245- 275 Lamarche Avenue

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

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1 Screening

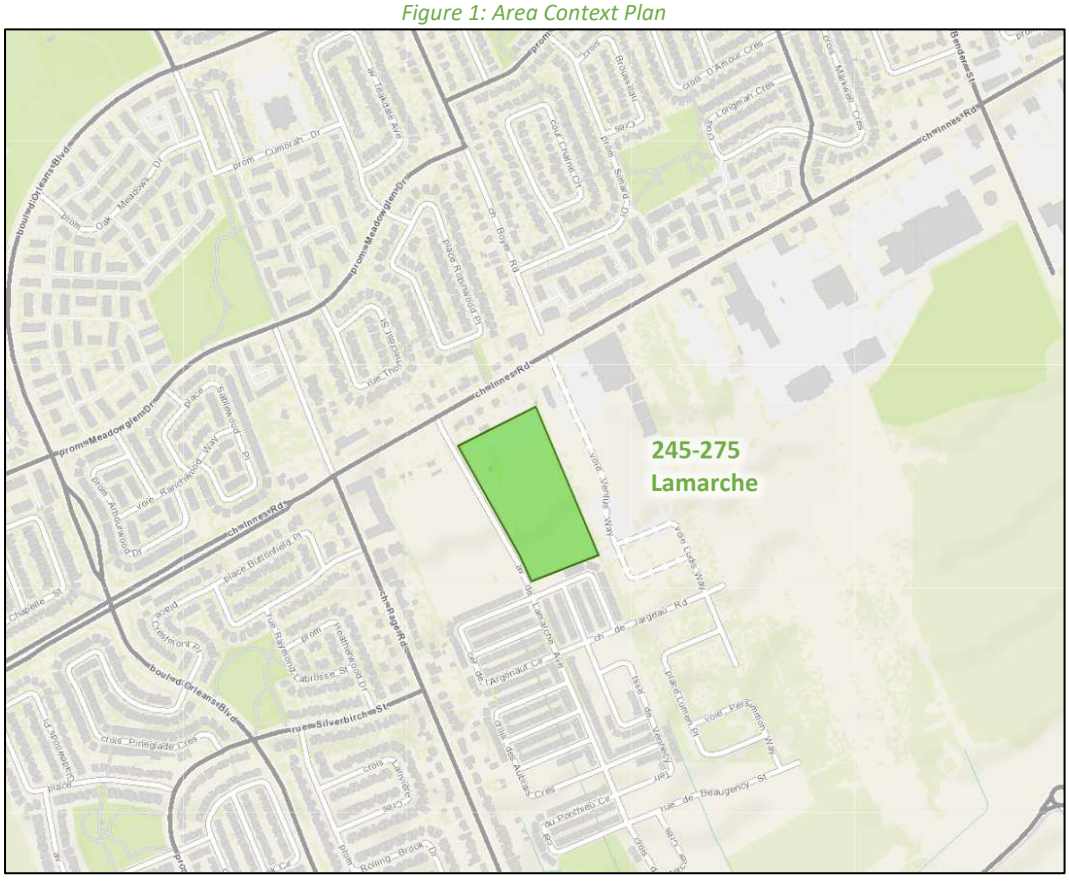
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support a Site Plan application.

2 Existing and Planned Conditions

2.1 Proposed Development

The existing site, located at 245 and 275 Lamarche Avenue, is zoned as Development Reserve (DR). The proposed development consists of 476 stacked dwellings, 476 residential vehicle parking spaces, 36 visitor parking spaces, and 238 bicycle parking spaces. The concept plan includes two full-movement accesses onto Lamarche Avenue. The anticipated full build-out and occupancy horizon is 2026 with construction occurring in phases. Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 6, 2024

Figure 2: Concept Plan

SITE AREA	45,201.63 m² (4.52 ha)
PAVED AREA	13,895.1753 m² (30.7%)
LANDSCAPED AREA	19,936.709 m² (44.1%)
TOTAL BUILDING COVERAGE	11,369.7445 m² (25.2%)
TOTAL GROSS FLOOR AREA	45,819.4504m²
DENSITY (UPH)	UPH
ZONE CATEGORY	R4Z()

DWELLING BLOCK	DWELLING TYPE	GROSS FLOOR AREA (m²)	UNITS
BLOCKS 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 13 - 14 - 19	24 UNITS STACKED DWELLING	(per Block)	312
BLOCKS 11 - 12 - 16 - 17 - 21	20 UNITS STACKED DWELLING	(per Block)	100
BLOCKS 15 - 18 - 20 - 22	16 UNITS STACKED DWELLING	(per Block)	64
	TOTAL		476

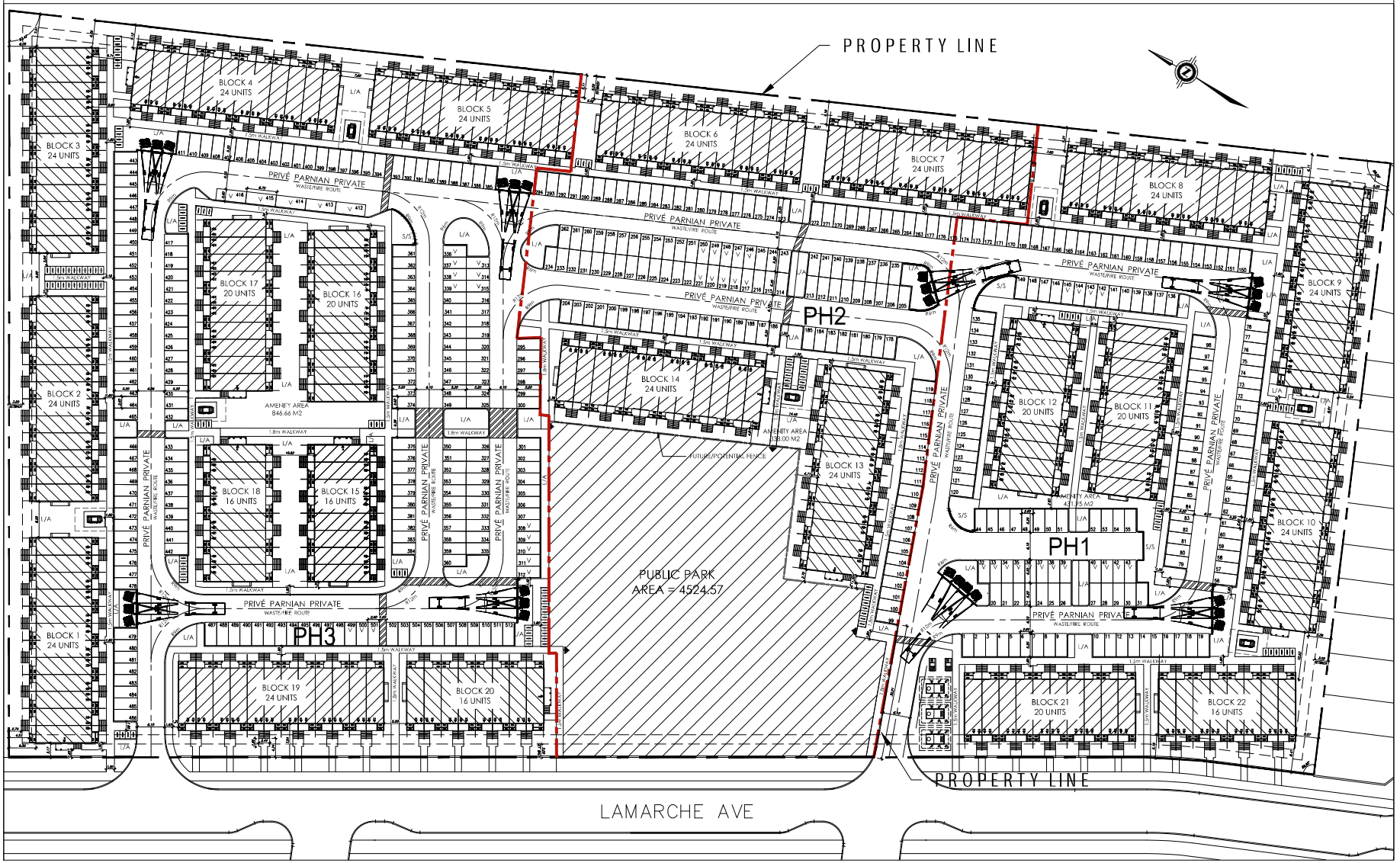
	ZONE PROVISION - PLANNED UNIT DEVELOPMENT	REQUIRED	PROPOSED
162A(table)(i)	MIN. LOT AREA (m²)	1,400m2	m²
162A(table)(ii)	MIN. LOT WIDTH (m)	18m	m
162A(table)(ii)	MIN. FRONT YARD SETBACK (m)	3.0m	VARIES
229B (3)(a)(ii) 2022-0351	MIN. INTERIOR SIDE YARD SETBACK: NORTH-WEST	VARIES	6.0m
	SOUTH-EAST	VARIES	5.0m
229B (3)(a)(ii) 2022-0351	MIN. REAR YARD SETBACK (m) NORTH-EAST	VARIES	5.0m
162A(table)(ii)	MAX. BUILDING HEIGHT (m)	AS PER TYPE	12.10m (3 storeys)
101(table)	RESIDENT PARKING - 1 spaces/unit	476	476
102(table)	VISITOR PARKING - 0.5 spaces/unit	45.6	36 (0.079)
111A(table)	MIN. BICYCLE PARKING - 0.5 spaces/unit	238	180
131(table)(i)	MIN. WIDTH OF PRIVATE WAY/ PARKING AISLE (m)	6.0m	6.0m
131(table)(ii)	MIN. SETBACK FOR ANY WALL OF A RESIDENTIAL USE BUILDING TO A PRIVATE WAY (m)	1.8m	m
131(table)(iii)	MIN. SEPARATION DISTANCE BETWEEN BUILDINGS WITHIN A PLANNED UNIT DEVELOPMENT (m)	1.2m	VARIES1.2m
137(table)	AMENITY AREA:		
	TOTAL MIN. AMENITY AREA (6m² per unit)	2856 m²	6141.18 m²
	MIN. COMMUNAL AMENITY AREA (min. 50% max)	1428 m²	1616.31 M²

Individual amenity areas are provided on the balconies

	ADDITIONAL PROVISIONS	REQUIRED	PROPOSED
65(table)	PERMITTED PROJECTIONS INTO REQUIRED YARDS:		
65(table)(5)	FIRE ESCAPES, OPEN STAIRWAYS, STOOP (m)	>0.6m to lot line	VARIES m
65(table)(6)	COVERED OR UNCOVERED BALCONY, PORCH, DECK	>1m to lot line	VARIES m
106(1)(a)	MIN. PERPENDICULAR PARKING SPACE SIZE (m)	2.6m x 5.2m	2.6m x 5.2m
106(2)	MIN. BARRIER FREE PARKING**		
	TYPE A PARKING SPACE SIZE (m)	3.4m wide	3.4m wide
	TYPE B PARKING SPACE SIZE (m)	2.4m wide	2.4m wide
	ACCESS AISLE (m)	1.5m	1.5m
111B(table)	MIN. BICYCLE PARKING SPACE DIMENSION, HORIZONTAL (m)	Width: 0.6m Length: 1.8m	Width: 0.6m Length: 1.8m
111(9)	MIN. BICYCLE PARKING SPACE ACCESS AISLE WIDTH (m)	1.5m	1.8m
109(3)(b)	MAX. WALKWAY WIDTH PERMITTED IN YARD (m)	1.8m	1.8m
110(1)	MIN. % OF PARKING LOT LANDSCAPED	15%	%
110(table)(iv)	LANDSCAPED AREA SURROUNDING PARKING LOT:		
	ABUTTING A STREET (m)	3.0m	
	NOT ABUTTING A STREET (m)	3.0m	m
110(3)	REFUSE COLLECTION AREAS:		
110(3)(b)	MIN. WASTE COLLECTION SETBACK TO LOT LINE (m)	3.0m	3.0m
110(3)(c)	OPAQUE SCREEN MIN. HEIGHT (m)	2.0m***	2.0m***

**Per the 2014 Guide to the Integrated Accessibility Standards Regulation • Design of Public Spaces Standard, 4% of parking spaces provided for public use must be accessible. 2 of the provided 46 visitor spaces have been designed to be barrier-free, one each of Type A and Type B size.
***Section 110(3)(b) where an in-ground refuse container is provided, the screening requirement of Section 110(3) above may be achieved with soft landscaping (Min= 2000MM)

GARBAGE:
REQUESTED BY ZONING: PH XX
GARBAGE: 0.037 CUBIC YARD /UNIT — 0.037 X 476= 109.7 CUBIC YARD (17 BINS)
RECYCLING: 0.062 CUBIC YARD /UNIT — 0.018 X 476 = 8.56 CUBIC YARDS (2 BIN)
+ 0.062 CUBIC YARD /UNIT — 0.062 X 476 = 29.51 CUBIC YARDS (2 BINS)
ORGANIC: 240L PER 50 UNITS — 240L X 9.52 = 2284.8 L (7 BIN)



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The contractor / builder must verify all dimensions on the job and report any discrepancy to the designer before proceeding with the work.

Drawings are NOT to be scales. All drawings and specifications are instruments of service and the copyright property of the designer and must be returned upon request.

12	SPC-PLANNERS COMMENTS	2024/09/20 CT/JM
11	SPC-PRE-CONSULT COMMENTS	2024/09/27 CT/JM
10	SPC-PRE ZONES COMMENTS UPDATE	2024/08/08 CT/JM
9	SPC - CITY COMMENTS UPDATE	2024/07/22 CT/JM
8	SPC-M-PAVERS AND BIL LUMINENTS	2024/06/25 CT/JM
7	FIRE ROUTE, SWM SK 06	2024/06/25 CT/JM
6	SWM SK 06	2024/06/07 CT/JM
5	SWM SK 05	2024/05/09 CT/JM
4	SWM SK 04	2024/05/09 CT/JM
3	SWM SK 03	2024/05/09 CT/JM
2	SWM SK 02	2024/05/07 CT/JM
1	SWM SK 01	2024/04/29 CT/JM

Issued / Revision Chart

Location ORLEANS

Client CAIVAN

Project No.

Scale

Drawn By CT

Checked By CT

OVERALL SITE PLAN

SP1

2.2 Existing Conditions

2.2.1 Area Road Network

Innes Road: Innes Road is a City of Ottawa arterial road. It has a divided four-lane urban cross-section west of Page Road, and five-lane urban cross-section including a two-way left-turn lane to the east. Bike lanes and sidewalks are provided on both sides of the road east of Orleans Boulevard, and on the north side of the road west of Orleans Boulevard. The posted speed limit is 60 km/h east of Orleans Boulevard and 80 km/h west of Orleans Boulevard. The City-protected right-of-way is 37.5 metres. Innes Road is designated as a truck route.

Orleans Boulevard: Orleans Boulevard is a City of Ottawa urban arterial road with a four-lane divided cross-section north of Silverbirch Street and a two-lane cross-section south of Silverbirch Street. Sidewalks are present on both sides of the road north of Silverbirch Street, and on the west side of the road to the south of Silverbirch Street. The posted speed limit is 60 km/h north of Innes Road, and 50 km/h to the south. The city-protected right-of-way is 37.5 metres north of Innes Road, and the measured right-of-way is 34.0 metres south of Innes Road. Orleans Boulevard is designated as a truck route north of Innes Road.

Viseneau Drive: Viseneau Drive is a City of Ottawa collector road with a two-lane urban cross-section. A sidewalk is present on the west side of the road. The posted speed limit is 40 km/h, and the city-protected right-of-way is 26.0 metres.

Page Road: Page Road is a City of Ottawa local road with a two-lane semi-urban cross-section north of Innes Road and a collector road with a two-lane urban cross-section south of Innes Road. Sidewalks are present on the west side of the road and for 205 metres south of Innes Road on east side of the road. The posted speed limit is 40 km/h. The measured right-of-way varies between 20.0 and 22.0 metres north of Silverbirch Street, and the City-protected right-of-way is 24.0 metres south of Silverbirch Street.

Lamarche Avenue: Lamarche Avenue is a City of Ottawa urban local road with a two-lane cross. A MUP is present on the west side of the road north of Argonaut Circle/Jargeau Road. A sidewalk is present on the east side of the road north of Argonaut Circle/Jargeau Road and on the west side of the road between Argonaut Circle/Jargeau Road and Ponthieu Circle/Beaugency Street. The unposted speed limit is assumed to be 40 km/h, and the measured right-of-way is 24.0 metres.

Ventus Way: Ventus Way is a City of Ottawa local road with a two-lane cross. Ventus Way is currently under construction. The unposted speed limit is assumed to be 40 km/h, and the measured right-of-way is 23.5 metres.

2.2.2 Existing Intersections

The key existing signalized area intersections within one kilometre of the site have been summarized below:

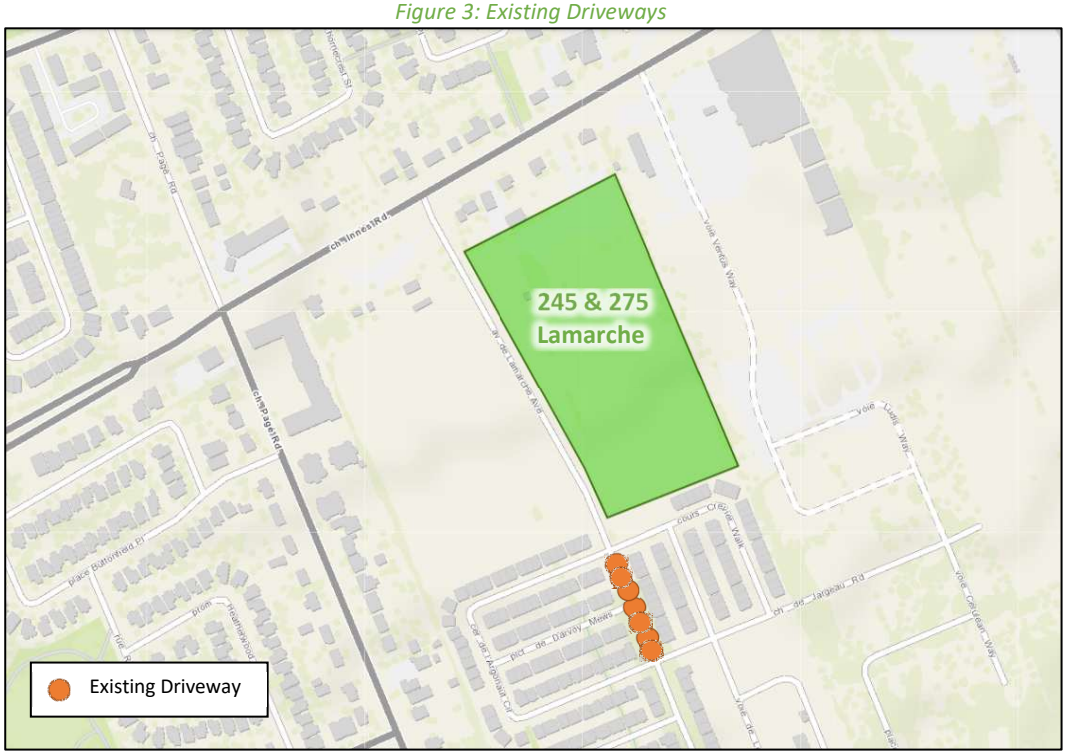
Innes Road at Orleans Boulevard	The intersection of Innes Road at Orleans Boulevard is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane, two through lanes, and an auxiliary channelized right-turn lane. The eastbound approach consists of two auxiliary left-turn lanes, two through lanes, and an auxiliary channelized right-turn lane, and the westbound approach consists of an auxiliary left-turn lane, two through lanes, a transit queue jump, a bike lane, and an auxiliary channelized right-turn lane.
Innes Road at Page Road	The intersection of Innes Road at Page Road is a signalized intersection. The northbound and southbound approaches each consist of a shared all-movement lane. The eastbound approach

	consists of an auxiliary left-turn lane, a through lane, a shared through/right-turn lane, and a bike lane, and westbound approach consists of an auxiliary left-turn lane, which develops from the two-way left-turn lane, a through lane, a shared through/right-turn lane, and a bike lane. No turn restrictions were noted.
Innes Road at Lamarche Avenue	The intersection of Innes Road at Lamarche Avenue is a T-intersection stop-controlled on the minor approach of Lamarche Avenue. The northbound approach consists of a shared all-movement lane. The eastbound approach consists of a through lane and a shared through/right-turn lane, and westbound approach consists of two through lanes. A two-way left-tun lane is present through the intersection on Innes Road. No turn restrictions were noted.
Innes Road at Ventus Way	The intersection of Innes Road at Ventus Way is a signalized intersection. The northbound approach functions as a left-turn lane and a shared through/right-turn lane, and the southbound approach consists of a shared all-movement lane. The eastbound approach consists of an auxiliary left-turn lane, which develops from the two-way left-turn lane, a through lane, a shared through/right-turn lane, and a bike lane, and the westbound approach consists of an auxiliary left-turn lane, a through lane, a shared through/right-turn lane, and a bike lane. No turn restrictions were noted.
Innes Road at Viseneau Drive	The intersection of Innes Road at Viseneau Drive is a signalized intersection. The northbound approach consists of a left-turn lane, a through lane, and an auxiliary right-turn lane, and the southbound approach consists of a shared all-movement lane. The eastbound approach consists of an auxiliary left-turn lane, two through lanes, a bike lane, and an auxiliary right-turn lane, and the westbound approach consists of an auxiliary left-turn lane, a through lane, a shared through/right-turn lane, and a bike lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Within 200 metres of the site accesses on Lamarche Avenue, driveways are provided to townhouses south of the future accesses. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 6, 2024

2.2.4 Cycling and Pedestrian Facilities

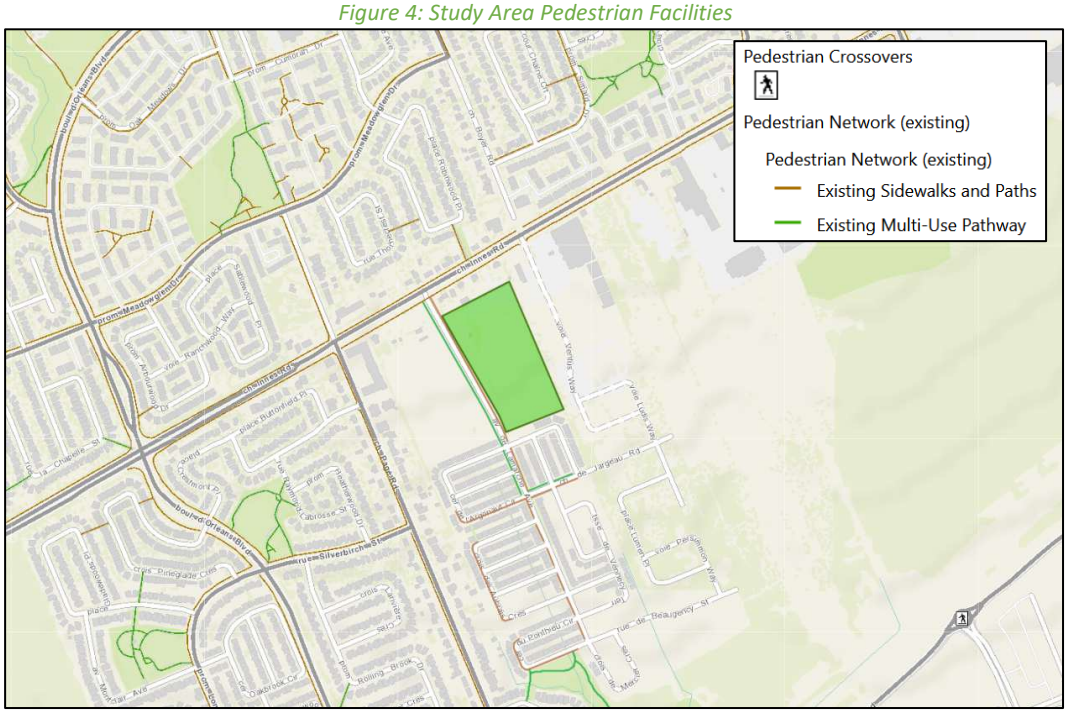
Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are present along both sides of Innes Road, east of Orleans Boulevard, and along Orleans Boulevard, north of Silverbirch Street. They are also present on the west side of Orleans Boulevard, as well as on Viseneau Drive, Page Road, and Lamarche Avenue between Argonaut Circle/Jargeau Road and Ponthieu Circle/Beaugency Street. Additionally, sidewalks are located on the east side of Page Road for 205 meters south of Innes Road and on the east side of Lamarche Avenue, north of Argonaut Circle/Jargeau Road.

Cycling facilities include bike lanes along both side of Innes Road east of Orleans Boulevard. A path is provided to connect Innes Road and Robinwood Place. A MUP is present on the west side of Lamarche Avenue north of Argonaut Circle/Jargeau Road and on the north side of Jargeau Road between Lamarche Avenue and Crevier Walk.

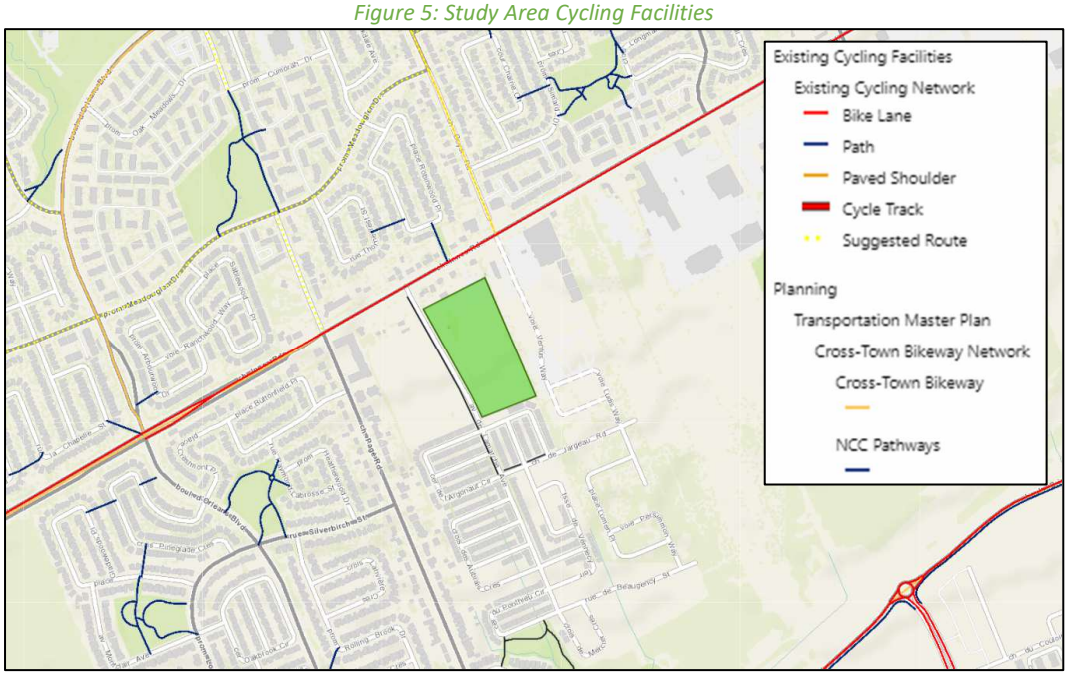
In the Transportation Master Plan – Part 1 (2023), Innes Road, Boyer Road, and Orleans Boulevard north of Innes Road are cross-town bikeways.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 6, 2024

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: August 6, 2024

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7, respectively.

Figure 6: Existing Pedestrian Volumes

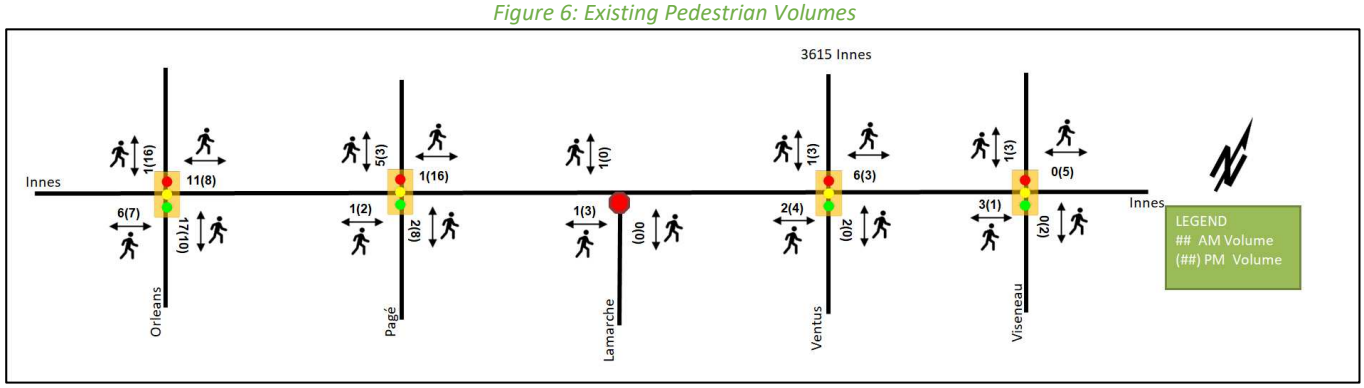
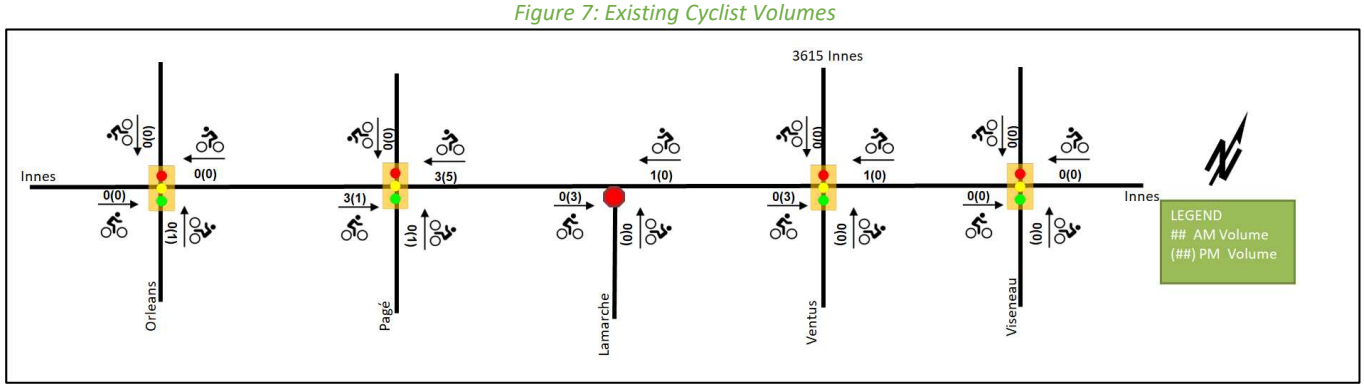


Figure 7: Existing Cyclist Volumes



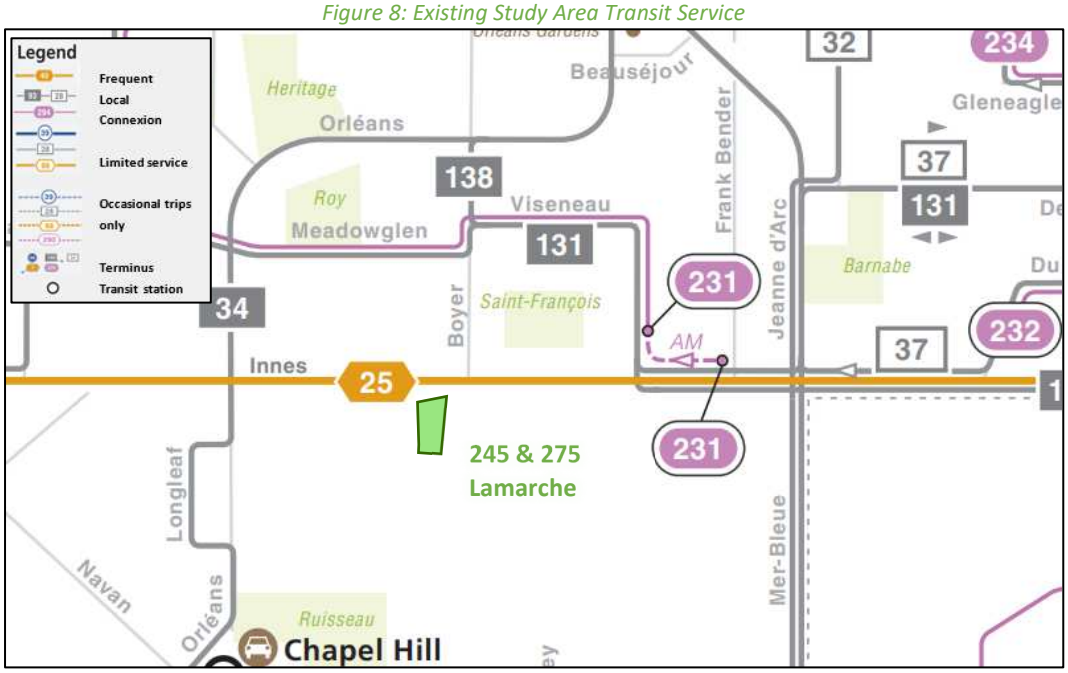
2.2.5 Existing Transit

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops. All transit information is from August 6, 2024, and is included for general information purposes and context to the surrounding area.

Within the study area, route #25 travels along Innes Road, route #34 travels along Orleans Boulevard, routes 131 and 231 travel along Innes Road and Viseneau Drive. The closest stops from the site for route #25 are located at Innes Road at Ventus Way and Innes Road at Page Road, the closest stops from the site for route #34 is located at Innes Road at Orleans Boulevard intersection, and the closest stops from the site for route #131 and 231 is located at Innes Road at Viseneau Drive intersection. The frequency of these routes within proximity of the proposed site based on August 6, 2024 service levels are:

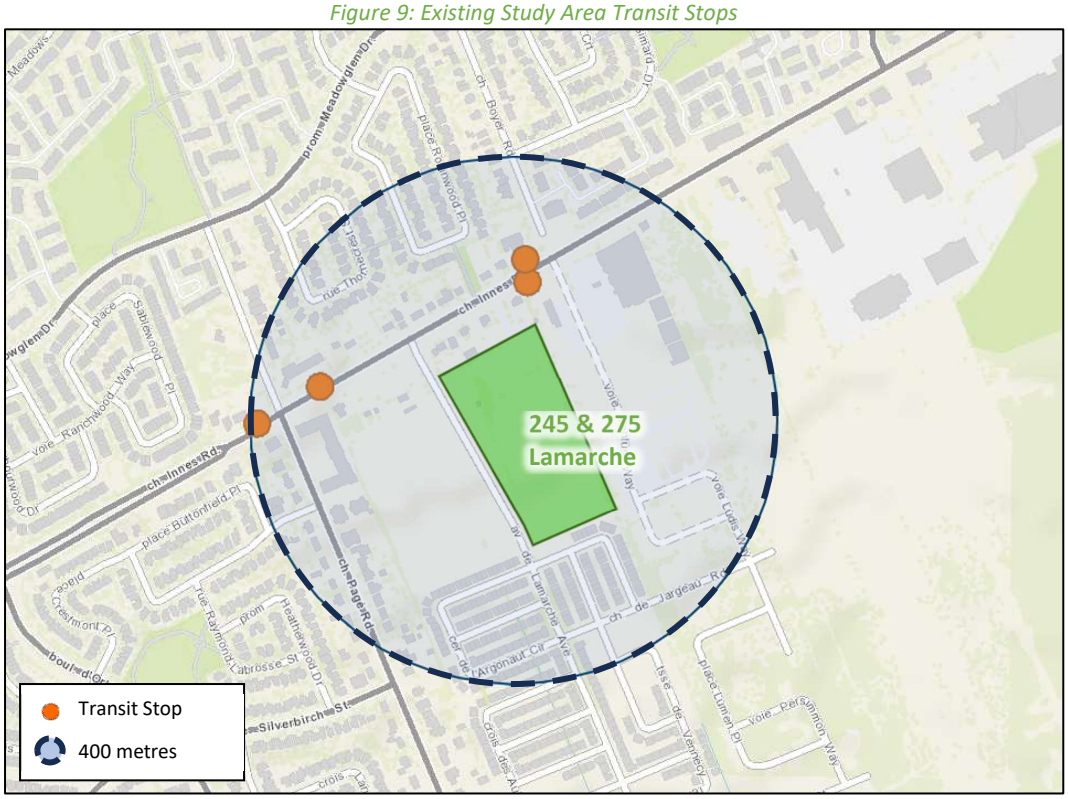
- Route #25 – 10-15-minute service in the peak period/direction, 15-minute daytime service, 30-minute service after 8:00 PM
- Route #34 – 30-minute service all-day
- Route #131 – 30-minute service all-day
- Roue #231 – Four buses in the peak period/direction

Figure 8: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: August 6, 2024

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: August 6, 2024

2.2.6 Existing Area Traffic Management Measures

Speed humps are present on Page Road north of Innes Road.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing study area intersections. Table 1 summarizes the intersection count dates and sources.

