68%
Non-fatal injury	3	3	0	1	0	3	0	0	10	32%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**14**	**6**	**2**	**3**	**0**	**5**	**0**	**1**	**31**	100%
	45%	19%	6%	10%	0%	16%	0%	3%		

INNES RD/473 E OF PAGE RD/BUILDERS' WAREHOUS

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	5	26,788	1825	**0.10**

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

ROAD SEGMENTS

INNES RD EB, ORLEANS BLVD to INNES RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	4	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	0	2	0	0	0	0	0	3	75%
Non-fatal injury	0	0	1	0	0	0	0	0	1	25%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**4**	100%
	25%	0%	75%	0%	0%	0%	0%	0%		

INNES RD WB, ORLEANS BLVD to INNES RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	5	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	4	0	0	0	0	1	0	0	5	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	100%
	80%	0%	0%	0%	0%	20%	0%	0%		

INNES RD, INNES RD to PAGE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	8	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	4	0	2	0	0	0	0	0	6	75%
Non-fatal injury	1	0	0	0	0	0	0	0	1	13%
Non-reportable	1	0	0	0	0	0	0	0	1	13%
Total	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**8**	100%
	75%	0%	25%	0%	0%	0%	0%	0%		

INNES RD, PAGE RD to 473 E OF PAGE RD/BUILDERS' WAREHOUSE SC

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2015-2019	15	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	1	3	4	0	1	0	0	12	80%
Non-fatal injury	2	0	0	1	0	0	0	0	3	20%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**1**	**3**	**5**	**0**	**1**	**0**	**0**	**15**	100%
	33%	7%	20%	33%	0%	7%	0%	0%		

APPENDIX D

EAST URBAN COMMUNITY & GLENVIEW SITE PLANS

TRAILSEDGE PHASE 5

BLOCK CONCEPT PLAN

LEGEND

- Low Density Residential - Detached Units
- Low Density Residential - Townhome Units
- Low Density Residential - Back-to-back Townhome Units
- Medium Density Residential
- Highest Density Residential
- Future Employment
- Park
- Stormwater Management Facility
- Existing Municipal Snow Disposal Facility
- Rock Barren
- Land Adjacent to Rock Barren
- Subject Lands

0 50 100 200m

No.	REVISION	DATE	BY
5	REVISE LABELS	2021.05.26	EL
4	REVISE BOUNDARY LINE	2021.05.07	RP
3	REVISE BLOCK 73, 74, 75	2020.08.17	EL
2	FOR CLIENT REVIEW	2020.08.13	RP
1	BLOCK PLAN	2020.08.12	RP

CLIENT
RICHCRAFT

RICHCRAFT Group of Companies

FOTENN
Planning + Design
396 Cooper Street, Suite 300, Ottawa ON K2P 2H7
613.730.5709 www.fotenn.com

DESIGNED	RP
REVIEWED	RP
DATE	2020.08.10

P1

DRAFT PLAN OF SUBDIVISION OF
PART OF LOT 4
CONCESSION 4 (Ottawa Front)
GEOGRAPHIC TOWNSHIP of GLOUCESTER
CITY OF OTTAWA

SCALE
1 : 1250

DATE: SEPTEMBER, 2019

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 (17) OF THE PLANNING ACT.

A) The boundaries of the land proposed to be subdivided, certified by an Ontario land Surveyor;
As shown on Draft Plan

B) The locations, widths & names of the proposed highways within the proposed subdivision & of existing highways on which the proposed subdivision abuts;
As shown on Draft Plan

C) On a small keyplan, on a scale of not less than 1cm to 100m, all of the land adjacent to the proposed subdivision that is owned by the applicant or in which the applicant has an interest, every subdivision adjacent to the proposed subdivision & the relationship of the boundaries of the land to be subdivided to the boundaries of the township lot of other original grant of which the land forms the whole part;
As Shown on Draft Plan

D) The purpose for which the proposed lots are to be used;
Residential, Mixed Use and Open Space shown on Draft Plan

E) The existing uses of all adjoining lands;
Residential and Mixed Use shown on Draft Plan

F) The approximate dimensions & layout of the proposed lots;
As shown on Draft Plan

G) Natural & artificial features such as buildings or other structures or installations, railways, highways, watercources, drainage ditches, wetlands & wooded areas within or adjacent to the land proposed to be subdivided;
As shown on Draft Plan

H) The availability and nature of domestic water supplies;
Development will be supplied with full municipal piped water service

I) The nature & porosity of the soil;
-

J) Existing contours or elevations as may be required to determine the grade of the highways and the drainage of the land proposed to be subdivided;
Contours shown at 0.25 metre intervals on Draft Plan

K) The municipal services available or to be available to the land proposed to be subdivided;
Development will be supplied with full sanitary and storm water sewer services.

L) The nature & extent of any restrictions affecting the land proposed to be subdivided, including restrictive covenants or easements. 1994, c. 23, s. 30; 1996, c. 4, s. 28 (3).;
As shown on Draft Plan.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJOINING LANDS ARE CORRECTLY SHOWN.

DATED ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
?surveyor name?
ONTARIO LAND SURVEYOR

?name of surveying company?
ONTARIO LAND SURVEYORS
?surveyor job number?

OWNER'S CERTIFICATE

I/WE, ,BEING THE REGISTERED OWNER(S), HEREBY AUTHORIZE NOVATECH TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF OTTAWA FOR REVIEW AND APPROVAL.

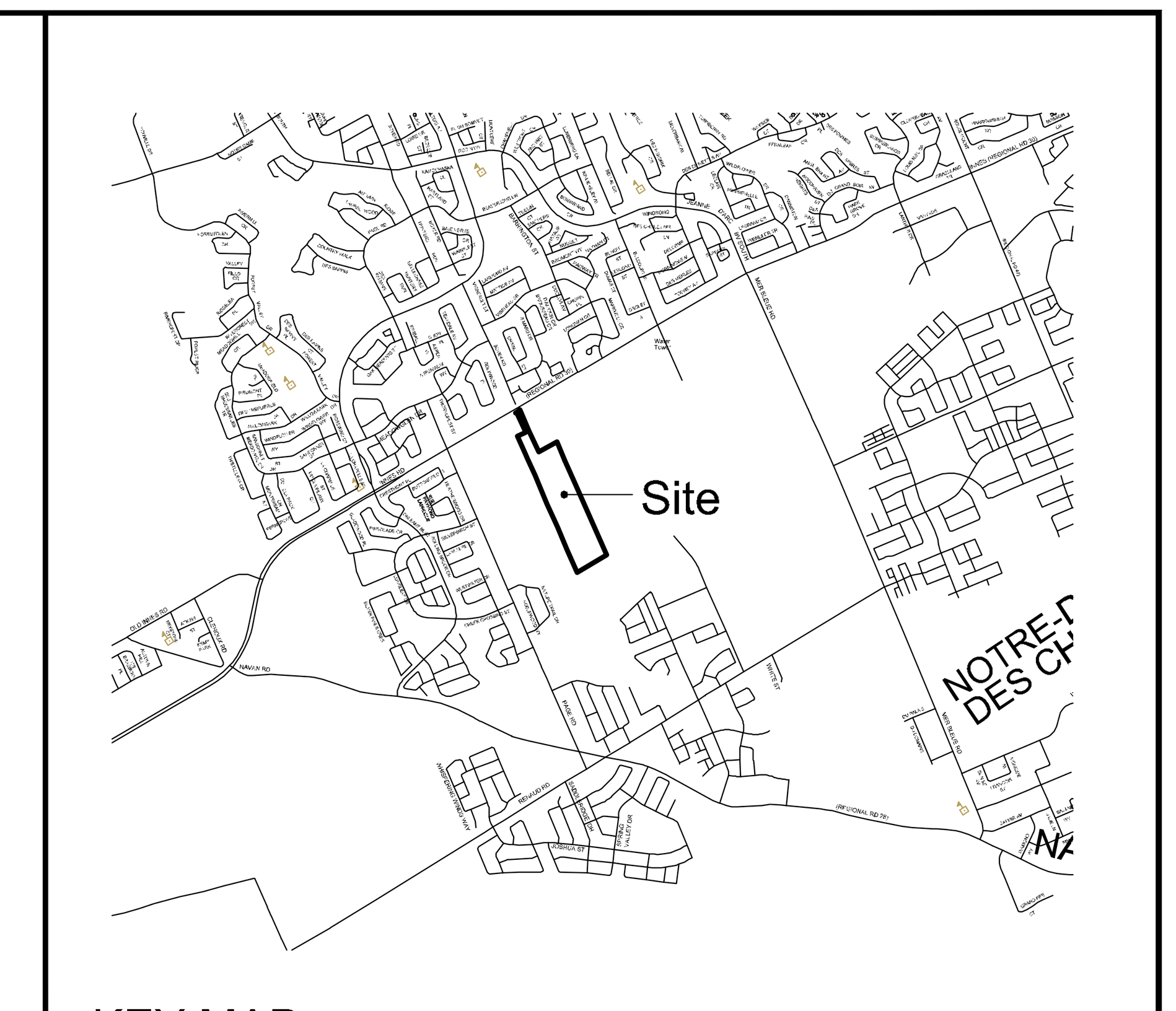
DATED ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
owner name

SUBJECT TO THE CONDITIONS, IF ANY, SET FORTH IN OUR LETTER DATED ____________, THIS DRAFT PLAN IS APPROVED BY THE CITY OF OTTAWA UNDER SECTION 51 OF THE PLANNING ACT THIS ______ DAY OF ________, 20___

JEFF MCEWEN, P.ENG , MANAGER
DEVELOPMENT REVIEW EAST ,
PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

UNIT MIX BREAKDOWN

LOT/BLOCK #'s	LOT SIZE	UNITS	%
1-35, 85, 88, 90, 97-108, 147,148, 150-180	30' (9.15m)	82	17.94
36-84, 86, 86, 89, 91-96, 109-146, 149	36' (11.0m)	98	21.44
BLK 183 - 190	21' (6.6m)	109	23.85
BLK 181, 182	Medium Density	168	36.76
Total		**457**	**100.0**



METRIC : MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

BMR LANDS - INNES

PROJECT No. 118224

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CONCEPT STATISTICS:

RESIDENTIAL FRONTAGE:
Singles - 1876.23m
Towns - 826.32m
Total - 2702.55m

ROAD LENGTH:
Total - 2329.25m

APPENDIX E

INTERNAL REDUCTION CALCULATIONS

Target Mode Share Assumption

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lepine Innes	**Organization:**	Parsons
Project Location:	3490 Innes Road	**Performed By:**	
Scenario Description:	External - Internal Trips AM	**Date:**	1-Sep-21
Analysis Year:	2021 Target Mode Share	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37,536	sq ft GFA	103	53	50
Restaurant	937	2,217	sq ft GFA	178	91	87
Cinema/Entertainment				0		
Residential	220	525	units	91	28	63
Hotel				0		
All Other Land Uses[2]	945	1,550	sq ft GFA	151	90	61
				523	262	261

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		7	0	1	0
Restaurant	0	4		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	13	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	523	262	261
Internal Capture Percentage	10%	10%	10%
External Vehicle-Trips[5]	469	235	234
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	16%
Restaurant	22%	6%
Cinema/Entertainment	N/A	N/A
Residential	7%	22%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Target Mode Share Assumption

Project Name:	Lepine Innes
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	53	53	1.00	50	50
Restaurant	1.00	91	91	1.00	87	87
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	28	28	1.00	63	63
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	15		7	0	7	0
Restaurant	27	12		0	3	3
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	13	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	21	0	0	0
Retail	0		46	0	1	0
Restaurant	0	4		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	9	18	0		0
Hotel	0	2	5	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	5	48	53	48	0	0
Restaurant	20	71	91	71	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	26	28	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	90	90	90	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	8	42	50	42	0	0
Restaurant	5	82	87	82	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	14	49	63	49	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	61	61	61	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Target Mode Share Assumption

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lepine Innes	**Organization:**	Parsons
Project Location:	3490 Innes Road	**Performed By:**	
Scenario Description:	External - Internal Trips PM	**Date:**	1-Sep-21
Analysis Year:	2021 Target Mode Share	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37,536	sq ft GFA	300	151	149
Restaurant	937	2,217	sq ft GFA	87	43	44
Cinema/Entertainment				0		
Residential	220	525	units	94	55	39
Hotel				0		
All Other Land Uses[2]	945	1,550	sq ft GFA	175	89	86
				656	338	318

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					550	
Restaurant					500	
Cinema/Entertainment						
Residential		550	500			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		12	0	25	0
Restaurant	0	18		0	8	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	14	5	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	656	338	318
Internal Capture Percentage	25%	24%	26%
External Vehicle-Trips[5]	492	256	236
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	21%	25%
Restaurant	40%	59%
Cinema/Entertainment	N/A	N/A
Residential	60%	49%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Target Mode Share Assumption

Project Name:	Lepine Innes
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	151	151	1.00	149	149
Restaurant	1.00	43	43	1.00	44	44
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	55	55	1.00	39	39
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	3		43	6	39	7
Restaurant	1	18		4	8	3
Cinema/Entertainment	0	0	0		0	0
Residential	2	15	7	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		12	1	0	2	0
Retail	0		12	0	25	0
Restaurant	0	76		0	9	0
Cinema/Entertainment	0	6	1		2	0
Residential	0	14	5	0		0
Hotel	0	3	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	32	119	151	119	0	0
Restaurant	17	26	43	26	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	33	22	55	22	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	89	89	89	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	37	112	149	112	0	0
Restaurant	26	18	44	18	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	20	39	20	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	86	86	86	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

TRANS Mode Share Assumption

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lepine Innes	**Organization:**	Parsons
Project Location:	3490 Innes Road	**Performed By:**	
Scenario Description:	External - Internal Trips AM	**Date:**	1-Sep-21
Analysis Year:	2021 TRANS Mode Share	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37,536	sq ft GFA	103	53	50
Restaurant	937	2,217	sq ft GFA	178	91	87
Cinema/Entertainment				0		
Residential	220	525	units	109	34	75
Hotel				0		
All Other Land Uses[2]	945	1,550	sq ft GFA	151	90	61
				541	268	273

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		7	0	1	0
Restaurant	0	4		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	15	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	541	268	273
Internal Capture Percentage	11%	11%	11%
External Vehicle-Trips[5]	481	238	243
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	16%
Restaurant	24%	7%
Cinema/Entertainment	N/A	N/A
Residential	9%	21%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

TRANS Mode Share Assumption

Project Name:	Lepine Innes
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	53	53	1.00	50	50
Restaurant	1.00	91	91	1.00	87	87
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	34	34	1.00	75	75
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	15		7	0	7	0
Restaurant	27	12		0	3	3
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	15	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	21	0	0	0
Retail	0		46	0	1	0
Restaurant	0	4		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	9	18	0		0
Hotel	0	2	5	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	5	48	53	48	0	0
Restaurant	22	69	91	69	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	31	34	31	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	90	90	90	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	8	42	50	42	0	0
Restaurant	6	81	87	81	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	16	59	75	59	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	61	61	61	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

TRANS Mode Share Assumption

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Lepine Innes	**Organization:**	Parsons
Project Location:	3490 Innes Road	**Performed By:**	
Scenario Description:	External - Internal Trips PM	**Date:**	1-Sep-21
Analysis Year:	2021 TRANS Mode Share	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37,536	sq ft GFA	300	151	149
Restaurant	937	2,217	sq ft GFA	87	43	44
Cinema/Entertainment				0		
Residential	220	525	units	127	74	53
Hotel				0		
All Other Land Uses[2]	945	1,550	sq ft GFA	175	89	86
				689	357	332

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					550	
Restaurant					500	
Cinema/Entertainment						
Residential		550	500			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		12	0	34	0
Restaurant	0	18		0	8	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	14	5	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	689	357	332
Internal Capture Percentage	26%	25%	27%
External Vehicle-Trips[5]	507	266	241
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	21%	31%
Restaurant	40%	59%
Cinema/Entertainment	N/A	N/A
Residential	57%	36%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

TRANS Mode Share Assumption

Project Name:	Lepine Innes
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	151	151	1.00	149	149
Restaurant	1.00	43	43	1.00	44	44
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	74	74	1.00	53	53
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	3		43	6	39	7
Restaurant	1	18		4	8	3
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	10	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		12	1	0	3	0
Retail	0		12	0	34	0
Restaurant	0	76		0	12	0
Cinema/Entertainment	0	6	1		3	0
Residential	0	14	5	0		0
Hotel	0	3	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	32	119	151	119	0	0
Restaurant	17	26	43	26	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	42	32	74	32	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	89	89	89	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	46	103	149	103	0	0
Restaurant	26	18	44	18	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	34	53	34	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	86	86	86	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

APPENDIX F

PROJECTED BACKGROUND GROWTH

Innes/Orleans
8 hrs

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2003	Monday May 5	3894	4061	2568	2126	5041	4663	7013	7666	37032
2004	Thursday July 22	3435	3253	2003	1682	4016	4101	5585	6003	30078
2014	Tuesday Jan 21	3719	3786	1906	1485	6786	7032	8225	8333	41272
2017	Wednesday May 3	4527	4881	2515	2055	7900	8264	9610	9352	49104

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	4061	3894	7955	37032				
2004	3253	3435	6688	30078	-19.9%	-11.8%	-15.9%	-18.8%
2014	3786	3719	7505	41272	16.4%	8.3%	12.2%	37.2%
2017	4881	4527	9408	49104	28.9%	21.7%	25.4%	19.0%

Regression Estimate	2003	3587	3611	7198
Regression Estimate	2017	4466	4220	8686
Average Annual Change		**1.58%**	**1.12%**	**1.35%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	7013	7666	14679	37032				
2004	5585	6003	11588	30078	-20.4%	-21.7%	-21.1%	-18.8%
2014	8225	8333	16558	41272	47.3%	38.8%	42.9%	37.2%
2017	9610	9352	18962	49104	16.8%	12.2%	14.5%	19.0%

Regression Estimate	2003	6178	6757	12935
Regression Estimate	2017	9259	9086	18345
Average Annual Change		**2.93%**	**2.14%**	**2.53%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	4663	5041	9704	37032				
2004	4101	4016	8117	30078	-12.1%	-20.3%	-16.4%	-18.8%
2014	7032	6786	13818	41272	71.5%	69.0%	70.2%	37.2%
2017	8264	7900	16164	49104	17.5%	16.4%	17.0%	19.0%

Regression Estimate	2003	4237	4412	8649
Regression Estimate	2017	8067	7694	15761
Average Annual Change		**4.71%**	**4.05%**	**4.38%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	2568	2126	4694	37032				
2004	2003	1682	3685	30078	-22.0%	-20.9%	-21.5%	-18.8%
2014	1906	1485	3391	41272	-4.8%	-11.7%	-8.0%	37.2%
2017	2515	2055	4570	49104	32.0%	38.4%	34.8%	19.0%

Regression Estimate	2003	2260	1880	4139
Regression Estimate	2017	2234	1788	4022
Average Annual Change		**-0.08%**	**-0.36%**	**-0.20%**

Innes/Orleans
AM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2003	Monday May 5	881	410	584	165	1095	308	355	2032	5830
2004	Thursday July 22	558	229	336	95	872	294	302	1480	4166
2014	Tuesday Jan 21	670	482	450	98	1527	388	424	2103	6142
2017	Wednesday May 3	627	529	506	147	1687	460	492	2176	6624

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	410	881	1291	5830				
2004	229	558	787	4166	-44.1%	-36.7%	-39.0%	-28.5%
2014	482	670	1152	6142	110.5%	20.1%	46.4%	47.4%
2017	529	627	1156	6624	9.8%	-6.4%	0.3%	7.8%

Regression Estimate	2003	316	731	1047
Regression Estimate	2017	524	630	1154
Average Annual Change		**3.68%**	**-1.06%**	**0.69%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	355	2032	2387	5830				
2004	302	1480	1782	4166	-14.9%	-27.2%	-25.3%	-28.5%
2014	424	2103	2527	6142	40.4%	42.1%	41.8%	47.4%
2017	492	2176	2668	6624	16.0%	3.5%	5.6%	7.8%

Regression Estimate	2003	322	1754	2076
Regression Estimate	2017	475	2171	2646
Average Annual Change		**2.82%**	**1.53%**	**1.75%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	308	1095	1403	5830				
2004	294	872	1166	4166	-4.5%	-20.4%	-16.9%	-28.5%
2014	388	1527	1915	6142	32.0%	75.1%	64.2%	47.4%
2017	460	1687	2147	6624	18.6%	10.5%	12.1%	7.8%

Regression Estimate	2003	294	963	1257
Regression Estimate	2017	442	1678	2120
Average Annual Change		**2.96%**	**4.05%**	**3.81%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	584	165	749	5830				
2004	336	95	431	4166	-42.5%	-42.4%	-42.5%	-28.5%
2014	450	98	548	6142	33.9%	3.2%	27.1%	47.4%
2017	506	147	653	6624	12.4%	50.0%	19.2%	7.8%

Regression Estimate	2003	461	128	590
Regression Estimate	2017	478	124	602
Average Annual Change		**0.25%**	**-0.27%**	**0.14%**

Innes/Orleans
PM Peak

Year	Date	North Leg		South Leg		East Leg		West Leg		Total
		SB	NB	NB	SB	WB	EB	EB	WB	
2003	Monday May 5	566	996	303	593	466	1170	2009	585	6688
2004	Thursday July 22	514	796	311	404	450	895	1445	625	5440
2014	Tuesday Jan 21	506	812	231	382	596	1551	2058	646	6782
2017	Wednesday May 3	609	918	373	457	705	1673	2161	800	7696

North Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	996	566	1562	6688				
2004	796	514	1310	5440	-20.1%	-9.2%	-16.1%	-18.7%
2014	812	506	1318	6782	2.0%	-1.6%	0.6%	24.7%
2017	918	609	1527	7696	13.1%	20.4%	15.9%	13.5%

Regression Estimate	2003	894	534	1428
Regression Estimate	2017	865	566	1431
Average Annual Change		**-0.24%**	**0.41%**	**0.01%**

West Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	2009	585	2594	6688				
2004	1445	625	2070	5440	-28.1%	6.8%	-20.2%	-18.7%
2014	2058	646	2704	6782	42.4%	3.4%	30.6%	24.7%
2017	2161	800	2961	7696	5.0%	23.8%	9.5%	13.5%

Regression Estimate	2003	1724	591	2315
Regression Estimate	2017	2143	748	2891
Average Annual Change		**1.57%**	**1.69%**	**1.60%**

East Leg

Year	Counts				% Change			
	EB	*WB*	*EB+WB*	*INT*	*EB*	*WB*	*EB+WB*	*INT*
2003	1170	466	1636	6688				
2004	895	450	1345	5440	-23.5%	-3.4%	-17.8%	-18.7%
2014	1551	596	2147	6782	73.3%	32.4%	59.6%	24.7%
2017	1673	705	2378	7696	7.9%	18.3%	10.8%	13.5%

Regression Estimate	2003	1017	447	1464
Regression Estimate	2017	1675	678	2353
Average Annual Change		**3.63%**	**3.03%**	**3.45%**

South Leg

Year	Counts				% Change			
	NB	*SB*	*NB+SB*	*INT*	*NB*	*SB*	*NB+SB*	*INT*
2003	303	593	896	6688				
2004	311	404	715	5440	2.6%	-31.9%	-20.2%	-18.7%
2014	231	382	613	6782	-25.7%	-5.4%	-14.3%	24.7%
2017	373	457	830	7696	61.5%	19.6%	35.4%	13.5%

Regression Estimate	2003	298	500	797
Regression Estimate	2017	312	412	725
Average Annual Change		**0.35%**	**-1.36%**	**-0.68%**

APPENDIX G

CAIVAN LANDS PLAN & LAMARCHE AVENUE ACTIVE TRANSPORTATION FACILITIES

Page Setup: ----

Drawing Frame: 790mm x 534mm City of Ottawa 2008 (Rev.0)

Plot Date: Wednesday, January 23, 2019 11:21:04 AM

Last Saved: Wednesday, January 23, 2019 10:48:26 AM

Consultant's Information: H:\ISO\476145\1000\DWG\CAIVAN_INNES_23-01-2019.dwg

Caivan Innis Road

Signage and Pavement Marking Plan North

PARSONS

476145	Dwg. No. 001
Sheet 1 of 3	

Des.	Chk'd.
Dwn. MJM	Chk'd.

Scale: HORIZONTAL 0m 2.5 5 10

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

REVISIONS

No.	Description	By	Date (dd/mm/yy)
01	Signage Plan	MJM	03/08/18
02	Signage Plan	RN	23/01/19

Cercle de l'Argonaut Circle

Cours Crevier Walk

Placette de Darvoy Mews

Rang de Loury Row

Avenue de Lamarche Avenue

Croissant des Aubrais Crescent

Chemin de Largeau Road

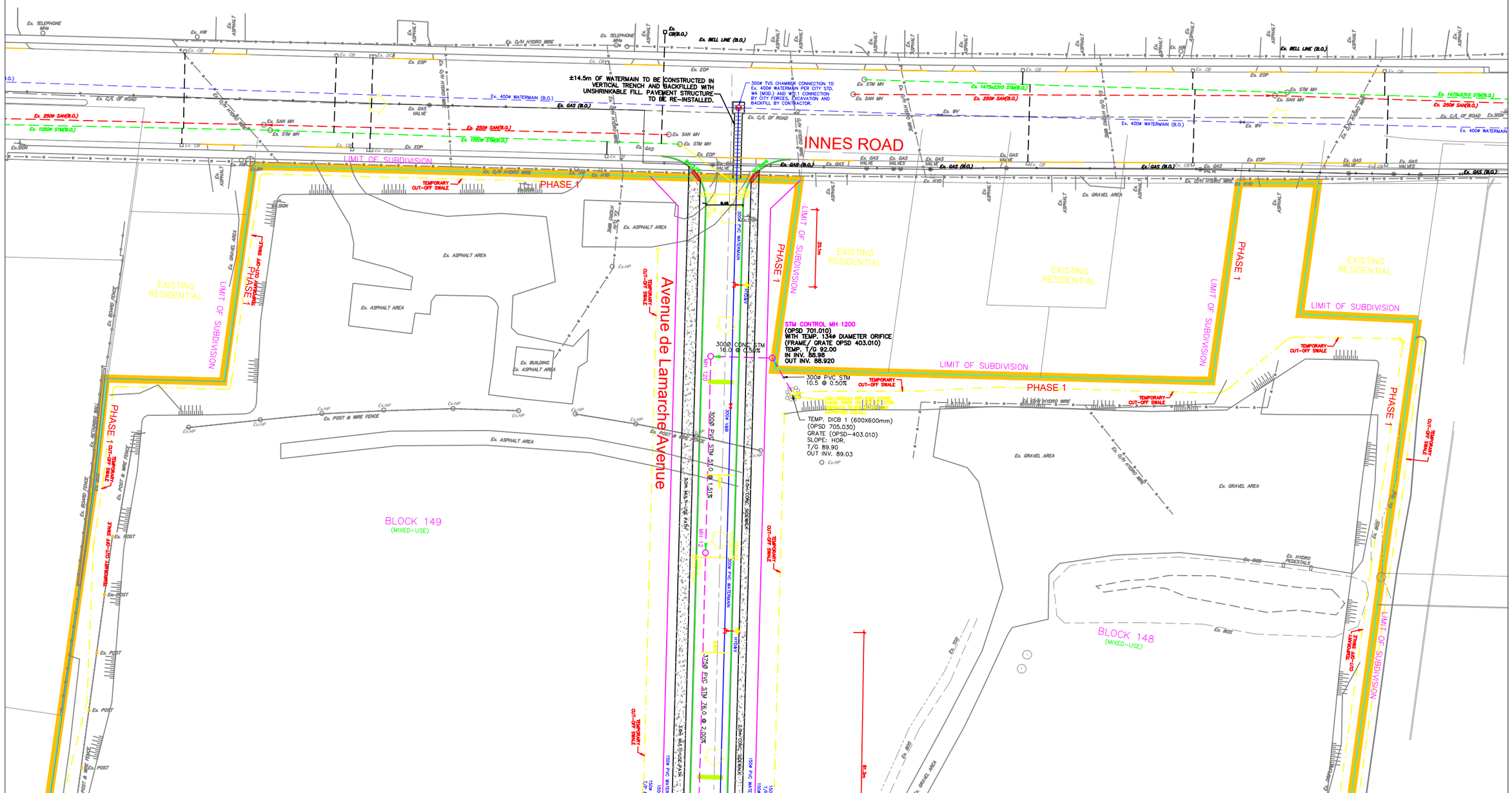
Terrase de Vennecy Terrace

CONCESSION 3 (OTTAWA)

LIMIT OF SUBDIVISION

Wc-44R (TAC)
Rb-71 (OTM)
Rb-73 (OTM)
Ra-1
Wc-44L (TAC)
Wc-7
STOP BAR - SOLID WHITE 60cm (TYP.)
15m - SOLID YELLOW 20cm (TYP.)
ELEPHANT TRACK - WHITE 40cm WIDE, 40cm SPACING (TYP.)
CROSSWALK - SOLID WHITE 20cm (TYP.)