Table 1: Intersection Count Date

Intersection	Count Date	Source
Innes Road at Orleans Boulevard	Wednesday, April 24, 2024	City of Ottawa
Innes Road at Page Road	Thursday, May 09, 2024	City of Ottawa
Innes Road at Lamarche Avenue	Wednesday, August 21, 2024	Ontario Traffic Inc.
Innes Road at Ventus Way	Wednesday, August 21, 2024	Ontario Traffic Inc.
Innes Road at Viseneau Drive	Wednesday, January 19, 2022	City of Ottawa

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

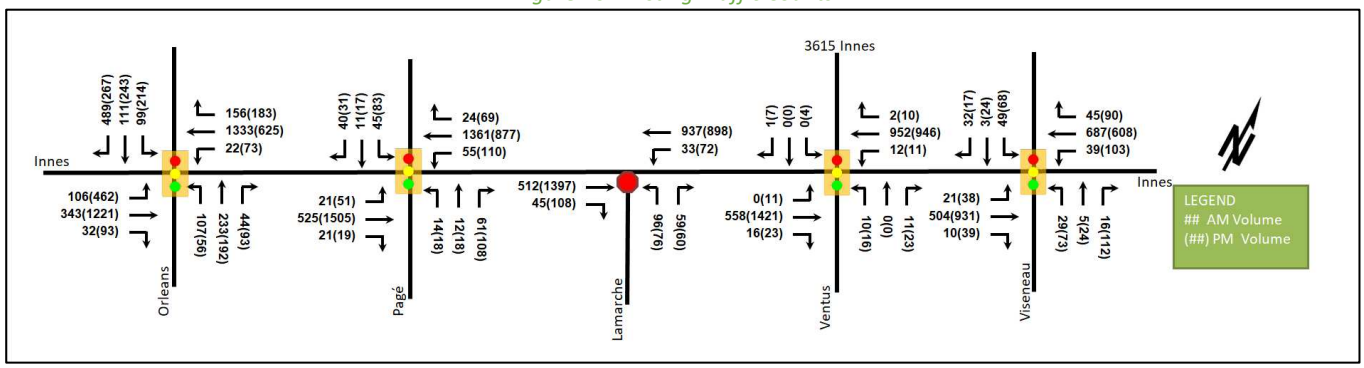


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Orleans Boulevard *Signalized*	EBL	C	0.77	**91.7**	**#31.2**	D	0.81	52.4	71.0
	EBT	A	0.25	20.6	42.7	E	0.98	52.0	**#209.4**
	EBR	A	0.05	0.1	0.0	A	0.15	0.9	1.8
	WBL	A	0.30	68.9	15.1	B	0.61	56.7	**#34.9**
	WBT	E	0.99	55.9	**#247.3**	C	0.78	48.3	**#107.6**
	WBR	A	0.25	6.1	17.3	A	0.36	14.5	44.9
	NBL	A	0.31	32.2	36.1	A	0.19	26.0	18.3
	NBT	A	0.23	30.7	35.1	A	0.19	25.5	25.4
	NBR	A	0.09	1.9	2.9	A	0.17	1.4	2.8
	SBL	A	0.52	56.4	45.5	D	0.86	68.5	**#97.3**
	SBT	A	0.18	43.7	22.7	A	0.32	35.1	37.5
	SBR	**F**	**1.20**	**137.1**	**#198.3**	A	0.50	7.3	21.6
	Overall	**E**	**0.98**	**59.2**	**-**	**E**	**0.96**	**42.0**	**-**

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Page Road ***Signalized***	EBL	A	0.15	9.8	7.3	A	0.19	3.6	m2.6
	EBT/R	A	0.25	5.9	45.1	C	0.73	6.5	m38.8
	WBL	A	0.11	5.3	7.0	**F**	**1.05**	**127.9**	**#64.1**
	WBT/R	B	0.62	9.3	205.2	A	0.46	14.1	142.0
	NB	A	0.38	19.5	17.7	A	0.57	42.3	40.5
	SB	A	0.52	41.1	28.4	C	0.74	57.5	40.6
	Overall	**A**	**0.59**	**10.1**	**-**	**E**	**0.98**	**17.6**	**-**
Innes Road at Lamarche Avenue ***Unsignalized***	EBT/R	-	-	-	-	-	-	-	-
	WBL	A	0.04	8.9	0.8	C	0.21	17.1	6.0
	WBT	-	-	-	-	-	-	-	-
	NB	C	0.44	21.5	16.5	**F**	**1.14**	**184.3**	**65.3**
	Overall	**A**	**-**	**2.2**	**-**	**B**	**-**	**10.1**	**-**
Innes Road at Ventus Way ***Signalized***	EBL	-	-	-	-	A	0.03	1.9	m0.4
	EBT/R	A	0.23	3.0	32.0	A	0.57	3.2	78.8
	WBL	A	0.02	8.2	m5.0	A	0.07	5.9	3.5
	WBT/R	A	0.38	7.6	122.1	A	0.38	4.5	70.6
	NBL	A	0.09	45.9	7.1	A	0.12	41.8	8.9
	NBT/R	A	0.03	0.1	0.0	A	0.13	7.0	4.5
	SB	A	0.00	0.0	0.0	A	0.06	3.3	1.7
	Overall	**A**	**0.38**	**6.1**	**-**	**A**	**0.56**	**4.0**	**-**
Innes Road at Viseneau Drive ***Signalized***	EBL	A	0.27	77.0	14.9	A	0.39	67.6	22.0
	EBT	A	0.27	9.0	54.6	A	0.52	18.2	126.9
	EBR	A	0.01	0.1	0.0	A	0.05	0.1	0.0
	WBL	A	0.38	61.8	21.2	B	0.63	69.8	46.0
	WBT/R	A	0.38	10.9	81.6	A	0.37	12.4	77.6
	NBL	A	0.22	47.4	14.4	A	0.50	60.5	32.7
	NBT	A	0.03	41.0	4.6	A	0.11	46.4	13.6
	NBR	A	0.07	0.5	0.0	A	0.40	11.3	15.6
	SB	A	0.51	43.8	27.8	B	0.66	65.8	44.6
	Overall	**A**	**0.42**	**15.1**	**-**	**A**	**0.57**	**23.2**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

During both the AM and PM peak hours, capacity issues are noted at the intersection of Innes Road at Orleans Boulevard. At this intersection, the southbound right-turn movement during AM peak hour is over theoretical capacity and may be subject to high delays and extended queues. The westbound through movement during the AM peak hour is noted to reach V/C of 0.99 at this intersection. Extended queues may be exhibited on the eastbound left-turn and westbound through movements during the AM peak hour, and on the eastbound though, westbound left-turn, westbound through, and southbound left-turn movements during PM peak hour. High delays are anticipated on the eastbound left-turn movement during AM peak hour.

The intersection of the Innes Road and Page Road may be subject to high delays and extended queues on the westbound left-turn movement during PM peak hour. The City may improve the operation by changing the eastbound and westbound left-turn to be protected/permissive phasing, and it would be subject to coordination of the Innes Road corridor.

At the intersection of Innes Road at Lamarche Avenue, the northbound movement experiences delays of over 180 seconds during the PM peak hour. Signal warrant analysis of the Ontario Traffic Manual Book 12 Justifications 1

and 2 were performed for the intersection of Innes Road at Lamarche Avenue. The intersection does not meet signal warrants, as provided in Appendix D.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network. Table 3 summarizes the collision types and conditions in the study area, Figure 11 illustrates the area collisions, and Table 4 summarizes the total collisions for each of the locations analyzed. Collision data are included in Appendix E.

Table 3: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		**13**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	3	23%
	Property Damage Only	10	77%
Initial Impact Type	**Angle**	6	46%
	Rear end	1	8%
	Sideswipe	2	15%
	Turning Movement	1	8%
	SMV Other	3	23%
Road Surface Condition	**Dry**	9	69%
	Wet	1	8%
	Slush	1	8%
	Packed Snow	1	8%
	Ice	1	8%
Pedestrian Involved		0	0%
Cyclists Involved		1	8%

Figure 11: Study Area Collision Records

Table 4: Summary of Collision Locations, 2018-2022

	Number	%
Intersections / Segments	**13**	**100%**
Innes Rd btwn Page Rd & Ventus Way	12	92%
Lamarche Ave at Innes Rd	1	8%

Within the study area, the segment of Innes Road between Page Road and Ventus Way excludes the intersection of Lamarche Avenue at Innes Road is noted to have experienced twelve collisions, and one cyclist collision is noted at Lamarche Avenue at Innes Road intersection. Table 5 and Table 6 summarize the collision types and conditions for each of the locations.

Table 5: Segment of Innes Rd between Page Road and Ventus Way Collision Summary

		Number	%
Total Collisions		12	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	2	17%
	Property Damage Only	10	83%
Initial Impact Type	**Angle**	5	42%
	Rear end	1	8%
	Sideswipe	2	17%
	Turning Movement	1	8%
	SMV Other	3	25%
Road Surface Condition	**Dry**	8	67%
	Wet	1	8%
	Slush	1	8%
	Packed Snow	1	8%
	Ice	1	8%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

The segment of Innes Road between Page Road and Ventus Way (exclude Lamarche Avenue at Innes Road intersection) during the 2018-2022 time period, with ten involving property damage only and the remaining two having non-fatal injuries. The collision types are most represented by angle with five collisions, followed by SMV other with three collisions, sideswipe with two collisions, and the remaining one collision each for rear end and turning movement. Two out of five angle collisions and one out of three SMV other collisions were observed to occur under winter road conditions. These conditions, including ice, packed snow, and slush, are considered as the primary contributing factors to these collisions. No further examination is required as part of this study.

Table 6: Lamarche Avenue at Innes Road Collision Summary

		Number	%
Total Collisions		1	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	1	100%
	Property Damage Only	0	0%
Initial Impact Type	**Angle**	1	100%
Road Surface Condition	**Dry**	1	100%
Pedestrian Involved		0	0%
Cyclists Involved		1	100%

During the 2018-2022 period, there was one cyclist angle collision at the Lamarche Avenue and Innes Road intersection, which occurred under dry conditions. The absence of cycling crossings at this intersection may have

contributed to the collision. With the planned construction of cycling crossings at this intersection by 2025, it is expected that such collisions will be reduced. No further examination is required as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

2.3.1.1 Transportation Master Plan Update – Part 1 (2023)

No projects are identified within the study area in the Transportation Master Plan Part 1. Part 2 of the Transportation Master Plan will identify the road network concept and transit network concept, including the affordable network. This is expected to be released by the end of 2024. The Transportation Master Plan (2013) is instructive to how the transportation facilities are planned and can be referenced during the interim.

The Rapid Transit and Transit Priority Network's Network Concept diagram identifies an isolated transit priority measures along Innes Road.

2.3.1.2 Traffic Control Signals at Innes Road and Lamarche Avenue

The intersection of Innes Road and Lamarche Avenue is listed on the City's DC By-law funded projects and is anticipated to be constructed by spring of 2025. The design of the intersection includes signalization of the existing minor stop control, an auxiliary westbound left-turn lane, an auxiliary northbound left-turn lane, an auxiliary eastbound right-turn lane, and protected intersection features for bi-directional cycling crossing on the west side of the intersection and an unidirectional crossing on the south. The design of Innes Road and Lamarche Avenue intersection modification is provided in Appendix F.

2.3.2 Other Study Area Developments

3817-3843 Innes Road

The proposed development application includes a site plan application for three apartment buildings with a total of 110 residential units. The development was assumed to be built out in 2024 and will be included in the future conditions. The development is predicted to generate 40 new AM and 51 new PM two-way peak hour auto trips. (D. J. Halpenny & Associates Ltd, 2022)

3484 Innes Road, 240 & 270 Lamarche Avenue

The proposed development application includes a zoning by-law amendment and plan of subdivision. The current option includes five seven-storey with a total of 525 residential units, 10,600 ft^2 of commercial space, a 26,900 ft^2 grocery store, a 2,200 ft^2 coffee shop with drive-thru, and a 1,550 ft^2 gas bar. The full buildout is currently estimated by 2031 and is forecasted to generate 261 new AM and 276 new PM two-way peak hour auto trips. (Parsons, 2023)

3604 Innes Road

The proposed development application includes a plan of subdivision for the construction of 180 single detached homes, 109 townhouse units and 168 stacked townhouses in two phases. Phase 1 was anticipated to be built by 2021 and was forecasted to generate 70 new AM and 92 new PM two-way peak-hour auto trips. Phase 2 was anticipated to be built by 2023 and was forecasted to generate 200 new AM two-way peak hour auto trips and 256 new PM two-way peak hour auto trips. Full buildout will be included in the future conditions. (Novatech, 2019)

3443 Innes Road &3437 Innes Road

The proposed development application includes a site plan application to include a six-storey, mixed-use building with ground floor commercial and 35 residential units. The development is forecasted to generate 24 new AM

and 27 new PM two-way peak hour auto trips. The development was expected to be completed by 2019, and there have been no updates since 2018. (Novatech, 2018)

3672 Innes Road, 3730 Innes Road, and 3828 Innes Road

The proposed development application includes a zoning by-law amendment to permit the construction of 340 singles detached homes, 529 townhouses, 114 back-to-back townhomes, and 1,060 apartment units. Phase 1, which is anticipated to be built by 2037, is forecasted to generate 312-341 new AM and 380-415 new PM two-way peak hour auto trips. Phase 2, which is anticipated to be built by 2042, is forecasted to generate 603-659 new AM and 725-793 new PM two-way peak hour auto trips. Phase 3, which is anticipated to be built by 2047, is forecasted to generate 968-1,056 new AM and 1,166-1,275 new PM two-way peak hour auto trips. (Castleglenn Consultants, 2021)

3493-3499 Innes Road

The proposed development application includes a zoning by-law amendment and site plan control applications for two single-storey commercial buildings, with gross floor areas of 821 m^2 each (i.e. 1,642 m^2 GFA in total) constructed in two phases. Phase 1 was assumed to be built out in 2023 and Phase 2 was assumed to be built out in 2025. Full buildout will be included in the future conditions. The development is predicted to generate 23 new AM and 60 new PM two-way peak hour auto trips. (Novatech, 2022)

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Innes Road at:
  - Orleans Boulevard
  - Page Road
  - Lamarche Avenue
  - Ventus Way
  - Viseneau Drive

The boundary road will be Lamarche Avenue and SL 47 screenlines is present within proximity to the site but will not be analyzed as part of this study.

3.2 Time Periods

As the proposed development is composed entirely of residential units the AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2026. As a result, the full build-out plus five years horizon year is 2031.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for Orleans have been summarized in Table 7.

Table 7: TRANS Trip Generation Manual Recommended Mode Shares – Orleans

Travel Mode	Multi-Unit (Low-Rise)	
	AM	PM
Auto Driver	47%	51%
Auto Passenger	15%	19%
Transit	29%	24%
Cycling	1%	1%
Walking	9%	6%
Total	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 8 summarizes the person trip rates for the proposed residential land for each peak period.

Table 8: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Person Trip Rates
Multi-Unit (Low-Rise)	220 (TRANS)	AM	1.35
		PM	1.58

Using the above person trip rates, the total person trip generation has been estimated. Table 9 summarizes the total person trip generation for the residential land use.

Table 9: Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (Low-Rise)	476	193	450	643	421	331	752

Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 10 summarizes the residential trip generation by mode and peak hour.

Table 10: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (Low-Rise)	Auto Driver	**47%**	44	102	145	**51%**	95	74	169
	Auto Passenger	**15%**	14	32	46	**19%**	35	28	63
	Transit	**29%**	31	71	102	**24%**	48	37	85
	Cycling	**1%**	1	2	3	**1%**	2	2	4
	Walking	**9%**	10	24	34	**6%**	13	10	23
	Total	**100%**	**100**	**231**	**330**	**100%**	**193**	**151**	**344**

As shown above, a total of 145 AM and 169 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Orleans. Table 11 below summarizes the distributions.

Table 11: OD Survey Distribution – Orleans

To/From	Residential % of Trips
North	15%
South	0%
East	40%
West	45%
Total	**100%**

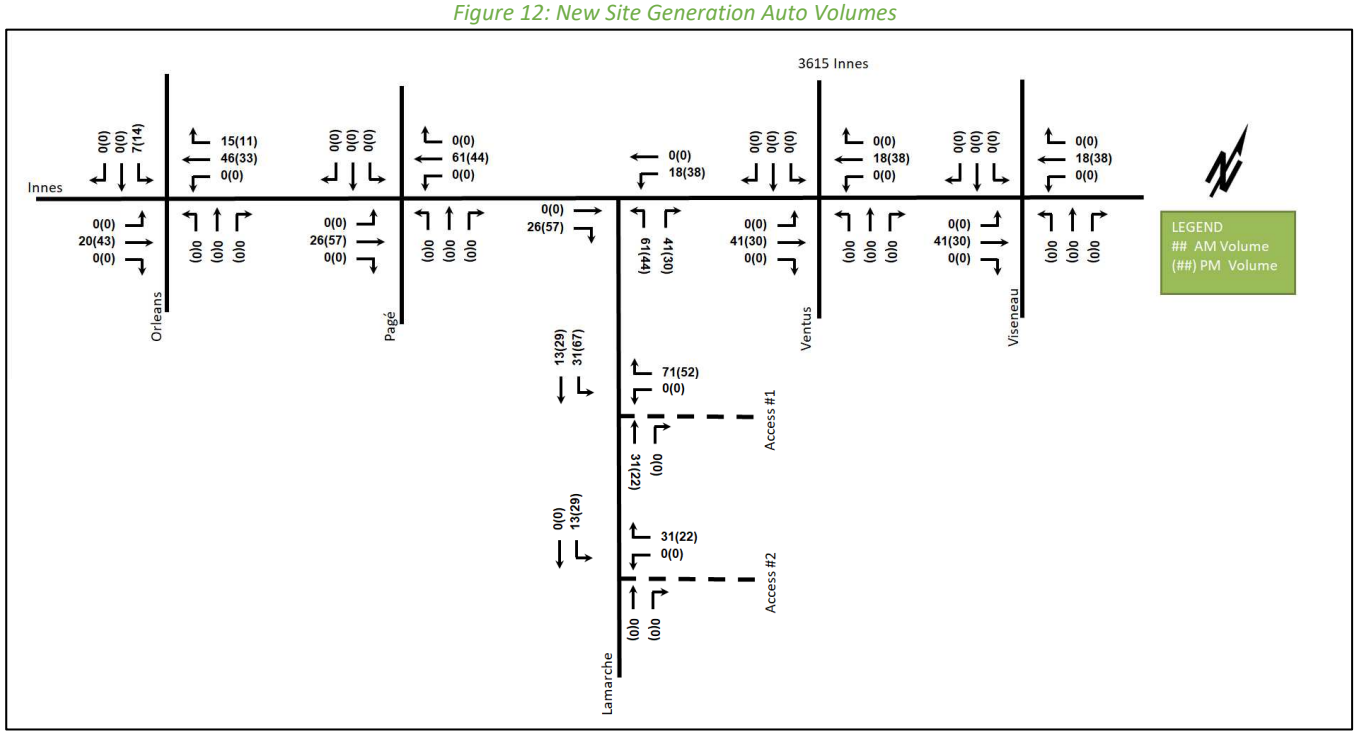
4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 12 summarizes the proportional assignment to the study area roadways, and Figure 12 illustrates the new site generated volumes.

Table 12: Trip Assignment

To/From	Via
North	15% Orleans Boulevard (N)
South	-
East	40% Innes Road (E)
West	45% Innes Road (W)
Total	**100%**

Figure 12: New Site Generation Auto Volumes



5 Exemption Review

Table 13 summarizes the exemptions for this TIA.

Table 13: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Required
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Required
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	Exempt
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Required
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Required

Module	Element	Explanation	Exempt/Required
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Required
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Required

6 Development Design

6.1 Design for Sustainable Modes

The proposed development is a residential development where surface vehicle and bicycle parking spaces are provided. Walkways are provided within the site including connections to the public park and existing sidewalk along Lamarche Avenue. Pedestrians and cyclists can access the site via the existing MUP and sidewalks on Lamarche Avenue. This route will also connect to the future pedestrian and cycling crossings at Innes Road and Lamarche Avenue, linking to the existing sidewalks and bike lanes on Innes Road.

The infrastructure TDM checklist is provided in Appendix G.

6.2 Circulation and Access

Access is provided via the two full-movement accesses on Lamarche Avenue. Garbage is expected to be collected from the waste management areas. The garbage collection vehicle was reviewed to confirm movements will be permitted on site, and the turning templates are provided in Appendix H.

Standard fire lanes are recommended to permit emergency vehicles to circulate the site, meeting the 6 metres width and 12 metre centre radii.

7 Parking

7.1 Parking Supply

The site provides a total of 476 residential vehicle parking spaces, 36 visitor parking spaces, and 238 bicycle parking spaces.

The parking by-law minimum residential parking provisions requirement is 1.0 space per dwelling unit, totaling 476 spaces, while the minimum visitor parking requirement is 0.1 spaces per dwelling unit, totaling 48 spaces. The residential vehicle parking meets the requirement, and the site provides ten less visitor parking spaces than the parking provisions by-law requirement. On-street parking will be available adjacent to the site that may accommodate any additional vehicles.

The minimum bicycle parking provisions by-law requirement is 0.5 spaces per dwelling unit, totaling 238 spaces. The proposed bicycle parking meets the minimum bicycle parking by-law requirement.

8 Boundary Street Design

Table 14 summarizes the MMLOS analysis for the boundary street of Lamarche Avenue. The existing and future conditions for both streets will be the same and are considered in one row. The boundary street analysis is based on the land use of general urban area. The MMLOS worksheets has been provided in Appendix I.

Table 14: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Lamarche Avenue (Existing/ Future)	A	C	A	D	N/A	N/A	N/A	N/A

Lamarche Avenue meets MMLOS targets for the area and no mitigation or additional elements are required.

9 Transportation Demand Management

9.1 Context for TDM

The mode shares used within the TIA represent the unmodified district mode shares. Overall, the modal shares are likely to be achieved and supporting TDM measures should be provided to encourage shifts towards sustainable modes.

The subject site is not within a design priority area. The total bedroom count within the development is subject to the final unit breakdown and layout selections by purchasers. No age restrictions are noted.

9.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto travel and those assumptions have been carried through the analysis. As the unmodified district mode shares have been applied, risks to other network users from failing to meet mode share targets are low.

9.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix G. The key TDM measures recommended include:

- Inclusion of a 1-year Presto card for first time new townhome purchase, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
- Provide a multimodal travel option information package to new residents

10 Background Network Travel Demands

10.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. The intersection of Innes Road and Lamarche Avenue is anticipated to become a signalized intersection with an auxiliary westbound left-turn lane, an auxiliary northbound left-turn lane, an auxiliary eastbound right-turn lane, and protected intersection features for pedestrian and cycling crossings.

10.2 Background Growth

A review of the background projections from the City's TRANS Regional Model for the 2011 and 2031 horizons was completed to determine the background growth for each of the study area roadways. The background TRANS model growth rates are summarized in Table 15 and the TRANS model plots are provided in Appendix J.

Table 15: TRANS Regional Model Projections – Study Area Growth Rates

Street	Average TRANS Rate		Existing to 2031	
	Eastbound	Westbound	Eastbound	Westbound
Innes Road	-0.28%	-1.64%	-3.14%	-5.02%
	Northbound	**Southbound**	**Northbound**	**Southbound**
Orleans Boulevard	4.02%	-0.95%	0.45%	1.92%

In general, the growth rates in the study area derived from the two TRANS model horizons are projected to be negative along Innes Road in the eastbound and westbound directions and slightly positive along Orleans Boulevard in the northbound direction. The existing volumes are noted to be exceed the TRANS 2031 model forecasts for Innes Road.

As the continued development is expected in Orleans and result in additional volumes along the area road network, beyond the developments considered in Section 6.3, it is assumed that a 1.00% growth rate will be applied to Innes Road and a 2.00% growth rate will be applied on Orleans Boulevard in peak directions. The modified growth rates have been applied to the study area network, and it is summarized in Table 16 .

Table 16: Recommended Area Growth Rates

Street	AM Peak Hour		PM Peak Hour	
	Eastbound	**Westbound**	**Eastbound**	**Westbound**
Innes Road	1.00%	1.00%	1.00%	1.00%
	Northbound	**Southbound**	**Northbound**	**Southbound**
Orleans Boulevard	2.00%	-	-	2.00%

10.3 Other Developments

The background developments explicitly considered in the background conditions (Section 10.2) include:

- 3817-3843 Innes Road
- 3484 Innes Road, 240 & 270 Lamarche Avenue
- 3604 Innes Road
- 3443 Innes Road & 3437 Innes Road
- 3493-3499 Innes Road

The background development volumes within the study area have been provided in Appendix K.

11 Demand Rationalization

11.1 2026 Future Background Intersection Operations

Given that the intersections were counted on different dates, volumes were balanced along Innes Road. The intersection of Innes Road at Lamarche Avenue is anticipated to be signalized by 2026 and has been modelled as a signalized intersection for all future horizons. A cycle length of 120 seconds during the AM peak hour and of 110 seconds during the PM peak hour have been assumed. The intersection does not meet signalization warrants, which have been provided in Appendix D.

Figure 13 illustrates the 2026 background volumes and Table 17 summarizes the 2026 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2026 future background horizon are provided in Appendix L.

Figure 13: 2026 Future Background Volumes

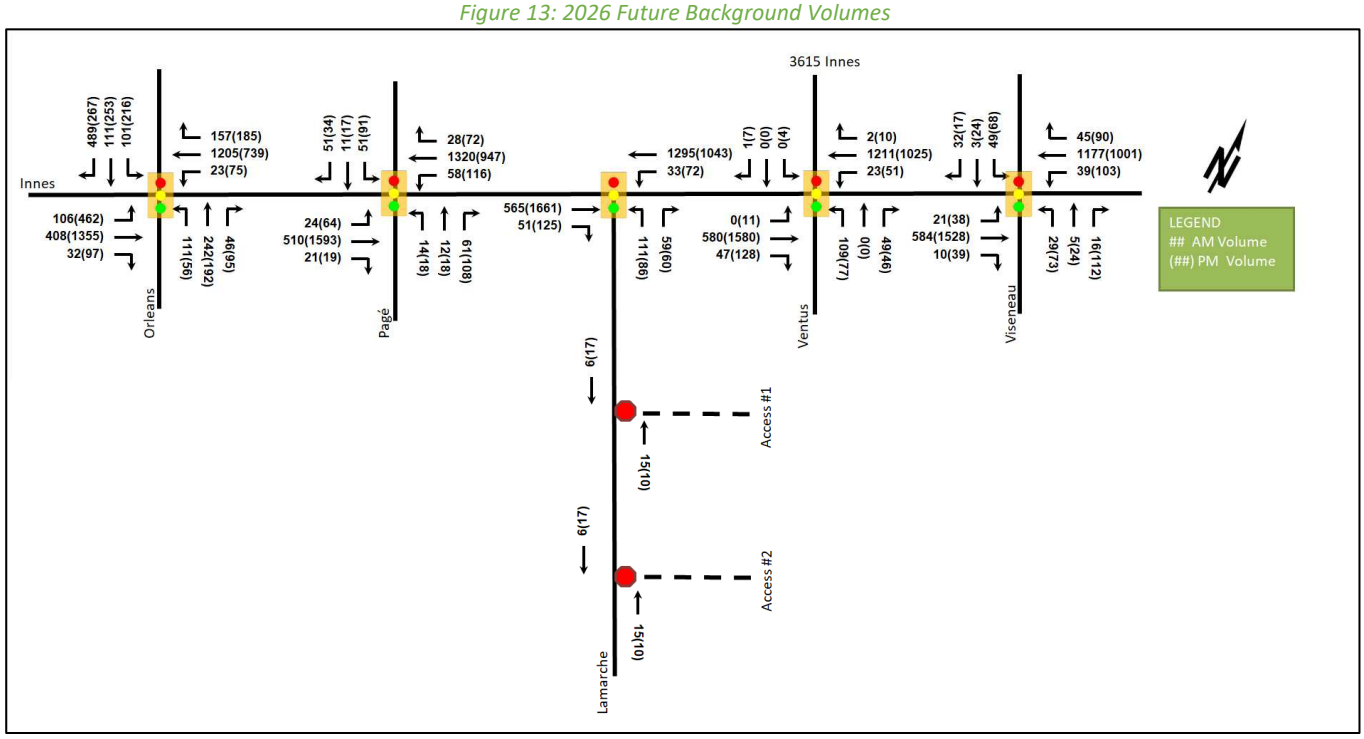


Table 17: 2026 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Orleans Boulevard *Signalized*	EBL	B	0.69	**83.8**	**#27.1**	C	0.77	51.3	63.6
	EBT	A	0.27	20.9	45.7	E	0.97	51.3	**#208.7**
	EBR	A	0.04	0.1	0.0	A	0.14	0.6	0.8
	WBL	A	0.28	68.3	15.1	A	0.57	56.0	32.5
	WBT	C	0.80	35.8	166.0	C	0.80	52.0	**#119.3**
	WBR	A	0.22	5.0	14.2	A	0.32	14.2	41.3
	NBL	A	0.29	31.8	34.0	A	0.17	25.7	16.8
	NBT	A	0.21	30.5	33.1	A	0.17	25.3	23.2
	NBR	A	0.09	1.5	2.2	A	0.16	0.9	1.3
	SBL	A	0.47	53.9	41.7	C	0.76	57.6	**#84.5**
	SBT	A	0.16	43.4	20.9	A	0.30	34.8	35.3
	SBR	**F**	**1.04**	**81.8**	**#159.0**	A	0.47	7.2	20.5
	Overall	**D**	**0.81**	**40.9**	-	**E**	**0.92**	**42.1**	-
Innes Road at Page Road *Signalized*	EBL	A	0.12	8.5	7.0	A	0.21	3.2	m2.5
	EBT/R	A	0.22	5.7	38.8	B	0.69	5.6	m32.5
	WBL	A	0.10	8.5	m10.9	D	0.87	70.6	**#55.8**
	WBT/R	A	0.54	9.9	147.5	A	0.45	7.3	0.0
	NB	A	0.35	19.3	16.6	A	0.52	38.9	35.6
	SB	A	0.53	39.5	29.2	B	0.70	54.3	39.3
	Overall	**A**	**0.53**	**10.7**	-	**D**	**0.82**	**12.3**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Lamarche Avenue *Signalized*	EBT	A	0.27	14.0	74.8	D	0.88	24.4	**#231.0**
	EBR	A	0.05	15.0	18.3	A	0.15	14.7	m17.7
	WBL	A	0.30	59.1	m16.6	A	0.47	52.1	28.7
	WBT	A	0.54	8.0	108.0	A	0.45	10.3	106.9
	NBL	A	0.60	63.6	41.9	A	0.42	50.3	32.3
	NBR	A	0.26	45.8	23.7	A	0.22	41.2	23.0
	Overall	**A**	**0.58**	**14.5**	**-**	**C**	**0.78**	**20.9**	**-**
Innes Road at Ventus Way *Signalized*	EBL	-	-	-	-	A	0.03	3.0	m0.9
	EBT/R	A	0.26	7.6	84.2	B	0.66	12.6	230.0
	WBL	A	0.05	9.9	m7.5	A	0.36	16.0	17.9
	WBT/R	A	0.50	12.7	160.0	A	0.39	5.5	67.9
	NBL	B	0.68	67.7	40.6	A	0.47	51.6	26.8
	NBT/R	A	0.10	0.4	0.0	A	0.21	16.6	10.3
	SB	A	0.00	0.0	0.0	A	0.05	2.4	1.2
	Overall	**A**	**0.53**	**13.7**	**-**	**B**	**0.66**	**11.2**	**-**
Innes Road at Viseneau Drive *Signalized*	EBL	A	0.26	**88.0**	14.0	A	0.37	67.2	20.5
	EBT	A	0.26	2.7	25.6	C	0.75	23.2	**#246.6**
	EBR	A	0.01	0.0	0.1	A	0.04	0.1	0.0
	WBL	A	0.36	61.3	19.8	B	0.61	70.3	42.8
	WBT/R	A	0.51	11.5	144.7	A	0.51	14.1	122.5
	NBL	A	0.20	47.1	13.3	A	0.46	59.4	29.8
	NBT	A	0.03	41.0	4.2	A	0.10	46.8	12.3
	NBR	A	0.06	0.4	0.0	A	0.39	11.6	15.2
	SB	A	0.47	41.7	25.1	B	0.62	63.3	40.0
	Overall	**A**	**0.56**	**12.4**	**-**	**C**	**0.73**	**23.8**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

Compared to the existing condition, the study area intersections will have incremental improvement to the intersection operations. These improvements are primarily due to the adjustment of the peak hour factor to 1.00 for forecasted conditions and the balancing of traffic along Innes Road.

At the intersection of Innes Road at Orleans Boulevard intersection, the capacity issue on the right-turn movement during AM peak hour remains as noted in the existing condition, with V/C decreasing from 1.20 to 1.04.

Compared to existing conditions, the operation at the intersection of Innes Road and Page Road will see slight improvements. However, extended queues may still occur on the westbound left-turn movement during the PM peak hour.

With signalized control at the intersection of Innes Road and Lamarche Avenue, the northbound capacity issue observed under existing conditions is expected to be resolved. However, the eastbound through movement may experience extended queues during the PM peak hour. The operations are influenced by the bi-directional crossing of Innes Road as it reduces the available green time for other movements phases.

Compared to the existing condition, at the intersection of Innes Road at Viseneau Drive, the eastbound left-turn movement may experience high delays during the AM peak hour, and the eastbound through movement may exhibit extended queues during the PM peak hour at this horizon.

11.2 2031 Future Background Intersection Operations

As noted in the 2026 future background conditions, volumes were balanced along Innes Road, and the intersection of Innes Road at Lamarche Avenue has been modelled as a signalized intersection for all future horizons. The signal timing is assumed to be consistent with the 2026 future background conditions. The intersection of Innes Road at Lamarche Avenue is expected to meet signalization warrants by 2031. The signal warrants have been provided in Appendix D.

Figure 14 illustrates the 2031 background volumes and Table 18 summarizes the 2031 background intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets for the 2031 future background horizon are provided in Appendix M.

Figure 14: 2031 Future Background Volumes

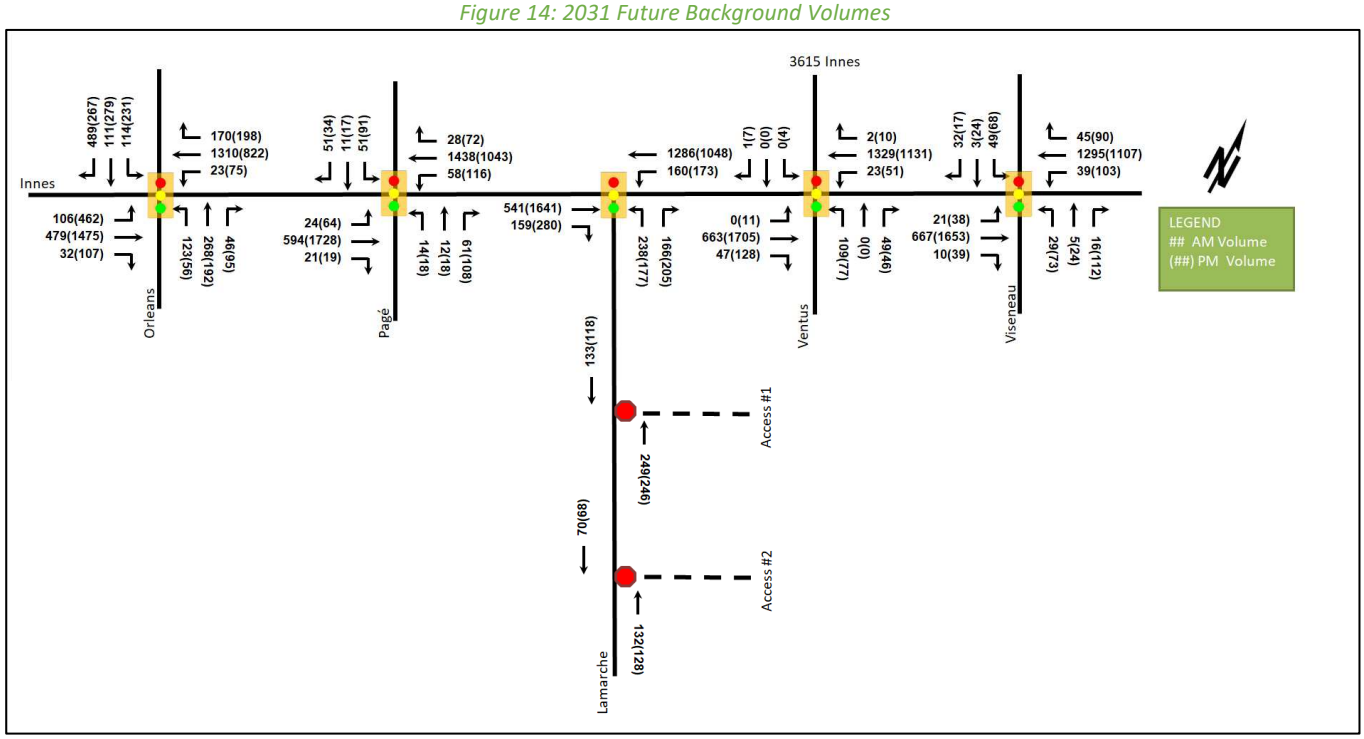


Table 18: 2031 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Orleans Boulevard ***Signalized***	EBL	B	0.69	**83.8**	**#27.1**	C	0.77	51.3	63.6
	EBT	A	0.31	21.5	54.0	**F**	**1.06**	**73.9**	**#237.3**
	EBR	A	0.04	0.1	0.0	A	0.15	1.2	2.5
	WBL	A	0.28	68.3	15.1	A	0.57	56.0	32.1
	WBT	D	0.87	40.1	189.2	D	0.89	56.1	**#140.8**
	WBR	A	0.24	5.9	16.8	A	0.34	14.9	43.4
	NBL	A	0.31	32.4	37.2	A	0.18	25.8	16.8
	NBT	A	0.24	30.8	36.3	A	0.17	25.3	23.2
	NBR	A	0.09	1.5	2.2	A	0.16	0.9	1.3
	SBL	A	0.55	57.7	46.8	D	0.81	62.9	**#92.6**
	SBT	A	0.17	43.5	20.9	A	0.33	35.2	38.5
	SBR	**F**	**1.07**	**91.5**	**#164.2**	A	0.47	7.2	20.5
	Overall	**D**	**0.87**	**43.6**	**-**	**E**	**0.98**	**51.4**	**-**
Innes Road at Page Road ***Signalized***	EBL	A	0.14	9.2	7.4	A	0.23	3.0	m2.4
	EBT/R	A	0.26	5.9	45.8	C	0.75	7.5	m32.0
	WBL	A	0.11	11.5	m14.5	**F**	**1.08**	**134.5**	**m#59.8**
	WBT/R	A	0.59	15.5	201.8	A	0.49	8.9	37.4
	NB	A	0.35	19.3	16.6	A	0.53	41.5	37.0
	SB	A	0.53	39.5	29.2	B	0.70	54.3	39.3
	Overall	**A**	**0.57**	**14.2**	**-**	**F**	**1.01**	**15.8**	**-**
Innes Road at Lamarche Avenue ***Signalized***	EBT	A	0.36	27.9	87.6	E	0.97	35.3	**#227.4**
	EBR	A	0.24	28.9	59.9	A	0.38	18.3	m36.4
	WBL	B	0.69	59.3	60.8	D	0.82	71.4	**#71.0**
	WBT	A	0.60	13.3	121.4	A	0.45	10.4	111.2
	NBL	C	0.77	61.8	75.3	C	0.77	68.3	**#70.2**
	NBR	A	0.48	43.5	50.7	C	0.74	**120.8**	**#74.8**
	Overall	**B**	**0.68**	**26.7**	**-**	**E**	**0.92**	**34.9**	**-**
Innes Road at Ventus Way ***Signalized***	EBL	-	-	-	-	A	0.03	2.4	m0.7
	EBT/R	A	0.30	0.8	1.2	C	0.71	10.7	m226.2
	WBL	A	0.05	9.8	m6.1	A	0.44	23.3	**#26.1**
	WBT/R	A	0.55	13.6	176.3	A	0.43	5.9	78.2
	NBL	B	0.68	67.7	40.6	A	0.47	51.6	26.8
	NBT/R	A	0.11	0.5	0.0	A	0.22	21.0	11.8
	SB	A	0.00	0.0	0.0	A	0.05	2.4	1.2
	Overall	**A**	**0.57**	**11.8**	**-**	**B**	**0.70**	**10.2**	**-**

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Viseneau Drive *Signalized*	EBL	A	0.26	78.3	14.2	A	0.37	67.2	20.5
	EBT	A	0.30	4.5	18.0	D	0.81	25.6	#281.9
	EBR	A	0.01	0.0	m0.0	A	0.04	0.1	0.0
	WBL	A	0.36	61.3	19.8	B	0.61	70.3	42.8
	WBT/R	A	0.56	12.4	168.4	A	0.56	15.0	141.2
	NBL	A	0.20	47.1	13.3	A	0.46	59.4	29.8
	NBT	A	0.03	41.0	4.2	A	0.10	46.8	12.3
	NBR	A	0.06	0.4	0.0	A	0.39	11.6	15.2
	SB	A	0.47	41.7	25.1	B	0.62	63.3	40.0
	Overall	**B**	**0.61**	**13.0**	**-**	**C**	**0.78**	**25.0**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

At the intersection of Innes Road at Orleans Boulevard, the capacity and queues issues noted in the 2026 future background conditions remain, with the additional eastbound through movement expected to be over theoretical capacity during the PM peak hour.

At the intersection of Innes Road at Page Road, the westbound left-turn movement is anticipated to be over theoretical capacity with high delays and extended queues during the PM peak hour. A protected phase for the westbound left-turn may resolve the capacity issue at this intersection.

At the intersection of Innes Road at Lamarche Avenue, the eastbound through, westbound left-turn, northbound left-turn, and northbound right-turn movements may experience extended queues during the PM peak hour, and high delays are expected on the northbound right-turn movement during the PM peak hour. The operations are influenced by the bi-directional crossing of Innes Road as it reduces the available green time for other movements phases.

During the PM peak hour, the westbound left-turn movement at the Innes Road and Ventus Way intersection and the eastbound through movement at the Innes Road and Viseneau Drive intersection may experience extended queues.