BETWEEN CONCESSIONS 2 AND 3 (OTTAWA FRONT)
Known as INNES ROAD
REGIONAL ROAD NO. 30



APPENDIX H

MMLOS: BOUNDARY STREETS ROAD SEGMENTS

Multi-Modal Level of Service - Segments Form

Consultant	Parsons	**Project**	Lepine 477947
Scenario		**Date**	Sept 8 2021
Comments			

SEGMENTS		Street A	Innes	Lamarche	Lamarche	Access Loop	Section	Section	Section	Section	Section
			Both Sides	West Side	East Side	Both Sides	5	6	7	8	9
Pedestrian	Sidewalk Width Boulevard Width	E	1.8 m 0.5 - 2 m	≥ 2 m 0.5 - 2 m	≥ 2 m > 2 m	≥ 2 m 0.5 - 2 m			≥ 2 m > 2 m		
	Avg Daily Curb Lane Traffic Volume		> 3000	≤ 3000	≤ 3000	≤ 3000			> 3000		
	Operating Speed On-Street Parking		> 60 km/h no	> 50 to 60 km/h yes	> 50 to 60 km/h yes	> 30 to 50 km/h yes			> 50 to 60 km/h no		
	Exposure to Traffic PLoS		**E**	**A**	**A**	**A**	-	-	**C**	-	-
	Effective Sidewalk Width		1.5 m	3.0 m	2.0 m	2.0 m					
	Pedestrian Volume		500 ped /hr	250 ped/hr	250 ped/hr	250 ped/hr					
	Crowding PLoS		**B**	**A**	**B**	**B**	-	-	-	-	-
	Level of Service		**E**	**A**	**B**	**B**	-	-	-	-	-
Bicycle	Type of Cycling Facility	D	Curbside Bike Lane	Physically Separated	Mixed Traffic	Mixed Traffic					
	Number of Travel Lanes		2 ea. dir. (no median)		≤ 2 (no centreline)	≤ 2 (no centreline)					
	Operating Speed		>50 to 70 km/h		≥ 50 to 60 km/h	≤ 40 km/h					
	# of Lanes & Operating Speed LoS		**C**	**-**	**D**	**A**	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width		≥ 1.8 m								
	Bike Lane Width LoS		**A**	**-**	**-**	**-**	-	-	-	-	-
	Bike Lane Blockages		Rare								
	Blockage LoS		**A**	**-**	**-**	**-**	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge		< 1.8 m refuge	< 1.8 m refuge					
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes		≤ 3 lanes	≤ 3 lanes					
	Sidestreet Operating Speed		>40 to 50 km/h		>40 to 50 km/h	≤ 40 km/h					
	Unsignalized Crossing - Lowest LoS		**B**	**A**	**B**	**A**	-	-	-	-	-
	Level of Service		**C**	**A**	**D**	**A**	-	-	-	-	-
Transit	Facility Type	D	Mixed Traffic	Mixed Traffic	Mixed Traffic						
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8						
	Level of Service		**D**	**D**	**D**	-	-	-	-	-	-
Truck	Truck Lane Width	A	≤ 3.5 m								
	Travel Lanes per Direction		> 1								
	Level of Service		**A**	**-**	**-**	**-**	-	-	-	-	-

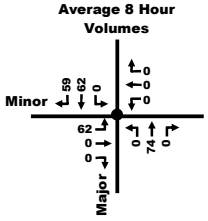
APPENDIX I

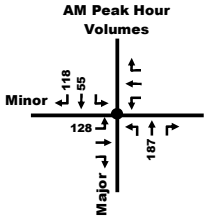
WARRANT ANALYSIS

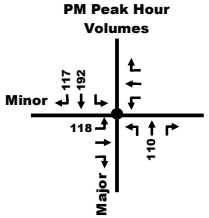
Loop/Lamarche - 2031 projected

AWSC Warrant			Description	Minimum Requirement for a 'T' intersection	Compliance		
					Sectional %	Entire %	Warrant
Intersection	1. Minimum Volume Criterion	A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, or	200	129%	78%	No
		B	Vehicle Volume, All Approaches for the Heaviest Peak Hour, and	350	153%		
		C	Vehicle and pedestrian Volume, Along Minor Streets for Each of the Same 8 Hours, and	80	78%		
		D	The volume split between the major and minor streets	75/25	95%		
	2. Minimum Collision Criterion	A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	9	0%	0%	

Note: ***0*** *preventable by AWSC collisions (i.e. right angle and turning movement collisions) were reported during a 3 year time period*







Assumes 50% of all site gen traffic to use the first municipal loop access

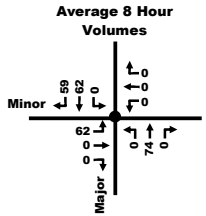
		IN	OUT	% assumed using exit
	AM	235	256	50%
	PM	234	236	

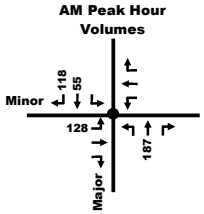
				Major Lamarche						Minor Loop			
	Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Existing	8 hr												
	AM		187			55	118	128					
	PM		110			192	117	118					
Site Generated	AM												
	PM												
	Avg. 8 hr	0	74	0	0	62	59	62	0	0	0	0	0

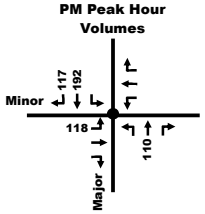
Loop/Lamarche - 2031 projected

AWSC Warrant			Description	Minimum Requirement for a 'T' intersection	Compliance		
					Sectional %	Entire %	Warrant
Intersection	1. Minimum Volume Criterion	A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, or	200	146%	100%	Yes
		B	Vehicle Volume, All Approaches for the Heaviest Peak Hour, and	350	173%		
		C	Vehicle and pedestrian Volume, Along Minor Streets for Each of the Same 8 Hours, and	80	100%		
		D	The volume split between the major and minor streets	75/25	113%		
	2. Minimum Collision Criterion	A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	9	0%	0%	

Note: ***0*** *preventable by AWSC collisions (i.e. right angle and turning movement collisions) were reported during a 3 year time period*







Assumes 65% of all site gen traffic to use the first municipal loop access

	IN	OUT	% assumed using exit
AM	235	256	65%
PM	234	236	

		Major Lamarche							Minor Loop				
	Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Existing	8 hr												
	AM		187			55	153	166					
	PM		110			192	152	153					
Site Generated	AM												
	PM												
	Avg. 8 hr	0	74	0	0	62	76	80	0	0	0	0	0

APPENDIX J

TDM CHECKLIST

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

Legend

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑ Majority of parking located underground
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ Building entrances located to the exterior perimeter/roads
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ modern design buildings with windows
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑ The furthest Buildings from OC-Transpo major bus route #25 bus-stop on Innes Road are located approximately 350 meters walking distance from existing stops
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑ Internal pedestrian walkways are proposed through landscaped courtyards which connect all the buildings to the municipal loop road and Innes Road / Lamarche Avenue

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑ Sidewalks to be built to city standards
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑ The buildings will have at-grade access directly onto the municipal loop road and Lamarche Avenue plus a proposed public plaza in zone 2
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑ Internal pathways will connect to existing pedestrian and cycling facilities on Lamarche Avenue and Innes Road
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ MUP on east side of Lamarche Avenue connects to Innes Road
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑ MUP on east side of Lamarche Avenue connects to Innes Road
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☑ MUP on east side of Lamarche Avenue connects to Innes Road cycling facilities
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☑ Public plaza proposed and sidewalks on the municipal loop road
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☑ likely to have signs for each building

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

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐ to be considered
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐ to be considered
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐ to be considered
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑ expected to meet parking bylaw. To be confirmed in SPA
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☑ Separated parking for visitors/commercial (short-term) and residents (long-term)
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☑ if an option with commercial is chosen, recommended shared parking for visitors to be considered
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

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

Legend

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

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

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

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

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

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

APPENDIX K

MMLOS: INTERSECTION ANALYSIS

Multi-Modal Level of Service - Intersections Form

Consultant	Parsons	**Project**	Lepine 477947
Scenario		**Date**	Sept 8 2021
Comments			

Unlocked Rows for Replicating

INTERSECTIONS		Innes/Page				Innes/Boyer				Orleans/Innes				Future Innes/Lamarche			
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	5	6	7	7	4	5	7	7	6	6	9	9		5	7	7
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Protected/ Permissive	Protected	Protected		Permissive	Permissive	No left turn / Prohib.
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control		Protected	No right turn	Protected
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed		RTOR prohibited	RTOR prohibited	RTOR prohibited
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No	No	No	No	No		Yes	Yes	Yes
	Right Turn Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane		No Channel	No Channel	No Channel
	Corner Radius	5-10m	10-15m	10-15m	10-15m	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	15-25m	15-25m		10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings		Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement
	PETSI Score	**38**	**20**	**4**	**4**	**53**	**37**	**4**	**4**	**19**	**19**	**-19**	**-19**		**50**	**17**	**25**
	Ped. Exposure to Traffic LoS	**E**	**F**	**F**	**F**	**D**	**E**	**F**	**F**	**F**	**F**	**#N/A**	**#N/A**	**-**	**D**	**F**	**F**
	Cycle Length	110	110	110	110	120	120	120	120	110	110	110	110		120	120	120
	Effective Walk Time	31	31	33	33	26	26	28	28	26	26	20	20		30	30	30
	Average Pedestrian Delay	**28**	**28**	**27**	**27**	**37**	**37**	**35**	**35**	**32**	**32**	**37**	**37**		**34**	**34**	**34**
	Pedestrian Delay LoS	**C**	**C**	**C**	**C**	**D**	**D**	**D**	**D**	**D**	**D**	**D**	**D**	**-**	**D**	**D**	**D**
	Level of Service	**E**	**F**	**F**	**F**	**D**	**E**	**F**	**F**	**F**	**F**	**#N/A**	**#N/A**	**-**	**D**	**F**	**F**
		F				**F**				**#N/A**				**F**			
	Approach From	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Pocket Bike Lane	Mixed Traffic		Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	Right Turn Lane Configuration	≤ 50 m	≤ 50 m	Not Applicable	Not Applicable	≤ 50 m	≤ 50 m	Not Applicable	Not Applicable	≤ 50 m	≤ 50 m	> 50 m Introduced right turn lane	> 50 m		Not Applicable	Not Applicable	Not Applicable
	Right Turning Speed	≤ 25 km/h	≤ 25 km/h	Not Applicable	Not Applicable	≤ 25 km/h	≤ 25 km/h	Not Applicable	Not Applicable	≤ 25 km/h	≤ 25 km/h	>25 to 30 km/h	>25 km/h		Not Applicable	Not Applicable	Not Applicable
	Cyclist relative to RT motorists	**D**	**D**	**Not Applicable**	**Not Applicable**	**D**	**D**	**Not Applicable**	**Not Applicable**	**D**	**D**	**D**	**F**	**-**	**Not Applicable**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Mixed Traffic**	**-**	**Separated**	**Separated**	**Separated**
	Left Turn Approach	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed	No lane crossed		No lane crossed	No lane crossed	No lane crossed
	Operating Speed	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h		> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**-**	**C**	**C**	**C**
	Level of Service	**D**	**D**	**C**	**C**	**D**	**D**	**C**	**C**	**D**	**D**	**D**	**F**	**-**	**C**	**C**	**C**
		D				**D**				**F**				**C**			
Transit	Average Signal Delay			≤ 10 sec	≤ 10 sec			≤ 20 sec	≤ 10 sec			> 40 sec	> 40 sec			≤ 40 sec	≤ 30 sec
	Level of Service	**-**	**-**	**B**	**B**	**-**	**-**	**C**	**B**	**-**	**-**	**F**	**F**	**-**	**-**	**E**	**D**
		B				**C**				**F**				**E**			
Truck	Effective Corner Radius									> 15 m		> 15 m	> 15 m				
	Number of Receiving Lanes on Departure from Intersection									≥ 2		≥ 2	≥ 2				
	Level of Service	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**A**	**-**	**A**	**A**	**-**	**-**	**-**	**-**
		-				**-**				**A**				**-**			
Auto	Volume to Capacity Ratio																
	Level of Service	**-**				**-**				**-**				**-**			

APPENDIX L

DESIGN SKETCH LAMARCHE/INNES INTERSECTION

TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 3/22/2021 7:25:53 AM

Last Saved: 3/22/2021 7:25:26 AM

Consultant's Information: H:\ISO\476731\1000\DWGS\01-Conceptual\476731-01-Functional Plan.Dgn

PARSONS

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

INNES ROAD AND LAMARCHE AVENUE

CONCEPTUAL INTERSECTION DESIGN

Client:

Project Number: 476731

Dwn. M.J.P.

Dwg. No. 001

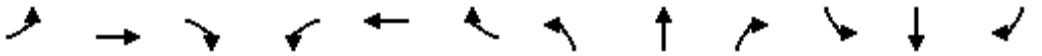
Date: June 16, 2020

Sheet 1 of 1

Scale: HORIZONTAL 0m 5 10 20

APPENDIX M

SYNCHRO ANALYSIS: EXISTING INTERSECTION PERFORMANCE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	318	23	24	1186	109	203	259	44	61	100	459
Future Volume (vph)	121	318	23	24	1186	109	203	259	44	61	100	459
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.493			0.575		
Satd. Flow (perm)	3280	3390	1492	1667	3390	1480	874	3390	1427	993	3390	1496
Satd. Flow (RTOR)			195			143			82			256
Lane Group Flow (vph)	134	353	26	27	1318	121	226	288	49	68	111	510
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	13.0	65.0		13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	
Total Split (%)	10.0%	50.0%		10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	8.7	70.9	130.0	6.7	63.7	63.7	38.1	38.1	38.1	17.5	17.5	130.0
Actuated g/C Ratio	0.07	0.55	1.00	0.05	0.49	0.49	0.29	0.29	0.29	0.13	0.13	1.00
v/c Ratio	0.61	0.19	0.02	0.31	0.79	0.15	0.66	0.29	0.10	0.51	0.24	0.34
Control Delay	71.6	17.4	0.0	68.7	33.0	2.4	46.6	35.3	2.0	63.5	49.5	0.6
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	71.6	17.4	0.0	68.7	33.0	2.4	46.6	35.3	2.0	63.5	49.5	0.6
LOS	E	B	A	E	C	A	D	D	A	E	D	A
Approach Delay		30.7			31.1			37.0			14.7	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	17.1	24.8	0.0	6.8	146.3	0.0	48.4	30.7	0.0	16.9	14.0	0.0
Queue Length 95th (m)	#34.6	38.9	0.0	16.7	187.9	7.3	65.8	38.9	2.9	29.6	20.9	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	219	1850	1492	91	1662	798	344	1181	550	200	685	1496
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	0.61	0.19	0.02	0.30	0.79	0.15	0.66	0.24	0.09	0.34	0.16	0.34

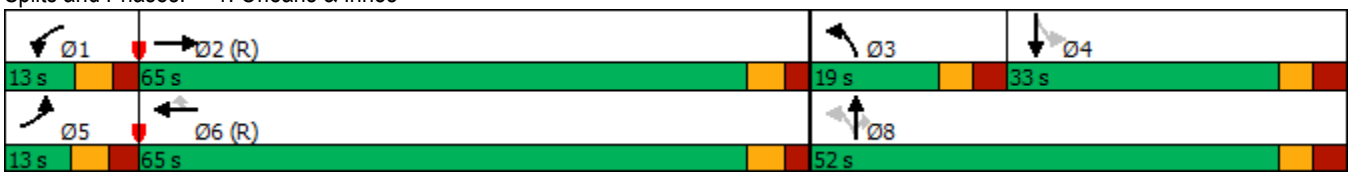
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 99 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

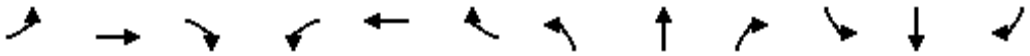
Maximum v/c Ratio: 0.79

Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 86.0%	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: 1: Orleans & Innes