11.3 Modal Share Sensitivity

Capacity constraints have been noted along Innes Road during the existing and background horizons, which are subject to regional travel not associated with the development traffic. No further demand rationalization is required for this development.

12 Transit

12.1 Route Capacity

In Section 5.1 the trip generation by mode was estimated, including an estimate of the number of transit trips that will be generated by the proposed development. Table 19 summarizes the transit trip generation.

Table 19: Trip Generation by Transit Mode

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Transit	29% (24%)	31	71	102	48	37	85

The proposed development is anticipated to generate an additional 32 AM and 28 PM peak hour two-way transit trips. From the trip distribution found in section 5.3, these values can be further broken down. Table 20 summarizes forecasted site-generated transit ridership trips by direction and the equivalent bus loads.

Table 20: Forecasted Site-Generated Transit Ridership

Direction	AM Peak Hour		PM Peak Hour		Service Type	Approximate Equivalent Peak Hour/Direction Bus Loads
	In	Out	In	Out		
North	5	11	7	6	Bus	Negligible
South	0	0	0	0	-	-
East	12	28	19	14	Bus	Half of a standard bus
West	14	32	22	17	Bus	Half of a standard bus

It is anticipated that the existing service will accommodate site-generated transit trips. However, if all forecasted site-generated trips use Route #25, and considering the current service of four to six buses per peak hour, ridership could increase by about ten passengers per bus. Consequently, if the capacity is unavailable on Route #25, an additional standard bus may be required during peak hours.

12.2 Transit Priority

Examining the study area's intersection operations, slight increases in delays are anticipated for transit movements at the study area intersections due to traffic from the development site. When comparing the 2031 background and future conditions, the most significant increase will be on the westbound through movements at the Orleans Boulevard intersection. The existing queue jump permits transit vehicles to bypass the majority of the queuing and delay at this location.

13 Access Intersections Design

13.1 Location and Design of Access

The site is proposed to have two full-movement access. A 2.0 metre-sidewalk is present along the boundary Street of Lamarche Avenue. Access #1 is proposed to be 8.0 metres wide, and Access # 2 is proposed to be 8.6 metres wide. Both accesses meet the minimum and maximum width in the private approach by law.

Access #1 is approximately 80 metres from the intersection of Innes Road at Lamarche Avenue, and it meets the minimum distance of 60 metres between the private approach and nearest intersecting street line in the private approach by law and TAC requirement of 15 metres. The distance between two accesses are 157 metres, and it meets the private approach by law distance between two-way private approaches to the same property.

Although site accesses meet the TAC and private approach by law requirements, the accesses will need to comply with the City of Ottawa standard drawing SC7.1.

13.2 Intersection Control

The site accesses will have stop-control on the minor approach.

13.3 Access Intersection Design

13.3.1 2026 Future Total Access Intersection Operations

Figure 15 illustrates the 2026 future total volumes and Table 21 summarizes the 2026 future total access intersection operations. Synchro 11 has been used to model the unsignalized intersections and HCM 2010 methodology was used for unsignalized intersection operation. The synchro worksheets have been provided in Appendix N.

Figure 15: 2026 Future Total Volumes

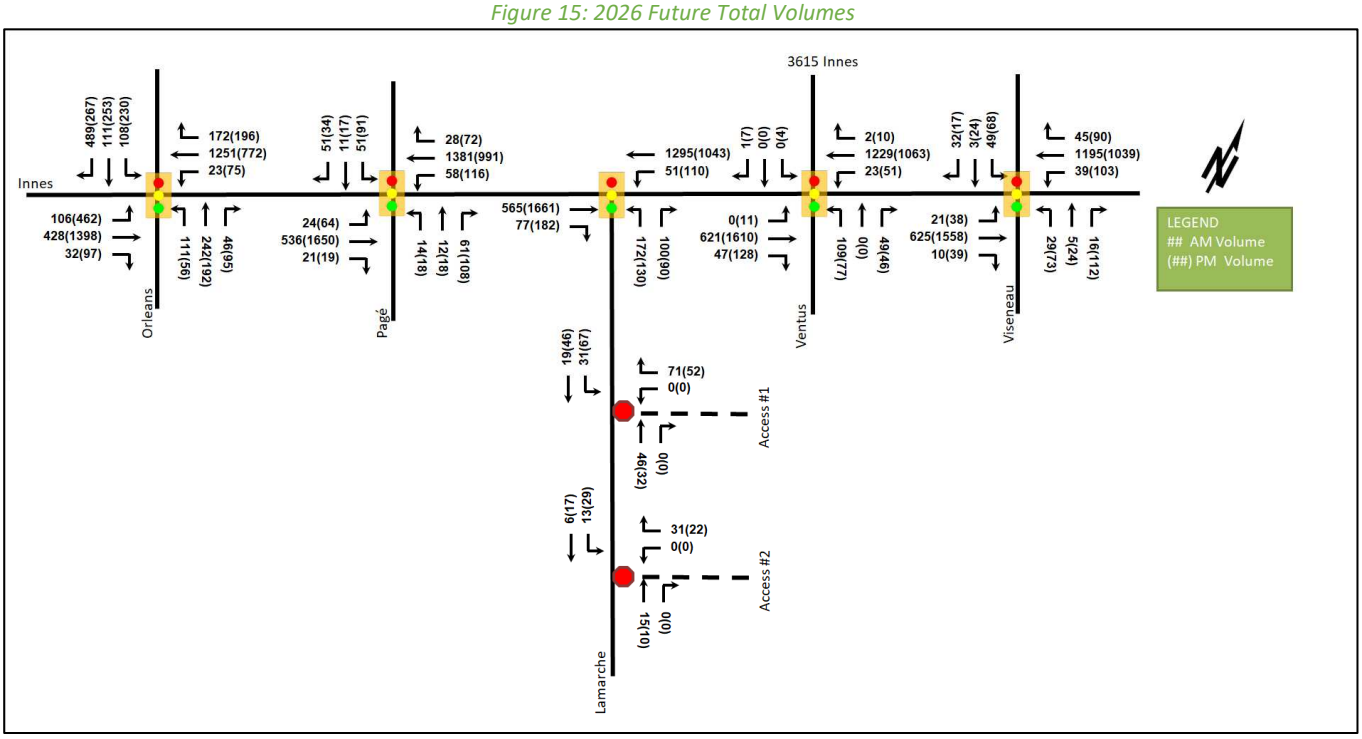


Table 21: 2026 Future Total Access Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Access #1 at Lamarche Avenue *Unsignalized*	WB	A	0.07	8.8	1.5	A	0.05	8.6	1.5
	NB	-	-	-	-	-	-	-	-
	SB	A	0.02	7.4	0.8	A	0.04	7.4	0.8
	Overall	**A**	**-**	**5.1**	**-**	**A**	**-**	**4.8**	**-**
Access #2 at Lamarche Avenue *Unsignalized*	WB	A	0.03	8.5	0.8	A	0.02	8.4	0.8
	NB	-	-	-	-	-	-	-	-
	SB	A	0.01	7.3	0.0	A	0.02	7.3	0.8
	Overall	**A**	**-**	**5.5**	**-**	**A**	**-**	**5.1**	**-**

Notes:
Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

The access intersections are anticipated to operate well at the 2026 future total horizon.

13.3.2 2031 Future Total Access Intersection Operations

Figure 16 illustrates the 2031 future total volumes and Table 22 summarizes the 2031 future total access intersection operations. Synchro 11 has been used to model the unsignalized intersections and HCM 2010 methodology was used for unsignalized intersection operation. The synchro worksheets have been provided in Appendix O.

Figure 16: 2031 Future Total Volumes

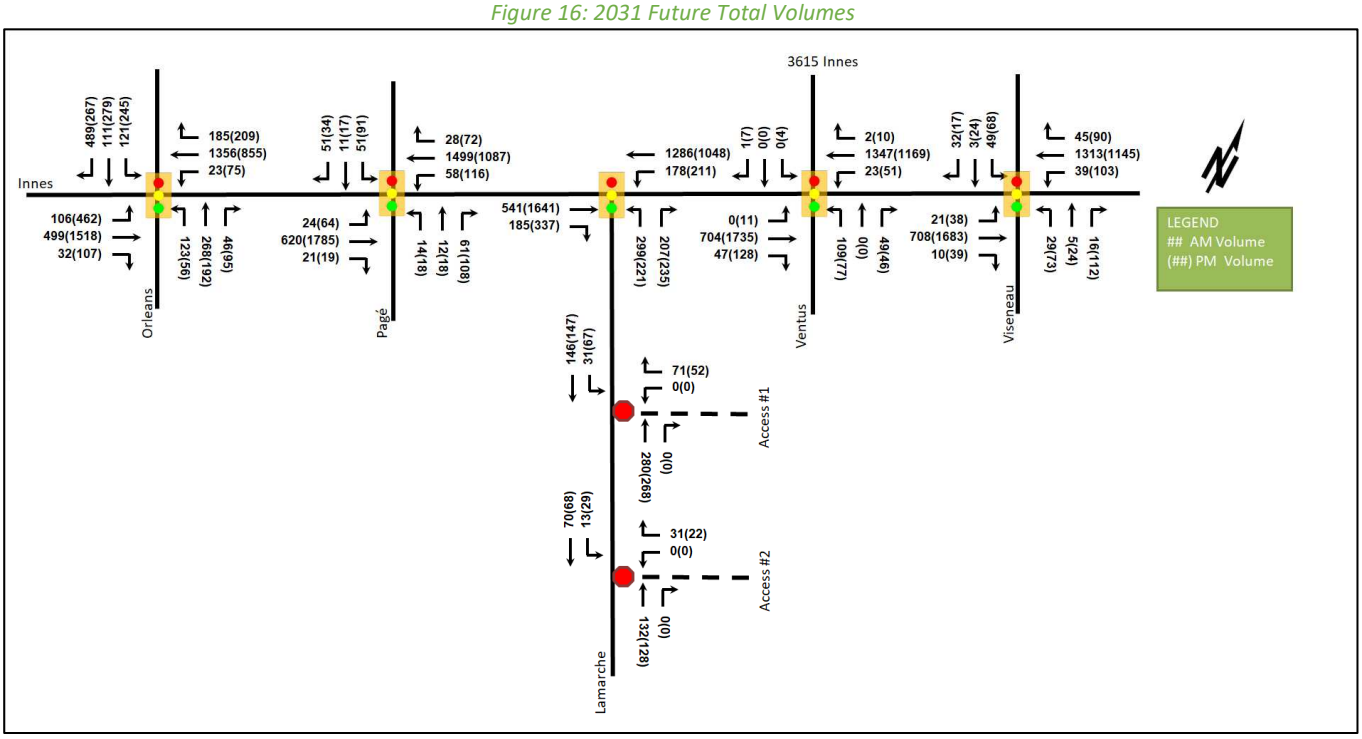


Table 22: 2031 Future Total Access Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Access #1 at Lamarche Avenue *Unsignalized*	WB	B	0.09	10.2	2.3	B	0.07	10.0	1.5
	NB	-	-	-	-	-	-	-	-
	SB	A	0.02	7.9	0.8	A	0.05	7.9	1.5
	Overall	**A**	**-**	**1.8**	**-**	**A**	**-**	**2.0**	**-**
Access #2 at Lamarche Avenue *Unsignalized*	WB	A	0.03	9.1	0.8	A	0.02	9.0	0.8
	NB	-	-	-	-	-	-	-	-
	SB	A	0.01	7.5	0.0	A	0.02	7.5	0.8
	Overall	**A**	**-**	**1.6**	**-**	**A**	**-**	**1.7**	**-**

Notes:
Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

The access intersections are anticipated to operate well at the 2031 future total horizon.

13.3.3 Access Intersection MMLOS

Based upon the projected volumes, the site access will have stop-control on the minor approach.

13.3.4 Recommended Design Elements

The accesses will need to comply with the City of Ottawa standard drawing SC7.1.

14 Network Intersection Design

14.1 Network Intersection Control

The intersection of Innes Road at Lamarche Avenue is expected to meet signalization warrants by 2031 and the proposed signalization underway addresses this warrant.

14.2 Network Intersection Design

14.2.1 2026 Future Total Intersection Operations

As noted in the 2026 future background conditions, volumes were balanced along Innes Road, and the intersection of Innes Road at Lamarche Avenue has been modelled as a signalized intersection for all future horizons. The signal timing is assumed to be consistent with the 2026 future background conditions. Similar to the 2026 future background conditions, the intersection does not meet signalization warrants, which have been provided in Appendix D.

Table 23 summarizes the 2026 future total intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets have been provided in Appendix N.

Table 23: 2026 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Orleans Boulevard *Signalized*	EBL	B	0.69	**83.8**	**#27.1**	C	0.77	51.3	63.6
	EBT	A	0.28	21.0	48.0	E	1.00	58.3	**#219.1**
	EBR	A	0.04	0.1	0.0	A	0.14	0.6	0.8
	WBL	A	0.28	68.3	15.1	A	0.57	56.1	32.3
	WBT	D	0.83	37.5	175.8	D	0.83	53.1	**#127.8**
	WBR	A	0.25	6.0	17.1	A	0.34	14.8	43.6
	NBL	A	0.29	31.8	34.0	A	0.17	25.7	16.8
	NBT	A	0.21	30.5	33.1	A	0.17	25.3	23.2
	NBR	A	0.09	1.5	2.2	A	0.16	0.9	1.3
	SBL	A	0.50	55.2	44.4	D	0.81	62.5	**#92.1**
	SBT	A	0.16	43.4	20.9	A	0.30	34.8	35.3
	SBR	**F**	**1.05**	**83.8**	**#160.3**	A	0.47	7.2	20.5
	Overall	**D**	**0.83**	**41.7**	-	**E**	**0.95**	**45.2**	-
Innes Road at Page Road *Signalized*	EBL	A	0.13	8.8	7.2	A	0.22	3.2	m2.5
	EBT/R	A	0.23	5.8	41.0	C	0.72	6.2	m33.3
	WBL	A	0.10	10.2	m12.3	E	0.94	**90.1**	**#58.5**
	WBT/R	A	0.57	12.6	173.7	A	0.46	8.1	0.0
	NB	A	0.35	19.3	16.6	A	0.52	40.0	36.2
	SB	A	0.53	39.5	29.2	B	0.70	54.3	39.3
	Overall	**A**	**0.55**	**12.4**	-	**D**	**0.89**	**13.5**	-
Innes Road at Lamarche Avenue *Signalized*	EBT	A	0.30	18.4	80.3	E	0.95	31.8	**#232.7**
	EBR	A	0.09	18.9	27.5	A	0.24	16.3	m24.8
	WBL	A	0.41	59.7	m25.0	B	0.61	55.8	40.3
	WBT	A	0.57	10.3	109.7	A	0.45	10.4	108.1
	NBL	B	0.70	63.0	58.5	A	0.57	54.7	45.8
	NBR	A	0.35	44.0	34.3	A	0.32	44.3	31.8
	Overall	**B**	**0.63**	**19.2**	-	**D**	**0.82**	**26.1**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Ventus Way *Signalized*	EBL	-	-	-	-	A	0.03	2.6	m0.8
	EBT/R	A	0.28	4.7	84.0	B	0.67	11.8	m224.0
	WBL	A	0.05	9.9	m7.2	A	0.38	17.2	19.1
	WBT/R	A	0.51	12.8	162.3	A	0.41	5.7	71.5
	NBL	B	0.68	67.7	40.6	A	0.47	51.6	26.8
	NBT/R	A	0.10	0.4	0.0	A	0.21	17.7	10.7
	SB	A	0.00	0.0	0.0	A	0.05	2.4	1.2
	Overall	**A**	**0.53**	**12.7**	**-**	**B**	**0.67**	**10.7**	**-**
Innes Road at Viseneau Drive *Signalized*	EBL	A	0.26	**85.4**	14.1	A	0.37	67.2	20.5
	EBT	A	0.28	3.5	53.1	C	0.77	23.7	**#255.3**
	EBR	A	0.01	0.0	0.0	A	0.04	0.1	0.0
	WBL	A	0.36	61.3	19.8	B	0.61	70.3	42.8
	WBT/R	A	0.52	11.6	148.0	A	0.53	14.4	129.2
	NBL	A	0.20	47.1	13.3	A	0.46	59.4	29.8
	NBT	A	0.03	41.0	4.2	A	0.10	46.8	12.3
	NBR	A	0.06	0.4	0.0	A	0.39	11.6	15.2
	SB	A	0.47	41.7	25.1	B	0.62	63.3	40.0
	Overall	**A**	**0.57**	**12.5**	**-**	**C**	**0.74**	**24.1**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

During both peak hours, the capacity and queues issues at the study intersections noted in the 2026 future background conditions remain, with a slight decrease due to development traffic. The capacity issues were noted during the existing and background conditions, and no additional capacity issues are noted due to the development trips.

The site traffic will contribute less than 5% of the total eastbound volumes and should be an acceptable increase for any roadway. The volumes along Innes Road may be reduced once the LRT is active and could be further reduced once Brian Coburn Boulevard is extended west to Blair Road. No mitigation is required for the subject site

14.2.2 2031 Future Total Intersection Operations

As noted in the 2026 future background conditions, volumes were balanced along Innes Road, and the intersection of Innes Road at Lamarche Avenue has been modelled as a signalized intersection for all future horizons. The signal timing is assumed to be consistent with the 2026 future background conditions. Similar to the 2031 future background conditions, the intersection of Innes Road at Lamarche Avenue is expected to meet signalization warrants by 2031. The signal warrants have been provided in Appendix D.

Table 24 summarizes the 2031 future total intersection operations. The level of service for signalized intersections is based on v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection. The synchro worksheets have been provided in Appendix O.

Table 24: 2031 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Orleans Boulevard *Signalized*	EBL	B	0.69	**83.8**	**#27.1**	C	0.77	51.3	63.6
	EBT	A	0.33	21.7	56.4	**F**	**1.09**	**84.5**	**#247.8**
	EBR	A	0.04	0.1	0.0	A	0.15	1.2	2.5
	WBL	A	0.28	68.3	15.1	A	0.57	55.8	32.4
	WBT	D	0.90	42.8	**#202.5**	E	0.92	59.0	**#149.1**
	WBR	A	0.26	6.9	20.1	A	0.36	15.7	45.8
	NBL	A	0.31	32.4	37.2	A	0.18	25.8	16.8
	NBT	A	0.24	30.8	36.3	A	0.17	25.3	23.2
	NBR	A	0.09	1.5	2.2	A	0.16	0.9	1.3
	SBL	A	0.58	59.4	49.6	D	0.86	69.2	**#99.7**
	SBT	A	0.17	43.5	20.9	A	0.33	35.2	38.5
	SBR	**F**	**1.07**	**93.0**	**#165.1**	A	0.47	7.2	20.5
	Overall	**D**	**0.89**	**44.8**	-	**F**	**1.02**	**56.2**	-
Innes Road at Page Road *Signalized*	EBL	A	0.15	9.8	7.6	A	0.25	2.7	m2.3
	EBT/R	A	0.27	6.0	48.1	C	0.77	8.1	m33.0
	WBL	A	0.11	10.6	m12.9	**F**	**1.22**	**181.2**	**m#59.5**
	WBT/R	B	0.61	16.7	202.6	A	0.51	9.7	m0.0
	NB	A	0.35	19.3	16.6	A	0.53	42.2	37.3
	SB	A	0.53	39.5	29.2	B	0.70	54.3	39.3
	Overall	**A**	**0.59**	**14.8**	-	**F**	**1.10**	**17.7**	-
Innes Road at Lamarche Avenue *Signalized*	EBT	A	0.40	32.3	88.5	E	0.98	37.2	**#227.4**
	EBR	A	0.31	33.9	68.6	A	0.46	19.3	m42.3
	WBL	C	0.71	61.9	64.9	E	0.96	**94.0**	**#91.8**
	WBT	B	0.64	16.0	127.2	A	0.45	10.5	112.3
	NBL	D	0.81	60.7	90.4	E	0.96	**98.2**	**#93.9**
	NBR	A	0.52	41.1	59.0	D	0.85	**127.7**	**#90.5**
	Overall	**C**	**0.73**	**30.4**	-	**E**	**0.98**	**40.6**	-
Innes Road at Ventus Way *Signalized*	EBL	-	-	-	-	A	0.04	2.5	m0.7
	EBT/R	A	0.32	0.9	2.9	C	0.72	10.7	m227.5
	WBL	A	0.05	9.9	m5.9	A	0.46	25.7	**#27.1**
	WBT/R	A	0.56	13.8	178.7	A	0.45	6.0	82.1
	NBL	B	0.68	67.7	40.6	A	0.47	51.6	26.8
	NBT/R	A	0.11	0.5	0.0	A	0.22	21.0	11.8
	SB	A	0.00	0.0	0.0	A	0.05	2.4	1.2
	Overall	**A**	**0.58**	**11.8**	-	**C**	**0.71**	**10.3**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Innes Road at Viseneau Drive *Signalized*	EBL	A	0.26	74.0	14.2	A	0.37	67.2	20.5
	EBT	A	0.32	5.6	23.5	D	0.83	26.3	#290.1
	EBR	A	0.01	0.0	m0.0	A	0.04	0.1	0.0
	WBL	A	0.36	61.3	19.8	B	0.61	70.3	42.8
	WBT/R	A	0.57	12.5	172.3	A	0.58	15.4	148.5
	NBL	A	0.20	47.1	13.3	A	0.46	59.4	29.8
	NBT	A	0.03	41.0	4.2	A	0.10	46.8	12.3
	NBR	A	0.06	0.4	0.0	A	0.39	11.6	15.2
	SB	A	0.47	41.7	25.1	B	0.62	63.3	40.0
	Overall	**B**	**0.61**	**13.2**	-	**C**	**0.79**	**25.4**	-

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average driver delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity
v/c = volume to capacity ratio

During both peak hours, the capacity and queues issues at the study intersections noted in the 2031 future background conditions remain, with a slight decrease due to development traffic.

At the intersection of Innes Road and Orleans Boulevard, the westbound through movement may experience extended queues during the AM peak hour, and the V/C of the overall intersection at intersection of Innes Road and Orleans Boulevard will increase from 0.98 to 1.02 when compared to the 2031 future background conditions.

The intersection of Innes Road at Lamarche Avenue is anticipated to experience increased delays in the northbound direction during the PM peak hour, with the left-turn increasing by approximately 30 seconds and the right-turn increasing by approximately 7 seconds. The bi-directional cycling crossing on the west side of the intersection limits the ability to mitigate the northbound delays.

The peak operations in the eastbound direction along Innes Road will be at or over capacity at a number of locations and is a result on the background conditions for the corridor. The site traffic will contribute less than 5% of the total eastbound volumes and should be an acceptable increase for any roadway. As noted in the 2026 future total conditions, the volumes along Innes Road may be reduced once the LRT is active and could be further reduced once Brian Coburn Boulevard is extended west of Navan Road. No mitigation is required for the subject site.

14.2.3 Intersection MMLOS

Table 25 summarizes the MMLOS analysis for the network intersections within the study area. The existing and future conditions for both intersections will be the same and are considered in one row. The intersection analysis of Innes Road at Orleans Boulevard is based on the land use of general urban area, and other intersections analysis are based on the land use of arterial main street. The MMLOS worksheets has been provided in Appendix I.

Table 25: Study Area Intersection MMLOS Analysis

Intersection	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS		Auto LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	ALOS	Target
Innes Road at Orleans Boulevard	F	C	F	B	F	D	A	D	F	D
Innes Road at Page Road	F	C	F	B	C	D	N/A	N/A	F	D
Innes Road at Lamarche Avenue (Future)	E	C	A	B	E	D	N/A	N/A	E	D

Intersection	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS		Auto LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target	ALOS	Target
Innes Road at Access 3615 Innes Road/3636 Innes Road	F	C	F	B	C	D	N/A	N/A	C	D
Innes Road at Viseneau Drive	F	C	F	B	F	D	N/A	N/A	C	D

The design of the intersection of Innes Road at Lamarche Avenue is currently proceeding. The current design will not meet the pedestrian, transit or auto LOS targets. The crossing distance would need to be reduced to three lane-widths on the west approach to meet pedestrian LOS targets. As typical for arterial roads, the crossing distance does not permit the targets to be met. Notwithstanding the crossing distance not meeting the target, the pedestrian delay is expected to be C, which would meet the pedestrian LOS target. To meet the transit LOS targets, the delay at the intersections would need to be reduced to below 30 seconds.

The pedestrian LOS targets will not be met at the remaining existing or future intersections within the study area. To meet pedestrian LOS targets, the maximum crossing distance would need to be reduced to three lane-widths on all pedestrian crossings. As typical for arterial roads, the crossing distance does not permit the targets to be met.

The bicycle LOS targets will not be met at the remaining existing or future intersections within the study area. To meet bicycle LOS targets, the left-turn configurations would need to be two-stage, turn boxes or protected facilities.

The transit LOS targets will not be met in the existing or future condition at the intersections of Innes Road at Orleans Boulevard and Innes Road at Viseneau Drive. To meet transit LOS, the delay at the intersections would need to be reduced to below 30 seconds. It is noted that the westbound transit movement at the Innes Road at Orleans Boulevard intersection likely meets the transit LOS due to the queue jump provided.

Any improvements for these intersections would be subject to City planning and improvements along Innes Road.

14.2.4 Recommended Design Elements

No study area intersection design elements are proposed for the network intersections as part of this study.

15 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed development consists of 476 stacked dwellings, 476 residential vehicle parking spaces, 36 visitor parking spaces, and 238 bicycle parking spaces
- The concept plan includes two full-movement accesses onto Lamarche Avenue
- The anticipated full build-out and occupancy horizon is 2026 with construction occurring in phases
- The trip generation and safety triggers were met for the TIA Screening

Existing Conditions

- Innes Road and Orleans Boulevard are arterial roads, and Viseneau Drive is a collector road in the study area
- Page Road, Lamarche Avenue, and Ventus Way are local roads in the study area

- Sidewalks are present along both sides of Innes Road, east of Orleans Boulevard, and along Orleans Boulevard, north of Silverbirch Street
- Sidewalks are present on the west side of Orleans Boulevard, Viseneau Drive, Page Road, and Lamarche Avenue, between Argonaut Circle/Jargeau Road and Ponthieu Circle/Beaugency Street. Additionally, sidewalks are present on the east side of Page Road, extending 205 meters south of Innes Road, and on Lamarche Avenue, north of Argonaut Circle/Jargeau Road
- Bike lanes are present along both side of Innes Road east of Orleans Boulevard
- A MUP is present on the west side of Lamarche Avenue north of Argonaut Circle/Jargeau Road and on the north side of Jargeau Road between Lamarche Avenue and Crevier Walk
- Innes Road, Boyer Road, and Orleans Boulevard north of Innes Road are cross-town bikeways in the Transportation Master Plan – Part 1 (2023)
- During both the AM and PM peak hours, capacity issues are noted at the intersection of Innes Road at Orleans Boulevard
- At the intersection of Innes Road at Lamarche Avenue, the northbound movement experiences delays of over 180 seconds during the PM peak hour
- Within the study area, the segment of Innes Road between Page Road and Ventus Way excludes the intersection of Lamarche Avenue at Innes Road is noted to have experienced twelve collisions, and one cyclist collision is noted at Lamarche Avenue at Innes Road intersection
- No further collision examination is required as part of this study

Planned Conditions

- The intersection of Innes Road and Lamarche Avenue is listed on the City's DC By-law funded projects and is anticipated to be constructed by 2025, which includes signalization of the existing minor stop control, an auxiliary westbound left-turn lane, an auxiliary northbound left-turn lane, an auxiliary eastbound right-turn lane, and protected intersection features for bi-directional cycling crossing on the west side of the intersection and on the west and an unidirectional crossing on the south

Development Generated Travel Demand

- The proposed development is forecasted produce 330 two-way people trips during the AM peak hour and 344 two-way people trips during the PM peak hour
- Of the forecasted people trips, 145 two-way trips will be vehicle trips during the AM peak hour and 169 two-way trips will be vehicle trips during the PM peak hour
- Of the forecasted people trips, 102 two-way trips will be transit trips during the AM peak hour and 85 two-way trips will be transit trips during the PM peak hour
- Of the forecasted trips, 15 % are anticipated to travel north, 40% to the east, and 45 % to the west

Development Design

- The proposed development is a residential development where surface vehicle and bicycle parking spaces are provided
- Walkways are provided within the site to provide connections to the public park within the site and existing sidewalk along Lamarche Avenue
- Pedestrians and cyclists can access the site via the existing MUP and sidewalks on Lamarche Avenue. This route will also connect to the future pedestrian and cycling crossings at Innes Road and Lamarche Avenue, linking to the existing sidewalks and bike lanes on Innes Road

- Access is provided via the two full-movement accesses on Lamarche Avenue
- Garbage is expected to be collected from the waste management areas
- The garbage collection vehicle was reviewed to confirm movements will be permitted on site
- Within the site, it is recommended that the fire route requirements be met and provide a 6-metre-wide drive aisle with 12-metre centre radii

Parking

- The site provides a total of 476 residential vehicle parking spaces, 36 visitor parking spaces, and 238 bicycle parking spaces
- The residential vehicle parking meets the parking provisions by-law requirement, and the site provides ten less visitor parking spaces than the parking provisions by-law requirement
- It is anticipated that on-street parking will also present along Lamarche Avenue, and it provides additional parking for the visitors
- The proposed bicycle parking meets the minimum bicycle parking by-law requirement

Boundary Street Design

- Lamarche Avenue meets MMLOS targets for the area and no mitigation or additional elements are required

TDM

- Supportive TDM measures to be included within the proposed development should include:
    - Inclusion of a 1-year Presto card for first time new townhome purchase, with a set time frame for this offer (e.g. 6-months) from the initial opening of the site
    - Provide a multimodal travel option information package to new residents

Background Conditions

- It is assumed that a 1.00% growth rate will be applied to Innes Road and a 2.00% growth rate will be applied on Orleans Boulevard in peak directions
- Given that the intersections were counted on different dates, volumes were balanced along Innes Road
- The southbound right-turn movement during AM peak hour and the eastbound through movement during PM peak hour at the intersection of Innes Road at Orleans Boulevard is anticipated to be over theoretical capacity in the 2031 future background horizon
- The westbound left-turn movement during PM peak hour at the intersection of Innes Road at Page Road is anticipated to be over theoretical capacity in the 2031 future background horizon
- The intersection of Innes Road at Lamarche Avenue meets a signal warrant in the 2031 future background horizon
- Capacity constraints have been noted along Innes Road during the existing and background horizons, which are subject to regional travel not associated with the development traffic

Transit

- The proposed development is anticipated to generate an additional 102 AM peak hour transit trips and 85 PM peak hour transit trips
- Peak hour increases in transit ridership resulting from the site equate to a half of a standard bus load easterly and westerly of the site, and negligible impact northerly of the site

- It is anticipated that the existing service will accommodate site-generated transit trips
- If all forecasted site-generated trips use Route #25, and considering the current service of four to six buses per peak hour, ridership could increase by about ten passengers per bus
- Examining the study area's intersection operations, slight increases in delays are anticipated for transit movements at the study area intersections due to traffic from the development site
- Although the most significant increase will be in the westbound through movements at the Orleans Boulevard intersection when comparing the 2031 background and future conditions, the existing queue jump allows transit vehicles to bypass most of the queuing and delays in these westbound movements

Access Design

- Although site accesses meet the TAC and private approach by law requirements, the accesses will need to comply with the City of Ottawa standard drawing SC7.1
- The site accesses will have stop-control on the minor approach
- The access intersections are anticipated to operate well at the future total horizons

Network Intersection Design

- The intersection of Innes Road at Lamarche Avenue is expected to meet signalization warrants by 2031 and the proposed signalization underway addresses this warrant
- Compared to the background conditions, no additional capacity issues were noted
- The site traffic will contribute less than 5% of the total eastbound volumes and should be an acceptable increase for any roadway
- It is expected that the volumes along Innes Road may be reduced once the LRT is active and could be further reduced once Brian Coburn Boulevard is extended west to Blair Road. No mitigation is required for the subject site
- The design of the intersection of Innes Road at Lamarche Avenue is currently proceeding. The current design will not meet the pedestrian, transit or auto LOS targets
- The pedestrian LOS targets will not be met at the existing or future intersections within the study area, and no mitigation is recommended as the crossing distances would need to be reduced to equal or less than three lane widths
- Except for the future Innes Road at Lamarche Avenue intersection, the bicycle LOS targets will not be met at the existing or future intersections within the study area, and it is limited by the lack of dedicated facilities and improved left-turn configurations
- The transit LOS targets will not be met in the existing or future condition at the intersections of Innes Road at Orleans Boulevard and Innes Road at Viseneau Drive, and the delay is required to be below 30 seconds to meet the targets
- Any improvements for these intersections would be subject to City planning and improvements along Innes Road

16 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

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Reviewed By:

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Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2023 Revisions to 2017 TIA Guidelines
Step 1 - Screening Form

Date: 3-Sep-24
Project Number: 2024-106
Project Reference: 245 and 275 Lamarche Avenue

1.1 Description of Proposed Development	
Municipal Address	245 and 275 Lamarche Avenue
Description of Location	Ward 2. East of Lamarche Avenue, approximately 60 metres south of Innes Road
Land Use Classification	Development Reserve (DR)
Development Size	Approximately 476 stacked dwellings
Accesses	Two accesses on Lamarche Avenue
Phase of Development	Multiple
Buildout Year	2026
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (Low-Rise)	
Development Size	476	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers	
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	No
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No
Location Trigger	No

1.4. Safety Triggers		
Are posted speed limits on a boundary street 80 km/hr or greater?	No	
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No	
Is the proposed driveway 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)?	Yes	Innes Road at Lamarche Avenue (Future)
Is the proposed driveway within auxiliary lanes of an intersection?	No	
Does the proposed driveway make use of an existing median break that serves an existing site?	No	
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No	
Does the development include a drive-thru facility?	No	
Safety Trigger	Yes	

Certification Form for TIA Study PM

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that they meet the four criteria listed below.

CERTIFICATION

- ☑ I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines; (Update effective July 2023)
- ☑ I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- ☑ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- ☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

[1] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

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Revision Date: June 2023

Dated at Ottawa (City) this 17 day of August , 20 23 .