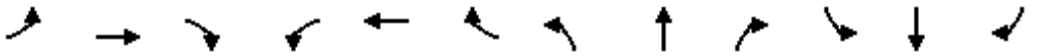
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	399	11	41	1275	27	14	14	61	37	7	59
Future Volume (vph)	13	399	11	41	1275	27	14	14	61	37	7	59
Satd. Flow (prot)	1695	3375	0	1695	3378	0	0	1589	0	0	1589	0
Flt Permitted	0.154			0.490				0.929			0.824	
Satd. Flow (perm)	275	3375	0	873	3378	0	0	1485	0	0	1332	0
Satd. Flow (RTOR)		4			3			68			53	
Lane Group Flow (vph)	14	455	0	46	1447	0	0	100	0	0	115	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	82.0	82.0		82.0	82.0		38.0	38.0		38.0	38.0	
Total Split (%)	68.3%	68.3%		68.3%	68.3%		31.7%	31.7%		31.7%	31.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.9	91.9		91.9	91.9			15.1			15.1	
Actuated g/C Ratio	0.77	0.77		0.77	0.77			0.13			0.13	
v/c Ratio	0.07	0.18		0.07	0.56			0.41			0.54	
Control Delay	6.7	4.8		2.6	6.1			21.7			34.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.7	4.8		2.6	6.1			21.7			34.8	
LOS	A	A		A	A			C			C	
Approach Delay		4.9			6.0			21.7			34.8	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	0.6	10.3		1.9	50.3			7.1			14.2	
Queue Length 95th (m)	4.1	29.5		3.0	147.4			19.4			27.5	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	210	2584		668	2587			436			385	
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	0.07	0.18		0.07	0.56			0.23			0.30	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 26 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Page & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	505	8	3	1307	1	3	0	0	0	0	5
Future Volume (vph)	3	505	8	3	1307	1	3	0	0	0	0	5
Satd. Flow (prot)	1695	3382	0	1695	3390	0	0	1695	0	0	1520	0
Flt Permitted	0.170			0.438				0.769				
Satd. Flow (perm)	303	3382	0	779	3390	0	0	1372	0	0	1520	0
Satd. Flow (RTOR)		3									60	
Lane Group Flow (vph)	3	570	0	3	1453	0	0	3	0	0	6	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0		33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	112.3	112.3		112.3	112.3			13.2			13.2	
Actuated g/C Ratio	0.94	0.94		0.94	0.94			0.11			0.11	
v/c Ratio	0.01	0.18		0.00	0.46			0.02			0.03	
Control Delay	3.7	1.9		3.7	3.4			43.0			0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.7	1.9		3.7	3.4			43.0			0.2	
LOS	A	A		A	A			D			A	
Approach Delay		1.9			3.4			43.0			0.2	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.0	0.0		0.0	0.0			0.7			0.0	
Queue Length 95th (m)	m1.1	27.6		1.2	111.2			3.2			0.0	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	284	3166		729	3173			305			384	
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	0.01	0.18		0.00	0.46			0.01			0.02	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 3.0	Intersection LOS: A
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 4: U-Haul Access/Boyer & Innes

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	469	21	20	1277	84	56
Future Vol, veh/h	469	21	20	1277	84	56
Conflicting Peds, #/hr	0	5	5	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	521	23	22	1419	93	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	549	0	1292	277
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1017	-	155	720
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	151	717
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	416	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	52.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	-	-	1013	-
HCM Lane V/C Ratio	0.704	-	-	0.022	-
HCM Control Delay (s)	52.6	-	-	8.6	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	4.6	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	1341	158	58	584	154	64	225	84	165	241	203
Future Volume (vph)	579	1341	158	58	584	154	64	225	84	165	241	203
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.438			0.597		
Satd. Flow (perm)	3263	3390	1487	1687	3390	1477	773	3390	1465	1048	3390	1492
Satd. Flow (RTOR)			292			230			159			292
Lane Group Flow (vph)	643	1490	176	64	649	171	71	250	93	183	268	226
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	31.0	49.0		16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	
Total Split (%)	28.2%	44.5%		14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	Max	C-Min		Max	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	30.4	42.8	110.0	15.8	27.8	27.8	32.3	32.3	32.3	22.7	22.7	110.0
Actuated g/C Ratio	0.28	0.39	1.00	0.14	0.25	0.25	0.29	0.29	0.29	0.21	0.21	1.00
v/c Ratio	0.71	1.13	0.12	0.26	0.76	0.31	0.26	0.25	0.17	0.85	0.38	0.15
Control Delay	42.9	101.0	0.2	45.0	49.3	12.8	28.2	28.8	0.9	73.7	38.5	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	42.9	101.0	0.2	45.0	49.3	12.8	28.2	28.8	0.9	73.7	38.5	0.2
LOS	D	F	A	D	D	B	C	C	A	E	D	A
Approach Delay		77.1			41.9			22.5			35.2	
Approach LOS		E			D			C			D	
Queue Length 50th (m)	68.1	~195.7	0.0	13.1	58.9	2.5	10.5	20.1	0.0	37.0	25.5	0.0
Queue Length 95th (m)	#99.0	#237.6	0.0	28.8	97.4	33.9	20.4	29.3	1.0	#68.8	36.9	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	908	1319	1487	243	856	545	271	1180	613	250	810	1492
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	0.71	1.13	0.12	0.26	0.76	0.31	0.26	0.21	0.15	0.73	0.33	0.15

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
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: 1.13

Intersection Signal Delay: 58.0	Intersection LOS: E
Intersection Capacity Utilization 88.8%	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: 1: Orleans & Innes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	1506	23	53	764	98	13	21	98	50	23	35
Future Volume (vph)	61	1506	23	53	764	98	13	21	98	50	23	35
Satd. Flow (prot)	1695	3381	0	1695	3321	0	0	1564	0	0	1650	0
Flt Permitted	0.279			0.101				0.965			0.696	
Satd. Flow (perm)	497	3381	0	180	3321	0	0	1515	0	0	1170	0
Satd. Flow (RTOR)		2			22			23			22	
Lane Group Flow (vph)	68	1699	0	59	958	0	0	146	0	0	121	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	72.0	72.0		72.0	72.0		38.0	38.0		38.0	38.0	
Total Split (%)	65.5%	65.5%		65.5%	65.5%		34.5%	34.5%		34.5%	34.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	80.2	80.2		80.2	80.2			16.8			16.8	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.15			0.15	
v/c Ratio	0.19	0.69		0.45	0.39			0.58			0.61	
Control Delay	2.3	6.1		31.9	11.0			44.1			47.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.3	6.1		31.9	11.0			44.1			47.0	
LOS	A	A		C	B			D			D	
Approach Delay		6.0			12.2			44.1			47.0	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	1.6	23.5		3.7	30.4			25.4			20.6	
Queue Length 95th (m)	m2.0	m23.8		#27.2	118.0			38.1			33.4	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	362	2465		131	2426			446			347	
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	0.19	0.69		0.45	0.39			0.33			0.35	

Intersection Summary

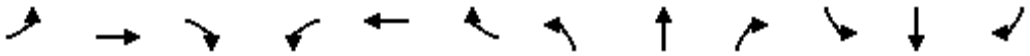
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Page & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1647	4	1	899	12	5	0	3	12	0	7
Future Volume (vph)	14	1647	4	1	899	12	5	0	3	12	0	7
Satd. Flow (prot)	1695	3390	0	1695	3382	0	0	1641	0	0	1623	0
Flt Permitted	0.274			0.097				0.799			0.806	
Satd. Flow (perm)	488	3390	0	173	3382	0	0	1340	0	0	1348	0
Satd. Flow (RTOR)					2			31			31	
Lane Group Flow (vph)	16	1834	0	1	1012	0	0	9	0	0	21	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	77.0	77.0		77.0	77.0		33.0	33.0		33.0	33.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	93.4	93.4		93.4	93.4			13.2			13.2	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.12			0.12	
v/c Ratio	0.04	0.64		0.01	0.35			0.05			0.11	
Control Delay	2.4	5.0		5.0	4.3			0.5			9.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.4	5.0		5.0	4.3			0.5			9.4	
LOS	A	A		A	A			A			A	
Approach Delay		5.0			4.3			0.5			9.4	
Approach LOS		A			A			A			A	
Queue Length 50th (m)	1.1	90.3		0.0	26.3			0.0			0.0	
Queue Length 95th (m)	m0.4	126.6		0.7	65.1			0.3			4.6	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	414	2877		146	2870			348			350	
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	0.04	0.64		0.01	0.35			0.03			0.06	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 4.8	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: 4: U-Haul Access/Boyer & Innes

Intersection	
Int Delay, s/veh	39.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1621	72	72	877	50	33
Future Vol, veh/h	1621	72	72	877	50	33
Conflicting Peds, #/hr	0	11	11	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1801	80	80	974	56	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1892	0	2499	952
Stage 1	-	-	-	-	1852	-
Stage 2	-	-	-	-	647	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	312	-	~ 24	260
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	309	-	~ 18	258
Mov Cap-2 Maneuver	-	-	-	-	~ 18	-
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	358	-

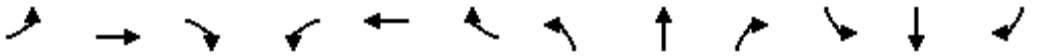
Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	$ 1266.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	29	-	-	309	-
HCM Lane V/C Ratio	3.18	-	-	0.259	-
HCM Control Delay (s)	$ 1266.4	-	-	20.7	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	11	-	-	1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX N

SYNCHRO ANALYSIS: BACKGROUND INTERSECTION PERFORMANCE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	401	23	24	1474	109	203	259	44	61	100	459
Future Volume (vph)	121	401	23	24	1474	109	203	259	44	61	100	459
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.495			0.592		
Satd. Flow (perm)	3282	3390	1492	1669	3390	1480	877	3390	1427	1021	3390	1496
Satd. Flow (RTOR)			195			143			82			267
Lane Group Flow (vph)	121	401	23	24	1474	109	203	259	44	61	100	459
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	13.0	65.0		13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	
Total Split (%)	10.0%	50.0%		10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	8.2	73.1	130.0	6.6	66.4	66.4	36.0	36.0	36.0	17.1	17.1	130.0
Actuated g/C Ratio	0.06	0.56	1.00	0.05	0.51	0.51	0.28	0.28	0.28	0.13	0.13	1.00
v/c Ratio	0.59	0.21	0.02	0.28	0.85	0.13	0.64	0.28	0.10	0.46	0.22	0.31
Control Delay	71.4	16.8	0.0	67.6	34.7	1.7	47.2	36.4	1.3	60.6	49.5	0.5
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	71.4	16.8	0.0	67.6	34.7	1.7	47.2	36.4	1.3	60.6	49.5	0.5
LOS	E	B	A	E	C	A	D	D	A	E	D	A
Approach Delay		28.2			32.9			37.7			14.3	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	15.5	26.4	0.0	6.0	162.5	0.0	44.8	28.6	0.0	15.2	12.6	0.0
Queue Length 95th (m)	#30.0	44.2	0.0	15.1	#240.4	5.1	59.1	35.1	1.5	27.1	19.2	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	206	1907	1492	91	1730	825	319	1181	550	206	685	1496
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	0.59	0.21	0.02	0.26	0.85	0.13	0.64	0.22	0.08	0.30	0.15	0.31

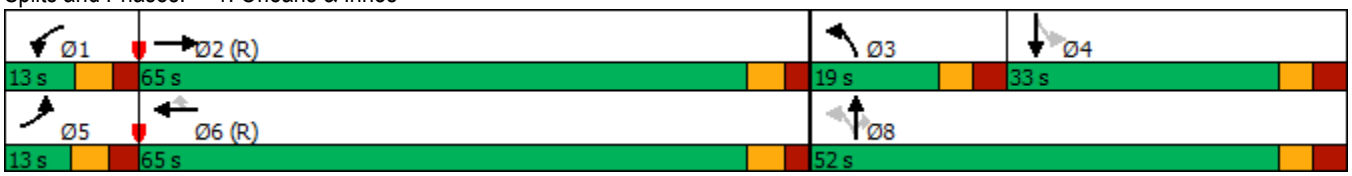
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 99 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

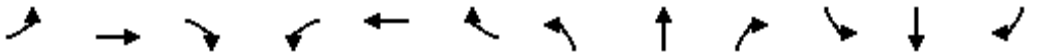
Maximum v/c Ratio: 0.85

Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 94.4%	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: Orleans & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	489	11	41	1532	31	14	14	61	43	7	70
Future Volume (vph)	16	489	11	41	1532	31	14	14	61	43	7	70
Satd. Flow (prot)	1695	3378	0	1695	3378	0	0	1587	0	0	1585	0
Flt Permitted	0.131			0.469				0.936			0.849	
Satd. Flow (perm)	234	3378	0	836	3378	0	0	1494	0	0	1369	0
Satd. Flow (RTOR)		4			3			61			41	
Lane Group Flow (vph)	16	500	0	41	1563	0	0	89	0	0	120	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	82.0	82.0		82.0	82.0		38.0	38.0		38.0	38.0	
Total Split (%)	68.3%	68.3%		68.3%	68.3%		31.7%	31.7%		31.7%	31.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.3	91.3		91.3	91.3			15.7			15.7	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13			0.13	
v/c Ratio	0.09	0.19		0.06	0.61			0.36			0.56	
Control Delay	7.5	5.0		2.2	6.8			20.6			40.1	
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0	
Total Delay	7.5	5.0		2.2	7.1			20.6			40.1	
LOS	A	A		A	A			C			D	
Approach Delay		5.1			6.9			20.6			40.1	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	0.7	12.5		1.2	40.8			6.1			18.0	
Queue Length 95th (m)	4.7	32.5		m2.5	193.4			18.0			31.3	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	178	2570		636	2570			433			386	
Starvation Cap Reductn	0	0		0	329			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.09	0.19		0.06	0.70			0.21			0.31	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 26 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 8.8	Intersection LOS: A
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	559	34	27	1546	127	75
Future Volume (vph)	559	34	27	1546	127	75
Satd. Flow (prot)	3353	0	1695	3390	1695	1517
Flt Permitted			0.427		0.950	
Satd. Flow (perm)	3353	0	759	3390	1695	1517
Satd. Flow (RTOR)	10					75
Lane Group Flow (vph)	593	0	27	1546	127	75
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
Minimum Split (s)	39.2		37.2	37.2	39.8	39.8
Total Split (s)	80.0		80.0	80.0	40.0	40.0
Total Split (%)	66.7%		66.7%	66.7%	33.3%	33.3%
Yellow Time (s)	3.7		3.7	3.7	3.0	3.0
All-Red Time (s)	2.5		2.5	2.5	3.8	3.8
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2		6.2	6.2	6.8	6.8
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min		C-Min	C-Min	None	None
Act Effct Green (s)	89.8		89.8	89.8	17.2	17.2
Actuated g/C Ratio	0.75		0.75	0.75	0.14	0.14
v/c Ratio	0.24		0.05	0.61	0.52	0.27
Control Delay	5.0		3.1	5.2	53.5	10.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	5.0		3.1	5.3	53.5	10.7
LOS	A		A	A	D	B
Approach Delay	5.0			5.2	37.6	
Approach LOS	A			A	D	
Queue Length 50th (m)	15.2		0.8	31.7	28.9	0.0
Queue Length 95th (m)	29.8		m1.2	105.4	40.1	11.3
Internal Link Dist (m)	206.4			215.4	157.2	
Turn Bay Length (m)			50.0		55.0	
Base Capacity (vph)	2511		568	2536	468	473
Starvation Cap Reductn	0		0	23	0	0
Spillback Cap Reductn	0		0	60	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.24		0.05	0.62	0.27	0.16

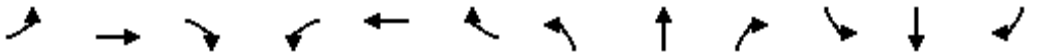
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 3: Lamarche & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	559	39	14	1498	1	102	0	38	0	0	5
Future Volume (vph)	3	559	39	14	1498	1	102	0	38	0	0	5
Satd. Flow (prot)	1695	3350	0	1695	3390	0	0	1651	0	0	1520	0
Flt Permitted	0.142			0.426				0.782				
Satd. Flow (perm)	253	3350	0	758	3390	0	0	1338	0	0	1520	0
Satd. Flow (RTOR)		13						28			55	
Lane Group Flow (vph)	3	598	0	14	1499	0	0	140	0	0	5	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0		33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.1	91.1		91.1	91.1			16.5			16.5	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.14			0.14	
v/c Ratio	0.02	0.23		0.02	0.58			0.67			0.02	
Control Delay	4.3	3.5		5.1	8.2			53.9			0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	4.3	3.5		5.1	8.2			53.9			0.2	
LOS	A	A		A	A			D			A	
Approach Delay		3.5			8.1			53.9			0.2	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.1	10.2		0.7	65.6			25.6			0.0	
Queue Length 95th (m)	m0.7	20.4		3.1	117.6			42.8			0.0	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	191	2545		575	2572			319			380	
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	0.02	0.23		0.02	0.58			0.44			0.01	

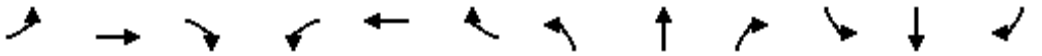
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.7	Intersection LOS: A
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 4: U-Haul Access/Boyer & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	1657	158	58	742	154	64	225	84	165	241	203
Future Volume (vph)	579	1657	158	58	742	154	64	225	84	165	241	203
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.456			0.611		
Satd. Flow (perm)	3266	3390	1487	1689	3390	1477	804	3390	1465	1072	3390	1492
Satd. Flow (RTOR)			292			230			159			292
Lane Group Flow (vph)	579	1657	158	58	742	154	64	225	84	165	241	203
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	31.0	49.0		16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	
Total Split (%)	28.2%	44.5%		14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	Max	C-Min		Max	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	32.0	42.8	110.0	17.4	27.8	27.8	30.7	30.7	30.7	21.1	21.1	110.0
Actuated g/C Ratio	0.29	0.39	1.00	0.16	0.25	0.25	0.28	0.28	0.28	0.19	0.19	1.00
v/c Ratio	0.61	1.26	0.11	0.22	0.87	0.28	0.24	0.24	0.16	0.80	0.37	0.14
Control Delay	39.0	152.7	0.1	43.1	51.8	11.3	28.5	29.5	0.7	69.4	39.3	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	39.0	152.7	0.1	43.1	51.8	11.3	28.5	29.5	0.7	69.4	39.3	0.2
LOS	D	F	A	D	D	B	C	C	A	E	D	A
Approach Delay		115.1			44.7			22.8			34.4	
Approach LOS		F			D			C			C	
Queue Length 50th (m)	57.7	~235.0	0.0	9.9	55.1	1.9	9.8	18.6	0.0	33.7	23.5	0.0
Queue Length 95th (m)	80.6	#277.2	0.0	27.3	#114.8	30.5	18.7	26.6	0.0	#55.7	33.4	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	957	1319	1487	268	856	545	266	1180	613	256	810	1492
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	0.61	1.26	0.11	0.22	0.87	0.28	0.24	0.19	0.14	0.64	0.30	0.14

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

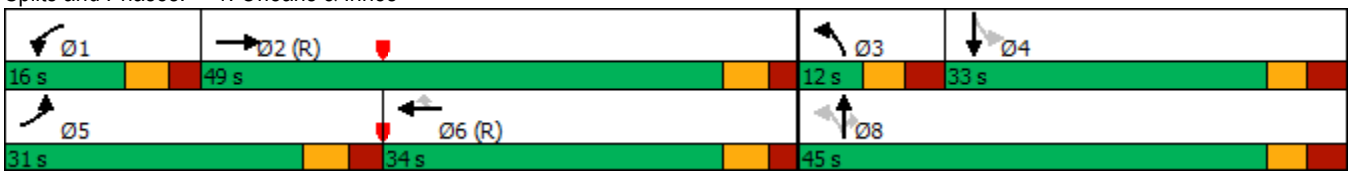
Maximum v/c Ratio: 1.26

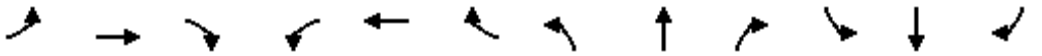
Intersection Signal Delay: 80.3	Intersection LOS: F
Intersection Capacity Utilization 98.0%	ICU Level of Service F
Analysis Period (min) 15	

~ 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: 1: Orleans & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1829	23	53	923	101	13	21	98	58	23	38
Future Volume (vph)	74	1829	23	53	923	101	13	21	98	58	23	38
Satd. Flow (prot)	1695	3382	0	1695	3329	0	0	1566	0	0	1650	0
Flt Permitted	0.258			0.078				0.964			0.720	
Satd. Flow (perm)	459	3382	0	139	3329	0	0	1515	0	0	1211	0
Satd. Flow (RTOR)		2			19			16			21	
Lane Group Flow (vph)	74	1852	0	53	1024	0	0	132	0	0	119	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	72.0	72.0		72.0	72.0		38.0	38.0		38.0	38.0	
Total Split (%)	65.5%	65.5%		65.5%	65.5%		34.5%	34.5%		34.5%	34.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	80.5	80.5		80.5	80.5			16.5			16.5	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.15			0.15	
v/c Ratio	0.22	0.75		0.52	0.42			0.55			0.60	
Control Delay	2.3	10.5		30.7	3.6			44.8			46.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.3	10.5		30.7	3.6			44.8			46.4	
LOS	A	B		C	A			D			D	
Approach Delay		10.2			4.9			44.8			46.4	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	1.6	39.5		3.1	41.8			24.0			20.4	
Queue Length 95th (m)	m1.7	m20.2		#30.2	9.1			35.7			32.7	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	336	2475		101	2441			441			358	
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	0.22	0.75		0.52	0.42			0.30			0.33	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1922	113	96	1033	76	44
Future Volume (vph)	1922	113	96	1033	76	44
Satd. Flow (prot)	3355	0	1695	3390	1695	1517
Flt Permitted			0.052		0.950	
Satd. Flow (perm)	3355	0	93	3390	1695	1517
Satd. Flow (RTOR)	7					44
Lane Group Flow (vph)	2035	0	96	1033	76	44
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)	39.2		11.0	37.2	39.8	39.8
Total Split (s)	59.2		11.0	70.2	39.8	39.8
Total Split (%)	53.8%		10.0%	63.8%	36.2%	36.2%
Yellow Time (s)	3.7		4.0	3.7	3.0	3.0
All-Red Time (s)	2.5		2.0	2.5	3.8	3.8
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2		6.0	6.2	6.8	6.8
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Min		None	C-Min	None	None
Act Effct Green (s)	72.4		85.5	86.5	15.1	15.1
Actuated g/C Ratio	0.66		0.78	0.79	0.14	0.14
v/c Ratio	0.92		0.56	0.39	0.33	0.18
Control Delay	25.8		31.9	10.5	44.1	11.6
Queue Delay	9.4		0.0	0.0	0.0	0.1
Total Delay	35.2		31.9	10.5	44.1	11.7
LOS	D		C	B	D	B
Approach Delay	35.2			12.3	32.2	
Approach LOS	D			B	C	
Queue Length 50th (m)	149.4		8.0	27.1	15.7	0.0
Queue Length 95th (m)	#327.8		#35.9	127.5	23.3	7.9
Internal Link Dist (m)	206.4			215.4	157.2	
Turn Bay Length (m)			50.0		55.0	
Base Capacity (vph)	2212		172	2667	508	485
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	186		0	0	0	103
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.00		0.56	0.39	0.15	0.12

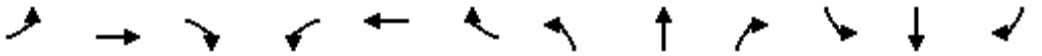
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 89.7%	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: 3: Lamarche & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1871	109	41	1033	12	66	0	26	12	0	7
Future Volume (vph)	14	1871	109	41	1033	12	66	0	26	12	0	7
Satd. Flow (prot)	1695	3358	0	1695	3382	0	0	1649	0	0	1624	0
Flt Permitted	0.259			0.072				0.776			0.820	
Satd. Flow (perm)	461	3358	0	128	3382	0	0	1311	0	0	1373	0
Satd. Flow (RTOR)		11			2			31			31	
Lane Group Flow (vph)	14	1980	0	41	1045	0	0	92	0	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	77.0	77.0		77.0	77.0		33.0	33.0		33.0	33.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	88.2	88.2		88.2	88.2			13.9			13.9	
Actuated g/C Ratio	0.80	0.80		0.80	0.80			0.13			0.13	
v/c Ratio	0.04	0.73		0.40	0.39			0.48			0.10	
Control Delay	4.6	16.9		22.8	5.3			36.9			7.4	
Queue Delay	0.0	3.6		0.0	0.0			0.0			0.0	
Total Delay	4.6	20.4		22.8	5.3			36.9			7.4	
LOS	A	C		C	A			D			A	
Approach Delay		20.3			5.9			36.9			7.4	
Approach LOS		C			A			D			A	
Queue Length 50th (m)	0.6	239.2		2.2	28.3			12.6			0.0	
Queue Length 95th (m)	m1.2	m261.8		#22.1	68.1			24.6			3.9	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	369	2694		102	2711			341			356	
Starvation Cap Reductn	0	609		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	0.04	0.95		0.40	0.39			0.27			0.05	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

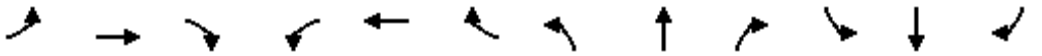
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: U-Haul Access/Boyer & Innes

APPENDIX O

SYNCHRO ANALYSIS: FUTURE INTERSECTION PERFORMANCE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	454	23	24	1526	122	203	259	44	74	100	459
Future Volume (vph)	121	454	23	24	1526	122	203	259	44	74	100	459
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.500			0.592		
Satd. Flow (perm)	3282	3390	1492	1670	3390	1480	886	3390	1427	1021	3390	1496
Satd. Flow (RTOR)			195			143			82			215
Lane Group Flow (vph)	121	454	23	24	1526	122	203	259	44	74	100	459
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	12.4	71.9		12.4	71.9	71.9	13.0	45.7	45.7	32.7	32.7	
Total Split (%)	9.5%	55.3%		9.5%	55.3%	55.3%	10.0%	35.2%	35.2%	25.2%	25.2%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	8.0	75.9	130.0	6.3	68.9	68.9	33.5	33.5	33.5	17.7	17.7	130.0
Actuated g/C Ratio	0.06	0.58	1.00	0.05	0.53	0.53	0.26	0.26	0.26	0.14	0.14	1.00
v/c Ratio	0.60	0.23	0.02	0.30	0.85	0.14	0.71	0.30	0.10	0.54	0.22	0.31
Control Delay	72.1	14.8	0.0	69.4	32.3	2.1	56.5	39.1	1.5	64.3	48.9	0.5
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	72.1	14.8	0.0	69.4	32.3	2.1	56.5	39.1	1.5	64.3	48.9	0.5
LOS	E	B	A	E	C	A	E	D	A	E	D	A
Approach Delay		25.8			30.6			42.8			15.6	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	15.4	28.0	0.0	6.0	160.4	0.0	46.9	30.0	0.0	18.4	12.5	0.0
Queue Length 95th (m)	#33.0	44.7	0.0	15.2	215.4	6.8	63.6	37.7	1.6	31.6	19.2	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	202	1979	1492	83	1797	852	285	1017	485	204	678	1496
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	0.60	0.23	0.02	0.29	0.85	0.14	0.71	0.25	0.09	0.36	0.15	0.31

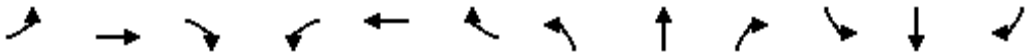
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 99 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 95.9%	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: Orleans & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	555	11	41	1597	31	14	14	61	43	7	70
Future Volume (vph)	16	555	11	41	1597	31	14	14	61	43	7	70
Satd. Flow (prot)	1695	3378	0	1695	3378	0	0	1587	0	0	1585	0
Flt Permitted	0.119			0.439				0.938			0.850	
Satd. Flow (perm)	212	3378	0	783	3378	0	0	1497	0	0	1371	0
Satd. Flow (RTOR)		3			3			61			35	
Lane Group Flow (vph)	16	566	0	41	1628	0	0	89	0	0	120	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	82.0	82.0		82.0	82.0		38.0	38.0		38.0	38.0	
Total Split (%)	68.3%	68.3%		68.3%	68.3%		31.7%	31.7%		31.7%	31.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.1	91.1		91.1	91.1			15.9			15.9	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13			0.13	
v/c Ratio	0.10	0.22		0.07	0.63			0.35			0.57	
Control Delay	7.9	5.3		3.5	7.6			20.4			42.9	
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0	
Total Delay	7.9	5.3		3.5	7.8			20.4			42.9	
LOS	A	A		A	A			C			D	
Approach Delay		5.3			7.7			20.4			42.9	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	0.7	14.8		1.0	30.4			6.1			19.4	
Queue Length 95th (m)	4.9	37.2		m4.5	222.6			18.0			32.6	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	161	2564		594	2564			434			382	
Starvation Cap Reductn	0	0		0	248			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	0.22		0.07	0.70			0.21			0.31	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 26 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	517	142	154	1484	254	182			
Future Volume (vph)	517	142	154	1484	254	182			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.451		0.950				
Satd. Flow (perm)	3390	1461	801	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	517	142	154	1484	254	182			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	7.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	68.0	68.0	15.0	68.0	32.0	32.0	15.0	5.0	5.0
Total Split (%)	56.7%	56.7%	12.5%	56.7%	26.7%	26.7%	13%	4%	4%
Yellow Time (s)	3.7	3.7	2.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	0.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.2	6.2	2.0	6.2	6.8	6.8			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	76.3	76.3	86.1	76.3	23.1	23.1			
Actuated g/C Ratio	0.64	0.64	0.72	0.64	0.19	0.19			
v/c Ratio	0.24	0.15	0.25	0.69	0.78	0.62			
Control Delay	9.1	9.2	4.3	11.4	62.1	53.2			
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0			
Total Delay	9.1	9.2	4.3	11.6	62.1	53.2			
LOS	A	A	A	B	E	D			
Approach Delay	9.1			10.9	58.4				
Approach LOS	A			B	E				
Queue Length 50th (m)	21.8	10.8	6.5	118.5	57.3	39.6			
Queue Length 95th (m)	34.6	22.2	8.8	53.6	80.2	59.1			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	50.0		55.0				
Base Capacity (vph)	2154	928	720	2154	373	334			
Starvation Cap Reductn	0	0	0	42	0	0			
Spillback Cap Reductn	0	0	0	116	0	0			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.24	0.15	0.21	0.73	0.68	0.54			