Name : Andrew Harte

Professional title: Senior Transportation Engineer / Vice-President Ottawa

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)
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Stamp

Revision Date: June 2023

Appendix B

Turning Movement Counts

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #24-128 - CGH Transportation

Intersection Count Report

Intersection:	Innes Rd & Orleans Blvd
Municipality:	Ottawa
Count Date:	Wednesday, Apr 24, 2024
Site Code:	2412800003
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Innes Rd & Orleans Blvd
Site Code:	2412800003
Municipality:	Ottawa
Count Date:	Apr 24, 2024

Orleans Blvd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	74	70	454	0	598	7	111	181	34	0	326	6	924
08:00 - 09:00	130	143	415	0	688	12	96	210	56	0	362	4	1050
09:00 - 10:00	149	114	252	1	516	7	71	153	70	0	294	1	810
BREAK													
11:30 - 12:00	91	60	95	0	246	2	21	55	40	0	116	0	362
12:00 - 13:00	166	153	209	0	528	2	47	117	63	0	227	3	755
13:00 - 13:30	83	64	111	0	258	1	23	35	33	0	91	3	349
BREAK													
15:00 - 16:00	229	219	249	0	697	11	46	154	87	0	287	6	984
16:00 - 17:00	203	236	249	2	690	5	62	198	86	0	346	6	1036
17:00 - 18:00	220	218	224	0	662	7	55	183	119	0	357	5	1019
GRAND TOTAL	**1345**	**1277**	**2258**	**3**	**4883**	**54**	**532**	**1286**	**588**	**0**	**2406**	**34**	**7289**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

Innes Rd - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	18	1222	118	1	1359	17	81	285	30	0	396	2	1755
08:00 - 09:00	26	1182	150	1	1359	8	128	397	43	0	568	8	1927
09:00 - 10:00	34	622	92	0	748	3	135	463	47	0	645	3	1393
BREAK													
11:30 - 12:00	20	251	56	0	327	2	91	272	20	0	383	3	710
12:00 - 13:00	40	593	135	0	768	7	173	579	41	0	793	3	1561
13:00 - 13:30	18	321	80	0	419	3	81	283	27	0	391	2	810
BREAK													
15:00 - 16:00	61	643	159	0	863	7	400	1054	89	0	1543	24	2406
16:00 - 17:00	73	622	170	3	868	10	453	1240	93	0	1786	14	2654
17:00 - 18:00	54	540	152	3	749	18	362	1011	89	0	1462	9	2211
GRAND TOTAL	**344**	**5996**	**1112**	**8**	**7460**	**75**	**1904**	**5584**	**479**	**0**	**7967**	**68**	**15427**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

North Approach - Orleans Blvd

	Cars					Trucks					Bicycles					
Start Time	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	Total Peds
07:00	15	8	95	0	118	0	2	1	0	3	0	0	0	0	0	2
07:15	17	8	102	0	127	0	2	1	0	3	0	0	0	0	0	1
07:30	19	21	146	0	186	1	1	0	0	2	0	0	0	0	0	1
07:45	22	26	106	0	154	0	2	3	0	5	0	0	0	0	0	3
08:00	20	30	115	0	165	0	0	0	0	0	0	0	0	0	0	6
08:15	36	28	118	0	182	1	3	1	0	5	0	0	0	0	0	1
08:30	35	38	100	0	173	3	1	1	0	5	0	0	0	0	0	5
08:45	35	40	77	0	152	0	3	3	0	6	0	0	0	0	0	0
09:00	47	36	76	0	159	1	2	2	0	5	0	0	0	0	0	2
09:15	47	30	55	1	133	2	2	3	0	7	0	0	0	0	0	2
09:30	23	27	63	0	113	0	1	1	0	2	0	0	0	0	0	1
09:45	28	14	50	0	92	1	2	2	0	5	0	0	0	0	0	2
SUBTOTAL	344	306	1103	1	1754	9	21	18	0	48	0	0	0	0	0	26

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

North Approach - Orleans Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
11:30	48	28	41	0	117	0	2	1	0	3	0	0	0	0	0	2
11:45	42	29	53	0	124	1	1	0	0	2	0	0	0	0	0	0
12:00	30	31	49	0	110	0	1	0	0	1	0	0	0	0	0	0
12:15	48	38	53	0	139	1	1	1	0	3	0	0	0	0	0	1
12:30	43	39	55	0	137	0	1	0	0	1	0	0	0	0	0	1
12:45	44	42	49	0	135	0	0	2	0	2	0	0	0	0	0	0
13:00	40	40	47	0	127	0	1	0	0	1	0	0	0	0	0	1
13:15	40	23	63	0	126	3	0	1	0	4	0	0	0	0	0	0
SUBTOTAL	335	270	410	0	1015	5	7	5	0	17	0	0	0	0	0	5

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

North Approach - Orleans Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
15:00	42	42	50	0	134	1	3	1	0	5	0	0	0	0	0	3
15:15	58	42	62	0	162	1	3	2	0	6	0	0	0	0	0	3
15:30	59	59	57	0	175	0	3	3	0	6	0	0	0	0	0	1
15:45	67	59	72	0	198	1	8	2	0	11	0	0	0	0	0	4
16:00	55	45	58	0	158	1	2	4	0	7	0	0	0	0	0	4
16:15	43	66	57	0	166	1	2	1	0	4	0	0	0	0	0	0
16:30	46	61	73	0	180	0	0	0	0	0	0	0	0	0	0	0
16:45	56	59	55	2	172	1	1	1	0	3	0	0	0	0	0	1
17:00	61	60	72	0	193	1	1	1	0	3	0	0	0	0	0	0
17:15	57	54	47	0	158	0	0	1	0	1	0	0	0	0	0	3
17:30	49	61	50	0	160	0	1	0	0	1	0	0	0	0	0	1
17:45	52	41	53	0	146	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	645	649	706	2	2002	7	24	16	0	47	0	0	0	0	0	23
GRAND TOTAL	**1324**	**1225**	**2219**	**3**	**4771**	**21**	**52**	**39**	**0**	**112**	**0**	**0**	**0**	**0**	**0**	**54**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

South Approach - Orleans Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	27	26	3	0	56	0	1	0	0	1	0	0	0	0	0	1
07:15	29	30	13	0	72	2	0	0	0	2	0	0	0	0	0	0
07:30	33	53	7	0	93	0	3	1	0	4	0	0	0	0	0	3
07:45	20	65	9	0	94	0	3	1	0	4	0	0	0	0	0	2
08:00	25	43	16	0	84	1	3	0	0	4	0	0	0	0	0	0
08:15	26	62	10	0	98	2	1	0	0	3	0	0	0	0	0	1
08:30	27	39	11	0	77	1	0	2	0	3	0	0	0	0	0	3
08:45	11	60	17	0	88	3	2	0	0	5	0	0	0	0	0	0
09:00	26	51	22	0	99	1	8	0	0	9	0	0	0	0	0	0
09:15	19	35	17	0	71	0	2	1	0	3	0	2	0	0	2	0
09:30	10	28	13	0	51	0	1	0	0	1	0	0	0	0	0	1
09:45	15	26	17	0	58	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	268	518	155	0	941	10	24	5	0	39	0	2	0	0	2	11

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

South Approach - Orleans Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	11	26	17	0	54	0	1	0	0	1	0	0	0	0	0	0
11:45	10	27	22	0	59	0	1	1	0	2	0	0	0	0	0	0
12:00	12	33	17	0	62	0	1	0	0	1	0	0	0	0	0	1
12:15	14	27	11	0	52	1	1	0	0	2	0	0	0	0	0	0
12:30	10	24	21	0	55	0	1	0	0	1	0	0	0	0	0	1
12:45	10	30	14	0	54	0	0	0	0	0	0	0	0	0	0	1
13:00	14	18	17	0	49	0	1	0	0	1	0	0	0	0	0	3
13:15	9	15	16	0	40	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	90	200	135	0	425	1	7	1	0	9	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

South Approach - Orleans Blvd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
15:00	13	34	9	0	56	0	1	0	0	1	0	0	0	0	0	2
15:15	13	31	21	0	65	0	0	0	0	0	0	0	0	0	0	3
15:30	14	42	23	0	79	0	1	0	0	1	0	0	0	0	0	0
15:45	6	44	33	0	83	0	1	1	0	2	0	0	0	0	0	1
16:00	23	47	20	0	90	0	2	0	0	2	0	0	0	0	0	2
16:15	15	49	23	0	87	1	2	0	0	3	0	1	0	0	1	2
16:30	11	46	16	0	73	0	1	0	0	1	0	0	0	0	0	2
16:45	12	50	27	0	89	0	0	0	0	0	0	0	0	0	0	0
17:00	14	49	34	0	97	0	1	1	0	2	0	0	0	0	0	1
17:15	14	48	18	0	80	1	2	0	0	3	0	0	0	0	0	4
17:30	14	33	29	0	76	0	0	0	0	0	0	0	0	0	0	0
17:45	12	50	37	0	99	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	161	523	290	0	974	2	11	2	0	15	0	1	0	0	1	17
GRAND TOTAL	519	1241	580	0	2340	13	42	8	0	63	0	3	0	0	3	34

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	3	242	16	0	261	0	9	0	0	9	0	0	0	0	0	2
07:15	4	314	24	0	342	0	3	0	0	3	0	0	0	0	0	4
07:30	3	327	37	0	367	0	11	2	0	13	0	0	0	0	0	5
07:45	8	312	37	1	358	0	4	2	0	6	0	0	0	0	0	6
08:00	5	329	38	0	372	0	11	4	0	15	0	0	0	0	0	3
08:15	6	333	35	0	374	0	6	1	0	7	0	0	0	0	0	3
08:30	6	288	32	0	326	0	5	1	0	6	0	0	0	0	0	1
08:45	8	198	38	1	245	1	12	1	0	14	0	0	0	0	0	1
09:00	12	161	33	0	206	1	9	3	0	13	0	0	0	0	0	1
09:15	5	154	20	0	179	0	11	0	0	11	0	0	0	0	0	1
09:30	7	135	17	0	159	0	4	0	0	4	0	0	0	0	0	1
09:45	9	142	19	0	170	0	6	0	0	6	0	0	0	0	0	0
SUBTOTAL	76	2935	346	2	3359	2	91	14	0	107	0	0	0	0	0	28

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	10	134	24	0	168	0	8	1	0	9	0	0	0	0	0	1
11:45	10	104	30	0	144	0	5	1	0	6	0	0	0	0	0	1
12:00	7	136	36	0	179	0	6	1	0	7	0	0	0	0	0	2
12:15	12	140	29	0	181	0	8	0	0	8	0	0	0	0	0	0
12:30	8	145	34	0	187	0	5	0	0	5	0	0	0	0	0	1
12:45	13	148	33	0	194	0	5	2	0	7	0	0	0	0	0	4
13:00	14	135	43	0	192	0	9	0	0	9	0	0	0	0	0	2
13:15	4	172	37	0	213	0	5	0	0	5	0	0	0	0	0	1
SUBTOTAL	78	1114	266	0	1458	0	51	5	0	56	0	0	0	0	0	12

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	12	152	39	0	203	0	8	1	0	9	0	0	0	0	0	2
15:15	16	147	32	0	195	0	10	3	0	13	0	0	0	0	0	3
15:30	14	170	31	0	215	1	12	3	0	16	0	0	0	0	0	2
15:45	16	140	50	0	206	2	4	0	0	6	0	0	0	0	0	0
16:00	18	155	33	2	208	0	15	0	0	15	0	0	0	0	0	7
16:15	19	144	48	1	212	0	8	0	0	8	0	0	0	0	0	1
16:30	18	155	51	0	224	0	4	1	0	5	0	0	0	0	0	2
16:45	17	134	35	0	186	1	7	2	0	10	0	0	0	0	0	0
17:00	15	121	45	0	181	0	6	0	0	6	0	0	0	0	0	0
17:15	21	139	39	1	200	0	3	2	0	5	0	0	0	0	0	7
17:30	7	132	27	1	167	0	2	0	0	2	0	0	0	0	0	5
17:45	11	132	39	1	183	0	5	0	0	5	0	0	0	0	0	6
SUBTOTAL	184	1721	469	6	2380	4	84	12	0	100	0	0	0	0	0	35
GRAND TOTAL	338	5770	1081	8	7197	6	226	31	0	263	0	0	0	0	0	75

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	12	48	7	0	67	0	4	0	0	4	0	0	0	0	0	2
07:15	16	60	2	0	78	0	7	2	0	9	0	0	0	0	0	0
07:30	22	73	9	0	104	2	10	2	0	14	0	0	0	0	0	0
07:45	27	76	8	0	111	2	7	0	0	9	0	0	0	0	0	0
08:00	27	83	7	0	117	0	5	0	0	5	0	0	0	0	0	1
08:15	25	81	6	0	112	1	8	0	0	9	0	0	0	0	0	0
08:30	36	98	8	0	142	0	6	0	0	6	0	0	0	0	0	7
08:45	38	111	22	0	171	1	5	0	0	6	0	0	0	0	0	0
09:00	34	103	18	0	155	4	6	0	0	10	0	0	0	0	0	0
09:15	35	112	10	0	157	2	9	0	0	11	0	0	0	0	0	2
09:30	27	118	9	0	154	2	5	0	0	7	0	0	0	0	0	0
09:45	30	101	10	0	141	1	9	0	0	10	0	0	0	0	0	1
SUBTOTAL	329	1064	116	0	1509	15	81	4	0	100	0	0	0	0	0	13

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	41	123	6	0	170	3	4	0	0	7	0	0	0	0	0	3
11:45	45	145	14	0	204	2	0	0	0	2	0	0	0	0	0	0
12:00	47	145	8	0	200	1	8	0	0	9	0	0	0	0	0	1
12:15	38	141	13	0	192	1	1	0	0	2	0	0	0	0	0	1
12:30	35	125	10	0	170	0	5	0	0	5	0	0	0	0	0	1
12:45	50	149	10	0	209	1	5	0	0	6	0	0	0	0	0	0
13:00	48	130	14	0	192	3	2	0	0	5	0	0	0	0	0	2
13:15	30	148	13	0	191	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	334	1106	88	0	1528	11	28	0	0	39	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Municipality: Ottawa
Count Date: Apr 24, 2024

West Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
15:00	80	211	14	0	305	2	9	0	0	11	0	0	0	0	0	4
15:15	92	242	26	0	360	0	4	2	0	6	0	0	0	0	0	10
15:30	100	282	22	0	404	1	4	0	0	5	0	0	0	0	0	2
15:45	125	295	24	0	444	0	7	1	0	8	0	0	0	0	0	8
16:00	123	290	23	0	436	4	9	2	0	15	0	0	0	0	0	2
16:15	108	315	21	0	444	0	4	1	0	5	0	0	0	0	0	5
16:30	102	297	21	0	420	0	4	0	0	4	0	0	0	0	0	1
16:45	114	318	25	0	457	2	3	0	0	5	0	0	0	0	0	6
17:00	119	290	27	0	436	1	3	0	0	4	0	0	0	0	0	2
17:15	97	242	18	0	357	0	3	1	0	4	0	0	0	0	0	3
17:30	86	252	27	0	365	1	3	0	0	4	0	0	0	0	0	1
17:45	58	215	15	0	288	0	3	1	0	4	0	0	0	0	0	3
SUBTOTAL	1204	3249	263	0	4716	11	56	8	0	75	0	0	0	0	0	47
GRAND TOTAL	1867	5419	467	0	7753	37	165	12	0	214	0	0	0	0	0	68

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:30:00
To:	10:00:00	To:	08:30:00

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	687	471	1158
Trucks	12	24	36
Bicycles	0	0	0
	699	495	1194

Orleans Blvd

Bicycles	0	0	0	0
Trucks	4	6	2	0
Cars	485	105	97	0
Totals	489	111	99	0

East Approach

	Out	In	Total
Cars	1471	453	1924
Trucks	41	34	75
Bicycles	0	0	0
	1512	487	1999

Innes Rd

			Totals	
0	0	0	0	
0	5	101	106	
0	30	313	343	
0	2	30	32	

Peds: 11
Peds: 1
Peds: 17
Peds: 6

Innes Rd

Totals			
1	1	0	0
156	147	9	0
1333	1301	32	0
22	22	0	0

West Approach

	Out	In	Total
Cars	444	1890	2334
Trucks	37	39	76
Bicycles	0	0	0
	481	1929	2410

Orleans Blvd

Totals	107	233	44	0
Cars	104	223	42	0
Trucks	3	10	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	369	157	526
Trucks	15	8	23
Bicycles	0	0	0
	384	165	549

- Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Orleans Blvd						South Approach Orleans Blvd						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	20	22	146	0	1	188	33	56	8	0	3	97	3	338	39	0	5	380	24	83	11	0	0	118	783
07:45	22	28	109	0	3	159	20	68	10	0	2	98	8	316	39	1	6	364	29	83	8	0	0	120	741
08:00	20	30	115	0	6	165	26	46	16	0	0	88	5	340	42	0	3	387	27	88	7	0	1	122	762
08:15	37	31	119	0	1	187	28	63	10	0	1	101	6	339	36	0	3	381	26	89	6	0	0	121	790
Grand Total	**99**	**111**	**489**	**0**	**11**	**699**	**107**	**233**	**44**	**0**	**6**	**384**	**22**	**1333**	**156**	**1**	**17**	**1512**	**106**	**343**	**32**	**0**	**1**	**481**	**3076**
Approach %	14.2	15.9	70	0		-	27.9	60.7	11.5	0		-	1.5	88.2	10.3	0.1		-	22	71.3	6.7	0		-	
Totals %	3.2	3.6	15.9	0		22.7	3.5	7.6	1.4	0		12.5	0.7	43.3	5.1	0		49.2	3.4	11.2	1	0		15.6	
PHF	**0.67**	**0.9**	**0.84**	**0**		**0.93**	**0.81**	**0.86**	**0.69**	**0**		**0.95**	**0.69**	**0.98**	**0.93**	**0.25**		**0.98**	**0.91**	**0.96**	**0.73**	**0**		**0.99**	**0.97**
Cars	97	105	485	0		687	104	223	42	0		369	22	1301	147	1		1471	101	313	30	0		444	2971
% Cars	98	94.6	99.2	0		98.3	97.2	95.7	95.5	0		96.1	100	97.6	94.2	100		97.3	95.3	91.3	93.8	0		92.3	96.6
Trucks	2	6	4	0		12	3	10	2	0		15	0	32	9	0		41	5	30	2	0		37	105
% Trucks	2	5.4	0.8	0		1.7	2.8	4.3	4.5	0		3.9	0	2.4	5.8	0		2.7	4.7	8.7	6.3	0		7.7	3.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					6	-					17	-					1	-	35
% Peds					31.4	-					17.1	-					48.6	-					2.9	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	525	397	922
Trucks	8	9	17
Bicycles	0	0	0
	533	406	939

Orleans Blvd

Bicycles	0	0	0	0
Trucks	3	2	3	0
Cars	214	144	167	0
Totals	217	146	170	0

East Approach

	Out	In	Total
Cars	786	787	1573
Trucks	26	18	44
Bicycles	0	0	0
	812	805	1617

Innes Rd

Bicycles	Trucks	Cars	Totals	
0	0	0	0	
0	4	163	167	
0	15	552	567	
0	0	47	47	

Peds: 2
Peds: 3
Peds: 8
Peds: 5

Innes Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
149	147	2	0
624	600	24	0
39	39	0	0

West Approach

	Out	In	Total
Cars	762	857	1619
Trucks	19	27	46
Bicycles	0	0	0
	781	884	1665

Orleans Blvd

Totals	43	90	68	0
Cars	43	87	68	0
Trucks	0	3	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	198	230	428
Trucks	3	2	5
Bicycles	0	0	0
	201	232	433

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024
Period: 11:30 - 13:30

Peak Hour Data (12:30 - 13:30)

Start Time	North Approach Orleans Blvd						South Approach Orleans Blvd						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:30	43	40	55	0	1	138	10	25	21	0	1	56	8	150	34	0	1	192	35	130	10	0	1	175	561
12:45	44	42	51	0	0	137	10	30	14	0	1	54	13	153	35	0	4	201	51	154	10	0	0	215	607
13:00	40	41	47	0	1	128	14	19	17	0	3	50	14	144	43	0	2	201	51	132	14	0	2	197	576
13:15	43	23	64	0	0	130	9	16	16	0	0	41	4	177	37	0	1	218	30	151	13	0	0	194	583
Grand Total	**170**	**146**	**217**	**0**	**2**	**533**	**43**	**90**	**68**	**0**	**5**	**201**	**39**	**624**	**149**	**0**	**8**	**812**	**167**	**567**	**47**	**0**	**3**	**781**	**2327**
Approach %	31.9	27.4	40.7	0		-	21.4	44.8	33.8	0		-	4.8	76.8	18.3	0		-	21.4	72.6	6	0		-	
Totals %	7.3	6.3	9.3	0		22.9	1.8	3.9	2.9	0		8.6	1.7	26.8	6.4	0		34.9	7.2	24.4	2	0		33.6	
PHF	**0.97**	**0.87**	**0.85**	**0**		**0.97**	**0.77**	**0.75**	**0.81**	**0**		**0.9**	**0.7**	**0.88**	**0.87**	**0**		**0.93**	**0.82**	**0.92**	**0.84**	**0**		**0.91**	**0.96**
Cars	167	144	214	0		525	43	87	68	0		198	39	600	147	0		786	163	552	47	0		762	2271
% Cars	98.2	98.6	98.6	0		98.5	100	96.7	100	0		98.5	100	96.2	98.7	0		96.8	97.6	97.4	100	0		97.6	97.6
Trucks	3	2	3	0		8	0	3	0	0		3	0	24	2	0		26	4	15	0	0		19	56
% Trucks	1.8	1.4	1.4	0		1.5	0	3.3	0	0		1.5	0	3.8	1.3	0		3.2	2.4	2.6	0	0		2.4	2.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					2	-					5	-					8	-					3	-	18
% Peds					11.1	-					27.8	-					44.4	-					16.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 15:45:00
To: 16:45:00

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	702	826	1528
Trucks	22	11	33
Bicycles	0	1	1
	724	**838**	**1562**

Orleans Blvd

Bicycles	0	0	0	0
Trucks	7	12	3	0
Cars	260	231	211	0
Totals	**267**	**243**	**214**	**0**

East Approach

	Out	In	Total
Cars	850	1503	2353
Trucks	34	28	62
Bicycles	0	0	0
	884	**1531**	**2415**

Innes Rd

		Totals	
0	0	0	**0**
0	4	458	**462**
0	24	1197	**1221**
0	4	89	**93**

Peds: 8
Peds: 16
Peds: 10
Peds: 7

Innes Rd

Totals			
3	3	0	0
183	182	1	0
625	594	31	0
73	71	2	0

West Approach

	Out	In	Total
Cars	1744	909	2653
Trucks	32	39	71
Bicycles	0	0	0
	1776	**948**	**2724**

Orleans Blvd

Totals	**56**	**193**	**93**	**0**
Cars	55	186	92	0
Trucks	1	6	1	0
Bicycles	0	1	0	0

South Approach

	Out	In	Total
Cars	333	391	724
Trucks	8	18	26
Bicycles	1	0	1
	342	**409**	**751**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Orleans Blvd
Site Code: 2412800003
Count Date: Apr 24, 2024
Period: 15:00 - 18:00

Peak Hour Data (15:45 - 16:45)

Start Time	North Approach Orleans Blvd						South Approach Orleans Blvd						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:45	68	67	74	0	4	209	6	45	34	0	1	85	18	144	50	0	0	212	125	302	25	0	8	452	958
16:00	56	47	62	0	4	165	23	49	20	0	2	92	18	170	33	2	7	223	127	299	25	0	2	451	931
16:15	44	68	58	0	0	170	16	52	23	0	2	91	19	152	48	1	1	220	108	319	22	0	5	449	930
16:30	46	61	73	0	0	180	11	47	16	0	2	74	18	159	52	0	2	229	102	301	21	0	1	424	907
Grand Total	**214**	**243**	**267**	**0**	**8**	**724**	**56**	**193**	**93**	**0**	**7**	**342**	**73**	**625**	**183**	**3**	**10**	**884**	**462**	**1221**	**93**	**0**	**16**	**1776**	**3726**
Approach %	29.6	33.6	36.9	0		-	16.4	56.4	27.2	0		-	8.3	70.7	20.7	0.3		-	26	68.8	5.2	0		-	
Totals %	5.7	6.5	7.2	0		19.4	1.5	5.2	2.5	0		9.2	2	16.8	4.9	0.1		23.7	12.4	32.8	2.5	0		47.7	
PHF	**0.79**	**0.89**	**0.9**	**0**		**0.87**	**0.61**	**0.93**	**0.68**	**0**		**0.93**	**0.96**	**0.92**	**0.88**	**0.38**		**0.97**	**0.91**	**0.96**	**0.93**	**0**		**0.98**	**0.97**
Cars	211	231	260	0		702	55	186	92	0		333	71	594	182	3		850	458	1197	89	0		1744	3629
% Cars	98.6	95.1	97.4	0		97	98.2	96.4	98.9	0		97.4	97.3	95	99.5	100		96.2	99.1	98	95.7	0		98.2	97.4
Trucks	3	12	7	0		22	1	6	1	0		8	2	31	1	0		34	4	24	4	0		32	96
% Trucks	1.4	4.9	2.6	0		3	1.8	3.1	1.1	0		2.3	2.7	5	0.5	0		3.8	0.9	2	4.3	0		1.8	2.6
Bicycles	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0	0	0	0		0	0	0.5	0	0		0.3	0	0	0	0		0	0	0	0	0		0	0
Peds					8	-					7	-					10	-					16	-	41
% Peds					19.5	-					17.1	-					24.4	-					39	-	

Transportation Services - Traffic Services

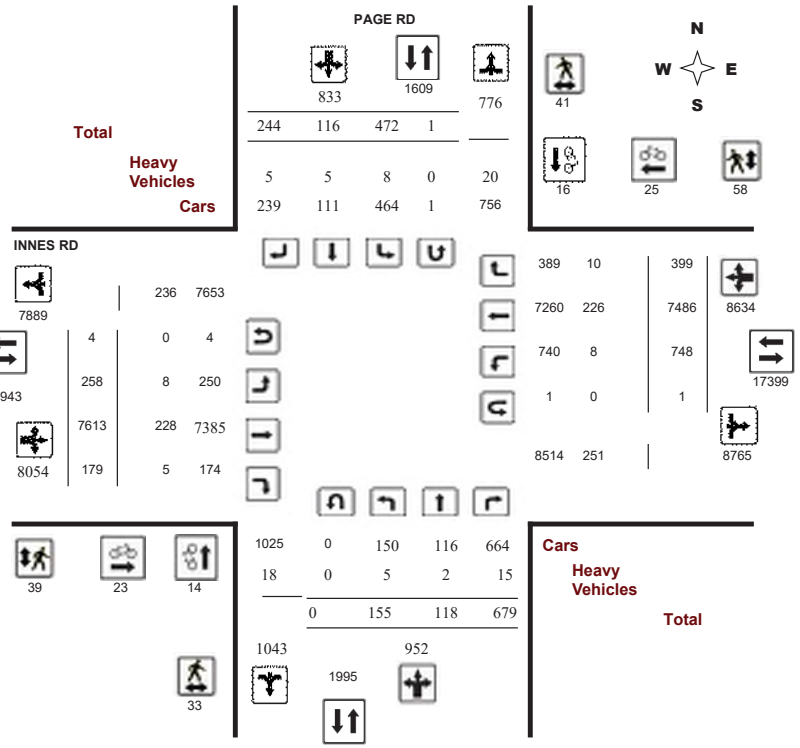
Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024
Start Time: 07:00

WO No: 41758
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

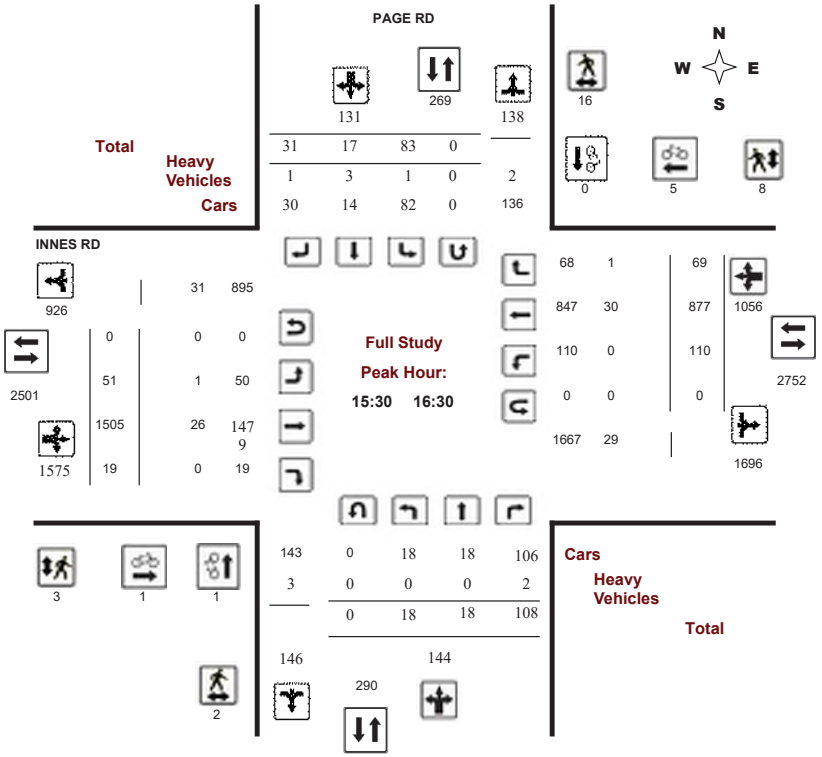
Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

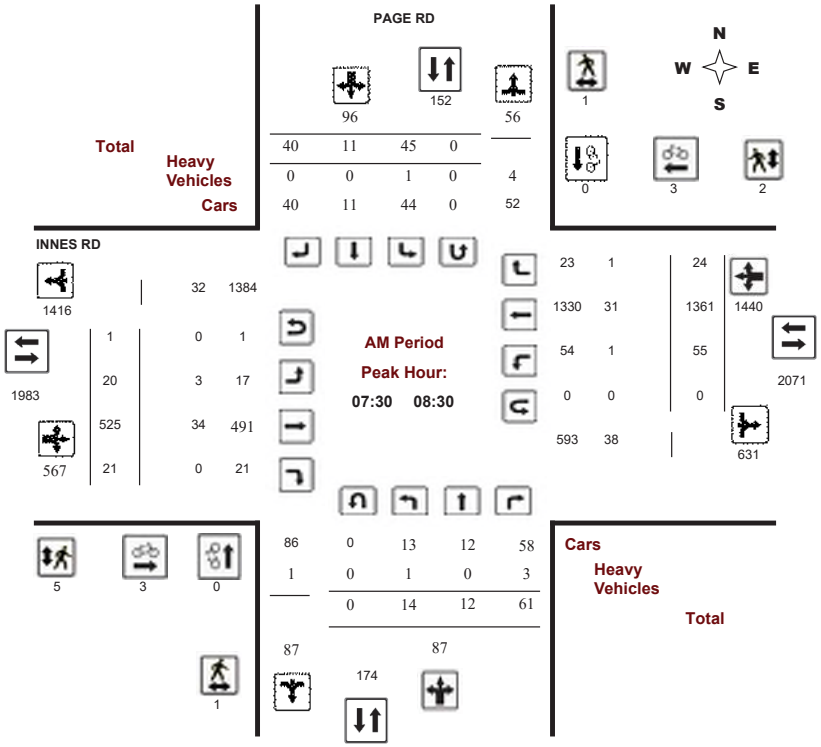
Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

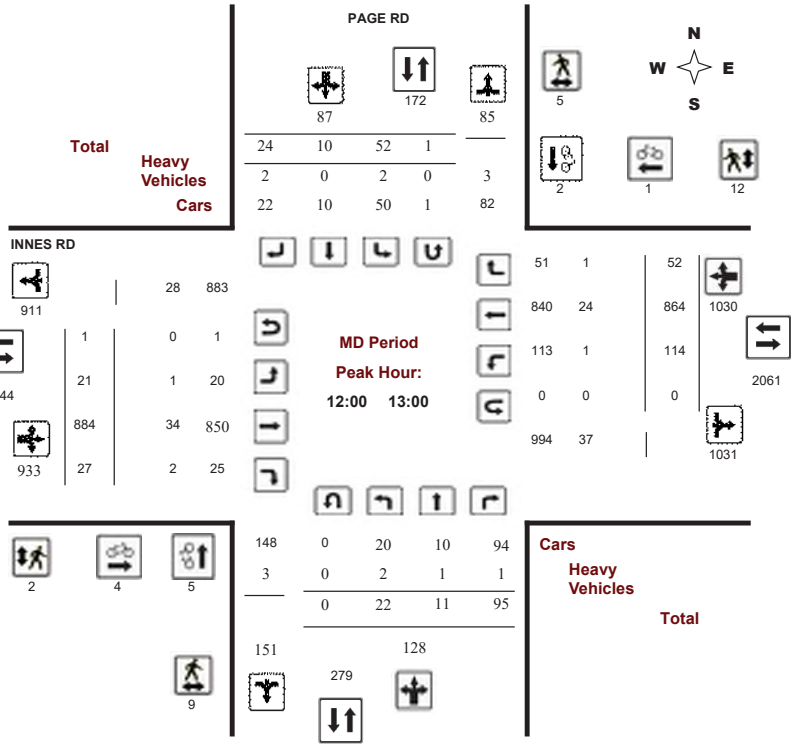
Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

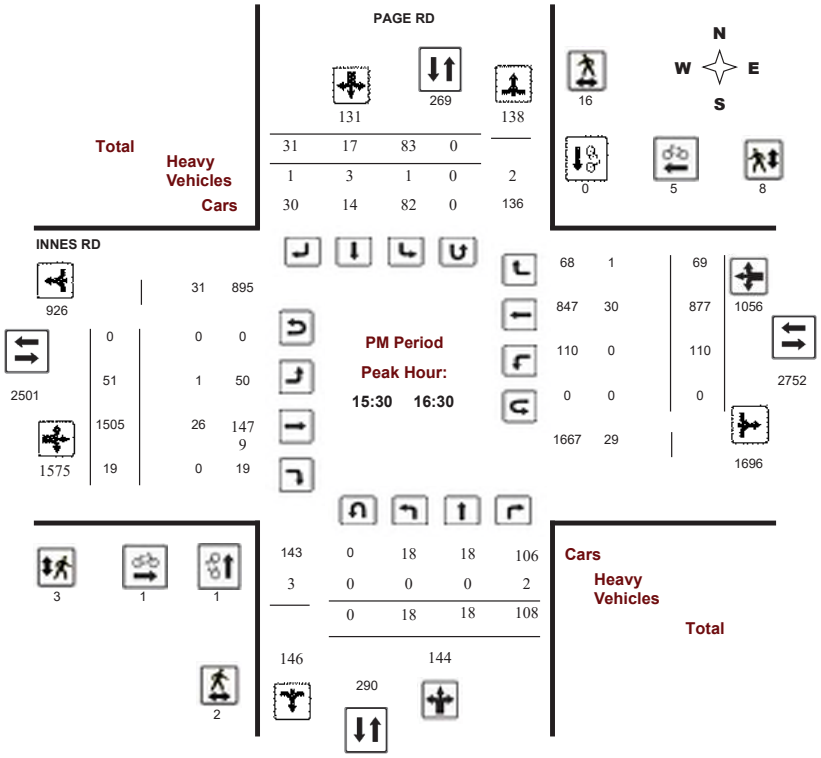
Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, May 09, 2024

Total Observed U-Turns

Northbound: 0 Southbound: 1

Eastbound: 4 Westbound: 1

AADT Factor .90

	PAGE RD								INNES RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	16	10	57	**83**	43	4	37	**84**	**167**	18	435	12	**465**	36	1336	25	**1397**	**1862**	**2029**
08:00 09:00	12	13	69	**94**	54	14	39	**107**	**201**	26	613	29	**668**	73	1161	32	**1266**	**1934**	**2135**
09:00 10:00	29	18	67	**114**	48	14	30	**92**	**206**	17	665	34	**716**	84	795	26	**905**	**1621**	**1827**
11:30 12:30	22	10	89	**121**	56	15	34	**105**	**226**	24	863	23	**910**	102	823	54	**979**	**1889**	**2115**
12:30 13:30	20	10	89	**119**	44	8	19	**71**	**190**	21	863	27	**911**	121	851	54	**1026**	**1937**	**2127**
15:00 16:00	24	16	106	**146**	55	18	23	**96**	**242**	46	1398	23	**1467**	97	862	68	**1027**	**2494**	**2736**
16:00 17:00	21	21	98	**140**	88	23	40	**151**	**291**	54	1439	12	**1505**	108	889	65	**1062**	**2567**	**2858**
17:00 18:00	11	20	104	**135**	84	20	22	**126**	**261**	52	1337	19	**1408**	127	769	75	**971**	**2379**	**2640**
Sub Total	155	118	679	**952**	472	116	244	**832**	**1784**	258	7613	179	**8050**	748	7486	399	**8633**	**16683**	**18467**
U Turns				**0**				**1**	**1**				**4**				**1**	**5**	**6**
Total	155	118	679	**952**	472	116	244	**833**	**1785**	258	7613	179	**8054**	748	7486	399	**8634**	**16688**	**18473**
EQ 12Hr	215	164	944	**1323**	656	161	339	**1158**	**2481**	359	10582	249	**11195**	1040	10406	555	**12001**	**23196**	**25677**

Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr	194	148	850	**1191**	590	190	400	**1042**	**2233**	323	9524	224	**10076**	936	9365	500	**10801**	**20876**	**23109**

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

AVG 24Hr	254	194	1114	**1560**	773	249	524	**1365**	**2925**	423	12476	293	**13200**	1226	12268	655	**14149**	**27348**	**30273**

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study 15 Minute Increments

		PAGE RD								INNES RD									
		Northbound				Southbound				Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	6	2	11	19	5	0	13	18	37	3	82	2	87	9	260	6	275	362	399
07:15	07:30	2	2	14	18	13	1	7	21	39	3	87	3	93	5	365	6	376	469	508
07:30	07:45	2	2	17	21	13	1	8	22	43	4	116	4	124	10	356	4	370	494	537
07:45	08:00	6	4	15	25	12	2	9	23	48	8	150	3	161	12	355	9	376	537	585
08:00	08:15	3	2	11	16	16	3	10	29	45	5	127	5	137	16	329	6	351	488	533
08:15	08:30	3	4	18	25	4	5	13	22	47	3	132	9	145	17	321	5	343	488	535
08:30	08:45	2	3	23	28	13	2	10	25	53	7	149	7	163	14	261	8	284	447	500
08:45	09:00	4	4	17	25	21	4	6	31	56	11	205	8	224	26	250	13	289	513	569
09:00	09:15	3	5	23	31	11	4	9	24	55	8	155	7	170	27	215	6	248	418	473
09:15	09:30	3	8	14	25	8	2	7	17	42	3	164	8	175	22	215	10	247	422	464
09:30	09:45	7	4	17	28	14	3	6	23	51	1	166	11	179	17	172	5	194	373	424
09:45	10:00	16	1	13	30	15	5	8	28	58	5	180	8	193	18	193	5	216	409	467
11:30	11:45	3	3	27	33	15	5	7	27	60	8	200	5	213	25	217	12	254	467	527
11:45	12:00	7	1	19	27	14	5	12	31	58	5	216	5	226	27	196	12	235	461	519
12:00	12:15	5	2	20	27	13	3	9	25	52	5	219	6	231	31	217	12	260	491	543
12:15	12:30	7	4	23	34	14	2	6	22	56	6	228	7	241	19	193	18	230	471	527
12:30	12:45	3	3	22	28	14	1	4	20	48	4	213	6	223	33	249	10	292	515	563
12:45	13:00	7	2	30	39	11	4	5	20	59	6	224	8	238	31	205	12	248	486	545
13:00	13:15	4	2	22	28	8	2	5	15	43	9	219	5	233	32	180	18	230	463	506
13:15	13:30	6	3	15	24	11	1	5	17	41	2	207	8	218	25	217	14	256	474	515
15:00	15:15	9	4	23	36	10	7	7	24	60	9	295	5	309	20	234	16	270	579	639
15:15	15:30	6	2	23	31	11	4	4	19	50	11	338	6	355	18	228	16	262	617	667
15:30	15:45	4	3	26	33	16	4	3	23	56	16	364	6	386	31	199	15	245	631	687
15:45	16:00	5	7	34	46	18	3	9	30	76	10	401	6	417	28	201	21	250	667	743
16:00	16:15	6	4	35	45	30	5	13	48	93	16	383	2	401	25	258	23	306	707	800
16:15	16:30	3	4	13	20	19	5	6	30	50	9	357	5	371	26	219	10	255	626	676
16:30	16:45	4	8	25	37	15	7	11	33	70	13	345	2	360	36	198	10	244	604	674
16:45	17:00	8	5	25	38	24	6	10	40	78	16	354	3	373	21	214	22	257	630	708
17:00	17:15	1	8	28	37	19	9	5	33	70	8	371	4	383	26	230	20	276	659	729
17:15	17:30	3	2	24	29	25	6	5	36	65	18	337	6	361	35	208	18	261	622	687
17:30	17:45	6	4	25	35	17	3	8	28	63	11	342	3	356	35	178	20	233	589	652
17:45	18:00	1	6	27	34	23	2	4	29	63	15	287	6	308	31	153	17	201	509	572
Total:		155	118	679	952	472	116	244	833	1785	258	7613	179	8054	748	7486	399	8634	16688	18,473

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study Cyclist Volume

Time Period		PAGE RD			INNES RD			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	2	0	2	0	0	0	2
07:15	07:30	0	1	1	0	1	1	2
07:30	07:45	0	0	0	1	2	3	3
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	2	1	3	3
08:15	08:30	0	0	0	0	0	0	0
08:30	08:45	0	1	1	0	0	0	1
08:45	09:00	0	0	0	2	2	4	4
09:00	09:15	0	0	0	1	2	3	3
09:15	09:30	1	0	1	1	1	2	3
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	1	2	3	0	1	1	4
11:30	11:45	1	1	2	1	1	2	4
11:45	12:00	0	0	0	1	3	4	4
12:00	12:15	1	1	2	0	0	0	2
12:15	12:30	2	0	2	1	0	1	3
12:30	12:45	1	1	2	0	1	1	3
12:45	13:00	1	0	1	3	0	3	4
13:00	13:15	0	1	1	1	0	1	2
13:15	13:30	1	0	1	0	0	0	1
15:00	15:15	1	1	2	2	1	3	5
15:15	15:30	0	2	2	0	1	1	3
15:30	15:45	0	0	0	0	2	2	2
15:45	16:00	0	0	0	0	1	1	1
16:00	16:15	0	0	0	0	1	1	1
16:15	16:30	1	0	1	1	1	2	3
16:30	16:45	0	1	1	2	0	2	3
16:45	17:00	0	1	1	1	0	1	2
17:00	17:15	0	1	1	1	1	2	3
17:15	17:30	1	0	1	1	0	1	2
17:30	17:45	0	2	2	1	2	3	5
17:45	18:00	0	0	0	0	0	0	0
Total		14	16	**30**	23	25	48	78

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study Pedestrian Volume

Time Period		PAGE RD			INNES RD			
		NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00	07:15	1	1	**2**	0	0	**0**	**2**
07:15	07:30	0	1	**1**	0	0	**0**	**1**
07:30	07:45	0	0	**0**	1	0	**1**	**1**
07:45	08:00	0	0	**0**	2	1	**3**	**3**
08:00	08:15	0	1	**1**	2	0	**2**	**3**
08:15	08:30	1	0	**1**	0	1	**1**	**2**
08:30	08:45	1	0	**1**	0	1	**1**	**2**
08:45	09:00	1	2	**3**	3	0	**3**	**6**
09:00	09:15	1	1	**2**	4	1	**5**	**7**
09:15	09:30	0	0	**0**	1	2	**3**	**3**
09:30	09:45	2	0	**2**	1	1	**2**	**4**
09:45	10:00	1	0	**1**	0	1	**1**	**2**
11:30	11:45	1	0	**1**	1	0	**1**	**2**
11:45	12:00	0	1	**1**	1	0	**1**	**2**
12:00	12:15	2	3	**5**	0	2	**2**	**7**
12:15	12:30	2	1	**3**	1	2	**3**	**6**
12:30	12:45	3	1	**4**	1	5	**6**	**10**
12:45	13:00	2	0	**2**	0	3	**3**	**5**
13:00	13:15	2	1	**3**	1	0	**1**	**4**
13:15	13:30	0	0	**0**	3	1	**4**	**4**
15:00	15:15	0	2	**2**	3	4	**7**	**9**
15:15	15:30	2	4	**6**	2	4	**6**	**12**
15:30	15:45	1	1	**2**	0	0	**0**	**2**
15:45	16:00	0	3	**3**	0	3	**3**	**6**
16:00	16:15	0	11	**11**	2	3	**5**	**16**
16:15	16:30	1	1	**2**	1	2	**3**	**5**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	4	0	**4**	3	6	**9**	**13**
17:00	17:15	1	0	**1**	1	2	**3**	**4**
17:15	17:30	2	3	**5**	2	12	**14**	**19**
17:30	17:45	1	0	**1**	2	0	**2**	**3**
17:45	18:00	1	3	**4**	1	1	**2**	**6**
Total		33	41	**74**	39	58	**97**	**171**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study Heavy Vehicles