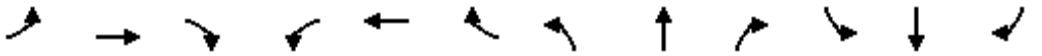
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

Splits and Phases: 3: Lamarche & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	624	39	14	1563	1	102	0	38	0	0	5
Future Volume (vph)	3	624	39	14	1563	1	102	0	38	0	0	5
Satd. Flow (prot)	1695	3354	0	1695	3390	0	0	1651	0	0	1520	0
Flt Permitted	0.130			0.396				0.782				
Satd. Flow (perm)	232	3354	0	705	3390	0	0	1338	0	0	1520	0
Satd. Flow (RTOR)		12						28			48	
Lane Group Flow (vph)	3	663	0	14	1564	0	0	140	0	0	5	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0		33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.1	91.1		91.1	91.1			16.5			16.5	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.14			0.14	
v/c Ratio	0.02	0.26		0.03	0.61			0.67			0.02	
Control Delay	3.3	3.0		5.2	8.5			53.9			0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.3	3.0		5.2	8.5			53.9			0.2	
LOS	A	A		A	A			D			A	
Approach Delay		3.0			8.5			53.9			0.2	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.1	10.3		0.7	71.0			25.6			0.0	
Queue Length 95th (m)	m0.5	28.3		3.1	127.2			42.8			0.0	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	175	2548		534	2572			319			375	
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	0.02	0.26		0.03	0.61			0.44			0.01	

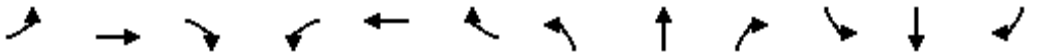
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 4: U-Haul Access/Boyer & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	1716	158	58	793	167	64	225	84	180	241	203
Future Volume (vph)	579	1716	158	58	793	167	64	225	84	180	241	203
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.462			0.611		
Satd. Flow (perm)	3267	3390	1487	1689	3390	1478	815	3390	1465	1072	3390	1492
Satd. Flow (RTOR)			292			230			159			292
Lane Group Flow (vph)	579	1716	158	58	793	167	64	225	84	180	241	203
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	27.0	54.4		11.2	38.6	38.6	11.7	44.4	44.4	32.7	32.7	
Total Split (%)	24.5%	49.5%		10.2%	35.1%	35.1%	10.6%	40.4%	40.4%	29.7%	29.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	Max	C-Min		Max	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	26.6	48.2	110.0	11.2	32.4	32.4	31.5	31.5	31.5	22.1	22.1	110.0
Actuated g/C Ratio	0.24	0.44	1.00	0.10	0.29	0.29	0.29	0.29	0.29	0.20	0.20	1.00
v/c Ratio	0.73	1.16	0.11	0.34	0.79	0.28	0.23	0.23	0.16	0.84	0.35	0.14
Control Delay	46.8	108.2	0.1	49.8	56.6	13.5	28.2	29.0	0.6	72.3	38.4	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	46.8	108.2	0.1	49.8	56.6	13.5	28.2	29.0	0.6	72.3	38.4	0.2
LOS	D	F	A	D	E	B	C	C	A	E	D	A
Approach Delay		86.8			49.1			22.5			35.7	
Approach LOS		F			D			C			D	
Queue Length 50th (m)	62.4	~229.3	0.0	10.7	95.7	6.9	9.6	18.2	0.0	36.5	23.0	0.0
Queue Length 95th (m)	#96.9	#271.5	0.0	#35.7	110.5	30.4	18.9	26.8	0.0	#66.4	33.6	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	795	1485	1487	172	998	597	273	1161	606	253	801	1492
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	0.73	1.16	0.11	0.34	0.79	0.28	0.23	0.19	0.14	0.71	0.30	0.14

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

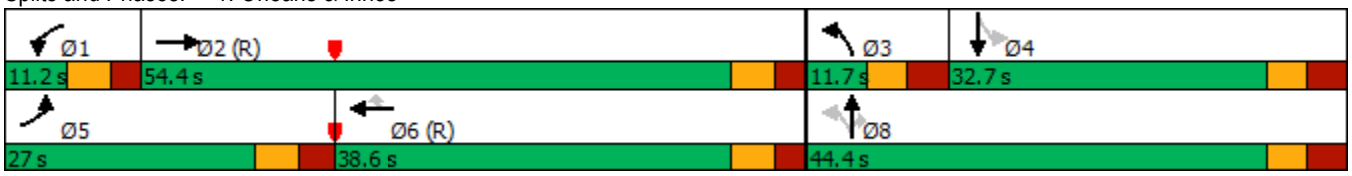
Maximum v/c Ratio: 1.16

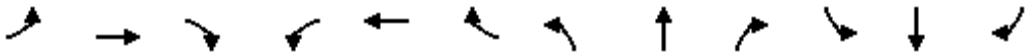
Intersection Signal Delay: 65.7	Intersection LOS: E
Intersection Capacity Utilization 100.6%	ICU Level of Service G
Analysis Period (min) 15	

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

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

Splits and Phases: 1: Orleans & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1903	23	53	987	101	13	21	98	58	23	38
Future Volume (vph)	74	1903	23	53	987	101	13	21	98	58	23	38
Satd. Flow (prot)	1695	3382	0	1695	3333	0	0	1566	0	0	1650	0
Flt Permitted	0.238			0.068				0.964			0.720	
Satd. Flow (perm)	424	3382	0	121	3333	0	0	1515	0	0	1211	0
Satd. Flow (RTOR)		2			17			13			21	
Lane Group Flow (vph)	74	1926	0	53	1088	0	0	132	0	0	119	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	72.0	72.0		72.0	72.0		38.0	38.0		38.0	38.0	
Total Split (%)	65.5%	65.5%		65.5%	65.5%		34.5%	34.5%		34.5%	34.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	80.4	80.4		80.4	80.4			16.6			16.6	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.15			0.15	
v/c Ratio	0.24	0.78		0.60	0.45			0.55			0.59	
Control Delay	1.8	8.1		39.0	2.7			45.8			46.1	
Queue Delay	0.0	0.2		0.0	0.0			0.0			0.0	
Total Delay	1.8	8.3		39.0	2.7			45.8			46.1	
LOS	A	A		D	A			D			D	
Approach Delay		8.1			4.4			45.8			46.1	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	1.2	26.7		1.1	0.0			24.6			20.4	
Queue Length 95th (m)	m1.8	m23.3		m#31.5	26.9			36.3			32.7	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	309	2472		88	2440			439			358	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	92		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.24	0.81		0.60	0.45			0.30			0.33	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	1841	268	197	1006	167	189			
Future Volume (vph)	1841	268	197	1006	167	189			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.061		0.950				
Satd. Flow (perm)	3390	1449	109	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	1841	268	197	1006	167	189			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	11.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	60.2	60.2	15.0	60.2	29.8	29.8	15.0	5.0	5.0
Total Split (%)	54.7%	54.7%	13.6%	54.7%	27.1%	27.1%	14%	5%	5%
Yellow Time (s)	3.7	3.7	4.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	-2.2	-2.2	-2.0	-2.2	-2.8	-2.8			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	66.0	66.0	76.9	66.0	21.1	21.1			
Actuated g/C Ratio	0.60	0.60	0.70	0.60	0.19	0.19			
v/c Ratio	0.91	0.31	0.84	0.49	0.52	0.65			
Control Delay	24.7	14.2	60.2	17.4	44.9	51.4			
Queue Delay	2.9	0.0	0.0	0.0	0.0	0.5			
Total Delay	27.6	14.2	60.2	17.4	44.9	51.9			
LOS	C	B	E	B	D	D			
Approach Delay	25.9			24.4	48.6				
Approach LOS	C			C	D				
Queue Length 50th (m)	124.7	27.7	27.0	58.5	32.2	37.5			
Queue Length 95th (m)	#250.3	m34.2	#63.7	117.5	50.7	58.2			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	50.0		55.0				
Base Capacity (vph)	2034	869	235	2034	397	355			
Starvation Cap Reductn	25	0	0	0	0	0			
Spillback Cap Reductn	118	0	0	0	0	26			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.96	0.31	0.84	0.49	0.42	0.57			

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

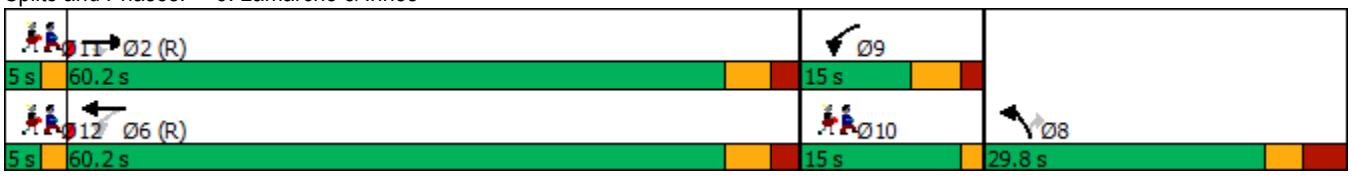
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

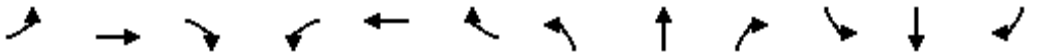
Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

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

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

Splits and Phases: 3: Lamarche & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1935	109	41	1107	12	66	0	26	12	0	7
Future Volume (vph)	14	1935	109	41	1107	12	66	0	26	12	0	7
Satd. Flow (prot)	1695	3358	0	1695	3382	0	0	1649	0	0	1624	0
Flt Permitted	0.238			0.064				0.776			0.820	
Satd. Flow (perm)	424	3358	0	114	3382	0	0	1311	0	0	1373	0
Satd. Flow (RTOR)		10			2			31			31	
Lane Group Flow (vph)	14	2044	0	41	1119	0	0	92	0	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	77.0	77.0		77.0	77.0		33.0	33.0		33.0	33.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	88.2	88.2		88.2	88.2			13.9			13.9	
Actuated g/C Ratio	0.80	0.80		0.80	0.80			0.13			0.13	
v/c Ratio	0.04	0.76		0.45	0.41			0.48			0.10	
Control Delay	4.4	14.3		28.7	5.5			36.9			7.4	
Queue Delay	0.0	1.9		0.0	0.0			0.0			0.0	
Total Delay	4.4	16.2		28.7	5.5			36.9			7.4	
LOS	A	B		C	A			D			A	
Approach Delay		16.1			6.3			36.9			7.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.5	226.6		2.3	31.3			12.6			0.0	
Queue Length 95th (m)	m1.3	#270.6		#24.1	75.0			24.6			3.9	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	339	2694		91	2711			341			356	
Starvation Cap Reductn	0	466		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	0.04	0.92		0.45	0.41			0.27			0.05	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

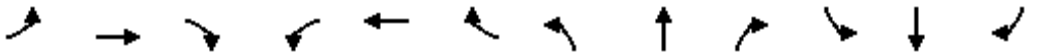
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: U-Haul Access/Boyer & Innes

APPENDIX P

SYNCHRO ANALYSIS: TARGET MODE SHARES NOT MET INTERSECTION PERFORMANCE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	455	23	24	1530	122	203	259	44	74	100	459
Future Volume (vph)	121	455	23	24	1530	122	203	259	44	74	100	459
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.500			0.592		
Satd. Flow (perm)	3282	3390	1492	1670	3390	1480	886	3390	1427	1021	3390	1496
Satd. Flow (RTOR)			195			143			82			215
Lane Group Flow (vph)	121	455	23	24	1530	122	203	259	44	74	100	459
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	12.4	71.9		12.4	71.9	71.9	13.0	45.7	45.7	32.7	32.7	
Total Split (%)	9.5%	55.3%		9.5%	55.3%	55.3%	10.0%	35.2%	35.2%	25.2%	25.2%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	8.0	75.9	130.0	6.3	69.0	69.0	33.5	33.5	33.5	17.7	17.7	130.0
Actuated g/C Ratio	0.06	0.58	1.00	0.05	0.53	0.53	0.26	0.26	0.26	0.14	0.14	1.00
v/c Ratio	0.60	0.23	0.02	0.30	0.85	0.14	0.71	0.30	0.10	0.54	0.22	0.31
Control Delay	72.1	14.8	0.0	69.4	32.4	2.1	56.6	39.1	1.5	64.3	48.9	0.5
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	72.1	14.8	0.0	69.4	32.4	2.1	56.6	39.1	1.5	64.3	48.9	0.5
LOS	E	B	A	E	C	A	E	D	A	E	D	A
Approach Delay		25.8			30.8			42.8			15.6	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	15.4	28.0	0.0	6.0	161.2	0.0	46.9	30.0	0.0	18.4	12.5	0.0
Queue Length 95th (m)	#33.0	44.9	0.0	15.2	216.5	6.8	63.6	37.7	1.6	31.6	19.2	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	202	1980	1492	83	1798	852	285	1017	485	204	678	1496
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	0.60	0.23	0.02	0.29	0.85	0.14	0.71	0.25	0.09	0.36	0.15	0.31

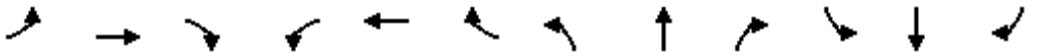
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 99 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	556	11	41	1601	31	14	14	61	43	7	70
Future Volume (vph)	16	556	11	41	1601	31	14	14	61	43	7	70
Satd. Flow (prot)	1695	3378	0	1695	3378	0	0	1587	0	0	1585	0
Flt Permitted	0.118			0.439				0.938			0.850	
Satd. Flow (perm)	211	3378	0	783	3378	0	0	1497	0	0	1371	0
Satd. Flow (RTOR)		3			3			61			35	
Lane Group Flow (vph)	16	567	0	41	1632	0	0	89	0	0	120	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	82.0	82.0		82.0	82.0		38.0	38.0		38.0	38.0	
Total Split (%)	68.3%	68.3%		68.3%	68.3%		31.7%	31.7%		31.7%	31.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.1	91.1		91.1	91.1			15.9			15.9	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13			0.13	
v/c Ratio	0.10	0.22		0.07	0.64			0.35			0.57	
Control Delay	7.9	5.3		3.4	7.5			20.4			42.9	
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0	
Total Delay	7.9	5.3		3.4	7.7			20.4			42.9	
LOS	A	A		A	A			C			D	
Approach Delay		5.3			7.6			20.4			42.9	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	0.7	14.9		0.9	30.8			6.1			19.4	
Queue Length 95th (m)	4.9	37.3		m4.3	222.9			18.0			32.6	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	160	2564		594	2564			434			382	
Starvation Cap Reductn	0	0		0	241			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.10	0.22		0.07	0.70			0.21			0.31	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 26 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	517	143	156	1484	258	187			
Future Volume (vph)	517	143	156	1484	258	187			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.451		0.950				
Satd. Flow (perm)	3390	1461	801	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	517	143	156	1484	258	187			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	7.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	68.0	68.0	15.0	68.0	32.0	32.0	15.0	5.0	5.0
Total Split (%)	56.7%	56.7%	12.5%	56.7%	26.7%	26.7%	13%	4%	4%
Yellow Time (s)	3.7	3.7	2.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	0.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.2	6.2	2.0	6.2	6.8	6.8			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	75.9	75.9	85.8	75.9	23.4	23.4			
Actuated g/C Ratio	0.63	0.63	0.72	0.63	0.20	0.20			
v/c Ratio	0.24	0.15	0.25	0.69	0.78	0.63			
Control Delay	9.2	9.3	4.5	11.7	61.7	53.3			
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0			
Total Delay	9.2	9.3	4.5	11.8	61.7	53.3			
LOS	A	A	A	B	E	D			
Approach Delay	9.2			11.1	58.1				
Approach LOS	A			B	E				
Queue Length 50th (m)	22.1	11.0	7.2	119.4	58.1	40.7			
Queue Length 95th (m)	34.7	22.5	9.0	53.7	81.3	60.1			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	100.0		55.0				
Base Capacity (vph)	2144	924	718	2144	375	336			
Starvation Cap Reductn	0	0	0	41	0	0			
Spillback Cap Reductn	0	0	0	116	0	0			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.24	0.15	0.22	0.73	0.69	0.56			