Time Period		PAGE RD Northbound				PAGE RD Southbound					INNES RD Eastbound				INNES RD Westbound					
		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	1	**1**	0	0	0	**0**	**1**	0	13	0	**13**	0	6	1	**7**	**20**	**21**
07:15	07:30	0	0	2	**2**	0	0	0	**0**	**2**	0	6	1	**7**	0	12	0	**12**	**19**	**21**
07:30	07:45	0	0	2	**2**	0	0	0	**0**	**2**	0	9	0	**9**	0	8	0	**8**	**17**	**19**
07:45	08:00	1	0	0	**1**	0	0	0	**0**	**1**	2	8	0	**10**	1	8	0	**9**	**19**	**20**
08:00	08:15	0	0	0	**0**	0	0	0	**0**	**0**	1	7	0	**8**	0	6	1	**7**	**15**	**15**
08:15	08:30	0	0	1	**1**	1	0	0	**1**	**2**	0	10	0	**10**	0	9	0	**9**	**19**	**21**
08:30	08:45	0	0	1	**1**	2	0	0	**2**	**3**	1	11	0	**12**	1	5	1	**7**	**19**	**22**
08:45	09:00	0	1	0	**1**	0	1	1	**2**	**3**	0	10	0	**10**	2	13	1	**16**	**26**	**29**
09:00	09:15	0	0	1	**1**	0	0	0	**0**	**1**	0	9	0	**9**	1	8	0	**9**	**18**	**19**
09:15	09:30	1	0	0	**1**	1	0	0	**1**	**2**	1	10	1	**12**	1	11	2	**14**	**26**	**28**
09:30	09:45	0	0	1	**1**	0	0	0	**0**	**1**	0	9	0	**9**	0	6	0	**6**	**15**	**16**
09:45	10:00	1	0	0	**1**	0	0	0	**0**	**1**	0	8	0	**8**	0	4	0	**4**	**12**	**13**
11:30	11:45	0	0	2	**2**	0	1	0	**1**	**3**	1	9	0	**10**	1	6	0	**7**	**17**	**20**
11:45	12:00	0	0	0	**0**	1	0	0	**1**	**1**	0	5	1	**6**	0	9	0	**9**	**15**	**16**
12:00	12:15	1	0	0	**1**	1	0	0	**1**	**2**	0	7	0	**7**	0	9	0	**9**	**16**	**18**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	10	0	**10**	1	3	0	**4**	**14**	**14**
12:30	12:45	0	1	0	**1**	0	0	0	**0**	**1**	0	8	1	**9**	0	8	1	**9**	**18**	**19**
12:45	13:00	1	0	1	**2**	1	0	2	**3**	**5**	1	9	1	**11**	0	4	0	**4**	**15**	**20**
13:00	13:15	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	4	0	**4**	**8**	**8**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	9	0	**9**	0	7	0	**7**	**16**	**16**
15:00	15:15	0	0	0	**0**	0	0	1	**1**	**1**	0	7	0	**7**	0	9	1	**10**	**17**	**18**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**7**	0	3	1	**4**	**11**	**11**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	8	0	**8**	**10**	**10**
15:45	16:00	0	0	1	**1**	0	0	0	**0**	**1**	1	10	0	**11**	0	4	0	**4**	**15**	**16**
16:00	16:15	0	0	1	**1**	1	2	1	**4**	**5**	0	10	0	**10**	0	10	1	**11**	**21**	**26**
16:15	16:30	0	0	0	**0**	0	1	0	**1**	**1**	0	4	0	**4**	0	8	0	**8**	**12**	**13**
16:30	16:45	0	0	1	**1**	0	0	0	**0**	**1**	0	0	0	**0**	0	6	0	**6**	**6**	**7**
16:45	17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**6**	0	10	0	**10**	**16**	**16**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	9	0	**9**	**10**	**10**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	6	0	**6**	**8**	**8**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	3	0	**3**	**7**	**7**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	4	0	**4**	**8**	**8**
Total:	None	5	2	15	**22**	8	5	5	**18**	**40**	8	228	5	**241**	8	226	10	**244**	**485**	**525**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ PAGE RD

Survey Date: Thursday, May 09, 2024 **WO No:** 41758

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

Full Study 15 Minute U-Turn Total

Time Period		PAGE RD Northbound U-Turn Total	PAGE RD Southbound U-Turn Total	INNES RD Eastbound U-Turn Total	INNES RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	1	0	1
08:30	08:45	0	0	0	1	1
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	1	0	1
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	1	0	1
12:15	12:30	0	0	0	0	0
12:30	12:45	0	1	0	0	1
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	1	0	1
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	1	4	1	6

Ontario Traffic Inc.
Traffic Monitoring - Services & Products

Project #24-346 - CGH Transportation

Intersection Count Report

Intersection:	Innes Rd & Lamarche Ave
Municipality:	Ottawa
Count Date:	Wednesday, Aug 21, 2024
Site Code:	2434600002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring - Services & Products

Traffic Count Summary

Intersection:	Innes Rd & Lamarche Ave
Site Code:	2434600002
Municipality:	Ottawa
Count Date:	Aug 21, 2024

Lamarche Ave - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	0	0	0	0	0	0	117	0	24	1	142	0	142
08:00 - 09:00	0	0	0	0	0	0	96	0	59	0	155	1	155
09:00 - 10:00	0	0	0	0	0	0	80	0	42	0	122	5	122
BREAK													
11:30 - 12:00	0	0	0	0	0	0	29	0	32	0	61	4	61
12:00 - 13:00	0	0	0	0	0	0	65	0	46	0	111	8	111
13:00 - 13:30	0	0	0	0	0	0	30	0	20	0	50	4	50
BREAK													
15:00 - 16:00	0	0	0	0	0	0	74	0	57	0	131	10	131
16:00 - 17:00	0	0	0	0	0	0	76	0	60	0	136	3	136
17:00 - 18:00	0	0	0	0	0	0	53	0	77	0	130	6	130
GRAND TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**620**	**0**	**417**	**1**	**1038**	**41**	**1038**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

Innes Rd - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	28	876	0	1	905	0	0	357	35	0	392	0	1297
08:00 - 09:00	33	937	0	0	970	0	0	512	45	0	557	1	1527
09:00 - 10:00	38	706	0	0	744	0	0	610	55	0	665	0	1409
BREAK													
11:30 - 12:00	22	403	0	0	425	0	0	464	29	0	493	1	918
12:00 - 13:00	33	902	0	0	935	0	0	905	55	0	960	0	1895
13:00 - 13:30	36	467	0	1	504	0	0	478	29	0	507	0	1011
BREAK													
15:00 - 16:00	39	850	0	0	889	0	0	1201	90	0	1291	0	2180
16:00 - 17:00	72	898	0	0	970	0	0	1400	108	0	1508	0	2478
17:00 - 18:00	57	804	0	0	861	0	0	1300	139	0	1439	0	2300
GRAND TOTAL	**358**	**6843**	**0**	**2**	**7203**	**0**	**0**	**7227**	**585**	**0**	**7812**	**2**	**15015**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Lamarche Ave

	Cars					Trucks					Bicycles					
Start Time	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	Total Peds
07:00	17	0	8	0	25	2	0	0	0	2	0	0	0	0	0	0
07:15	26	0	6	0	32	0	0	0	0	0	0	0	0	0	0	0
07:30	31	0	4	1	36	0	0	0	0	0	0	0	0	0	0	0
07:45	41	0	6	0	47	0	0	0	0	0	0	0	0	0	0	0
08:00	27	0	14	0	41	1	0	1	0	2	0	0	0	0	0	0
08:15	21	0	19	0	40	1	0	1	0	2	0	0	0	0	0	0
08:30	23	0	10	0	33	0	0	0	0	0	0	0	0	0	0	1
08:45	22	0	14	0	36	1	0	0	0	1	0	0	0	0	0	0
09:00	28	0	8	0	36	0	0	1	0	1	0	0	0	0	0	1
09:15	19	0	12	0	31	1	0	1	0	2	0	0	0	0	0	0
09:30	16	0	10	0	26	1	0	0	0	1	0	0	0	0	0	3
09:45	15	0	10	0	25	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	286	0	121	1	408	7	0	4	0	11	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Lamarche Ave

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
11:30	10	0	15	0	25	0	0	0	0	0	0	0	0	0	0	1
11:45	18	0	16	0	34	1	0	1	0	2	0	0	0	0	0	3
12:00	17	0	13	0	30	0	0	0	0	0	0	0	0	0	0	2
12:15	16	0	13	0	29	0	0	0	0	0	0	0	0	0	0	3
12:30	17	0	10	0	27	0	0	0	0	0	0	0	0	0	0	1
12:45	15	0	10	0	25	0	0	0	0	0	0	0	0	0	0	2
13:00	12	0	11	0	23	0	0	0	0	0	0	0	0	0	0	2
13:15	18	0	8	0	26	0	0	1	0	1	0	0	0	0	0	2
SUBTOTAL	123	0	96	0	219	1	0	2	0	3	0	0	0	0	0	16

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Lamarche Ave

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
15:00	15	0	13	0	28	0	0	0	0	0	0	0	0	0	0	3
15:15	20	0	11	0	31	0	0	0	0	0	0	0	0	0	0	2
15:30	18	0	20	0	38	0	0	0	0	0	0	0	0	0	0	1
15:45	21	0	13	0	34	0	0	0	0	0	0	0	0	0	0	4
16:00	21	0	16	0	37	0	0	0	0	0	0	0	0	0	0	1
16:15	18	0	18	0	36	1	0	0	0	1	0	0	0	0	0	1
16:30	18	0	11	0	29	0	0	1	0	1	0	0	0	0	0	0
16:45	18	0	14	0	32	0	0	0	0	0	0	0	0	0	0	1
17:00	10	0	14	0	24	0	0	0	0	0	0	0	0	0	0	0
17:15	13	0	15	0	28	0	0	0	0	0	0	0	0	0	0	1
17:30	19	0	22	0	41	0	0	0	0	0	0	0	0	0	0	1
17:45	11	0	26	0	37	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	202	0	193	0	395	1	0	1	0	2	0	0	0	0	0	19
GRAND TOTAL	611	0	410	1	1022	9	0	7	0	16	0	0	0	0	0	41

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
07:00	8	172	0	0	180	0	1	0	0	1	0	0	0	0	0	0
07:15	4	222	0	0	226	0	3	0	0	3	0	0	0	0	0	0
07:30	10	229	0	1	240	0	9	0	0	9	0	0	0	0	0	0
07:45	5	228	0	0	233	1	11	0	0	12	0	1	0	0	1	0
08:00	9	234	0	0	243	0	7	0	0	7	0	1	0	0	1	0
08:15	6	250	0	0	256	0	15	0	0	15	0	0	0	0	0	0
08:30	9	232	0	0	241	0	12	0	0	12	0	0	0	0	0	0
08:45	9	173	0	0	182	0	13	0	0	13	0	0	0	0	0	0
09:00	13	168	0	0	181	1	14	0	0	15	0	0	0	0	0	0
09:15	10	170	0	0	180	0	8	0	0	8	0	0	0	0	0	0
09:30	7	162	0	0	169	0	11	0	0	11	0	0	0	0	0	0
09:45	7	162	0	0	169	0	11	0	0	11	0	0	0	0	0	0
SUBTOTAL	97	2402	0	1	2500	2	115	0	0	117	0	2	0	0	2	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
11:30	10	186	0	0	196	0	9	0	0	9	0	0	0	0	0	0
11:45	12	197	0	0	209	0	11	0	0	11	0	0	0	0	0	0
12:00	8	215	0	0	223	0	10	0	0	10	0	1	0	0	1	0
12:15	7	233	0	0	240	0	13	0	0	13	0	0	0	0	0	0
12:30	7	217	0	0	224	0	9	0	0	9	0	0	0	0	0	0
12:45	11	196	0	0	207	0	8	0	0	8	0	0	0	0	0	0
13:00	22	225	0	1	248	0	12	0	0	12	0	0	0	0	0	0
13:15	14	225	0	0	239	0	5	0	0	5	0	0	0	0	0	0
SUBTOTAL	91	1694	0	1	1786	0	77	0	0	77	0	1	0	0	1	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
15:00	7	181	0	0	188	0	5	0	0	5	0	0	0	0	0	0
15:15	10	220	0	0	230	0	9	0	0	9	0	0	0	0	0	0
15:30	11	209	0	0	220	0	14	0	0	14	0	0	0	0	0	0
15:45	11	207	0	0	218	0	5	0	0	5	0	0	0	0	0	0
16:00	12	209	0	0	221	0	8	0	0	8	0	0	0	0	0	0
16:15	17	241	0	0	258	0	4	0	0	4	0	0	0	0	0	0
16:30	22	215	0	0	237	0	5	0	0	5	0	0	0	0	0	0
16:45	21	211	0	0	232	0	5	0	0	5	0	0	0	0	0	0
17:00	12	203	0	0	215	0	5	0	0	5	0	0	0	0	0	0
17:15	17	207	0	0	224	0	1	0	0	1	0	0	0	0	0	0
17:30	14	195	0	0	209	0	4	0	0	4	0	0	0	0	0	0
17:45	14	187	0	0	201	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	168	2485	0	0	2653	0	67	0	0	67	0	0	0	0	0	0
GRAND TOTAL	356	6581	0	2	6939	2	259	0	0	261	0	3	0	0	3	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
07:00	0	64	7	0	71	0	10	0	0	10	0	0	0	0	0	0
07:15	0	68	7	0	75	0	13	0	0	13	0	0	0	0	0	0
07:30	0	91	7	0	98	0	10	0	0	10	0	0	0	0	0	0
07:45	0	93	13	0	106	0	8	1	0	9	0	0	0	0	0	0
08:00	0	98	9	0	107	0	10	1	0	11	0	0	0	0	0	0
08:15	0	108	13	0	121	0	4	0	0	4	0	0	0	0	0	0
08:30	0	110	13	0	123	0	7	1	0	8	0	0	0	0	0	0
08:45	0	166	8	0	174	0	9	0	0	9	0	0	0	0	0	1
09:00	0	144	18	0	162	0	13	2	0	15	0	0	0	0	0	0
09:15	0	129	13	0	142	0	9	1	0	10	0	0	0	0	0	0
09:30	0	125	14	0	139	0	11	0	0	11	0	0	0	0	0	0
09:45	0	175	7	0	182	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	0	1371	129	0	1500	0	108	6	0	114	0	0	0	0	0	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	0	198	18	0	216	0	10	1	0	11	0	1	0	0	1	1
11:45	0	246	9	0	255	0	8	1	0	9	0	1	0	0	1	0
12:00	0	236	17	0	253	0	9	0	0	9	0	1	0	0	1	0
12:15	0	207	14	0	221	0	7	0	0	7	0	0	0	0	0	0
12:30	0	215	17	0	232	0	11	1	0	12	0	2	0	0	2	0
12:45	0	207	6	0	213	0	10	0	0	10	0	0	0	0	0	0
13:00	0	227	20	0	247	0	14	0	0	14	0	0	0	0	0	0
13:15	0	224	9	0	233	0	13	0	0	13	0	0	0	0	0	0
SUBTOTAL	0	1760	110	0	1870	0	82	3	0	85	0	5	0	0	5	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
15:00	0	268	25	0	293	0	4	0	0	4	0	0	0	0	0	0
15:15	0	276	25	0	301	0	11	0	0	11	0	0	0	0	0	0
15:30	0	306	22	0	328	0	6	1	0	7	0	0	0	0	0	0
15:45	0	329	17	0	346	0	1	0	0	1	0	0	0	0	0	0
16:00	0	336	22	0	358	0	6	0	0	6	0	1	0	0	1	0
16:15	0	345	37	0	382	0	4	0	0	4	0	0	0	0	0	0
16:30	0	362	20	0	382	0	3	0	0	3	0	2	0	0	2	0
16:45	0	338	29	0	367	0	3	0	0	3	0	0	0	0	0	0
17:00	0	338	32	0	370	0	1	0	0	1	0	0	0	0	0	0
17:15	0	309	40	0	349	0	7	0	0	7	0	1	0	0	1	0
17:30	0	344	37	0	381	0	2	0	0	2	0	1	0	0	1	0
17:45	0	293	30	0	323	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	0	3844	336	0	4180	0	52	1	0	53	0	5	0	0	5	0
GRAND TOTAL	0	6975	575	0	7550	0	242	10	0	252	0	10	0	0	10	2

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	10:00:00	To:	09:00:00

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Innes Rd runs E/W

East Approach

	Out	In	Total
Cars	922	539	1461
Trucks	47	32	79
Bicycles	1	0	1
	970	**571**	**1541**

Innes Rd

			Totals
0	0	0	**0**
0	30	482	**512**
0	2	43	**45**

Peds: 1

Peds: 0

Peds: 0

Peds: 1

Innes Rd

			Totals
0	0	0	**0**
937	889	47	1
33	33	0	0

West Approach

	Out	In	Total
Cars	525	982	1507
Trucks	32	50	82
Bicycles	0	1	1
	557	**1033**	**1590**

Totals	96	59	0
Cars	93	57	0
Trucks	3	2	0
Bicycles	0	0	0

Lamarche Ave

South Approach

	Out	In	Total
Cars	150	76	226
Trucks	5	2	7
Bicycles	0	0	0
	155	**78**	**233**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024
Period: 07:00 - 10:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach						South Approach Lamarche Ave						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00					0		28		15	0	0	43	9	242		0	0	251		108	10	0	0	118	412
08:15					0		22		20	0	0	42	6	265		0	0	271		112	13	0	0	125	438
08:30					0		23		10	0	1	33	9	244		0	0	253		117	14	0	0	131	417
08:45					0		23		14	0	0	37	9	186		0	0	195		175	8	0	1	183	415
Grand Total					**0**	**0**	**96**		**59**	**0**	**1**	**155**	**33**	**937**		**0**	**0**	**970**		**512**	**45**	**0**	**1**	**557**	**1682**
Approach %						-	61.9		38.1	0		-	3.4	96.6		0		-		91.9	8.1	0		-	
Totals %						0	5.7		3.5	0		9.2	2	55.7		0		57.7		30.4	2.7	0		33.1	
PHF						**0**	**0.86**		**0.74**	**0**		**0.9**	**0.92**	**0.88**		**0**		**0.89**		**0.73**	**0.8**	**0**		**0.76**	**0.96**
Cars						0	93		57	0		150	33	889		0		922		482	43	0		525	1597
% Cars						0	96.9		96.6	0		96.8	100	94.9		0		95.1		94.1	95.6	0		94.3	94.9
Trucks						0	3		2	0		5	0	47		0		47		30	2	0		32	84
% Trucks						0	3.1		3.4	0		3.2	0	5		0		4.8		5.9	4.4	0		5.7	5
Bicycles						0	0		0	0		0	0	1		0		1		0	0	0		0	1
% Bicycles						0	0		0	0		0	0	0.1		0		0.1		0	0	0		0	0.1
Peds					0	-					1	-					0	-					1	-	2
% Peds					0	-					50	-					0	-					50	-	

Peak Hour Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Innes Rd runs E/W

East Approach

	Out	In	Total
Cars	896	956	1852
Trucks	43	36	79
Bicycles	1	4	5
	940	**996**	**1936**

Innes Rd

			Totals
0	0	0	**0**
4	35	904	**943**
0	2	57	**59**

Peds: 0

Peds: 0

Peds: 0

Innes Rd

Totals			
0	0	0	0
906	862	43	1
34	34	0	0

Peds: 9

West Approach

	Out	In	Total
Cars	961	930	1891
Trucks	37	44	81
Bicycles	4	1	5
	1002	**975**	**1977**

Totals	**69**	**53**	**0**
Cars	68	52	0
Trucks	1	1	0
Bicycles	0	0	0

Lamarche Ave

South Approach

	Out	In	Total
Cars	120	91	211
Trucks	2	2	4
Bicycles	0	0	0
	122	**93**	**215**

Cars - Trucks - Bicycles

Comments

Peak Hour Summary

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024
Period: 11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach						South Approach Lamarche Ave						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45					0		19		17	0	3	36	12	208		0	0	220		255	10	0	0	265	521
12:00					0		17		13	0	2	30	8	226		0	0	234		246	17	0	0	263	527
12:15					0		16		13	0	3	29	7	246		0	0	253		214	14	0	0	228	510
12:30					0		17		10	0	1	27	7	226		0	0	233		228	18	0	0	246	506
Grand Total					**0**	**0**	**69**		**53**	**0**	**9**	**122**	**34**	**906**		**0**	**0**	**940**		**943**	**59**	**0**	**0**	**1002**	**2064**
Approach %						-	56.6		43.4	0		-	3.6	96.4		0		-		94.1	5.9	0		-	
Totals %						0	3.3		2.6	0		5.9	1.6	43.9		0		45.5		45.7	2.9	0		48.5	
PHF						**0**	**0.91**		**0.78**	**0**		**0.85**	**0.71**	**0.92**		**0**		**0.93**		**0.92**	**0.82**	**0**		**0.95**	**0.98**
Cars						0	68		52	0		120	34	862		0		896		904	57	0		961	1977
% Cars						0	98.6		98.1	0		98.4	100	95.1		0		95.3		95.9	96.6	0		95.9	95.8
Trucks						0	1		1	0		2	0	43		0		43		35	2	0		37	82
% Trucks						0	1.4		1.9	0		1.6	0	4.7		0		4.6		3.7	3.4	0		3.7	4
Bicycles						0	0		0	0		0	0	1		0		1		4	0	0		4	5
% Bicycles						0	0		0	0		0	0	0.1		0		0.1		0.4	0	0		0.4	0.2
Peds					0	-					9	-					0	-					0	-	9
% Peds					0	-					100	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Innes Rd runs E/W

East Approach

	Out	In	Total
Cars	948	1440	2388
Trucks	22	17	39
Bicycles	0	3	3
	970	**1460**	**2430**

Innes Rd

Cars	Trucks	Bicycles	Totals	
0	0	0	**0**	
3	16	1381	**1400**	
0	0	108	**108**	

Peds: 0 | Peds: 0 | Peds: 3

Innes Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	898	876	22	0
	72	72	0	0

West Approach

	Out	In	Total
Cars	1489	951	2440
Trucks	16	23	39
Bicycles	3	0	3
	1508	**974**	**2482**

Lamarche Ave

Totals	76	60	0
Cars	75	59	0
Trucks	1	1	0
Bicycles	0	0	0

South Approach

	Out	In	Total
Cars	134	180	314
Trucks	2	0	2
Bicycles	0	0	0
	136	**180**	**316**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Lamarche Ave
Site Code: 2434600002
Count Date: Aug 21, 2024
Period: 15:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach						South Approach Lamarche Ave						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00					0		21		16	0	1	37	12	217		0	0	229		343	22	0	0	365	631
16:15					0		19		18	0	1	37	17	245		0	0	262		349	37	0	0	386	685
16:30					0		18		12	0	0	30	22	220		0	0	242		367	20	0	0	387	659
16:45					0		18		14	0	1	32	21	216		0	0	237		341	29	0	0	370	639
Grand Total					**0**	**0**	**76**		**60**	**0**	**3**	**136**	**72**	**898**		**0**	**0**	**970**		**1400**	**108**	**0**	**0**	**1508**	**2614**
Approach %						-	55.9		44.1	0		-	7.4	92.6		0		-		92.8	7.2	0		-	
Totals %						0	2.9		2.3	0		5.2	2.8	34.4		0		37.1		53.6	4.1	0		57.7	
PHF						**0**	**0.9**		**0.83**	**0**		**0.92**	**0.82**	**0.92**		**0**		**0.93**		**0.95**	**0.73**	**0**		**0.97**	**0.95**
Cars						0	75		59	0		134	72	876		0		948		1381	108	0		1489	2571
% Cars						0	98.7		98.3	0		98.5	100	97.6		0		97.7		98.6	100	0		98.7	98.4
Trucks						0	1		1	0		2	0	22		0		22		16	0	0		16	40
% Trucks						0	1.3		1.7	0		1.5	0	2.4		0		2.3		1.1	0	0		1.1	1.5
Bicycles						0	0		0	0		0	0	0		0		0		3	0	0		3	3
% Bicycles						0	0		0	0		0	0	0		0		0		0.2	0	0		0.2	0.1
Peds					0	-					3	-					0	-					0	-	3
% Peds					0	-					100	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring - Services & Products

Project #24-346 - CGH Transportation

Intersection Count Report

Intersection:	Innes Rd & Boyer Rd - Builders Warehouse
Municipality:	Ottawa
Count Date:	Wednesday, Aug 21, 2024
Site Code:	2434600001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring - Services & Products

Traffic Count Summary

Intersection:	Innes Rd & Boyer Rd - Builders Warehouse
Site Code:	2434600001
Municipality:	Ottawa
Count Date:	Aug 21, 2024

Boyer Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	0	0	1	0	1	3	10	0	10	0	20	6	21
08:00 - 09:00	0	0	1	0	1	6	10	0	11	0	21	2	22
09:00 - 10:00	0	1	3	0	4	1	9	0	18	0	27	2	31
BREAK													
11:30 - 12:00	1	1	2	0	4	2	18	0	26	0	44	4	48
12:00 - 13:00	1	1	10	0	12	5	37	1	54	0	92	10	104
13:00 - 13:30	3	0	2	0	5	3	17	0	33	0	50	4	55
BREAK													
15:00 - 16:00	4	0	5	0	9	2	22	0	41	0	63	11	72
16:00 - 17:00	4	0	7	0	11	3	16	0	23	0	39	4	50
17:00 - 18:00	15	0	9	0	24	0	14	0	17	0	31	6	55
GRAND TOTAL	**28**	**3**	**40**	**0**	**71**	**25**	**153**	**1**	**233**	**0**	**387**	**49**	**458**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

Innes Rd - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	16	893	1	0	910	1	1	360	18	0	379	1	1289
08:00 - 09:00	7	953	2	5	967	2	0	558	16	0	574	1	1541
09:00 - 10:00	14	735	4	4	757	3	3	628	20	0	651	1	1408
BREAK													
11:30 - 12:00	10	403	4	4	421	1	2	463	33	0	498	1	919
12:00 - 13:00	52	881	6	1	940	0	2	902	41	2	947	2	1887
13:00 - 13:30	33	489	1	2	525	0	3	469	22	0	494	11	1019
BREAK													
15:00 - 16:00	24	861	4	4	893	2	4	1233	30	0	1267	4	2160
16:00 - 17:00	9	946	10	2	967	0	8	1424	23	3	1458	3	2425
17:00 - 18:00	16	841	12	4	873	1	11	1347	18	1	1377	8	2250
GRAND TOTAL	**181**	**7002**	**44**	**26**	**7253**	**10**	**34**	**7384**	**221**	**6**	**7645**	**32**	**14898**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

North Approach - Boyer Rd

	Cars					Trucks					Bicycles					
Start Time	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	Total Peds
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
09:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
09:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

North Approach - Boyer Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
11:45	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	2
12:00	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	1
12:30	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	2
12:45	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	2
13:00	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1
13:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	5	2	14	0	21	0	0	0	0	0	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

North Approach - Boyer Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
15:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1
15:15	1	0	2	0	3	0	0	0	0	0	1	0	0	0	1	0
15:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:45	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	3
16:45	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	0
17:00	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0
17:15	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
17:45	3	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	22	0	20	0	42	0	0	1	0	1	1	0	0	0	1	5
GRAND TOTAL	**27**	**3**	**39**	**0**	**69**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**25**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Builders Warehouse

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	1
07:15	2	0	1	0	3	0	0	1	0	1	0	0	0	0	0	2
07:30	2	0	4	0	6	0	0	1	0	1	0	0	0	0	0	0
07:45	2	0	1	0	3	1	0	1	0	2	0	0	0	0	0	3
08:00	4	0	3	0	7	0	0	0	0	0	0	0	0	0	0	1
08:15	1	0	2	0	3	2	0	0	0	2	0	0	0	0	0	0
08:30	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
08:45	2	0	2	0	4	0	0	1	0	1	0	0	0	0	0	1
09:00	1	0	3	0	4	0	0	1	0	1	0	0	0	0	0	1
09:15	3	0	3	0	6	0	0	2	0	2	0	0	0	0	0	0
09:30	3	0	5	0	8	0	0	1	0	1	0	0	0	0	0	1
09:45	2	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	26	0	31	0	57	3	0	8	0	11	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Builders Warehouse

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	7	0	8	0	15	1	0	2	0	3	0	0	0	0	0	1
11:45	9	0	16	0	25	1	0	0	0	1	0	0	0	0	0	3
12:00	8	0	16	0	24	1	0	0	0	1	0	0	0	0	0	1
12:15	4	0	13	0	17	0	0	0	0	0	0	0	0	0	0	5
12:30	15	0	13	0	28	1	0	0	0	1	0	0	0	0	0	1
12:45	8	1	11	0	20	0	0	1	0	1	0	0	0	0	0	3
13:00	6	0	13	0	19	0	0	1	0	1	0	0	0	0	0	3
13:15	11	0	18	0	29	0	0	1	0	1	0	0	0	0	0	1
SUBTOTAL	68	1	108	0	177	4	0	5	0	9	0	0	0	0	0	18

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

South Approach - Builders Warehouse

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
15:00	6	0	15	0	21	0	0	1	0	1	0	0	0	0	0	4
15:15	6	0	11	0	17	0	0	1	0	1	0	0	0	0	0	1
15:30	6	0	7	0	13	2	0	1	0	3	0	0	0	0	0	5
15:45	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	1
16:00	5	0	0	0	5	0	0	2	0	2	0	0	0	0	0	1
16:15	1	0	6	0	7	0	0	0	0	0	0	0	0	0	0	2
16:30	3	0	8	0	11	0	0	0	0	0	0	0	0	0	0	0
16:45	6	0	7	0	13	1	0	0	0	1	0	0	0	0	0	1
17:00	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	1
17:15	5	0	4	0	9	1	0	0	0	1	0	0	0	0	0	0
17:30	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	1
17:45	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	48	0	76	0	124	4	0	5	0	9	0	0	0	0	0	21
GRAND TOTAL	142	1	215	0	358	11	0	18	0	29	0	0	0	0	0	49

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	6	178	0	0	184	0	2	0	0	2	0	0	0	0	0	1
07:15	3	226	0	0	229	0	2	0	0	2	0	0	0	0	0	0
07:30	3	235	0	0	238	0	9	0	0	9	0	0	0	0	0	0
07:45	3	229	1	0	233	1	11	0	0	12	0	1	0	0	1	0
08:00	1	239	0	0	240	0	7	0	0	7	0	1	0	0	1	0
08:15	1	253	1	0	255	0	13	0	5	18	0	0	0	0	0	0
08:30	3	236	1	0	240	0	13	0	0	13	0	0	0	0	0	1
08:45	1	180	0	0	181	1	11	0	0	12	0	0	0	0	0	1
09:00	4	178	1	0	183	0	16	0	0	16	0	0	0	0	0	1
09:15	3	177	2	0	182	0	8	0	1	9	0	0	0	0	0	1
09:30	1	163	0	0	164	0	11	0	2	13	0	0	0	0	0	0
09:45	5	171	1	1	178	1	11	0	0	12	0	0	0	0	0	1
SUBTOTAL	34	2465	7	1	2507	3	114	0	8	125	0	2	0	0	2	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	6	189	1	2	198	0	8	0	0	8	0	0	0	0	0	1
11:45	4	196	3	0	203	0	10	0	2	12	0	0	0	0	0	0
12:00	5	213	3	0	221	0	9	0	1	10	0	1	0	0	1	0
12:15	12	232	0	0	244	0	12	0	0	12	0	0	0	0	0	0
12:30	16	208	1	0	225	0	8	0	0	8	0	0	0	0	0	0
12:45	18	191	2	0	211	1	7	0	0	8	0	0	0	0	0	0
13:00	16	242	0	1	259	4	13	0	0	17	0	0	0	0	0	0
13:15	13	227	1	1	242	0	6	0	0	6	0	1	0	0	1	0
SUBTOTAL	90	1698	11	4	1803	5	73	0	3	81	0	2	0	0	2	1

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

East Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
15:00	9	178	2	1	190	1	6	0	0	7	0	0	0	0	0	1
15:15	3	222	2	1	228	3	8	0	0	11	0	0	0	0	0	1
15:30	4	218	0	0	222	0	12	0	2	14	0	0	0	0	0	0
15:45	4	213	0	0	217	0	4	0	0	4	0	0	0	0	0	0
16:00	1	218	0	0	219	0	6	0	0	6	0	0	0	0	0	0
16:15	2	254	3	0	259	0	6	0	0	6	0	0	0	0	0	0
16:30	4	228	2	0	234	0	6	0	0	6	0	0	0	0	0	0
16:45	1	223	5	2	231	1	5	0	0	6	0	0	0	0	0	0
17:00	4	211	3	0	218	0	5	0	0	5	0	0	0	0	0	1
17:15	2	220	4	1	227	0	1	0	0	1	0	0	0	0	0	0
17:30	6	201	0	1	208	0	4	0	0	4	0	0	0	0	0	0
17:45	3	197	5	2	207	1	2	0	0	3	0	0	0	0	0	0
SUBTOTAL	43	2583	26	8	2660	6	65	0	2	73	0	0	0	0	0	3
GRAND TOTAL	167	6746	44	13	6970	14	252	0	13	279	0	4	0	0	4	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	71	3	0	74	0	10	0	0	10	0	0	0	0	0	1
07:15	1	71	3	0	75	0	13	1	0	14	0	0	0	0	0	0
07:30	0	86	6	0	92	0	8	1	0	9	0	0	0	0	0	0
07:45	0	94	3	0	97	0	7	1	0	8	0	0	0	0	0	0
08:00	0	107	5	0	112	0	10	0	0	10	0	0	0	0	0	0
08:15	0	128	2	0	130	0	6	0	0	6	0	0	0	0	0	0
08:30	0	117	5	0	122	0	7	0	0	7	0	0	0	0	0	1
08:45	0	175	4	0	179	0	8	0	0	8	0	0	0	0	0	0
09:00	0	148	2	0	150	0	12	3	0	15	0	0	0	0	0	0
09:15	0	132	5	0	137	0	8	1	0	9	0	0	0	0	0	1
09:30	3	131	3	0	137	0	11	0	0	11	0	0	0	0	0	0
09:45	0	182	6	0	188	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	4	1442	47	0	1493	0	104	7	0	111	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	1	198	14	0	213	0	10	0	0	10	0	1	0	0	1	1
11:45	1	243	19	0	263	0	9	0	0	9	0	2	0	0	2	0
12:00	0	237	12	0	249	0	9	0	0	9	0	0	0	0	0	0
12:15	0	210	9	0	219	0	8	0	0	8	0	0	0	0	0	0
12:30	1	212	12	0	225	0	9	0	1	10	0	1	0	0	1	0
12:45	1	208	7	1	217	0	8	1	0	9	0	0	0	0	0	2
13:00	0	225	11	0	236	0	14	0	0	14	0	0	0	0	0	8
13:15	2	217	11	0	230	1	13	0	0	14	0	0	0	0	0	3
SUBTOTAL	6	1750	95	1	1852	1	80	1	1	83	0	4	0	0	4	14

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Municipality: Ottawa
Count Date: Aug 21, 2024

West Approach - Innes Rd

Start Time	Cars				Total	Trucks				Total	Bicycles				Total	Total Peds
15:00	2	273	10	0	285	0	4	0	0	4	0	0	0	0	0	1
15:15	0	277	9	0	286	0	10	1	0	11	0	0	0	0	0	0
15:30	0	323	7	0	330	0	5	1	0	6	0	0	0	0	0	3
15:45	1	340	2	0	343	1	1	0	0	2	0	0	0	0	0	0
16:00	1	348	6	1	356	0	6	1	0	7	0	1	0	0	1	1
16:15	3	352	4	1	360	0	1	1	0	2	0	0	0	0	0	0
16:30	2	363	9	1	375	0	4	0	0	4	0	2	0	0	2	1
16:45	2	344	2	0	348	0	3	0	0	3	0	0	0	0	0	1
17:00	6	344	4	0	354	0	2	0	0	2	0	0	0	0	0	0
17:15	0	318	8	0	326	0	6	0	0	6	0	1	0	0	1	5
17:30	1	358	3	1	363	0	1	0	0	1	0	0	0	0	0	3
17:45	4	313	3	0	320	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	22	3953	67	4	4046	1	47	4	0	52	0	4	0	0	4	15
GRAND TOTAL	32	7145	209	5	7391	2	231	12	1	246	0	8	0	0	8	32

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 10:00:00

One Hour Peak
From: 08:00:00
To: 09:00:00

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	1	2	3
Trucks	0	0	0
Bicycles	0	0	0
	1	2	3

Boyer Rd

Bicycles	0	0	0	0
Trucks	0	0	0	0
Cars	1	0	0	0
Totals	1	0	0	0

East Approach

	Out	In	Total
Cars	916	537	1453
Trucks	50	37	87
Bicycles	1	0	1
	967	574	1541

Innes Rd

			Totals	
0	0	0	0	↩
0	0	0	0	↑
0	31	527	558	→
0	0	16	16	↓

Peds: 6
Peds: 1
Peds: 2
Peds: 2

Innes Rd

Totals			
5	0	5	0
2	2	0	0
953	908	44	1
7	6	1	0

West Approach

	Out	In	Total
Cars	543	917	1460
Trucks	31	46	77
Bicycles	0	1	1
	574	964	1538

Builders Warehouse

	↩	↑	→	↓
Totals	10	0	11	0
Cars	8	0	10	0
Trucks	2	0	1	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	18	22	40
Trucks	3	1	4
Bicycles	0	0	0
	21	23	44

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024
Period: 07:00 - 10:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Boyer Rd						South Approach Builders Warehouse						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	0	0	0	0	0	4	0	3	0	1	7	1	247	0	0	0	248	0	117	5	0	0	122	377
08:15	0	0	1	0	2	1	3	0	2	0	0	5	1	266	1	5	0	273	0	134	2	0	0	136	415
08:30	0	0	0	0	0	0	1	0	3	0	0	4	3	249	1	0	1	253	0	124	5	0	1	129	386
08:45	0	0	0	0	4	0	2	0	3	0	1	5	2	191	0	0	1	193	0	183	4	0	0	187	385
Grand Total	**0**	**0**	**1**	**0**	**6**	**1**	**10**	**0**	**11**	**0**	**2**	**21**	**7**	**953**	**2**	**5**	**2**	**967**	**0**	**558**	**16**	**0**	**1**	**574**	**1563**
Approach %	0	0	100	0		-	47.6	0	52.4	0		-	0.7	98.6	0.2	0.5		-	0	97.2	2.8	0		-	
Totals %	0	0	0.1	0		0.1	0.6	0	0.7	0		1.3	0.4	61	0.1	0.3		61.9	0	35.7	1	0		36.7	
PHF	**0**	**0**	**0.25**	**0**		**0.25**	**0.63**	**0**	**0.92**	**0**		**0.75**	**0.58**	**0.9**	**0.5**	**0.25**		**0.89**	**0**	**0.76**	**0.8**	**0**		**0.77**	**0.94**
Cars	0	0	1	0		1	8	0	10	0		18	6	908	2	0		916	0	527	16	0		543	1478
% Cars	0	0	100	0		100	80	0	90.9	0		85.7	85.7	95.3	100	0		94.7	0	94.4	100	0		94.6	94.6
Trucks	0	0	0	0		0	2	0	1	0		3	1	44	0	5		50	0	31	0	0		31	84
% Trucks	0	0	0	0		0	20	0	9.1	0		14.3	14.3	4.6	0	100		5.2	0	5.6	0	0		5.4	5.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0.1	0	0		0.1	0	0	0	0		0	0.1
Peds					6	-					2	-					2	-					1	-	11
% Peds					54.5	-					18.2	-					18.2	-					9.1	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	12	9	21
Trucks	0	1	1
Bicycles	0	0	0
	12	**10**	**22**

Boyer Rd

Bicycles	0	0	0	0
Trucks	0	0	0	0
Cars	8	1	3	0
Totals	**8**	**1**	**3**	**0**

East Approach

	Out	In	Total
Cars	937	922	1859
Trucks	39	47	86
Bicycles	1	1	2
	977	**970**	**1947**

Innes Rd

			Totals	
0	1	1	**2**	↶
0	1	4	**5**	↑
1	44	862	**907**	→
0	1	41	**42**	↓

Peds: 7
Peds: 13
Peds: 0
Peds: 8

Innes Rd

Totals			
2	2	0	0
4	4	0	0
903	868	34	1
68	63	5	0

West Approach

	Out	In	Total
Cars	908	917	1825
Trucks	47	36	83
Bicycles	1	1	2
	956	**954**	**1910**

Builders Warehouse

	↶	↑	→	
Totals	**41**	**1**	**58**	**0**
Cars	40	1	55	0
Trucks	1	0	3	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	96	105	201
Trucks	4	6	10
Bicycles	0	0	0
	100	**111**	**211**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024
Period: 11:30 - 13:30

Peak Hour Data (12:30 - 13:30)

Start Time	North Approach Boyer Rd						South Approach Builders Warehouse						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:30	0	0	3	0	2	3	16	0	13	0	1	29	16	216	1	0	0	233	1	222	12	1	0	236	501
12:45	0	1	3	0	2	4	8	1	12	0	3	21	19	198	2	0	0	219	1	216	8	1	2	226	470
13:00	3	0	0	0	1	3	6	0	14	0	3	20	20	255	0	1	0	276	0	239	11	0	8	250	549
13:15	0	0	2	0	2	2	11	0	19	0	1	30	13	234	1	1	0	249	3	230	11	0	3	244	525
Grand Total	**3**	**1**	**8**	**0**	**7**	**12**	**41**	**1**	**58**	**0**	**8**	**100**	**68**	**903**	**4**	**2**	**0**	**977**	**5**	**907**	**42**	**2**	**13**	**956**	**2045**
Approach %	25	8.3	66.7	0		-	41	1	58	0		-	7	92.4	0.4	0.2		-	0.5	94.9	4.4	0.2		-	
Totals %	0.1	0	0.4	0		0.6	2	0	2.8	0		4.9	3.3	44.2	0.2	0.1		47.8	0.2	44.4	2.1	0.1		46.7	
PHF	**0.25**	**0.25**	**0.67**	**0**		**0.75**	**0.64**	**0.25**	**0.76**	**0**		**0.83**	**0.85**	**0.89**	**0.5**	**0.5**		**0.88**	**0.42**	**0.95**	**0.88**	**0.5**		**0.96**	**0.93**
Cars	3	1	8	0		12	40	1	55	0		96	63	868	4	2		937	4	862	41	1		908	1953
% Cars	100	100	100	0		100	97.6	100	94.8	0		96	92.6	96.1	100	100		95.9	80	95	97.6	50		95	95.5
Trucks	0	0	0	0		0	1	0	3	0		4	5	34	0	0		39	1	44	1	1		47	90
% Trucks	0	0	0	0		0	2.4	0	5.2	0		4	7.4	3.8	0	0		4	20	4.9	2.4	50		4.9	4.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	1	0	0		1	2
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0.1	0	0		0.1	0	0.1	0	0		0.1	0.1
Peds					7	-					8	-					0	-					13	-	28
% Peds					25	-					28.6	-					0	-					46.4	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Innes Rd runs E/W

North Approach

	Out	In	Total
Cars	11	18	29
Trucks	0	0	0
Bicycles	0	0	0
	11	**18**	**29**

Boyer Rd

Bicycles	0	0	0	0
Trucks	0	0	0	0
Cars	7	0	4	0
Totals	**7**	**0**	**4**	**0**

East Approach

	Out	In	Total
Cars	943	1434	2377
Trucks	24	16	40
Bicycles	0	3	3
	967	**1453**	**2420**

Innes Rd

			Totals	
0	0	3	**3**	
0	0	8	**8**	
3	14	1407	**1424**	
0	2	21	**23**	

Peds: 3

Peds: 3

Peds: 0

Peds: 4

Innes Rd

	Totals			
	2	2	0	0
	10	10	0	0
	946	923	23	0
	9	8	1	0

West Approach

	Out	In	Total
Cars	1439	948	2387
Trucks	16	24	40
Bicycles	3	0	3
	1458	**972**	**2430**

Builders Warehouse

Totals	**16**	**0**	**23**	**0**
Cars	15	0	21	0
Trucks	1	0	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	36	29	65
Trucks	3	3	6
Bicycles	0	0	0
	39	**32**	**71**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Innes Rd & Boyer Rd - Builders Warehouse
Site Code: 2434600001
Count Date: Aug 21, 2024
Period: 15:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Boyer Rd						South Approach Builders Warehouse						East Approach Innes Rd						West Approach Innes Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	0	0	0	0	0	5	0	2	0	1	7	1	224	0	0	0	225	1	355	7	1	1	364	596
16:15	1	0	1	0	0	2	1	0	6	0	2	7	2	260	3	0	0	265	3	353	5	1	0	362	636
16:30	1	0	1	0	3	2	3	0	8	0	0	11	4	234	2	0	0	240	2	369	9	1	1	381	634
16:45	2	0	5	0	0	7	7	0	7	0	1	14	2	228	5	2	0	237	2	347	2	0	1	351	609
Grand Total	**4**	**0**	**7**	**0**	**3**	**11**	**16**	**0**	**23**	**0**	**4**	**39**	**9**	**946**	**10**	**2**	**0**	**967**	**8**	**1424**	**23**	**3**	**3**	**1458**	**2475**
Approach %	36.4	0	63.6	0		-	41	0	59	0		-	0.9	97.8	1	0.2		-	0.5	97.7	1.6	0.2		-	
Totals %	0.2	0	0.3	0		0.4	0.6	0	0.9	0		1.6	0.4	38.2	0.4	0.1		39.1	0.3	57.5	0.9	0.1		58.9	
PHF	**0.5**	**0**	**0.35**	**0**		**0.39**	**0.57**	**0**	**0.72**	**0**		**0.7**	**0.56**	**0.91**	**0.5**	**0.25**		**0.91**	**0.67**	**0.96**	**0.64**	**0.75**		**0.96**	**0.97**
Cars	4	0	7	0		11	15	0	21	0		36	8	923	10	2		943	8	1407	21	3		1439	2429
% Cars	100	0	100	0		100	93.8	0	91.3	0		92.3	88.9	97.6	100	100		97.5	100	98.8	91.3	100		98.7	98.1
Trucks	0	0	0	0		0	1	0	2	0		3	1	23	0	0		24	0	14	2	0		16	43
% Trucks	0	0	0	0		0	6.3	0	8.7	0		7.7	11.1	2.4	0	0		2.5	0	1	8.7	0		1.1	1.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	3	0	0		3	3
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0.2	0	0		0.2	0.1
Peds					3	-					4	-					0	-					3	-	10
% Peds					30	-					40	-					0	-					30	-	

Ottawa

Transportation Services - Traffic Services

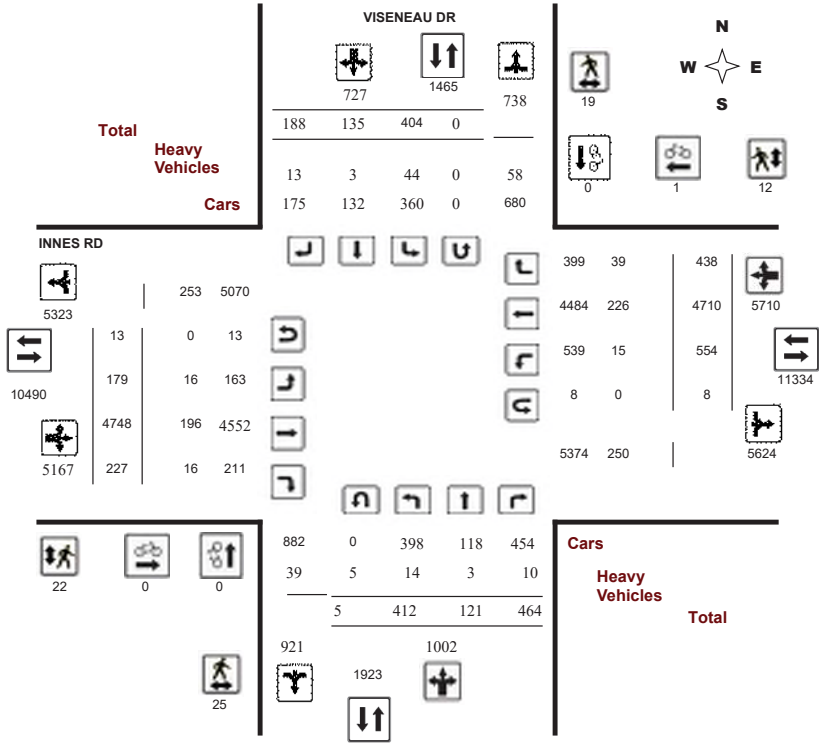
Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022
Start Time: 07:00

WO No: 40054
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

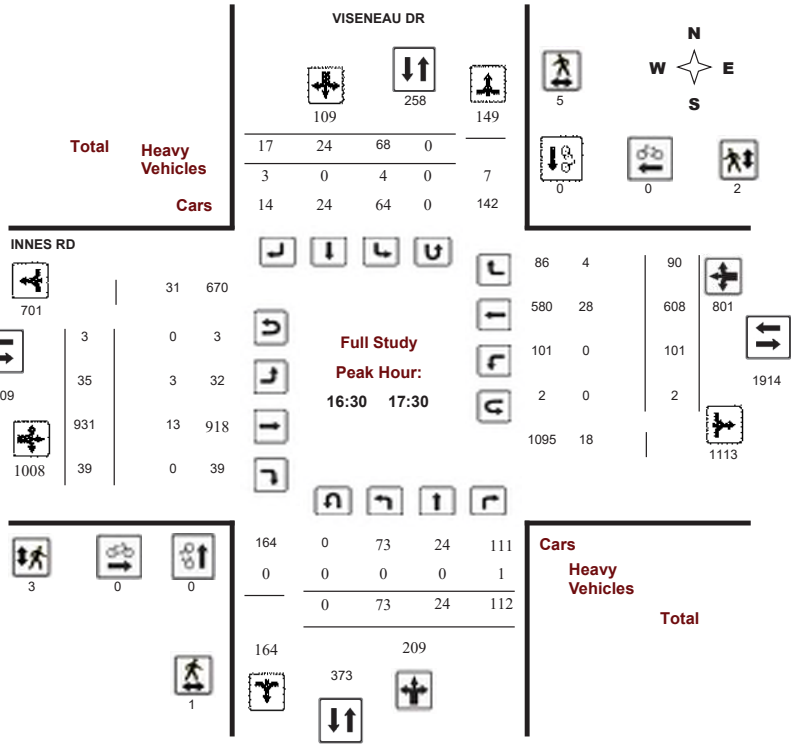
Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study Peak Hour Diagram



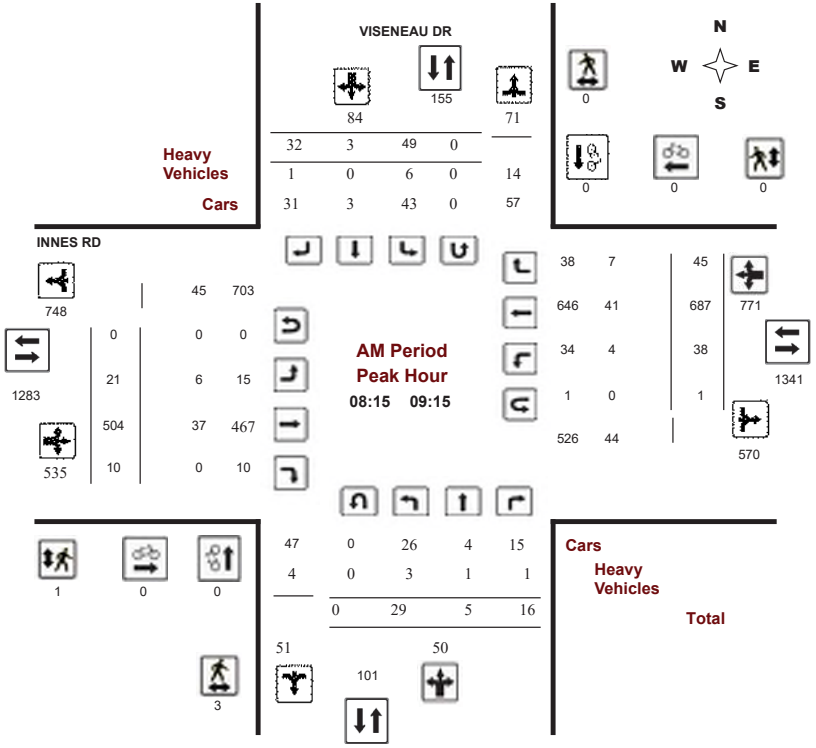
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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



Comments

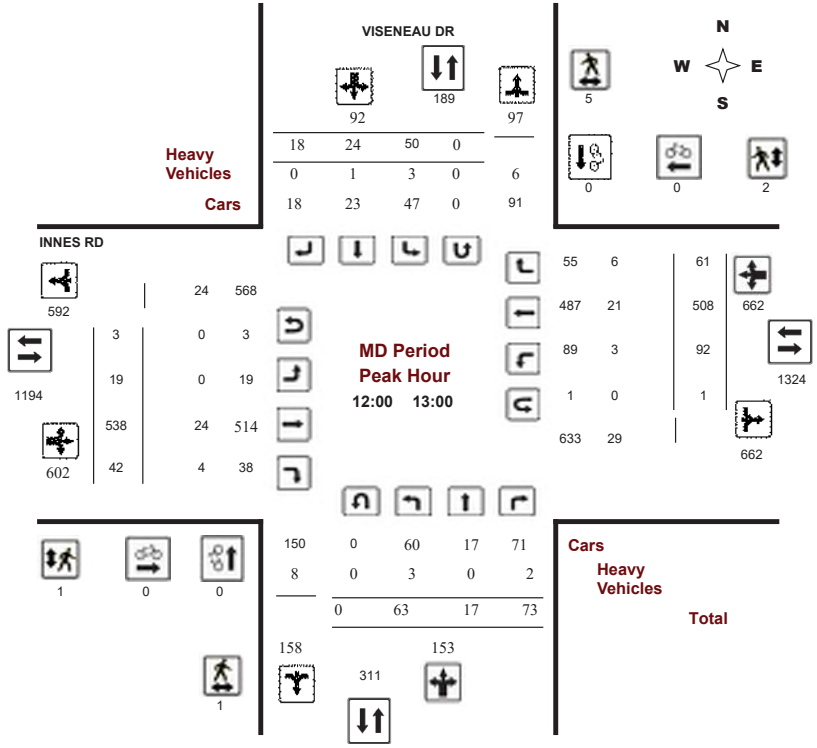
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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



Comments

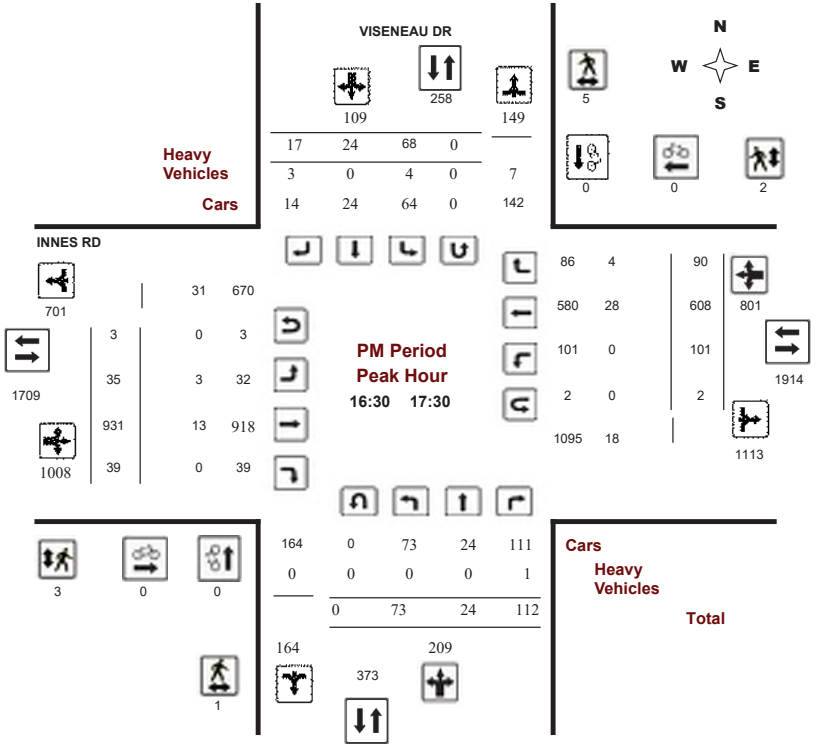
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 19, 2022

Total Observed U-Turns

Northbound: 5 Southbound: 0

Eastbound: 13 Westbound: 8

AADT Factor 1.00

	VISENEAU DR								INNES RD									
	Northbound				Southbound				Eastbound				Westbound					
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	12	3	4	**19**	41	5	42	**88**	**107**	9	299	9	**317**	16	582	27	**625**	**942**	**1049**
08:00 09:00	27	4	14	**45**	41	3	35	**79**	**124**	23	468	9	**500**	32	729	42	**803**	**1303**	**1427**
09:00 10:00	24	7	27	**58**	39	6	15	**60**	**118**	14	467	14	**495**	47	561	40	**648**	**1143**	**1261**
11:30 12:30	61	13	71	**145**	48	18	17	**83**	**228**	12	502	35	**549**	87	506	45	**638**	**1187**	**1415**
12:30 13:30	62	21	72	**155**	44	27	16	**87**	**242**	15	503	44	**562**	90	505	56	**651**	**1213**	**1455**
15:00 16:00	74	26	80	**180**	62	21	19	**102**	**282**	36	789	42	**867**	79	612	62	**753**	**1620**	**1902**
16:00 17:00	71	30	82	**183**	68	30	19	**117**	**300**	38	913	42	**993**	85	634	81	**800**	**1793**	**2093**
17:00 18:00	81	17	114	**212**	61	25	25	**111**	**323**	32	807	32	**871**	118	581	85	**784**	**1655**	**1978**
Sub Total	412	121	464	**997**	404	135	188	**727**	**1724**	179	4748	227	**5154**	554	4710	438	**5702**	**10856**	**12580**
U Turns				**5**				**0**	**5**				**13**				**8**	**21**	**26**
Total	412	121	464	**1002**	404	135	188	**727**	**1729**	179	4748	227	**5167**	554	4710	438	**5710**	**10877**	**12606**
EQ 12Hr	573	168	645	**1393**	562	188	261	**1011**	**2403**	249	6600	316	**7182**	770	6547	609	**7937**	**15119**	**17522**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	573	168	645	**1393**	562	246	342	**1011**	**2403**	249	6600	316	**7182**	770	6547	609	**7937**	**15119**	**17522**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	751	220	845	**1825**	736	322	448	**1324**	**3148**	326	8646	414	**9408**	1009	8577	798	**10397**	**19806**	**22954**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study 15 Minute Increments

		VISENEAU DR									INNES RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	4	2	0	6	8	2	9	19	25	2	56	1	59	4	132	4	140	199	224
07:15	07:30	3	1	0	4	11	0	10	21	25	3	65	1	69	2	134	6	142	211	236
07:30	07:45	1	0	3	7	9	1	14	24	31	1	83	5	89	4	166	6	176	265	296
08:30	08:45	7	0	2	9	16	1	4	21	30	6	124	3	133	9	178	11	198	331	361
08:45	09:00	9	2	5	16	10	2	7	19	35	3	147	4	154	9	142	11	162	316	351
09:30	09:45	4	1	7	12	9	3	2	14	26	2	110	3	115	8	138	6	152	267	293
09:45	10:00	4	2	5	11	8	2	5	15	26	2	102	6	111	19	114	10	143	254	280
11:30	11:45	12	3	17	32	7	6	3	16	48	2	119	8	130	19	114	9	142	272	320
12:30	12:45	24	3	19	46	10	6	4	20	66	8	135	10	155	24	136	15	175	330	396
13:00	13:15	16	5	14	35	11	4	1	16	51	0	101	13	114	20	109	13	142	256	307
15:15	15:30	21	4	14	39	16	6	3	25	64	12	193	19	225	19	162	18	199	424	488
16:00	16:15	25	6	20	51	20	7	5	32	83	10	184	9	203	19	173	16	208	411	494
16:30	16:45	17	11	13	41	21	6	5	32	73	8	244	14	267	13	143	27	183	450	523
17:15	17:30	28	6	34	68	17	7	3	27	95	6	215	8	230	30	156	22	208	438	533
17:00	17:15	14	1	38	53	15	5	6	26	79	12	218	11	241	30	148	16	194	435	514
17:45	18:00	19	4	17	40	12	7	9	28	68	7	194	4	205	31	145	21	197	402	470
07:45	08:00	4	0	1	7	13	2	9	24	31	3	95	2	101	6	150	11	167	268	299
08:00	08:15	6	0	5	11	6	0	7	13	24	9	94	2	105	5	188	7	200	305	329
12:00	12:15	9	4	13	26	18	5	3	26	52	2	152	10	164	22	120	16	158	322	374
08:15	08:30	5	2	2	9	9	0	17	26	35	5	103	0	108	9	221	13	243	351	386
09:00	09:15	8	1	7	16	14	0	4	18	34	7	130	3	140	11	146	10	168	308	342
13:15	13:30	11	7	21	39	10	9	5	24	63	3	135	11	150	24	138	12	175	325	388
09:15	09:30	8	3	8	19	8	1	4	13	32	3	125	2	130	9	163	14	187	317	349
15:30	15:45	20	7	26	53	15	4	4	23	76	10	195	5	210	23	160	13	196	406	482
11:45	12:00	21	2	18	41	14	2	6	22	63	3	112	5	120	22	142	6	170	290	353
12:15	12:30	19	4	23	46	9	5	5	19	65	5	119	12	136	24	130	14	168	304	369
15:00	15:15	14	7	17	38	15	5	7	27	65	3	163	8	174	19	126	15	161	335	400
12:45	13:00	11	6	18	35	13	8	6	27	62	4	132	10	147	22	122	16	161	308	370
15:45	16:00	19	8	23	50	16	6	5	27	77	11	238	10	259	18	164	16	198	457	534
16:15	16:30	15	7	22	44	12	11	6	29	73	11	231	13	256	25	157	13	195	451	524
17:30	17:45	20	6	25	51	17	6	7	30	81	7	180	9	197	27	132	26	186	383	464
16:45	17:00	14	6	27	47	15	6	3	24	71	9	254	6	270	28	161	25	216	486	557
Total:		412	121	464	1002	404	135	188	727	1729	179	4748	227	5167	554	4710	438	5710	10877	12,606

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study Cyclist Volume

Time Period		VISENEAU DR Northbound	VISENEAU DR Southbound	VISENEAU DR Street Total	INNES RD Eastbound	INNES RD Westbound	INNES RD Street Total	Grand Total
07:00	07:15	0	0	0	0	0	0	0
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0
09:30	09:45	0	0	0	0	0	0	0
09:45	10:00	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0
13:00	13:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0
13:15	13:30	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	1	1	1
15:30	15:45	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
Total		0	0	**0**	0	1	1	1

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study Pedestrian Volume

Time Period		VISENEAU DR NB Approach (E or W Crossing)	VISENEAU DR SB Approach (E or W Crossing)	VISENEAU DR Total	INNES RD EB Approach (N or S Crossing)	INNES RD WB Approach (N or S Crossing)	INNES RD Total	Grand Total
07:00	07:15	0	1	**1**	1	1	**2**	**3**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	1	0	**1**	0	0	**0**	**1**
08:30	08:45	1	0	**1**	0	0	**0**	**1**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:30	09:45	0	0	**0**	0	0	**0**	**0**
09:45	10:00	1	0	**1**	2	0	**2**	**3**
11:30	11:45	2	1	**3**	0	0	**0**	**3**
12:30	12:45	1	2	**3**	0	0	**0**	**3**
13:00	13:15	2	1	**3**	0	1	**1**	**4**
15:15	15:30	1	0	**1**	0	0	**0**	**1**
16:00	16:15	4	0	**4**	2	0	**2**	**6**
16:30	16:45	0	2	**2**	1	1	**2**	**4**
17:15	17:30	1	2	**3**	0	1	**1**	**4**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:45	18:00	1	0	**1**	1	0	**1**	**2**
07:45	08:00	0	0	**0**	1	0	**1**	**1**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	1	**1**	0	0	**0**	**1**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
09:00	09:15	2	0	**2**	1	0	**1**	**3**
13:15	13:30	0	0	**0**	1	0	**1**	**1**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	3	1	**4**	2	2	**4**	**8**
11:45	12:00	0	1	**1**	1	3	**4**	**5**
12:15	12:30	0	1	**1**	0	0	**0**	**1**
15:00	15:15	2	2	**4**	2	0	**2**	**6**
12:45	13:00	0	1	**1**	1	2	**3**	**4**
15:45	16:00	3	1	**4**	1	1	**2**	**6**
16:15	16:30	0	1	**1**	1	0	**1**	**2**
17:30	17:45	0	0	**0**	2	0	**2**	**2**
16:45	17:00	0	1	**1**	2	0	**2**	**3**
Total	.....	25	19	**44**	22	12	**34**	**78**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study Heavy Vehicles

		VISENEAU DR									INNES RD									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	0	0	0	**2**	0	0	0	**0**	**2**	0	8	0	**15**	2	7	0	**17**	**32**	**17**
07:15	07:30	0	0	0	**0**	1	0	0	**5**	**5**	2	8	0	**14**	0	4	2	**15**	**29**	**17**
07:30	07:45	0	0	1	**12**	1	0	1	**2**	**14**	0	6	5	**20**	0	8	0	**16**	**36**	**25**
08:30	08:45	1	0	1	**3**	3	0	0	**7**	**10**	2	9	0	**22**	1	10	2	**26**	**48**	**29**
08:45	09:00	1	1	0	**3**	0	0	0	**4**	**7**	0	11	0	**27**	1	15	3	**30**	**57**	**32**
09:30	09:45	1	0	0	**3**	0	0	0	**1**	**4**	1	5	2	**17**	0	8	0	**13**	**30**	**17**
09:45	10:00	1	0	0	**3**	1	0	0	**3**	**6**	0	5	1	**14**	1	7	2	**16**	**30**	**18**
11:30	11:45	1	1	0	**3**	1	0	0	**2**	**5**	0	7	1	**15**	0	6	0	**14**	**29**	**17**
12:30	12:45	1	0	1	**5**	0	0	0	**1**	**6**	0	6	2	**13**	1	4	1	**13**	**26**	**16**
13:00	13:15	1	0	0	**2**	0	0	0	**1**	**3**	0	4	1	**11**	0	5	1	**10**	**21**	**12**
15:15	15:30	0	0	0	**1**	2	0	1	**8**	**9**	1	6	1	**16**	0	7	4	**19**	**35**	**22**
16:00	16:15	0	0	0	**0**	5	0	2	**8**	**8**	0	7	0	**13**	0	4	1	**17**	**30**	**19**
16:30	16:45	0	0	0	**0**	1	0	1	**5**	**5**	2	1	0	**12**	0	8	1	**11**	**23**	**14**
17:15	17:30	0	0	0	**0**	1	0	1	**2**	**2**	0	2	0	**7**	0	4	0	**7**	**14**	**8**
17:00	17:15	0	0	0	**0**	1	0	0	**2**	**2**	0	6	0	**16**	0	10	1	**18**	**34**	**18**
17:45	18:00	0	0	0	**0**	2	0	1	**4**	**4**	0	4	0	**10**	0	5	1	**12**	**22**	**13**
07:45	08:00	2	0	1	**7**	3	0	0	**7**	**14**	1	4	0	**13**	0	6	3	**17**	**30**	**22**
08:00	08:15	0	0	1	**2**	0	0	0	**2**	**4**	2	6	0	**16**	1	8	0	**16**	**32**	**18**
12:00	12:15	1	0	0	**5**	0	1	0	**1**	**6**	0	4	1	**15**	2	9	0	**15**	**30**	**18**
08:15	08:30	1	0	0	**1**	1	0	1	**4**	**5**	2	8	0	**21**	0	9	0	**18**	**39**	**22**
09:00	09:15	0	0	0	**2**	2	0	0	**6**	**8**	2	9	0	**18**	2	7	2	**22**	**40**	**24**
13:15	13:30	0	0	1	**3**	2	0	1	**3**	**6**	0	3	1	**11**	1	6	0	**13**	**24**	**15**
09:15	09:30	1	0	0	**1**	2	0	0	**3**	**4**	0	12	0	**27**	0	14	1	**29**	**56**	**30**
15:30	15:45	0	0	1	**1**	3	0	0	**3**	**4**	0	6	0	**13**	0	7	0	**17**	**30**	**17**
11:45	12:00	0	0	1	**3**	1	0	0	**3**	**6**	0	6	0	**10**	2	4	2	**16**	**26**	**16**
12:15	12:30	1	0	1	**3**	2	0	0	**4**	**7**	0	8	1	**15**	0	5	2	**18**	**33**	**20**
15:00	15:15	0	0	0	**1**	2	0	0	**2**	**3**	0	7	0	**14**	1	7	0	**17**	**31**	**17**
12:45	13:00	0	0	0	**0**	1	0	0	**4**	**4**	0	6	0	**9**	0	3	3	**13**	**22**	**13**
15:45	16:00	1	1	0	**4**	3	2	2	**11**	**15**	0	8	0	**18**	0	7	3	**21**	**39**	**27**
16:15	16:30	0	0	0	**0**	1	0	1	**3**	**3**	0	6	0	**17**	0	10	1	**18**	**35**	**19**
17:30	17:45	0	0	0	**0**	1	0	0	**2**	**2**	0	4	0	**10**	0	6	1	**12**	**22**	**12**
16:45	17:00	0	0	1	**1**	1	0	1	**5**	**6**	1	4	0	**12**	0	6	2	**14**	**26**	**16**
Total:	None	14	3	10	**71**	44	3	13	**118**	**189**	16	196	16	**481**	15	226	39	**530**	**1011**	**600**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

INNES RD @ VISENEAU DR

Survey Date: Wednesday, January 19, 2022 **WO No:** 40054

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

Full Study 15 Minute U-Turn Total

		VISENEAU DR	VISENEAU DR	INNES RD	INNES RD	
Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	3	0	0	0	3
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	1	0	1
11:30	11:45	0	0	1	0	1
12:30	12:45	0	0	2	0	2
13:00	13:15	0	0	0	0	0
15:15	15:30	0	0	1	0	1
16:00	16:15	0	0	0	0	0
16:30	16:45	0	0	1	0	1
17:15	17:30	0	0	1	0	1
17:00	17:15	0	0	0	0	0
17:45	18:00	0	0	0	0	0
07:45	08:00	2	0	1	0	3
08:00	08:15	0	0	0	0	0
12:00	12:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
09:00	09:15	0	0	0	1	1
13:15	13:30	0	0	1	1	2
09:15	09:30	0	0	0	1	1
15:30	15:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:15	12:30	0	0	0	0	0
15:00	15:15	0	0	0	1	1
12:45	13:00	0	0	1	1	2
15:45	16:00	0	0	0	0	0
16:15	16:30	0	0	1	0	1
17:30	17:45	0	0	1	1	2
16:45	17:00	0	0	1	2	3
Total		5	0	13	8	26

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	343	32	22	1333	156	107	233	44	99	111	489
Future Volume (vph)	106	343	32	22	1333	156	107	233	44	99	111	489
Satd. Flow (prot)	3124	3103	1427	1658	3316	1427	1642	3252	1441	1658	3221	1483
Flt Permitted	0.950			0.950			0.540			0.592		
Satd. Flow (perm)	3110	3103	1394	1646	3316	1380	932	3252	1388	1015	3221	1463
Satd. Flow (RTOR)			143			143			82			190
Lane Group Flow (vph)	118	381	36	24	1481	173	119	259	49	110	123	543
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	33.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	25.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	64.0	64.0	6.4	58.8	58.8	45.3	45.3	45.3	27.0	27.0	27.0
Actuated g/C Ratio	0.05	0.49	0.49	0.05	0.45	0.45	0.35	0.35	0.35	0.21	0.21	0.21
v/c Ratio	0.77	0.25	0.05	0.30	0.99	0.25	0.31	0.23	0.09	0.52	0.18	1.20
Control Delay	91.7	20.6	0.1	68.9	55.9	6.1	32.2	30.7	1.9	56.4	43.7	137.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.7	20.6	0.1	68.9	55.9	6.1	32.2	30.7	1.9	56.4	43.7	137.1
LOS	F	C	A	E	E	A	C	C	A	E	D	F
Approach Delay		34.9			51.0			27.8			110.9	
Approach LOS		C			D			C			F	
Queue Length 50th (m)	15.7	31.4	0.0	6.0	193.9	4.2	21.3	24.6	0.0	25.5	13.8	~129.1
Queue Length 95th (m)	#31.2	42.7	0.0	15.1	#247.3	17.3	36.1	35.1	2.9	45.5	22.7	#198.3
Internal Link Dist (m)		265.9			463.6			69.4			101.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	153	1527	758	86	1499	702	391	1133	537	211	669	454
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.25	0.05	0.28	0.99	0.25	0.30	0.23	0.09	0.52	0.18	1.20

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: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20
Intersection Signal Delay: 59.2 — Intersection LOS: E
Intersection Capacity Utilization 93.6% — ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Orleans Blvd & Innes Rd

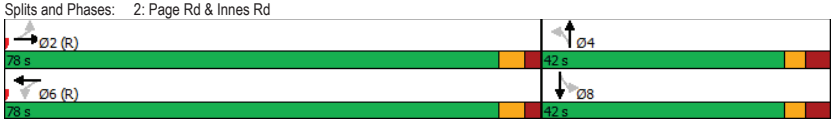
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	525	21	55	1361	24	14	12	61	45	11	40
Future Volume (vph)	21	525	21	55	1361	24	14	12	61	45	11	40
Satd. Flow (prot)	1483	3173	0	1658	3303	0	0	1508	0	0	1598	0
Flt Permitted	0.134			0.422				0.941			0.794	
Satd. Flow (perm)	209	3173	0	736	3303	0	0	1429	0	0	1298	0
Satd. Flow (RTOR)		6			3			68			30	
Lane Group Flow (vph)	23	606	0	61	1539	0	0	97	0	0	106	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	78.0	78.0		78.0	78.0		42.0	42.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	90.5	90.5		90.5	90.5			16.5			16.5	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.15	0.25		0.11	0.62			0.38			0.52	
Control Delay	9.8	5.9		5.3	9.3			19.5			41.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	9.8	5.9		5.3	9.3			19.5			41.1	
LOS	A	A		A	A			B			D	
Approach Delay		6.0			9.1			19.5			41.1	
Approach LOS		A			A			B			D	
Queue Length 50th (m)	1.1	15.8		1.9	28.7			6.4			17.4	
Queue Length 95th (m)	7.3	45.1		7.0	205.2			17.7			28.4	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	157	2395		555	2493			467			401	
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	0.15	0.25		0.11	0.62			0.21			0.26	

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: 85
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Page Rd & Innes Rd

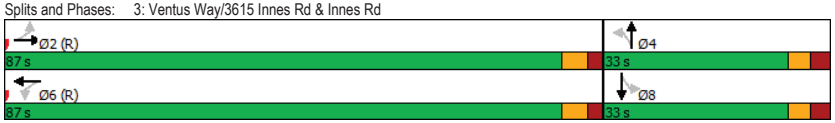


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	558	16	12	952	2	10	0	11	0	0	1
Future Volume (vph)	0	558	16	12	952	2	10	0	11	0	0	1
Satd. Flow (prot)	1745	3179	0	1566	3221	0	1409	1368	0	0	1489	0
Flt Permitted				0.410			0.757					
Satd. Flow (perm)	1745	3179	0	675	3221	0	1121	1368	0	0	1489	0
Satd. Flow (RTOR)		5						329			134	
Lane Group Flow (vph)	0	638	0	13	1060	0	11	12	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		103.4		103.4	103.4		13.2	13.2			13.2	
Actuated g/C Ratio		0.86		0.86	0.86		0.11	0.11			0.11	
v/c Ratio		0.23		0.02	0.38		0.09	0.03			0.00	
Control Delay		3.0		8.2	7.6		45.9	0.1			0.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		3.0		8.2	7.6		45.9	0.1			0.0	
LOS		A		A	A		D	A			A	
Approach Delay		3.0			7.6			22.0				
Approach LOS		A			A			C				
Queue Length 50th (m)		13.2		0.4	26.6		2.5	0.0			0.0	
Queue Length 95th (m)		32.0		m5.0	122.1		7.1	0.0			0.0	
Internal Link Dist (m)		221.9			561.5			129.3			67.7	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2739		581	2774		249	560			435	
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		0.23		0.02	0.38		0.04	0.02			0.00	

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: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38
Intersection Signal Delay: 6.1 — Intersection LOS: A
Intersection Capacity Utilization 47.4% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	504	10	39	687	45	29	5	16	49	3	32
Future Volume (vph)	21	504	10	39	687	45	29	5	16	49	3	32
Satd. Flow (prot)	1311	3161	1483	1537	3144	0	1537	1483	1427	0	1508	0
Flt Permitted	0.950			0.950			0.720				0.818	
Satd. Flow (perm)	1311	3161	1444	1532	3144	0	1164	1483	1427	0	1269	0
Satd. Flow (RTOR)			115		8				105		25	
Lane Group Flow (vph)	23	560	11	43	813	0	32	6	18	0	93	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	12.0	66.0	66.0	12.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%		30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.7	78.6	78.6	8.9	82.2		15.1	15.1	15.1		15.1	
Actuated g/C Ratio	0.06	0.66	0.66	0.07	0.68		0.13	0.13	0.13		0.13	
v/c Ratio	0.27	0.27	0.01	0.38	0.38		0.22	0.03	0.07		0.51	
Control Delay	77.0	9.0	0.1	61.8	10.9		47.4	41.0	0.5		43.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	77.0	9.0	0.1	61.8	10.9		47.4	41.0	0.5		43.8	
LOS	E	A	A	E	B		D	D	A		D	
Approach Delay		11.4			13.4			31.7			43.8	
Approach LOS		B			B			C			D	
Queue Length 50th (m)	5.7	9.8	0.0	9.8	40.0		7.1	1.3	0.0		15.5	
Queue Length 95th (m)	14.9	54.6	0.0	21.2	81.6		14.4	4.6	0.0		27.8	
Internal Link Dist (m)		561.5			183.4			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	84	2070	985	113	2156		288	367	432		332	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.27	0.01	0.38	0.38		0.11	0.02	0.04		0.28	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

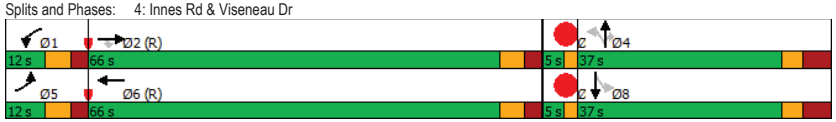
Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Innes Rd & Viseneau Dr



Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	512	45	33	937	96	59
Future Vol, veh/h	512	45	33	937	96	59
Conflicting Peds, #/hr	0	1	1	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	4	2	5	3	3
Mvmt Flow	569	50	37	1041	107	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	620	0	1191	311
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	596	-
Critical Hdwy	-	-	4.14	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.22	-	3.53	3.33
Pot Cap-1 Maneuver	-	-	956	-	179	682
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	510	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	955	-	172	681
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	21.5
HCM LOS			C

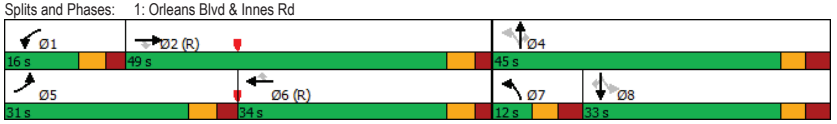
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	388	-	-	955	-
HCM Lane V/C Ratio	0.444	-	-	0.038	-
HCM Control Delay (s)	21.5	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.2	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1221	93	73	625	183	56	192	93	214	243	267
Future Volume (vph)	462	1221	93	73	625	183	56	192	93	214	243	267
Satd. Flow (prot)	3216	3316	1455	1642	3221	1483	1658	3283	1483	1658	3221	1469
Flt Permitted	0.950			0.950			0.470			0.618		
Satd. Flow (perm)	3189	3316	1421	1639	3221	1446	810	3283	1446	1068	3221	1422
Satd. Flow (RTOR)			165			230			159			297
Lane Group Flow (vph)	513	1357	103	81	694	203	62	213	103	238	270	297
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	31.0	49.0	49.0	16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	33.0
Total Split (%)	28.2%	44.5%	44.5%	14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max	Max
Act Effct Green (s)	21.8	46.2	46.2	9.0	30.4	30.4	38.3	38.3	38.3	28.7	28.7	28.7
Actuated g/C Ratio	0.20	0.42	0.42	0.08	0.28	0.28	0.35	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.81	0.98	0.15	0.61	0.78	0.36	0.19	0.19	0.17	0.86	0.32	0.50
Control Delay	52.4	52.0	0.9	56.7	48.3	14.5	26.0	25.5	1.4	68.5	35.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	52.0	0.9	56.7	48.3	14.5	26.0	25.5	1.4	68.5	35.1	7.3
LOS	D	D	A	E	D	B	C	C	A	E	D	A
Approach Delay		49.4			42.0			19.0			34.7	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	54.0	~167.7	0.0	13.9	53.8	3.6	8.9	16.6	0.0	50.3	25.4	0.0
Queue Length 95th (m)	71.0	#209.4	1.8	#34.9	#107.6	44.9	18.3	25.4	2.8	#97.3	37.5	21.6
Internal Link Dist (m)		265.9			463.6			166.8			210.2	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	713	1391	691	146	890	566	322	1143	607	278	840	590
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	0.72	0.98	0.15	0.55	0.78	0.36	0.19	0.19	0.17	0.86	0.32	0.50

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: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98
Intersection Signal Delay: 42.0 — Intersection LOS: D
Intersection Capacity Utilization 95.6% — ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Orleans Blvd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	1505	19	110	877	69	18	18	108	83	17	31
Future Volume (vph)	51	1505	19	110	877	69	18	18	108	83	17	31
Satd. Flow (prot)	1658	3308	0	1658	3238	0	0	1536	0	0	1595	0
Flt Permitted	0.243			0.095				0.950			0.629	
Satd. Flow (perm)	422	3308	0	166	3238	0	0	1468	0	0	1031	0
Satd. Flow (RTOR)		2			12			19			15	
Lane Group Flow (vph)	57	1693	0	122	1051	0	0	160	0	0	145	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	68.0	68.0		68.0	68.0		42.0	42.0		42.0	42.0	
Total Split (%)	61.8%	61.8%		61.8%	61.8%		38.2%	38.2%		38.2%	38.2%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	77.2	77.2		77.2	77.2			19.8			19.8	
Actuated g/C Ratio	0.70	0.70		0.70	0.70			0.18			0.18	
v/c Ratio	0.19	0.73		1.05	0.46			0.57			0.74	
Control Delay	3.6	6.5		127.9	14.1			42.3			57.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.6	6.5		127.9	14.1			42.3			57.5	
LOS	A	A		F	B			D			E	
Approach Delay		6.4			25.9			42.3			57.5	
Approach LOS		A			C			D			E	
Queue Length 50th (m)	1.4	30.8		~23.1	41.8			28.5			27.2	
Queue Length 95th (m)	m2.6	m38.8		#64.1	142.0			40.5			40.6	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	296	2322		116	2276			482			340	
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	0.73		1.05	0.46			0.33			0.43	

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: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 96.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

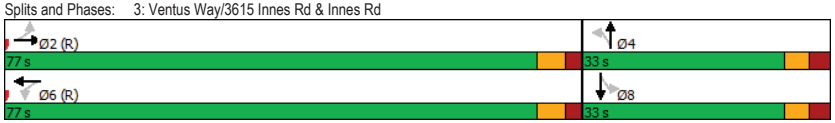
Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1421	23	11	946	10	16	0	23	4	0	7
Future Volume (vph)	11	1421	23	11	946	10	16	0	23	4	0	7
Satd. Flow (prot)	1658	3304	0	1551	3308	0	1595	1388	0	0	1546	0
Flt Permitted	0.258			0.133			0.750				0.892	
Satd. Flow (perm)	450	3304	0	217	3308	0	1255	1388	0	0	1402	0
Satd. Flow (RTOR)		3			2			40			31	
Lane Group Flow (vph)	12	1605	0	12	1062	0	18	26	0	0	12	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.1	34.1		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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	93.4	93.4		93.4	93.4		13.2	13.2			13.2	
Actuated g/C Ratio	0.85	0.85		0.85	0.85		0.12	0.12			0.12	
v/c Ratio	0.03	0.57		0.07	0.38		0.12	0.13			0.06	
Control Delay	1.9	3.2		5.9	4.5		41.8	7.0			3.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	1.9	3.2		5.9	4.5		41.8	7.0			3.3	
LOS	A	A		A	A		D	A			A	
Approach Delay		3.2			4.5			21.2			3.3	
Approach LOS		A			A			C			A	
Queue Length 50th (m)	0.1	36.4		0.4	28.4		3.6	0.0			0.0	
Queue Length 95th (m)	m0.4	78.8		3.5	70.6		8.9	4.5			1.7	
Internal Link Dist (m)		221.9			561.5			129.3			71.7	
Turn Bay Length (m)	85.0			40.0								
Base Capacity (vph)	382	2804		184	2807		304	367			363	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.03	0.57		0.07	0.38		0.06	0.07			0.03	

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: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57
Intersection Signal Delay: 4.0 Intersection LOS: A
Intersection Capacity Utilization 62.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	931	39	103	608	90	73	24	112	68	24	17
Future Volume (vph)	38	931	39	103	608	90	73	24	112	68	24	17
Satd. Flow (prot)	1566	3316	1483	1658	3150	0	1658	1745	1483	0	1576	0
Flt Permitted	0.950			0.950			0.674				0.794	
Satd. Flow (perm)	1559	3316	1450	1657	3150	0	1172	1745	1462	0	1288	0
Satd. Flow (RTOR)			106		17				124		7	
Lane Group Flow (vph)	42	1034	43	114	776	0	81	27	124	0	122	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	20.0	68.0	68.0	20.0	68.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	15.4%	52.3%	52.3%	15.4%	52.3%		28.5%	28.5%	28.5%	28.5%	28.5%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.9	77.8	77.8	14.3	85.6		18.0	18.0	18.0		18.0	
Actuated g/C Ratio	0.07	0.60	0.60	0.11	0.66		0.14	0.14	0.14		0.14	
v/c Ratio	0.39	0.52	0.05	0.63	0.37		0.50	0.11	0.40		0.66	
Control Delay	67.6	18.2	0.1	69.8	12.4		60.5	46.4	11.3		65.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	67.6	18.2	0.1	69.8	12.4		60.5	46.4	11.3		65.8	
LOS	E	B	A	E	B		E	D	B		E	
Approach Delay		19.4			19.7			32.5			65.8	
Approach LOS		B			B			C			E	
Queue Length 50th (m)	10.5	75.6	0.0	28.3	44.4		19.7	6.2	0.0		28.6	
Queue Length 95th (m)	22.0	126.9	0.0	46.0	77.6		32.7	13.6	15.6		44.6	
Internal Link Dist (m)		561.5			183.0			137.2			125.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	165	1984	910	198	2079		267	398	429		299	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.25	0.52	0.05	0.58	0.37		0.30	0.07	0.29		0.41	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 105 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

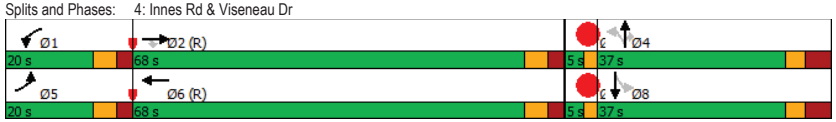
Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Innes Rd & Viseneau Dr



Intersection	
Int Delay, s/veh	10.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1397	108	72	898	76	60
Future Vol, veh/h	1397	108	72	898	76	60
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1552	120	80	998	84	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1675	0	2274	839
Stage 1	-	-	-	-	1615	-
Stage 2	-	-	-	-	659	-
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	-	-	379	-	~ 34	309
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	476	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	378	-	~ 18	308
Mov Cap-2 Maneuver	-	-	-	-	92	-
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	250	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	184.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	133	-	-	378	-
HCM Lane V/C Ratio	1.136	-	-	0.212	-
HCM Control Delay (s)	184.3	-	-	17.1	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	8.7	-	-	0.8	-

Notes

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

Appendix D

Signal Warrant Sheets

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Innes Rd / Lamarche Ave

What is the direction of the Main Road street? East-West

When was the data collected? 2024-08-21

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	0	316	34	115	0	24	27	851	0	0	0	0	0
8:00	0	482	43	93	0	57	33	889	0	0	0	0	1
9:00	0	573	52	78	0	40	37	662	0	0	0	0	5
10:00	0	887	58	61	0	57	37	831	0	0	0	0	9
15:00	0	904	57	68	0	52	34	862	0	0	0	0	9
16:00	0	1,179	89	74	0	57	39	817	0	0	0	0	10
17:00	0	1,381	108	75	0	59	72	876	0	0	0	0	3
18:00	0	1,284	139	53	0	77	57	792	0	0	0	0	6
Total	**0**	**7,006**	**580**	**617**	**0**	**423**	**336**	**6,580**	**0**	**0**	**0**	**0**	**43**

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Innes Rd / Lamarche Ave Count Date: 2024-08-21

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	51	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☐	☑
	B	Crossing Road	97	%		

Innes Rd @ Lamarche Ave
2026 Future Background

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1296	144%	70%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	119	70%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1217	135%	66%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	49	66%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Innes Rd @ Lamarche Ave
2031 Future Background

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1524	169%	169%	Yes
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	295	173%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1327	147%	147%	Yes
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	145	194%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Innes Rd @ Lamarche Ave
2026 Future Total

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1374	153%	109%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	185	109%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1251	139%	101%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	76	101%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Innes Rd @ Lamarche Ave
2031 Future Total

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1603	178%	178%	Yes
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	361	212%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1362	151%	151%	Yes
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	179	238%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Appendix E

Collision Data

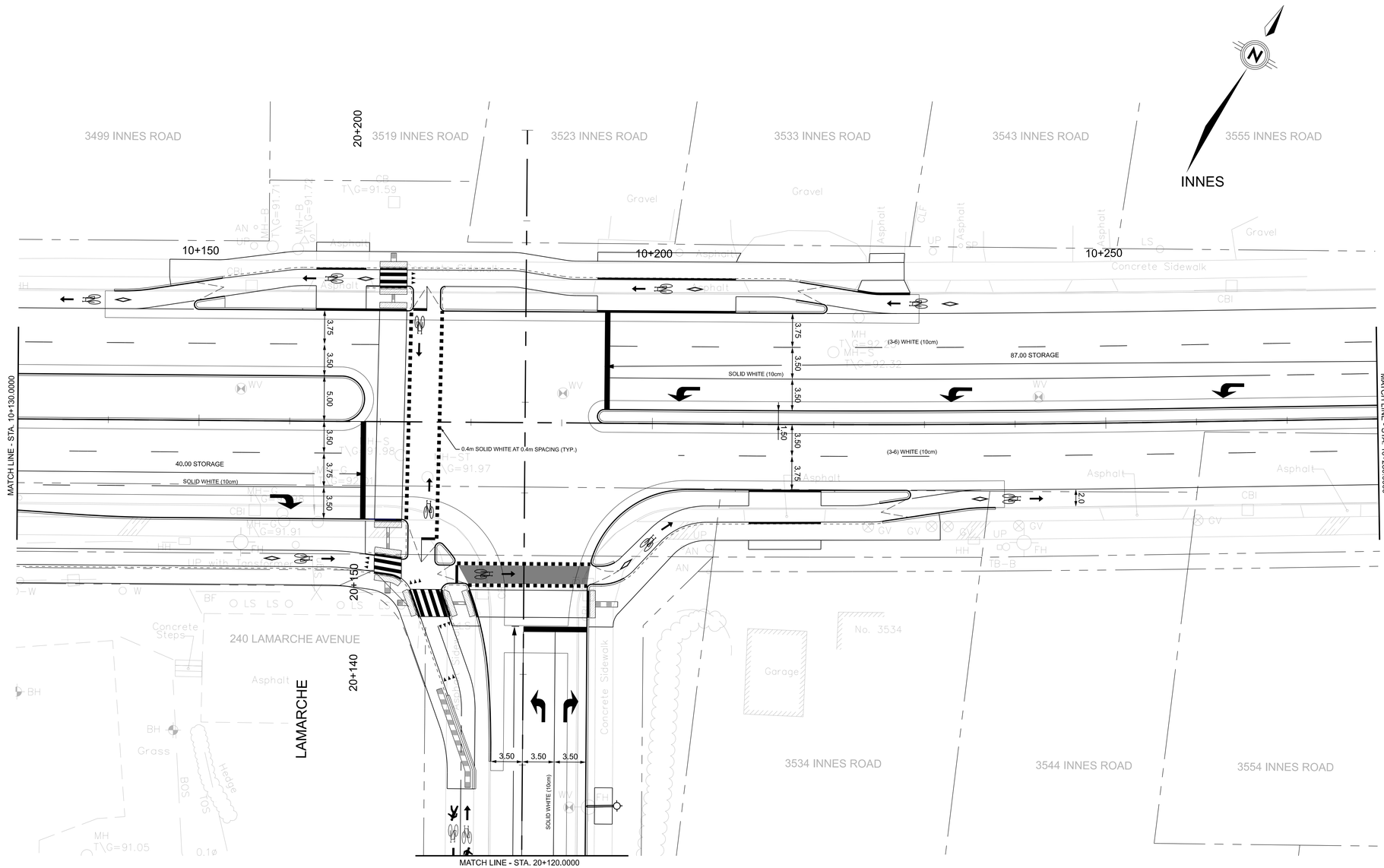
CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
4/26/2018	2018	18:06	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	05 - Turning movement	01 - Dry	0	0	0	0
11/22/2018	2018	14:37	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
12/31/2018	2018	21:30	INNES RD (__3ZAYFDA)	03 - Snow	07 - Dark	10 - No control	0	03 - P.D. only	02 - Angle	05 - Packed snow	0	0	0	0
4/21/2019	2019	19:26	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	0	0	0	0
7/10/2019	2019	7:15	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	01 - Dry	0	0	0	0
1/25/2020	2020	17:00	INNES RD (__3ZAYFDA)	03 - Snow	05 - Dusk	10 - No control	0	03 - P.D. only	07 - SMV other	04 - Slush	0	0	0	0
4/20/2020	2020	19:59	INNES RD (__3ZAYFDA)	01 - Clear	05 - Dusk	10 - No control	0	03 - P.D. only	03 - Rear end	01 - Dry	0	0	0	0
7/6/2020	2020	7:05	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	02 - Non-fatal injury	07 - SMV other	01 - Dry	0	1	0	0
1/9/2021	2021	14:20	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
2/16/2021	2021	12:36	INNES RD (__3ZAYFDA)	03 - Snow	01 - Daylight	10 - No control	0	02 - Non-fatal injury	02 - Angle	06 - Ice	0	0	0	0
6/25/2021	2021	17:01	DE LAMARCHE AVE @ INNES RD (0018480)	01 - Clear	01 - Daylight	02 - Stop sign	0	02 - Non-fatal injury	02 - Angle	01 - Dry	0	0	1	0
9/15/2021	2021	17:00	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	04 - Sideswipe	01 - Dry	0	0	0	0
9/25/2021	2021	9:06	INNES RD (__3ZAYFDA)	01 - Clear	01 - Daylight	10 - No control	0	03 - P.D. only	02 - Angle	02 - Wet	0	0	0	0

Appendix F

Innes Road and Lamarche Avenue Intersection Modification

CGH TRANSPORTATION



KEY PLAN

NOT TO SCALE

NOTES

PRELIMINARY
NOT FOR CONSTRUCTION
May 3, 2024

PARSONS

No.	Revision	By	Date (dd/mm/yy)
01	ISSUED FOR PRELIMINARY CIRCULATION	MH	03/05/24

Scale

0m 2.5 5 10

Project Title

INNES ROAD AND LAMARCHE AVENUE INTERSECTION MODIFICATION

Drawing Title

PAVEMENT MARKINGS 2
INNES ROAD
STA. 10+130 TO STA. 10+280

Designed by: DDC	Datum
Drawn by: DDC	
Approved by: MH	
Project No. 478567	Drawing No. 027

Appendix G

TDM Checklist

CGH TRANSPORTATION

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	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	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)*	☐
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)*	☑

		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)*	☑
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)*	☑
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)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
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	☐
	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	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *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)*	☑
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)*	☑
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)*	☑
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)*	☐
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	☐
	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)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑
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	☐
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)*	☐
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	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	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)*	☐
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

TDM Measures Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

	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	☑
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)	☐
	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)*	☐

			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	☑
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

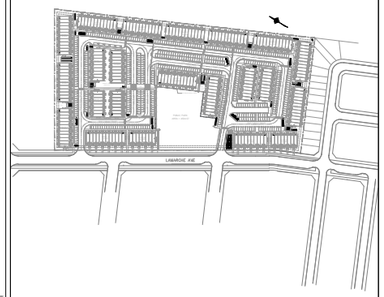
Appendix H

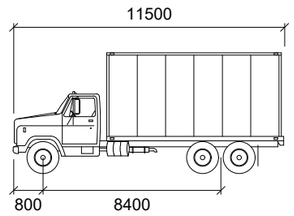
Turning Templates

CGH TRANSPORTATION

Notes:

Key Plan:





HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

FORWARD MOVEMENTS

REVERSE MOVEMENTS

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	AN	2024-08-27

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Cavian

ARCHITECT:

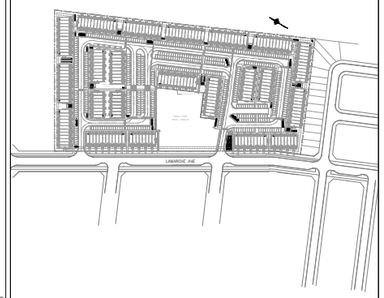
SITE: Orleans Village Phase 4

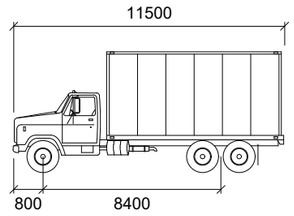
TITLE: Garbage Turning Movements
Site Curculation Movements (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-08-27	AN	AH
PROJECT NO:	DRAWING NO:		REVISION:
2021-106	001		01

Notes:

Key Plan:





HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

FORWARD MOVEMENTS

REVERSE MOVEMENTS

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	AN	2024-08-27

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Cavian

ARCHITECT:

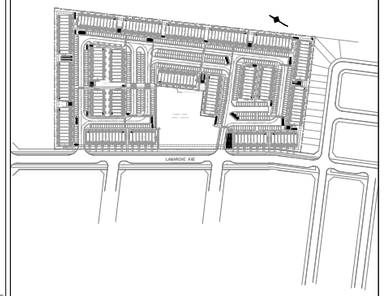
SITE: Orleans Village Phase 4

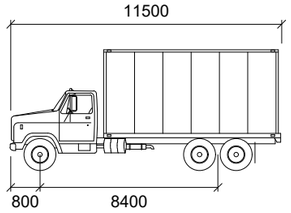
TITLE: Garbage Turning Movements
Site Curculation Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-08-27	AN	AH
PROJECT NO:	DRAWING NO:		REVISION:
2021-106	002		01

Notes:

Key Plan:





HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

FORWARD MOVEMENTS

REVERSE MOVEMENTS

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	AN	2024-08-27

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Cavian

ARCHITECT:

SITE: Orleans Village Phase 4

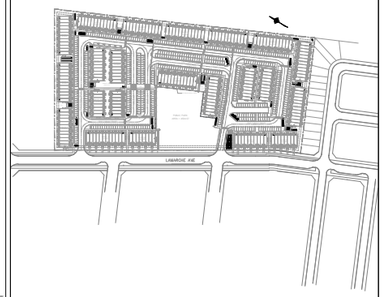
TITLE: Garbage Turning Movements
Pick-up Movements - Inbound

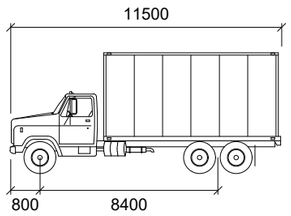
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-08-27	AN	AH

PROJECT NO:	DRAWING NO:	REVISION:
2021-106	003	01

Notes:

Key Plan:





HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

FORWARD MOVEMENTS

REVERSE MOVEMENTS

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	AN	2024-08-27

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Cavian

ARCHITECT:

SITE: Orleans Village Phase 4

TITLE: Garbage Turning Movements
Pick-up Movements - Inbound

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-08-27	AN	AH
PROJECT NO:	DRAWING NO:		REVISION:
2021-106	004		01

Appendix I

MMLOS Analysis

Multi-Modal Level of Service - Intersections Form

Consultant	**CGH Transportation Inc.**	**Project**	**245 and 275 Lamarche Avenue**
Scenario	**Existing/Future**	**Date**	**8/28/2024**
Comments			

INTERSECTIONS		Innes Road at Orleans Boulevard				Innes Road at Page Road				Innes Road at Lamarche Avenue (Future)				Innes Road at Access 3615 Innes Road/3636 Innes Road				Innes Road at Viseneau Drive			
Crossing Side		**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**	**NORTH**	**SOUTH**	**EAST**	**WEST**
Pedestrian	Lanes	6	6	8	8	6	6	8	8		3		7	4	5	7	7	5	7	9	9
	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	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	Protected	Protected	Permissive	Protected/ Permissive	Permissive	Permissive	Permissive	Permissive		Protected		Protected	Permissive	Permissive	Permissive	Permissive	Permissive	Protected/ Permissive	Permissive	Permissive
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control		Permissive or yield control		No right turn	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
	Right Turns on Red (RTaR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed		RTOR prohibited		RTOR prohibited	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No		No		No	No	No	No	No	No	No	Yes	Yes
	Right Turn Channel	Conventional with Receiving Lane	Conventional with Receiving Lane	Conventional with Receiving Lane	Conv'tl without Receiving Lane	No Channel	No Channel	No Channel	No Channel		No Channel		No Right Turn	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel
	Corner Radius	15-25m	15-25m	15-25m	15-25m	10-15m	10-15m	10-15m	10-15m		3-5m		No Right Turn	3-5m	5-10m	10-15m	5-10m	5-10m	10-15m	10-15m	10-15m
	Crosswalk Type	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis 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	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings
	PETSI Score	**27**	**27**	**-10**	**-7**	**20**	**20**	**-12**	**-12**		**83**		**30**	**55**	**38**	**4**	**11**	**38**	**4**	**-24**	**-24**
	Ped. Exposure to Traffic LoS	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**-**	**B**	**-**	**E**	**D**	**E**	**F**	**F**	**E**	**F**	**#N/A**	**#N/A**
	Cycle Length	110	110	110	110	110	110	110	110				120	110	110	110	110	120	120	120	120
	Effective Walk Time	7	19	15	26	7	7	41	41				45	8	8	57	57	8	8	43	26
	Average Pedestrian Delay	**48**	**38**	**41**	**32**	**48**	**48**	**22**	**22**				**23**	**47**	**47**	**13**	**13**	**52**	**52**	**25**	**37**
	Pedestrian Delay LoS	**E**	**D**	**E**	**D**	**E**	**E**	**C**	**C**	**-**	**-**	**-**	**C**	**E**	**E**	**B**	**B**	**E**	**E**	**C**	**D**
	Level of Service	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**-**	**B**	**-**	**E**	**E**	**E**	**F**	**F**	**E**	**F**	**#N/A**	**#N/A**
		F				**F**				**E**				**F**				**#N/A**			
Approach From		**NORTH**	**SOUTH**	**EAST**	**WEST**	**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	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP		Curb Bike Lane, Cycletrack or MUP	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	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	Right Turn Lane Configuration	> 50 m	≤ 50 m	> 50 m	Not Applicable			Not Applicable	Not Applicable		Not Applicable	Not Applicable	Not Applicable			Not Applicable	Not Applicable	≤ 50 m		Not Applicable	Not Applicable
	Right Turning Speed	>25 km/h	>25 km/h	>25 km/h	Not Applicable			Not Applicable	Not Applicable		Not Applicable	Not Applicable	Not Applicable			Not Applicable	Not Applicable	≤ 25 km/h		Not Applicable	Not Applicable
	Cyclist relative to RT motorists	**F**	**E**	**F**	**Not Applicable**	**#N/A**	**#N/A**	**Not Applicable**	**Not Applicable**	**-**	**Not Applicable**	**Not Applicable**	**Not Applicable**	**#N/A**	**#N/A**	**Not Applicable**	**Not Applicable**	**D**	**#N/A**	**Not Applicable**	**Not Applicable**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**-**	**Separated**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**	**Mixed Traffic**	**Mixed Traffic**	**Separated**	**Separated**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	No lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed		2-stage, LT box	2-stage, LT box	2-stage, LT box	No lane crossed	No lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 60 km/h	> 50 to < 60 km/h	≥ 60 km/h	≥ 60 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	≥ 60 km/h	≥ 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	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**B**	**B**	**F**	**F**	**-**	**A**	**A**	**A**	**C**	**C**	**F**	**F**	**B**	**E**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**#N/A**	**#N/A**	**F**	**F**	**-**	**A**	**A**	**A**	**#N/A**	**#N/A**	**F**	**F**	**D**	**#N/A**	**F**	**F**
		F				**#N/A**				**A**				**#N/A**				**#N/A**			
Transit	Average Signal Delay	> 40 sec	≤ 40 sec	> 40 sec	≤ 30 sec			≤ 20 sec	≤ 10 sec			≤ 20 sec	≤ 40 sec			≤ 20 sec	≤ 20 sec	> 40 sec		> 40 sec	≤ 20 sec
	Level of Service	**F**	**E**	**F**	**D**	**-**	**-**	**C**	**B**	**-**	**-**	**C**	**E**	**-**	**-**	**C**	**C**	**F**	**-**	**F**	**C**
		F				**C**				**E**				**C**				**F**			
Truck	Effective Corner Radius	> 15 m		> 15 m																	
	Number of Receiving Lanes on Departure from Intersection	≥ 2		≥ 2																	
	Level of Service	**A**	**-**	**A**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
		A				**-**				**-**				**-**				**-**			
Auto	Volume to Capacity Ratio	> 1.00				> 1.00				0.91 - 1.00				0.71 - 0.80				0.71 - 0.80			
	Level of Service	**F**				**F**				**E**				**C**				**C**			

Multi-Modal Level of Service - Segments Form

Consultant	**CGH Transportation Inc.**	**Project**	**245 and 275 Lamarche Avenue**
Scenario	**Existing/Future**	**Date**	**8/28/2024**
Comments			

SEGMENTS			Lamarche Ave Existing/Future			
Pedestrian	Sidewalk Width Boulevard Width	-	≥ 2 m > 2 m			
	Avg Daily Curb Lane Traffic Volume		≤ 3000			
	Operating Speed On-Street Parking		> 50 to 60 km/h yes			
	Exposure to Traffic PLoS		**A**	-	-	-
	Effective Sidewalk Width					
	Pedestrian Volume					
	Crowding PLoS		-	-	-	-
	Level of Service		**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**A**	Physically Separated			
	Number of Travel Lanes					
	Operating Speed					
	# of Lanes & Operating Speed LoS		-	-	-	-
	Bike Lane (+ Parking Lane) Width					
	Bike Lane Width LoS		-	-	-	-
	Bike Lane Blockages					
	Blockage LoS		-	-	-	-
	Median Refuge Width (no median = < 1.8 m)					
	No. of Lanes at Unsignalized Crossing					
	Sidestreet Operating Speed					
	Unsignalized Crossing - Lowest LoS		**A**	-	-	-
	Level of Service		**A**	**-**	**-**	**-**
Transit	Facility Type	-				
	Friction or Ratio Transit:Posted Speed					
	Level of Service		**-**	**-**	**-**	**-**
Truck	Truck Lane Width	-				
	Travel Lanes per Direction					
	Level of Service		**-**	**-**	**-**	**-**

Appendix J

TRANS Model Plots

CGH TRANSPORTATION

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

245 and 275 Lamarche Avenue

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb, 2022
EMME Scenario: 21713

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 1000

BLACKBURN HAMLET

Renaud Road

Dolman Ri

NOTRE-DAME-DES-CHAMPS

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

245 and 275 Lamarche Avenue

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb, 2022
EMME Scenario: 21714

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

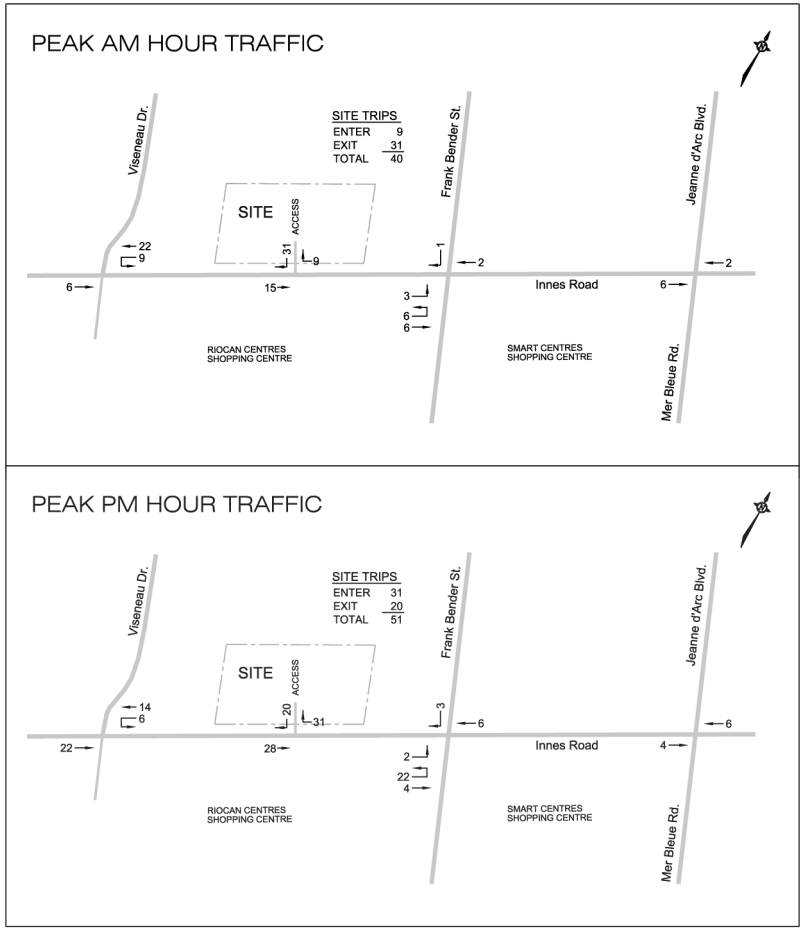
100 1000

Appendix K

Background Developments

CGH TRANSPORTATION

FIGURE 3.1
PEAK AM AND PM HOUR SITE GENERATED TRIPS



NOT TO SCALE

Figure 4: Site Generated Traffic Volumes

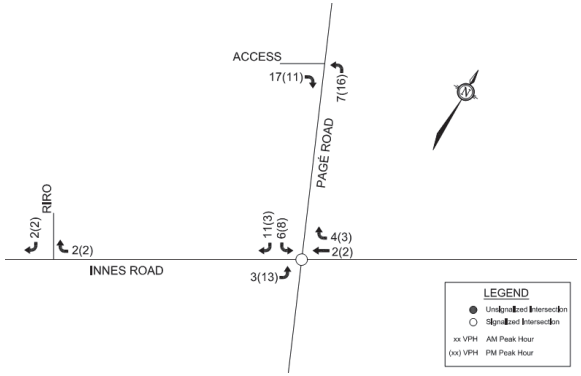


Figure 6: 2023/2028 Site-Generated Traffic

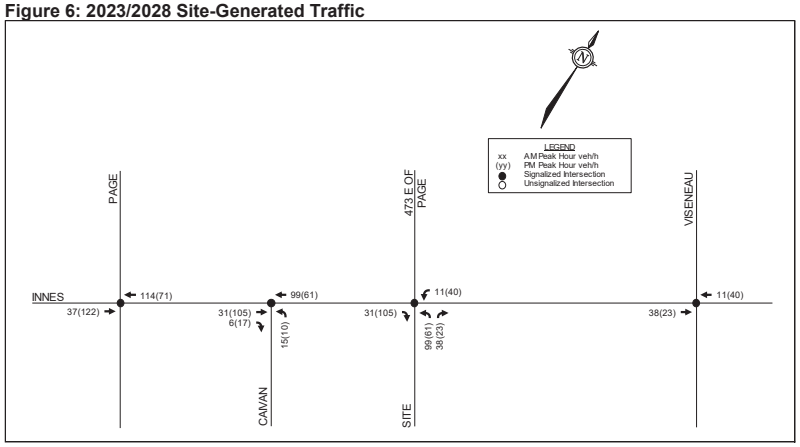


Figure 8: Proposed Site-Generated Primary Traffic Volumes

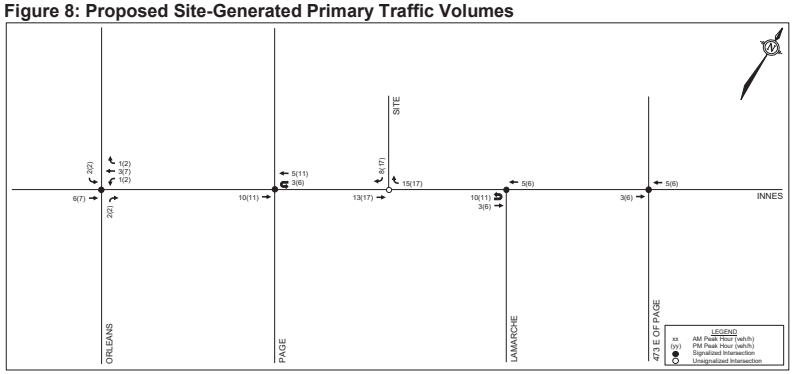


Figure 9: Proposed Site-Generated Pass-by Traffic Volumes

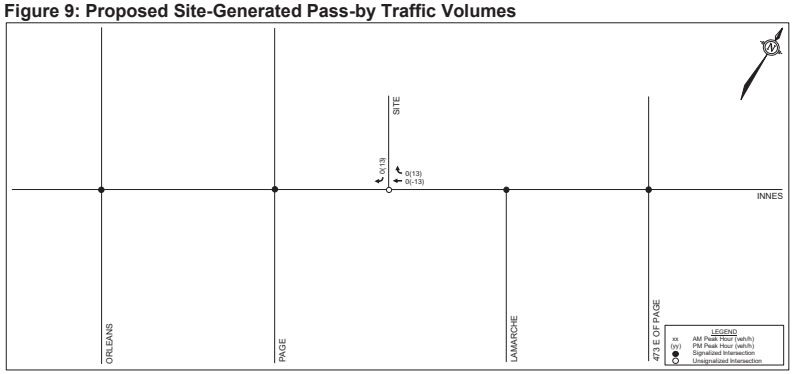
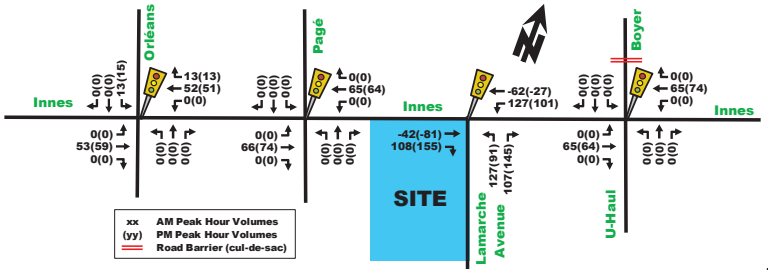


Figure 16: 'New' Site-Generated Peak Hour Traffic



Note: negative values reflect pass-by trip diversions.