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

Splits and Phases: 3: Lamarche & Innes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	629	39	14	1565	1	102	0	38	0	0	5
Future Volume (vph)	3	629	39	14	1565	1	102	0	38	0	0	5
Satd. Flow (prot)	1695	3354	0	1695	3390	0	0	1651	0	0	1520	0
Flt Permitted	0.130			0.394				0.782				
Satd. Flow (perm)	232	3354	0	701	3390	0	0	1338	0	0	1520	0
Satd. Flow (RTOR)		11						28			47	
Lane Group Flow (vph)	3	668	0	14	1566	0	0	140	0	0	5	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0		33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.1	91.1		91.1	91.1			16.5			16.5	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.14			0.14	
v/c Ratio	0.02	0.26		0.03	0.61			0.67			0.02	
Control Delay	3.7	3.0		5.2	8.6			53.9			0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.7	3.0		5.2	8.6			53.9			0.2	
LOS	A	A		A	A			D			A	
Approach Delay		3.0			8.5			53.9			0.2	
Approach LOS		A			A			D			A	
Queue Length 50th (m)	0.1	10.6		0.7	71.2			25.6			0.0	
Queue Length 95th (m)	m0.5	28.9		3.1	127.4			42.8			0.0	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	175	2547		531	2572			319			374	
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	0.02	0.26		0.03	0.61			0.44			0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 71.4%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 4: U-Haul Access/Boyer & Innes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	579	1720	158	58	795	167	64	225	84	180	241	203
Future Volume (vph)	579	1720	158	58	795	167	64	225	84	180	241	203
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.462			0.611		
Satd. Flow (perm)	3268	3390	1487	1689	3390	1478	815	3390	1465	1072	3390	1492
Satd. Flow (RTOR)			292			230			159			292
Lane Group Flow (vph)	579	1720	158	58	795	167	64	225	84	180	241	203
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	27.0	54.4		11.2	38.6	38.6	11.7	44.4	44.4	32.7	32.7	
Total Split (%)	24.5%	49.5%		10.2%	35.1%	35.1%	10.6%	40.4%	40.4%	29.7%	29.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	Max	C-Min		Max	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	26.6	48.2	110.0	11.2	32.4	32.4	31.5	31.5	31.5	22.1	22.1	110.0
Actuated g/C Ratio	0.24	0.44	1.00	0.10	0.29	0.29	0.29	0.29	0.29	0.20	0.20	1.00
v/c Ratio	0.73	1.16	0.11	0.34	0.80	0.28	0.23	0.23	0.16	0.84	0.35	0.14
Control Delay	46.8	109.3	0.1	48.4	57.8	13.8	28.2	29.0	0.6	72.3	38.4	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	46.8	109.3	0.1	48.4	57.8	13.8	28.2	29.0	0.6	72.3	38.4	0.2
LOS	D	F	A	D	E	B	C	C	A	E	D	A
Approach Delay		87.6			50.0			22.5			35.7	
Approach LOS		F			D			C			D	
Queue Length 50th (m)	62.4	~230.3	0.0	10.7	96.3	7.8	9.6	18.2	0.0	36.5	23.0	0.0
Queue Length 95th (m)	#96.9	#272.5	0.0	#35.7	110.7	30.3	18.9	26.8	0.0	#66.4	33.6	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	795	1485	1487	172	998	597	273	1161	606	253	801	1492
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	0.73	1.16	0.11	0.34	0.80	0.28	0.23	0.19	0.14	0.71	0.30	0.14

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

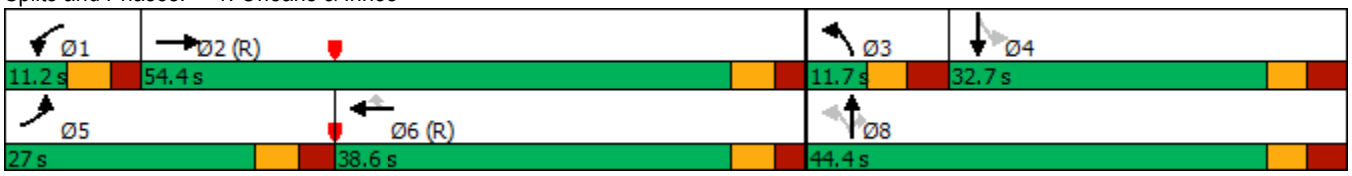
Maximum v/c Ratio: 1.16

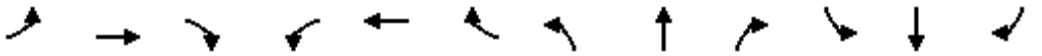
Intersection Signal Delay: 66.4	Intersection LOS: E
Intersection Capacity Utilization 100.7%	ICU Level of Service G
Analysis Period (min) 15	

~ 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: 1: Orleans & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1908	23	53	990	101	13	21	98	58	23	38
Future Volume (vph)	74	1908	23	53	990	101	13	21	98	58	23	38
Satd. Flow (prot)	1695	3382	0	1695	3333	0	0	1566	0	0	1650	0
Flt Permitted	0.237			0.067				0.964			0.720	
Satd. Flow (perm)	422	3382	0	120	3333	0	0	1515	0	0	1211	0
Satd. Flow (RTOR)		2			17			13			21	
Lane Group Flow (vph)	74	1931	0	53	1091	0	0	132	0	0	119	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	72.0	72.0		72.0	72.0		38.0	38.0		38.0	38.0	
Total Split (%)	65.5%	65.5%		65.5%	65.5%		34.5%	34.5%		34.5%	34.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	80.4	80.4		80.4	80.4			16.6			16.6	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.15			0.15	
v/c Ratio	0.24	0.78		0.61	0.45			0.55			0.59	
Control Delay	1.8	8.2		37.7	1.9			45.8			46.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	1.8	8.2		37.7	1.9			45.8			46.1	
LOS	A	A		D	A			D			D	
Approach Delay		7.9			3.6			45.8			46.1	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	1.2	27.3		1.3	0.0			24.6			20.4	
Queue Length 95th (m)	m1.8	m23.3		m#29.9	21.8			36.3			32.7	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	308	2472		87	2440			439			358	
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	0.24	0.78		0.61	0.45			0.30			0.33	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	1841	273	202	1006	170	192			
Future Volume (vph)	1841	273	202	1006	170	192			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.064		0.950				
Satd. Flow (perm)	3390	1449	114	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	1841	273	202	1006	170	192			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	11.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	59.0	59.0	16.2	59.0	29.8	29.8	16.2	5.0	5.0
Total Split (%)	53.6%	53.6%	14.7%	53.6%	27.1%	27.1%	15%	5%	5%
Yellow Time (s)	3.7	3.7	4.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.2	6.2	6.0	6.2	6.8	6.8			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	62.4	62.4	72.8	62.4	18.4	18.4			
Actuated g/C Ratio	0.57	0.57	0.66	0.57	0.17	0.17			
v/c Ratio	0.96	0.33	0.91	0.52	0.60	0.76			
Control Delay	33.7	17.4	74.0	20.6	50.7	62.0			
Queue Delay	10.5	0.0	0.0	0.0	0.0	0.9			
Total Delay	44.2	17.4	74.0	20.6	50.7	63.0			
LOS	D	B	E	C	D	E			
Approach Delay	40.7			29.5	57.2				
Approach LOS	D			C	E				
Queue Length 50th (m)	136.8	31.3	28.6	64.1	33.9	39.4			
Queue Length 95th (m)	#262.8	m38.8	#69.4	130.1	53.5	61.3			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	100.0		55.0				
Base Capacity (vph)	1923	821	222	1923	354	317			
Starvation Cap Reductn	0	0	0	0	0	0			
Spillback Cap Reductn	109	0	0	0	0	26			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	1.01	0.33	0.91	0.52	0.48	0.66			

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

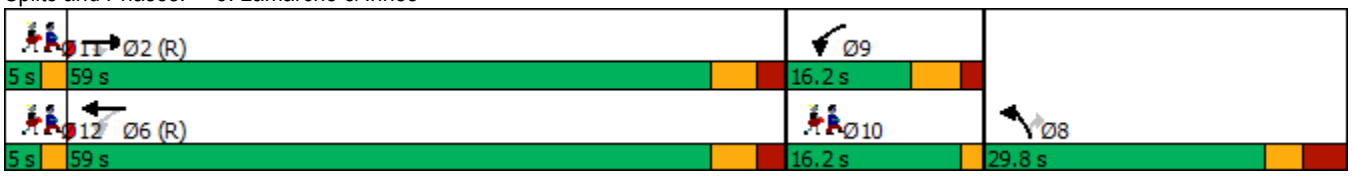
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

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

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

Splits and Phases: 3: Lamarche & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1938	109	41	1112	12	66	0	26	12	0	7
Future Volume (vph)	14	1938	109	41	1112	12	66	0	26	12	0	7
Satd. Flow (prot)	1695	3358	0	1695	3382	0	0	1649	0	0	1624	0
Flt Permitted	0.236			0.064				0.776			0.820	
Satd. Flow (perm)	421	3358	0	114	3382	0	0	1311	0	0	1373	0
Satd. Flow (RTOR)		10			2			31			31	
Lane Group Flow (vph)	14	2047	0	41	1124	0	0	92	0	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	77.0	77.0		77.0	77.0		33.0	33.0		33.0	33.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	88.2	88.2		88.2	88.2			13.9			13.9	
Actuated g/C Ratio	0.80	0.80		0.80	0.80			0.13			0.13	
v/c Ratio	0.04	0.76		0.45	0.41			0.48			0.10	
Control Delay	4.6	15.2		28.7	5.5			36.9			7.4	
Queue Delay	0.0	1.9		0.0	0.0			0.0			0.0	
Total Delay	4.6	17.1		28.7	5.5			36.9			7.4	
LOS	A	B		C	A			D			A	
Approach Delay		17.0			6.3			36.9			7.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.4	226.0		2.3	31.6			12.6			0.0	
Queue Length 95th (m)	m1.3	m249.3		#24.1	75.5			24.6			3.9	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	337	2694		91	2711			341			356	
Starvation Cap Reductn	0	466		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	0.04	0.92		0.45	0.41			0.27			0.05	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

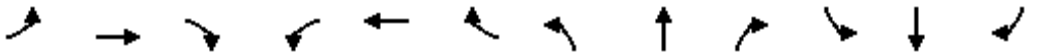
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

\# 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: 4: U-Haul Access/Boyer & Innes

APPENDIX Q

SYNCHRO ANALYSIS: 2037 EUC ASSUMPTIONS INTERSECTION PERFORMANCE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	410	22	23	1368	117	193	246	42	71	95	436
Future Volume (vph)	115	410	22	23	1368	117	193	246	42	71	95	436
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.501			0.599		
Satd. Flow (perm)	3280	3390	1492	1669	3390	1480	888	3390	1427	1032	3390	1496
Satd. Flow (RTOR)			195			143			82			227
Lane Group Flow (vph)	115	410	22	23	1368	117	193	246	42	71	95	436
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	12.4	71.9		12.4	71.9	71.9	13.0	45.7	45.7	32.7	32.7	
Total Split (%)	9.5%	55.3%		9.5%	55.3%	55.3%	10.0%	35.2%	35.2%	25.2%	25.2%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	7.8	74.6	130.0	6.3	67.9	67.9	34.8	34.8	34.8	17.5	17.5	130.0
Actuated g/C Ratio	0.06	0.57	1.00	0.05	0.52	0.52	0.27	0.27	0.27	0.13	0.13	1.00
v/c Ratio	0.59	0.21	0.01	0.28	0.77	0.14	0.64	0.27	0.10	0.51	0.21	0.29
Control Delay	72.1	15.3	0.0	68.8	29.2	1.8	50.2	37.7	1.0	63.0	48.8	0.5
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	72.1	15.3	0.0	68.8	29.2	1.8	50.2	37.7	1.0	63.0	48.8	0.5
LOS	E	B	A	E	C	A	D	D	A	E	D	A
Approach Delay		26.6			27.7			39.5			15.5	
Approach LOS		C			C			D			B	
Queue Length 50th (m)	14.7	28.4	0.0	5.8	149.2	0.0	41.1	26.3	0.0	17.7	11.8	0.0
Queue Length 95th (m)	#31.1	40.4	0.0	15.2	178.4	6.0	60.7	36.1	1.1	30.8	18.4	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	196	1945	1492	83	1771	841	303	1017	485	206	678	1496
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	0.59	0.21	0.01	0.28	0.77	0.14	0.64	0.24	0.09	0.34	0.14	0.29

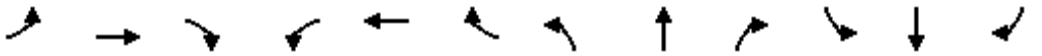
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 99 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	500	10	39	1431	30	13	13	58	41	7	67
Future Volume (vph)	15	500	10	39	1431	30	13	13	58	41	7	67
Satd. Flow (prot)	1695	3378	0	1695	3378	0	0	1587	0	0	1585	0
Flt Permitted	0.151			0.464				0.940			0.859	
Satd. Flow (perm)	269	3378	0	827	3378	0	0	1501	0	0	1386	0
Satd. Flow (RTOR)		3			3			58			51	
Lane Group Flow (vph)	15	510	0	39	1461	0	0	84	0	0	115	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	82.0	82.0		82.0	82.0		38.0	38.0		38.0	38.0	
Total Split (%)	68.3%	68.3%		68.3%	68.3%		31.7%	31.7%		31.7%	31.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	91.8	91.8		91.8	91.8			15.2			15.2	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13			0.13	
v/c Ratio	0.07	0.20		0.06	0.57			0.35			0.53	
Control Delay	6.8	4.9		3.5	6.9			20.7			34.7	
Queue Delay	0.0	0.0		0.0	0.1			0.0			0.0	
Total Delay	6.8	4.9		3.5	7.1			20.7			34.7	
LOS	A	A		A	A			C			C	
Approach Delay		5.0			7.0			20.7			34.7	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	0.6	12.0		1.0	22.5			5.8			14.6	
Queue Length 95th (m)	4.3	33.2		m5.2	192.8			17.2			27.8	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	205	2585		632	2585			433			398	
Starvation Cap Reductn	0	0		0	301			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.20		0.06	0.64			0.19			0.29	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 26 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	502	94	83	1379	185	113			
Future Volume (vph)	502	94	83	1379	185	113			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.466		0.950				
Satd. Flow (perm)	3390	1461	828	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	502	94	83	1379	185	113			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	7.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	70.0	70.0	15.0	70.0	30.0	30.0	15.0	5.0	5.0
Total Split (%)	58.3%	58.3%	12.5%	58.3%	25.0%	25.0%	13%	4%	4%
Yellow Time (s)	3.7	3.7	2.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	0.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	3.0	0.0	0.0	0.0			
Total Lost Time (s)	6.2	6.2	5.0	6.2	6.8	6.8			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	82.5	82.5	86.4	82.5	18.3	18.3			
Actuated g/C Ratio	0.69	0.69	0.72	0.69	0.15	0.15			
v/c Ratio	0.22	0.09	0.13	0.59	0.72	0.49			
Control Delay	7.1	7.1	1.7	7.1	63.5	52.8			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	7.1	7.1	1.7	7.2	63.5	52.8			
LOS	A	A	A	A	E	D			
Approach Delay	7.1			6.8	59.4				
Approach LOS	A			A	E				
Queue Length 50th (m)	17.6	6.2	1.2	93.8	42.0	24.7			
Queue Length 95th (m)	29.4	13.5	2.3	27.5	62.3	40.4			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	100.0		55.0				
Base Capacity (vph)	2331	1005	719	2331	332	297			
Starvation Cap Reductn	0	0	0	35	0	0			
Spillback Cap Reductn	0	0	0	43	0	0			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.22	0.09	0.12	0.60	0.56	0.38			

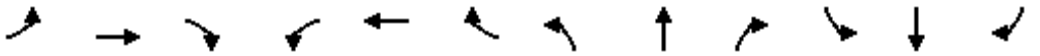
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

Splits and Phases: 3: Lamarche & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	535	40	24	1380	1	96	0	60	0	0	5
Future Volume (vph)	3	535	40	24	1380	1	96	0	60	0	0	5
Satd. Flow (prot)	1695	3350	0	1695	3390	0	0	1630	0	0	1520	0
Flt Permitted	0.165			0.436				0.809				
Satd. Flow (perm)	294	3350	0	776	3390	0	0	1360	0	0	1520	0
Satd. Flow (RTOR)		14						28			70	
Lane Group Flow (vph)	3	575	0	24	1381	0	0	156	0	0	5	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	87.0	87.0		87.0	87.0		33.0	33.0		33.0	33.0	
Total Split (%)	72.5%	72.5%		72.5%	72.5%		27.5%	27.5%		27.5%	27.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	90.3	90.3		90.3	90.3			17.3			17.3	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.01	0.23		0.04	0.54			0.71			0.02	
Control Delay	4.3	3.4		5.3	7.9			56.6			0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	4.3	3.4		5.3	7.9			56.6			0.2	
LOS	A	A		A	A			E			A	
Approach Delay		3.4			7.8			56.6			0.2	
Approach LOS		A			A			E			A	
Queue Length 50th (m)	0.1	7.7		1.2	60.1			29.3			0.0	
Queue Length 95th (m)	m0.5	12.0		4.5	102.1			47.9			0.0	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	221	2525		584	2551			324			392	
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	0.01	0.23		0.04	0.54			0.48			0.01	

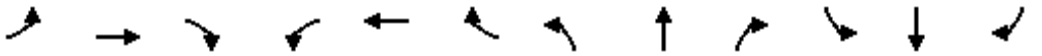
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 4: U-Haul Access/Boyer & Innes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	550	1541	150	55	720	159	61	214	80	172	229	193
Future Volume (vph)	550	1541	150	55	720	159	61	214	80	172	229	193
Satd. Flow (prot)	3288	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.950			0.950			0.464			0.618		
Satd. Flow (perm)	3268	3390	1487	1688	3390	1478	818	3390	1465	1084	3390	1492
Satd. Flow (RTOR)			292			230			159			292
Lane Group Flow (vph)	550	1541	150	55	720	159	61	214	80	172	229	193
Turn Type	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases			Free			6	8		8	4		Free
Detector Phase	5	2		1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.6	26.2		11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	
Total Split (s)	27.0	54.4		11.2	38.6	38.6	11.7	44.4	44.4	32.7	32.7	
Total Split (%)	24.5%	49.5%		10.2%	35.1%	35.1%	10.6%	40.4%	40.4%	29.7%	29.7%	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.5		2.5	2.5	2.5	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	0.0	0.0	0.0	
Total Lost Time (s)	6.6	6.2		6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	Max	C-Min		Max	C-Min	C-Min	None	None	None	None	None	
Act Effct Green (s)	27.3	48.2	110.0	11.9	32.4	32.4	30.8	30.8	30.8	21.4	21.4	110.0
Actuated g/C Ratio	0.25	0.44	1.00	0.11	0.29	0.29	0.28	0.28	0.28	0.19	0.19	1.00
v/c Ratio	0.67	1.04	0.10	0.30	0.72	0.27	0.23	0.23	0.15	0.82	0.35	0.13
Control Delay	44.5	64.9	0.1	52.3	47.4	11.5	28.3	29.3	0.6	70.1	38.7	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	44.5	64.9	0.1	52.3	47.4	11.5	28.3	29.3	0.6	70.1	38.7	0.2
LOS	D	E	A	D	D	B	C	C	A	E	D	A
Approach Delay		55.5			41.5			22.7			35.3	
Approach LOS		E			D			C			D	
Queue Length 50th (m)	57.8	~188.1	0.0	9.7	74.9	2.6	9.3	17.6	0.0	35.0	22.1	0.0
Queue Length 95th (m)	#89.7	#230.0	0.0	#33.9	101.0	28.5	18.3	25.7	0.0	#61.8	32.1	0.0
Internal Link Dist (m)		172.6			446.9			66.6			225.1	
Turn Bay Length (m)	150.0		85.0	120.0		70.0	50.0		45.0	65.0		60.0
Base Capacity (vph)	816	1485	1487	183	998	597	269	1161	606	256	801	1492
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	0.67	1.04	0.10	0.30	0.72	0.27	0.23	0.18	0.13	0.67	0.29	0.13

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

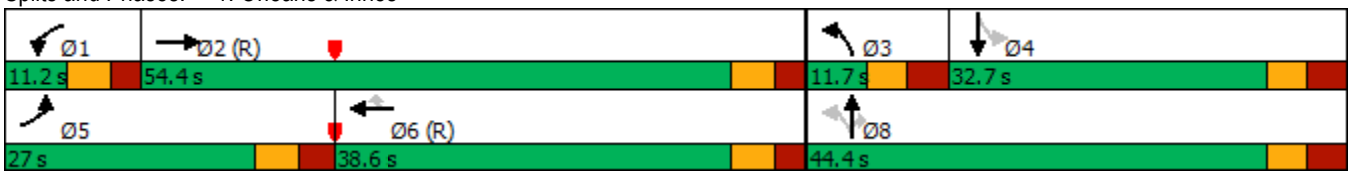
Maximum v/c Ratio: 1.04

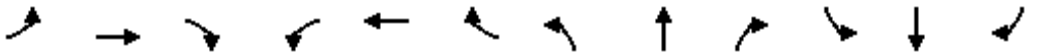
Intersection Signal Delay: 46.6	Intersection LOS: D
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

~ 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: 1: Orleans & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	1707	22	50	893	96	12	20	93	56	22	36
Future Volume (vph)	71	1707	22	50	893	96	12	20	93	56	22	36
Satd. Flow (prot)	1695	3382	0	1695	3329	0	0	1566	0	0	1650	0
Flt Permitted	0.270			0.098				0.965			0.733	
Satd. Flow (perm)	481	3382	0	175	3329	0	0	1517	0	0	1233	0
Satd. Flow (RTOR)		2			18			21			21	
Lane Group Flow (vph)	71	1729	0	50	989	0	0	125	0	0	114	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	39.2	39.2		39.2	39.2		37.8	37.8		37.8	37.8	
Total Split (s)	72.0	72.0		72.0	72.0		38.0	38.0		38.0	38.0	
Total Split (%)	65.5%	65.5%		65.5%	65.5%		34.5%	34.5%		34.5%	34.5%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.8			6.8	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	81.0	81.0		81.0	81.0			16.0			16.0	
Actuated g/C Ratio	0.74	0.74		0.74	0.74			0.15			0.15	
v/c Ratio	0.20	0.69		0.39	0.40			0.53			0.58	
Control Delay	2.5	6.7		14.9	3.0			42.1			45.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.5	6.7		14.9	3.0			42.1			45.4	
LOS	A	A		B	A			D			D	
Approach Delay		6.6			3.5			42.1			45.4	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	0.4	11.6		0.7	2.0			21.5			19.4	
Queue Length 95th (m)	m2.0	m23.8		22.7	20.0			32.9			31.1	
Internal Link Dist (m)		446.9			206.4			187.2			222.4	
Turn Bay Length (m)	110.0			75.0								
Base Capacity (vph)	354	2490		128	2455			445			364	
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	0.69		0.39	0.40			0.28			0.31	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 2: Page & Innes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø10	Ø11	Ø12
Lane Configurations									
Traffic Volume (vph)	1711	185	136	924	139	93			
Future Volume (vph)	1711	185	136	924	139	93			
Satd. Flow (prot)	3390	1517	1695	3390	1695	1517			
Flt Permitted			0.065		0.950				
Satd. Flow (perm)	3390	1449	116	3390	1695	1517			
Satd. Flow (RTOR)									
Lane Group Flow (vph)	1711	185	136	924	139	93			
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm			
Protected Phases	2		9	6	8		10	11	12
Permitted Phases		2	6			8			
Detector Phase	2	2	9	6	8	8			
Switch Phase									
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	1.0	1.0	1.0
Minimum Split (s)	39.2	39.2	11.0	37.2	29.8	29.8	15.0	5.0	5.0
Total Split (s)	59.0	59.0	16.2	59.0	29.8	29.8	16.2	5.0	5.0
Total Split (%)	53.6%	53.6%	14.7%	53.6%	27.1%	27.1%	15%	5%	5%
Yellow Time (s)	3.7	3.7	4.0	3.7	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.0	2.5	3.8	3.8	0.0	0.0	0.0
Lost Time Adjust (s)	-2.2	-2.2	-2.0	-2.2	-2.8	-2.8			
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0			
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None	None
Act Effct Green (s)	69.3	69.3	80.0	69.3	18.0	18.0			
Actuated g/C Ratio	0.63	0.63	0.73	0.63	0.16	0.16			
v/c Ratio	0.80	0.20	0.57	0.43	0.50	0.38			
Control Delay	19.2	12.3	30.8	15.3	47.3	44.0			
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.1			
Total Delay	19.3	12.3	30.8	15.3	47.3	44.1			
LOS	B	B	C	B	D	D			
Approach Delay	18.6			17.3	46.0				
Approach LOS	B			B	D				
Queue Length 50th (m)	108.5	17.1	10.5	46.4	27.8	18.2			
Queue Length 95th (m)	#166.3	m27.5	23.0	107.9	42.8	30.8			
Internal Link Dist (m)	206.4			215.4	157.2				
Turn Bay Length (m)		55.0	100.0		55.0				
Base Capacity (vph)	2137	913	261	2137	397	355			
Starvation Cap Reductn	0	0	0	0	0	0			
Spillback Cap Reductn	54	0	0	0	0	26			
Storage Cap Reductn	0	0	0	0	0	0			
Reduced v/c Ratio	0.82	0.20	0.52	0.43	0.35	0.28			

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

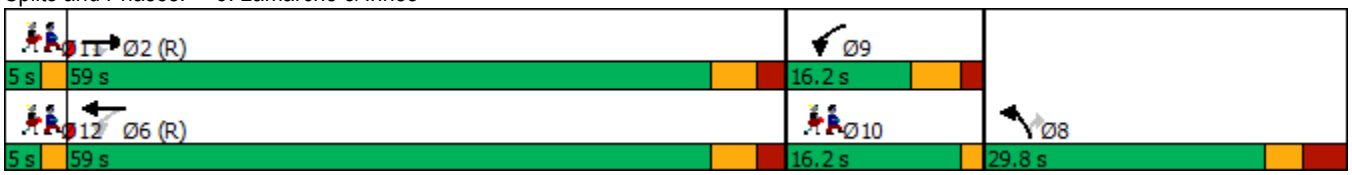
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

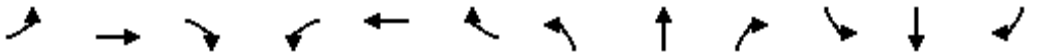
Description: Phase 11 and 12 function as AT (crossing Lamarche) and transit advance, phase 10 is a time separated crossing of the west leg of Innes whi

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

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

Splits and Phases: 3: Lamarche & Innes





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1703	102	62	957	11	65	0	42	11	0	7
Future Volume (vph)	13	1703	102	62	957	11	65	0	42	11	0	7
Satd. Flow (prot)	1695	3357	0	1695	3382	0	0	1630	0	0	1619	0
Flt Permitted	0.280			0.091				0.804			0.843	
Satd. Flow (perm)	499	3357	0	162	3382	0	0	1337	0	0	1406	0
Satd. Flow (RTOR)		11			2			31			31	
Lane Group Flow (vph)	13	1805	0	62	968	0	0	107	0	0	18	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		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	
Minimum Split (s)	32.1	32.1		32.1	32.1		32.3	32.3		32.3	32.3	
Total Split (s)	77.0	77.0		77.0	77.0		33.0	33.0		33.0	33.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1			6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	83.2	83.2		83.2	83.2			14.4			14.4	
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.13			0.13	
v/c Ratio	0.03	0.71		0.51	0.38			0.53			0.09	
Control Delay	5.3	16.7		26.8	5.7			39.7			6.5	
Queue Delay	0.0	1.4		0.0	0.0			0.0			0.0	
Total Delay	5.3	18.1		26.8	5.7			39.7			6.5	
LOS	A	B		C	A			D			A	
Approach Delay		18.0			7.0			39.7			6.5	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.8	208.4		3.9	27.2			15.7			0.0	
Queue Length 95th (m)	m1.3	232.7		#31.0	61.4			28.8			3.5	
Internal Link Dist (m)		215.4			197.0			184.8			37.6	
Turn Bay Length (m)	45.0			50.0								
Base Capacity (vph)	377	2541		122	2558			348			364	
Starvation Cap Reductn	0	496		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	0.03	0.88		0.51	0.38			0.31			0.05	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: U-Haul Access/Boyer & Innes