Appendix L

Synchro Intersection Worksheets – 2026 Future Background Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	408	32	23	1205	157	111	242	46	101	111	489
Future Volume (vph)	106	408	32	23	1205	157	111	242	46	101	111	489
Satd. Flow (prot)	3124	3103	1427	1658	3316	1427	1642	3252	1441	1658	3221	1483
Flt Permitted	0.950			0.950			0.547			0.601		
Satd. Flow (perm)	3103	3103	1394	1647	3316	1380	944	3252	1388	1030	3221	1463
Satd. Flow (RTOR)			143			143			82			207
Lane Group Flow (vph)	106	408	32	23	1205	157	111	242	46	101	111	489
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	33.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	25.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	64.0	64.0	6.4	58.8	58.8	45.3	45.3	45.3	27.2	27.2	27.2
Actuated g/C Ratio	0.05	0.49	0.49	0.05	0.45	0.45	0.35	0.35	0.35	0.21	0.21	0.21
v/c Ratio	0.69	0.27	0.04	0.28	0.80	0.22	0.29	0.21	0.09	0.47	0.16	1.04
Control Delay	83.8	20.9	0.1	68.3	35.8	5.0	31.8	30.5	1.5	53.9	43.4	81.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	20.9	0.1	68.3	35.8	5.0	31.8	30.5	1.5	53.9	43.4	81.8
LOS	F	C	A	E	D	A	C	C	A	D	D	F
Approach Delay		31.9			32.8			27.5			71.7	
Approach LOS		C			C			C			E	
Queue Length 50th (m)	14.0	34.0	0.0	5.8	137.1	2.0	19.8	22.8	0.0	23.1	12.4	~92.5
Queue Length 95th (m)	#27.1	45.7	0.0	15.1	166.0	14.2	34.0	33.1	2.2	41.7	20.9	#159.0
Internal Link Dist (m)		265.9			463.6			69.4			101.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	153	1527	758	86	1499	702	394	1133	537	215	673	469
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	0.69	0.27	0.04	0.27	0.80	0.22	0.28	0.21	0.09	0.47	0.16	1.04

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: 1.04

Intersection Signal Delay: 40.9	Intersection LOS: D
Intersection Capacity Utilization 90.1%	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 Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	510	21	58	1320	28	14	12	61	51	11	51
Future Volume (vph)	24	510	21	58	1320	28	14	12	61	51	11	51
Satd. Flow (prot)	1483	3173	0	1658	3303	0	0	1508	0	0	1590	0
Flt Permitted	0.173			0.455				0.943			0.824	
Satd. Flow (perm)	270	3173	0	793	3303	0	0	1433	0	0	1339	0
Satd. Flow (RTOR)		6			3			61			35	
Lane Group Flow (vph)	24	531	0	58	1348	0	0	87	0	0	113	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	78.0	78.0		78.0	78.0		42.0	42.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	90.4	90.4		90.4	90.4			16.6			16.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.12	0.22		0.10	0.54			0.35			0.53	
Control Delay	8.5	5.7		8.5	9.8			19.3			39.5	
Queue Delay	0.0	0.0		0.0	0.1			0.0			0.0	
Total Delay	8.5	5.7		8.5	9.9			19.3			39.5	
LOS	A	A		A	A			B			D	
Approach Delay		5.8			9.8			19.3			39.5	
Approach LOS		A			A			B			D	
Queue Length 50th (m)	1.1	13.6		2.6	40.7			5.7			17.8	
Queue Length 95th (m)	7.0	38.8		m10.9	147.5			16.6			29.2	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	203	2392		597	2490			463			417	
Starvation Cap Reductn	0	0		0	272			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.12	0.22		0.10	0.61			0.19			0.27	

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: 85
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	580	47	23	1211	2	109	0	49	0	0	1
Future Volume (vph)	0	580	47	23	1211	2	109	0	49	0	0	1
Satd. Flow (prot)	1745	3159	0	1566	3221	0	1409	1368	0	0	1489	0
Flt Permitted				0.411			0.757					
Satd. Flow (perm)	1745	3159	0	676	3221	0	1121	1368	0	0	1489	0
Satd. Flow (RTOR)		15						355			98	
Lane Group Flow (vph)	0	627	0	23	1213	0	109	49	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		90.2		90.2	90.2		17.4	17.4			17.4	
Actuated g/C Ratio		0.75		0.75	0.75		0.14	0.14			0.14	
v/c Ratio		0.26		0.05	0.50		0.68	0.10			0.00	
Control Delay		7.6		9.9	12.7		67.7	0.4			0.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		7.6		9.9	12.7		67.7	0.4			0.0	
LOS		A		A	B		E	A			A	
Approach Delay		7.6			12.6			46.8				
Approach LOS		A			B			D				
Queue Length 50th (m)		36.7		1.1	47.2		24.8	0.0			0.0	
Queue Length 95th (m)		84.2		m7.5	160.0		40.6	0.0			0.0	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2379		508	2422		249	580			407	
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		0.26		0.05	0.50		0.44	0.08			0.00	

Intersection Summary

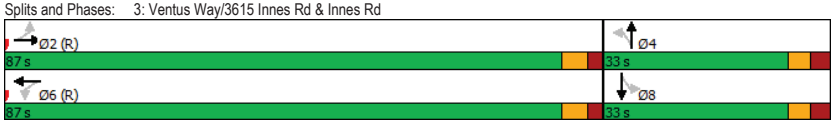
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	584	10	39	1177	45	29	5	16	49	3	32
Future Volume (vph)	21	584	10	39	1177	45	29	5	16	49	3	32
Satd. Flow (prot)	1311	3161	1483	1537	3160	0	1537	1483	1427	0	1510	0
Flt Permitted	0.950			0.950			0.741				0.818	
Satd. Flow (perm)	1311	3161	1444	1533	3160	0	1198	1483	1427	0	1270	0
Satd. Flow (RTOR)			115		4				105		25	
Lane Group Flow (vph)	21	584	10	39	1222	0	29	5	16	0	84	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	12.0	66.0	66.0	12.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%		30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.5	84.0	84.0	8.6	90.2		14.7	14.7	14.7		14.7	
Actuated g/C Ratio	0.06	0.70	0.70	0.07	0.75		0.12	0.12	0.12		0.12	
v/c Ratio	0.26	0.26	0.01	0.36	0.51		0.20	0.03	0.06		0.47	
Control Delay	88.0	2.7	0.0	61.3	11.5		47.1	41.0	0.4		41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	88.0	2.7	0.0	61.3	11.5		47.1	41.0	0.4		41.7	
LOS	F	A	A	E	B		D	D	A		D	
Approach Delay		5.6			13.0			31.6			41.7	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	5.3	2.4	0.0	8.9	41.1		6.5	1.1	0.0		13.5	
Queue Length 95th (m)	14.0	25.6	0.1	19.8	144.7		13.3	4.2	0.0		25.1	
Internal Link Dist (m)		561.5			183.4			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	82	2211	1045	110	2375		296	367	432		333	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.26	0.26	0.01	0.35	0.51		0.10	0.01	0.04		0.25	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

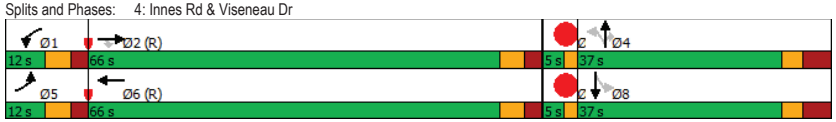
Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Innes Rd & Viseneau Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	565	51	33	1295	111	59	
Future Volume (vph)	565	51	33	1295	111	59	
Satd. Flow (prot)	3191	1455	1658	3221	1642	1469	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3191	1419	1654	3221	1640	1469	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	565	51	33	1295	111	59	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	22.5	22.5	11.7	22.5	22.5	22.5	5.5
Total Split (s)	41.5	41.5	30.0	71.5	43.0	48.5	5.5
Total Split (%)	34.6%	34.6%	25.0%	59.6%	35.8%	40.4%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None	Max
Act Effct Green (s)	79.2	79.2	7.9	88.7	13.5	18.8	
Actuated g/C Ratio	0.66	0.66	0.07	0.74	0.11	0.16	
v/c Ratio	0.27	0.05	0.30	0.54	0.60	0.26	
Control Delay	14.0	15.0	59.1	8.0	63.6	45.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.0	15.0	59.1	8.0	63.6	45.8	
LOS	B	B	E	A	E	D	
Approach Delay	14.1			9.2	57.4		
Approach LOS	B			A	E		
Queue Length 50th (m)	27.3	4.1	6.9	71.4	25.3	12.4	
Queue Length 95th (m)	74.8	18.3	m16.6	108.0	41.9	23.7	
Internal Link Dist (m)	206.5			221.9	196.1		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	2106	936	321	2380	502	514	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.05	0.10	0.54	0.22	0.11	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 5: Lamarche Ave & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1355	97	75	739	185	56	192	95	216	253	267
Future Volume (vph)	462	1355	97	75	739	185	56	192	95	216	253	267
Satd. Flow (prot)	3216	3316	1455	1642	3221	1483	1658	3283	1483	1658	3221	1469
Flt Permitted	0.950			0.950			0.482			0.631		
Satd. Flow (perm)	3191	3316	1421	1639	3221	1446	831	3283	1446	1090	3221	1422
Satd. Flow (RTOR)			165			230			159			267
Lane Group Flow (vph)	462	1355	97	75	739	185	56	192	95	216	253	267
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	31.0	49.0	49.0	16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	33.0
Total Split (%)	28.2%	44.5%	44.5%	14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max	Max
Act Effct Green (s)	20.6	46.2	46.2	8.8	31.6	31.6	38.3	38.3	38.3	28.7	28.7	28.7
Actuated g/C Ratio	0.19	0.42	0.42	0.08	0.29	0.29	0.35	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.77	0.97	0.14	0.57	0.80	0.32	0.17	0.17	0.16	0.76	0.30	0.47
Control Delay	51.3	51.3	0.6	56.0	52.0	14.2	25.7	25.3	0.9	57.6	34.8	7.2
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	51.3	51.3	0.6	56.0	52.0	14.2	25.7	25.3	0.9	57.6	34.8	7.2
LOS	D	D	A	E	D	B	C	C	A	E	C	A
Approach Delay		48.7			45.3			18.6			31.5	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	48.8	~167.3	0.0	13.4	66.6	3.3	8.1	14.8	0.0	44.2	23.7	0.0
Queue Length 95th (m)	63.6	#208.7	0.8	32.5	#119.3	41.3	16.8	23.2	1.3	#84.5	35.3	20.5
Internal Link Dist (m)		265.9			463.6			172.9			182.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	713	1394	692	146	926	579	329	1143	607	284	840	568
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	0.65	0.97	0.14	0.51	0.80	0.32	0.17	0.17	0.16	0.76	0.30	0.47

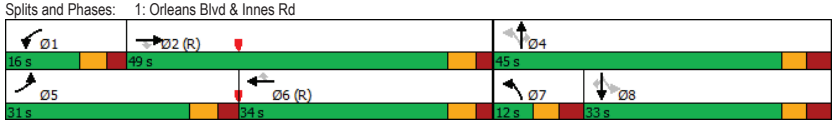
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 42.1	Intersection LOS: D
Intersection Capacity Utilization 99.7%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans Blvd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1593	19	116	947	72	18	18	108	91	17	34
Future Volume (vph)	64	1593	19	116	947	72	18	18	108	91	17	34
Satd. Flow (prot)	1658	3308	0	1658	3239	0	0	1536	0	0	1597	0
Flt Permitted	0.254			0.109				0.952			0.659	
Satd. Flow (perm)	441	3308	0	190	3239	0	0	1471	0	0	1082	0
Satd. Flow (RTOR)		2			12			23			15	
Lane Group Flow (vph)	64	1612	0	116	1019	0	0	144	0	0	142	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	68.0	68.0		68.0	68.0		42.0	42.0		42.0	42.0	
Total Split (%)	61.8%	61.8%		61.8%	61.8%		38.2%	38.2%		38.2%	38.2%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	77.6	77.6		77.6	77.6			19.4			19.4	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.18			0.18	
v/c Ratio	0.21	0.69		0.87	0.45			0.52			0.70	
Control Delay	3.2	5.6		70.6	7.3			38.9			54.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.2	5.6		70.6	7.3			38.9			54.3	
LOS	A	A		E	A			D			D	
Approach Delay		5.5			13.7			38.9			54.3	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	1.5	27.0		19.7	14.3			24.2			26.6	
Queue Length 95th (m)	m2.5	m32.5		#55.8	0.0			35.6			39.3	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	311	2334		134	2289			486			356	
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	0.21	0.69		0.87	0.45			0.30			0.40	

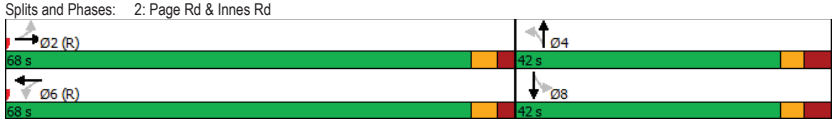
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 101.4%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1580	128	51	1025	10	77	0	46	4	0	7
Future Volume (vph)	11	1580	128	51	1025	10	77	0	46	4	0	7
Satd. Flow (prot)	1658	3255	0	1551	3312	0	1595	1388	0	0	1551	0
Flt Permitted	0.261			0.109			0.750				0.901	
Satd. Flow (perm)	455	3255	0	178	3312	0	1255	1388	0	0	1423	0
Satd. Flow (RTOR)		15			2			39			31	
Lane Group Flow (vph)	11	1708	0	51	1035	0	77	46	0	0	11	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.1	34.1		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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	87.6	87.6		87.6	87.6		14.5	14.5			14.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.13	0.13			0.13	
v/c Ratio	0.03	0.66		0.36	0.39		0.47	0.21			0.05	
Control Delay	3.0	12.1		16.0	5.5		51.6	16.6			2.4	
Queue Delay	0.0	0.6		0.0	0.0		0.0	0.0			0.0	
Total Delay	3.0	12.6		16.0	5.5		51.6	16.6			2.4	
LOS	A	B		B	A		D	B			A	
Approach Delay		12.6			6.0			38.5			2.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.2	201.3		2.8	30.9		15.9	1.4			0.0	
Queue Length 95th (m)	m0.9	230.0		17.9	67.9		26.8	10.3			1.2	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)	85.0			40.0								
Base Capacity (vph)	362	2595		141	2637		304	366			368	
Starvation Cap Reductn	0	453		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.03	0.80		0.36	0.39		0.25	0.13			0.03	

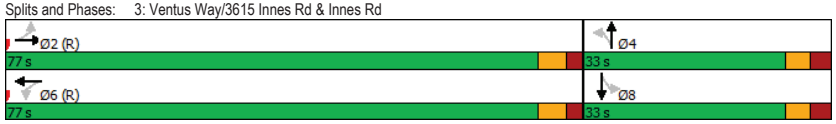
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1528	39	103	1001	90	73	24	112	68	24	17
Future Volume (vph)	38	1528	39	103	1001	90	73	24	112	68	24	17
Satd. Flow (prot)	1566	3316	1483	1658	3176	0	1658	1745	1483	0	1576	0
Flt Permitted	0.950			0.950			0.688				0.796	
Satd. Flow (perm)	1561	3316	1450	1657	3176	0	1197	1745	1462	0	1291	0
Satd. Flow (RTOR)			106		10				112		7	
Lane Group Flow (vph)	38	1528	39	103	1091	0	73	24	112	0	109	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	20.0	68.0	68.0	20.0	68.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	15.4%	52.3%	52.3%	15.4%	52.3%		28.5%	28.5%	28.5%	28.5%	28.5%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.6	79.6	79.6	13.3	86.7		17.2	17.2	17.2		17.2	
Actuated g/C Ratio	0.07	0.61	0.61	0.10	0.67		0.13	0.13	0.13		0.13	
v/c Ratio	0.37	0.75	0.04	0.61	0.51		0.46	0.10	0.39		0.62	
Control Delay	67.2	23.2	0.1	70.3	14.1		59.4	46.8	11.6		63.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	67.2	23.2	0.1	70.3	14.1		59.4	46.8	11.6		63.3	
LOS	E	C	A	E	B		E	D	B		E	
Approach Delay		23.7			18.9			32.4			63.3	
Approach LOS		C			B			C			E	
Queue Length 50th (m)	9.5	135.0	0.0	25.7	69.6		17.8	5.6	0.0		25.4	
Queue Length 95th (m)	20.5	#246.6	0.0	42.8	122.5		29.8	12.3	15.2		40.0	
Internal Link Dist (m)		561.5			183.0			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	165	2029	928	191	2120		273	398	420		300	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.23	0.75	0.04	0.54	0.51		0.27	0.06	0.27		0.36	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 105 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

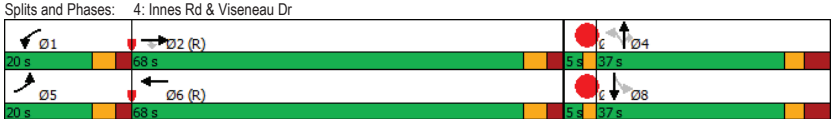
Intersection Summary

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 4: Innes Rd & Viseneau Dr

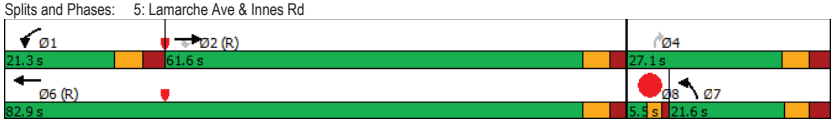


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	1661	125	72	1043	86	60	
Future Volume (vph)	1661	125	72	1043	86	60	
Satd. Flow (prot)	3316	1483	1658	3316	1658	1483	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3316	1437	1656	3316	1658	1483	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1661	125	72	1043	86	60	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	24.0	24.0	11.7	16.0	11.3	22.5	5.5
Total Split (s)	61.6	61.6	21.3	82.9	21.6	27.1	5.5
Total Split (%)	56.0%	56.0%	19.4%	75.4%	19.6%	24.6%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	62.7	62.7	10.1	76.9	13.6	20.6	
Actuated g/C Ratio	0.57	0.57	0.09	0.70	0.12	0.19	
v/c Ratio	0.88	0.15	0.47	0.45	0.42	0.22	
Control Delay	24.3	14.7	52.1	10.3	50.3	40.3	
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.8	
Total Delay	24.4	14.7	52.1	10.3	50.3	41.2	
LOS	C	B	D	B	D	D	
Approach Delay	23.7			13.0	46.6		
Approach LOS	C			B	D		
Queue Length 50th (m)	108.4	11.4	15.1	41.4	17.0	11.0	
Queue Length 95th (m)	#231.0	m17.7	28.7	106.9	32.3	23.0	
Internal Link Dist (m)	206.5			221.9	196.1		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1888	818	220	2318	230	277	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	12	0	0	0	0	92	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.89	0.15	0.33	0.45	0.37	0.32	

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: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88
Intersection Signal Delay: 20.9 — Intersection LOS: C
Intersection Capacity Utilization 73.5% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lamarche Ave & Innes Rd



Appendix M

Synchro Intersection Worksheets – 2031 Future Background Conditions

CGH TRANSPORTATION

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	479	32	23	1310	170	123	268	46	114	111	489
Future Volume (vph)	106	479	32	23	1310	170	123	268	46	114	111	489
Satd. Flow (prot)	3124	3103	1427	1658	3316	1427	1642	3252	1441	1658	3221	1483
Flt Permitted	0.950			0.950			0.546			0.587		
Satd. Flow (perm)	3106	3103	1394	1648	3316	1380	943	3252	1388	1006	3221	1463
Satd. Flow (RTOR)			143			143			82			195
Lane Group Flow (vph)	106	479	32	23	1310	170	123	268	46	114	111	489
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	33.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	25.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	64.0	64.0	6.4	58.8	58.8	45.3	45.3	45.3	26.9	26.9	26.9
Actuated g/C Ratio	0.05	0.49	0.49	0.05	0.45	0.45	0.35	0.35	0.35	0.21	0.21	0.21
v/c Ratio	0.69	0.31	0.04	0.28	0.87	0.24	0.31	0.24	0.09	0.55	0.17	1.07
Control Delay	83.8	21.5	0.1	68.3	40.1	5.9	32.4	30.8	1.5	57.7	43.5	91.5
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	83.8	21.5	0.1	68.3	40.1	5.9	32.4	30.8	1.5	57.7	43.5	91.5
LOS	F	C	A	E	D	A	C	C	A	E	D	F
Approach Delay		31.1			36.7			28.2			78.6	
Approach LOS		C			D			C			E	
Queue Length 50th (m)	14.0	41.0	0.0	5.8	156.8	3.8	22.1	25.5	0.0	26.5	12.4	~97.7
Queue Length 95th (m)	#27.1	54.0	0.0	15.1	189.2	16.8	37.2	36.3	2.2	46.8	20.9	#164.2
Internal Link Dist (m)		265.9			463.6			173.7			101.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	153	1527	758	86	1499	702	394	1133	537	208	667	457
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	0.69	0.31	0.04	0.27	0.87	0.24	0.31	0.24	0.09	0.55	0.17	1.07

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: 1.07

Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

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

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

Splits and Phases: 1: Orleans Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	594	21	58	1438	28	14	12	61	51	11	51
Future Volume (vph)	24	594	21	58	1438	28	14	12	61	51	11	51
Satd. Flow (prot)	1483	3176	0	1658	3303	0	0	1508	0	0	1590	0
Flt Permitted	0.148			0.418				0.943			0.824	
Satd. Flow (perm)	231	3176	0	729	3303	0	0	1433	0	0	1339	0
Satd. Flow (RTOR)		5			3			61			35	
Lane Group Flow (vph)	24	615	0	58	1466	0	0	87	0	0	113	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	78.0	78.0		78.0	78.0		42.0	42.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	90.4	90.4		90.4	90.4			16.6			16.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.14	0.26		0.11	0.59			0.35			0.53	
Control Delay	9.2	5.9		11.5	15.2			19.3			39.5	
Queue Delay	0.0	0.0		0.0	0.3			0.0			0.0	
Total Delay	9.2	5.9		11.5	15.5			19.3			39.5	
LOS	A	A		B	B			B			D	
Approach Delay		6.1			15.4			19.3			39.5	
Approach LOS		A			B			B			D	
Queue Length 50th (m)	1.1	16.3		4.9	71.7			5.7			17.8	
Queue Length 95th (m)	7.4	45.8		m14.5	201.8			16.6			29.2	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	173	2395		549	2490			463			417	
Starvation Cap Reductn	0	0		0	424			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.14	0.26		0.11	0.71			0.19			0.27	

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: 85
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	663	47	23	1329	2	109	0	49	0	0	1
Future Volume (vph)	0	663	47	23	1329	2	109	0	49	0	0	1
Satd. Flow (prot)	1745	3161	0	1566	3221	0	1409	1368	0	0	1489	0
Flt Permitted				0.374			0.757					
Satd. Flow (perm)	1745	3161	0	615	3221	0	1121	1368	0	0	1489	0
Satd. Flow (RTOR)		13						302			77	
Lane Group Flow (vph)	0	710	0	23	1331	0	109	49	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		90.2		90.2	90.2		17.4	17.4			17.4	
Actuated g/C Ratio		0.75		0.75	0.75		0.14	0.14			0.14	
v/c Ratio		0.30		0.05	0.55		0.68	0.11			0.00	
Control Delay		0.8		9.8	13.6		67.7	0.5			0.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		0.8		9.8	13.6		67.7	0.5			0.0	
LOS		A		A	B		E	A			A	
Approach Delay		0.8			13.5			46.9				
Approach LOS		A			B			D				
Queue Length 50th (m)		0.2		1.1	55.1		24.8	0.0			0.0	
Queue Length 95th (m)		1.2		m6.1	176.3		40.6	0.0			0.0	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2380		462	2422		249	539			391	
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		0.30		0.05	0.55		0.44	0.09			0.00	

Intersection Summary

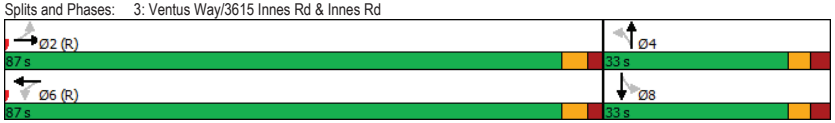
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	667	10	39	1295	45	29	5	16	49	3	32
Future Volume (vph)	21	667	10	39	1295	45	29	5	16	49	3	32
Satd. Flow (prot)	1311	3161	1483	1537	3165	0	1537	1483	1427	0	1510	0
Flt Permitted	0.950			0.950			0.741				0.818	
Satd. Flow (perm)	1311	3161	1444	1533	3165	0	1198	1483	1427	0	1270	0
Satd. Flow (RTOR)			115		4				105		25	
Lane Group Flow (vph)	21	667	10	39	1340	0	29	5	16	0	84	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	12.0	66.0	66.0	12.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%		30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.5	84.0	84.0	8.6	90.2		14.7	14.7	14.7		14.7	
Actuated g/C Ratio	0.06	0.70	0.70	0.07	0.75		0.12	0.12	0.12		0.12	
v/c Ratio	0.26	0.30	0.01	0.36	0.56		0.20	0.03	0.06		0.47	
Control Delay	78.3	4.5	0.0	61.3	12.4		47.1	41.0	0.4		41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	78.3	4.5	0.0	61.3	12.4		47.1	41.0	0.4		41.7	
LOS	E	A	A	E	B		D	D	A		D	
Approach Delay		6.6			13.8			31.6			41.7	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	5.2	9.1	0.0	8.9	47.8		6.5	1.1	0.0		13.5	
Queue Length 95th (m)	14.2	18.0	m0.0	19.8	168.4		13.3	4.2	0.0		25.1	
Internal Link Dist (m)		561.5			183.4			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	82	2211	1045	110	2379		296	367	432		333	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.26	0.30	0.01	0.35	0.56		0.10	0.01	0.04		0.25	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

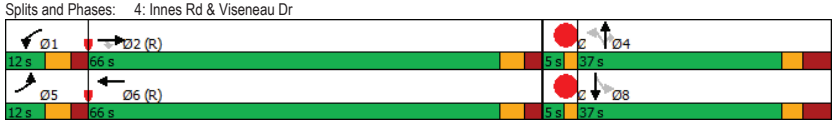
Intersection Summary

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 4: Innes Rd & Viseneau Dr



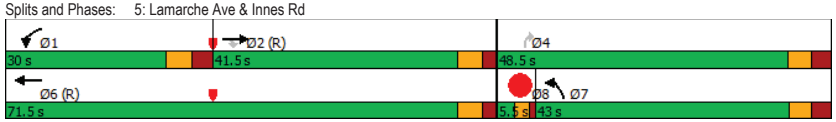
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	541	159	160	1286	238	166	
Future Volume (vph)	541	159	160	1286	238	166	
Satd. Flow (prot)	3191	1455	1658	3221	1642	1469	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3191	1419	1654	3221	1640	1469	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	541	159	160	1286	238	166	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	22.5	22.5	11.7	22.5	22.5	22.5	5.5
Total Split (s)	41.5	41.5	30.0	71.5	43.0	48.5	5.5
Total Split (%)	34.6%	34.6%	25.0%	59.6%	35.8%	40.4%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None	Max
Act Effct Green (s)	55.9	55.9	16.8	79.4	22.8	28.1	
Actuated g/C Ratio	0.47	0.47	0.14	0.66	0.19	0.23	
v/c Ratio	0.36	0.24	0.69	0.60	0.77	0.48	
Control Delay	27.9	28.9	59.3	13.3	61.6	43.5	
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	
Total Delay	27.9	28.9	59.3	13.3	61.8	43.5	
LOS	C	C	E	B	E	D	
Approach Delay	28.2			18.4	54.3		
Approach LOS	C			B	D		
Queue Length 50th (m)	38.4	20.3	36.9	89.2	53.6	33.9	
Queue Length 95th (m)	87.6	59.9	60.8	121.4	75.3	50.7	
Internal Link Dist (m)	206.5			221.9	196.1		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1487	661	321	2131	502	514	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	41	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.36	0.24	0.50	0.60	0.52	0.32	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Lamarche Ave & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1475	107	75	822	198	56	192	95	231	279	267
Future Volume (vph)	462	1475	107	75	822	198	56	192	95	231	279	267
Satd. Flow (prot)	3216	3316	1455	1642	3221	1483	1658	3283	1483	1658	3221	1469
Flt Permitted	0.950			0.950			0.462			0.631		
Satd. Flow (perm)	3194	3316	1421	1639	3221	1446	797	3283	1446	1090	3221	1422
Satd. Flow (RTOR)			165			230			159			267
Lane Group Flow (vph)	462	1475	107	75	822	198	56	192	95	231	279	267
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	31.0	49.0	49.0	16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	33.0
Total Split (%)	28.2%	44.5%	44.5%	14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max	Max
Act Effct Green (s)	20.6	46.2	46.2	8.8	31.6	31.6	38.3	38.3	38.3	28.7	28.7	28.7
Actuated g/C Ratio	0.19	0.42	0.42	0.08	0.29	0.29	0.35	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.77	1.06	0.15	0.57	0.89	0.34	0.18	0.17	0.16	0.81	0.33	0.47
Control Delay	51.3	73.9	1.2	56.0	56.1	14.9	25.8	25.3	0.9	62.9	35.2	7.2
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	51.3	73.9	1.2	56.0	56.1	14.9	25.8	25.3	0.9	62.9	35.2	7.2
LOS	D	E	A	E	E	B	C	C	A	E	D	A
Approach Delay		65.0			48.6			18.6			33.8	
Approach LOS		E			D			B			C	
Queue Length 50th (m)	48.8	~195.5	0.0	14.0	68.8	3.5	8.1	14.8	0.0	48.1	26.3	0.0
Queue Length 95th (m)	63.6	#237.3	2.5	32.1	#140.8	43.4	16.8	23.2	1.3	#92.6	38.5	20.5
Internal Link Dist (m)		265.9			463.6			320.4			270.5	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	713	1394	692	146	926	579	318	1143	607	284	840	568
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	0.65	1.06	0.15	0.51	0.89	0.34	0.18	0.17	0.16	0.81	0.33	0.47

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: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 51.4	Intersection LOS: D
Intersection Capacity Utilization 104.1%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1728	19	116	1043	72	18	18	108	91	17	34
Future Volume (vph)	64	1728	19	116	1043	72	18	18	108	91	17	34
Satd. Flow (prot)	1658	3308	0	1658	3243	0	0	1536	0	0	1597	0
Flt Permitted	0.224			0.087				0.952			0.659	
Satd. Flow (perm)	389	3308	0	152	3243	0	0	1471	0	0	1082	0
Satd. Flow (RTOR)		2			10			16			15	
Lane Group Flow (vph)	64	1747	0	116	1115	0	0	144	0	0	142	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	68.0	68.0		68.0	68.0		42.0	42.0		42.0	42.0	
Total Split (%)	61.8%	61.8%		61.8%	61.8%		38.2%	38.2%		38.2%	38.2%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	77.6	77.6		77.6	77.6			19.4			19.4	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.18			0.18	
v/c Ratio	0.23	0.75		1.08	0.49			0.53			0.70	
Control Delay	3.0	7.5		134.5	8.9			41.5			54.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.0	7.5		134.5	8.9			41.5			54.3	
LOS	A	A		F	A			D			D	
Approach Delay		7.4			20.7			41.5			54.3	
Approach LOS		A			C			D			D	
Queue Length 50th (m)	1.4	27.3		~24.1	24.8			25.8			26.6	
Queue Length 95th (m)	m2.4	m32.0		m#59.8	37.4			37.0			39.3	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	274	2334		107	2291			481			356	
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	0.23	0.75		1.08	0.49			0.30			0.40	

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: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 105.3%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1705	128	51	1131	10	77	0	46	4	0	7
Future Volume (vph)	11	1705	128	51	1131	10	77	0	46	4	0	7
Satd. Flow (prot)	1658	3260	0	1551	3312	0	1595	1388	0	0	1551	0
Flt Permitted	0.230			0.090			0.750				0.901	
Satd. Flow (perm)	401	3260	0	147	3312	0	1255	1388	0	0	1423	0
Satd. Flow (RTOR)		14			2			31			31	
Lane Group Flow (vph)	11	1833	0	51	1141	0	77	46	0	0	11	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.1	34.1		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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	87.6	87.6		87.6	87.6		14.5	14.5			14.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.13	0.13			0.13	
v/c Ratio	0.03	0.71		0.44	0.43		0.47	0.22			0.05	
Control Delay	2.4	10.0		23.3	5.9		51.6	21.0			2.4	
Queue Delay	0.0	0.7		0.0	0.0		0.0	0.0			0.0	
Total Delay	2.4	10.7		23.3	5.9		51.6	21.0			2.4	
LOS	A	B		C	A		D	C			A	
Approach Delay		10.6			6.6			40.2			2.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.0	198.2		3.1	35.7		15.9	2.9			0.0	
Queue Length 95th (m)	m0.7	m226.2		#26.1	78.2		26.8	11.8			1.2	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)	85.0			40.0								
Base Capacity (vph)	319	2599		117	2637		304	360			368	
Starvation Cap Reductn	0	398		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.03	0.83		0.44	0.43		0.25	0.13			0.03	

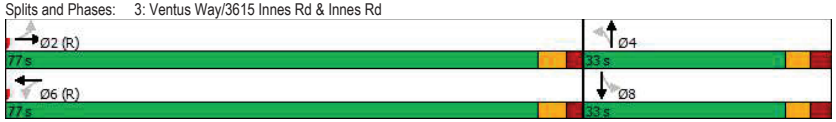
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1653	39	103	1107	90	73	24	112	68	24	17
Future Volume (vph)	38	1653	39	103	1107	90	73	24	112	68	24	17
Satd. Flow (prot)	1566	3316	1483	1658	3180	0	1658	1745	1483	0	1576	0
Flt Permitted	0.950			0.950			0.688				0.796	
Satd. Flow (perm)	1562	3316	1450	1657	3180	0	1197	1745	1462	0	1291	0
Satd. Flow (RTOR)			106		9				112		7	
Lane Group Flow (vph)	38	1653	39	103	1197	0	73	24	112	0	109	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	20.0	68.0	68.0	20.0	68.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	15.4%	52.3%	52.3%	15.4%	52.3%		28.5%	28.5%	28.5%	28.5%	28.5%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.6	79.6	79.6	13.3	86.7		17.2	17.2	17.2		17.2	
Actuated g/C Ratio	0.07	0.61	0.61	0.10	0.67		0.13	0.13	0.13		0.13	
v/c Ratio	0.37	0.81	0.04	0.61	0.56		0.46	0.10	0.39		0.62	
Control Delay	67.2	25.6	0.1	70.3	15.0		59.4	46.8	11.6		63.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	67.2	25.6	0.1	70.3	15.0		59.4	46.8	11.6		63.3	
LOS	E	C	A	E	B		E	D	B		E	
Approach Delay		25.9			19.4			32.4			63.3	
Approach LOS		C			B			C			E	
Queue Length 50th (m)	9.5	157.3	0.0	25.7	80.6		17.8	5.6	0.0		25.4	
Queue Length 95th (m)	20.5	#281.9	0.0	42.8	141.2		29.8	12.3	15.2		40.0	
Internal Link Dist (m)		561.5			183.0			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	165	2029	928	191	2122		273	398	420		300	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.23	0.81	0.04	0.54	0.56		0.27	0.06	0.27		0.36	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 105 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

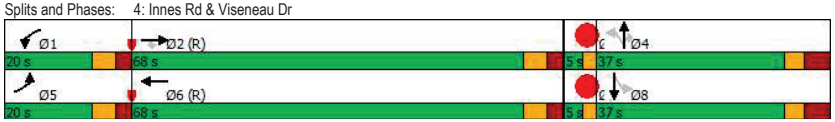
Intersection Summary

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 85.0%	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: 4: Innes Rd & Viseneau Dr



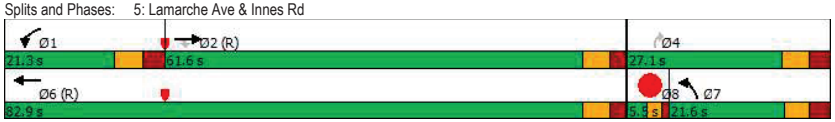
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	1641	280	173	1048	177	205	
Future Volume (vph)	1641	280	173	1048	177	205	
Satd. Flow (prot)	3316	1483	1658	3316	1658	1483	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3316	1437	1656	3316	1658	1483	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1641	280	173	1048	177	205	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	24.0	24.0	11.7	16.0	11.3	22.5	5.5
Total Split (s)	61.6	61.6	21.3	82.9	21.6	27.1	5.5
Total Split (%)	56.0%	56.0%	19.4%	75.4%	19.6%	24.6%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	56.2	56.2	14.0	76.9	15.3	20.6	
Actuated g/C Ratio	0.51	0.51	0.13	0.70	0.14	0.19	
v/c Ratio	0.97	0.38	0.82	0.45	0.77	0.74	
Control Delay	35.1	18.3	71.4	10.4	68.3	59.5	
Queue Delay	0.1	0.0	0.0	0.0	0.0	61.4	
Total Delay	35.3	18.3	71.4	10.4	68.3	120.8	
LOS	D	B	E	B	E	F	
Approach Delay	32.8			19.1	96.5		
Approach LOS	C			B	F		
Queue Length 50th (m)	114.5	35.6	36.9	42.1	37.1	41.9	
Queue Length 95th (m)	#227.4	m36.4	#71.0	111.2	#70.2	#74.8	
Internal Link Dist (m)	206.5			221.9	196.1		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1695	734	220	2318	230	277	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	2	0	0	0	0	92	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.97	0.38	0.79	0.45	0.77	1.11	

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: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.9 — Intersection LOS: C
Intersection Capacity Utilization 84.2% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lamarche Ave & Innes Rd



Appendix N

Synchro Intersection Worksheets – 2026 Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	428	32	23	1251	172	111	242	46	108	111	489
Future Volume (vph)	106	428	32	23	1251	172	111	242	46	108	111	489
Satd. Flow (prot)	3124	3103	1427	1658	3316	1427	1642	3252	1441	1658	3221	1483
Flt Permitted	0.950			0.950			0.547			0.601		
Satd. Flow (perm)	3105	3103	1394	1647	3316	1380	944	3252	1388	1030	3221	1463
Satd. Flow (RTOR)			143			143			82			204
Lane Group Flow (vph)	106	428	32	23	1251	172	111	242	46	108	111	489
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	33.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	25.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	64.0	64.0	6.4	58.8	58.8	45.3	45.3	45.3	27.2	27.2	27.2
Actuated g/C Ratio	0.05	0.49	0.49	0.05	0.45	0.45	0.35	0.35	0.35	0.21	0.21	0.21
v/c Ratio	0.69	0.28	0.04	0.28	0.83	0.25	0.29	0.21	0.09	0.50	0.16	1.05
Control Delay	83.8	21.0	0.1	68.3	37.5	6.0	31.8	30.5	1.5	55.2	43.4	83.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.8	21.0	0.1	68.3	37.5	6.0	31.8	30.5	1.5	55.2	43.4	83.8
LOS	F	C	A	E	D	A	C	C	A	E	D	F
Approach Delay		31.6			34.2			27.5			73.1	
Approach LOS		C			C			C			E	
Queue Length 50th (m)	14.0	36.0	0.0	5.8	145.6	4.1	19.8	22.8	0.0	24.9	12.4	~93.8
Queue Length 95th (m)	#27.1	48.0	0.0	15.1	175.8	17.1	34.0	33.1	2.2	44.4	20.9	#160.3
Internal Link Dist (m)		265.9			463.6			69.4			101.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	153	1527	758	86	1499	702	394	1133	537	215	673	467
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	0.69	0.28	0.04	0.27	0.83	0.25	0.28	0.21	0.09	0.50	0.16	1.05

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

Lanes, Volumes, Timings
1: Orleans Blvd & Innes Rd

2026 Future Total
AM Peak Hour

Maximum v/c Ratio: 1.05
Intersection Signal Delay: 41.7 — Intersection LOS: D
Intersection Capacity Utilization 91.4% — 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 Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	536	21	58	1381	28	14	12	61	51	11	51
Future Volume (vph)	24	536	21	58	1381	28	14	12	61	51	11	51
Satd. Flow (prot)	1483	3173	0	1658	3303	0	0	1508	0	0	1590	0
Flt Permitted	0.160			0.443				0.943			0.824	
Satd. Flow (perm)	250	3173	0	773	3303	0	0	1433	0	0	1339	0
Satd. Flow (RTOR)		6			3			61			35	
Lane Group Flow (vph)	24	557	0	58	1409	0	0	87	0	0	113	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	78.0	78.0		78.0	78.0		42.0	42.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	90.4	90.4		90.4	90.4			16.6			16.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.13	0.23		0.10	0.57			0.35			0.53	
Control Delay	8.8	5.8		10.2	12.4			19.3			39.5	
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0	
Total Delay	8.8	5.8		10.2	12.6			19.3			39.5	
LOS	A	A		B	B			B			D	
Approach Delay		5.9			12.5			19.3			39.5	
Approach LOS		A			B			B			D	
Queue Length 50th (m)	1.1	14.4		3.7	56.6			5.7			17.8	
Queue Length 95th (m)	7.2	41.0		m12.3	173.7			16.6			29.2	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	188	2392		582	2490			463			417	
Starvation Cap Reductn	0	0		0	355			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.13	0.23		0.10	0.66			0.19			0.27	

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: 85
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57
Intersection Signal Delay: 12.4 — Intersection LOS: B
Intersection Capacity Utilization 77.9% — ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	621	47	23	1229	2	109	0	49	0	0	1
Future Volume (vph)	0	621	47	23	1229	2	109	0	49	0	0	1
Satd. Flow (prot)	1745	3158	0	1566	3221	0	1409	1368	0	0	1489	0
Flt Permitted				0.393			0.757					
Satd. Flow (perm)	1745	3158	0	647	3221	0	1121	1368	0	0	1489	0
Satd. Flow (RTOR)		14						328			95	
Lane Group Flow (vph)	0	668	0	23	1231	0	109	49	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		90.2		90.2	90.2		17.4	17.4			17.4	
Actuated g/C Ratio		0.75		0.75	0.75		0.14	0.14			0.14	
v/c Ratio		0.28		0.05	0.51		0.68	0.10			0.00	
Control Delay		4.7		9.9	12.8		67.7	0.4			0.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		4.7		9.9	12.8		67.7	0.4			0.0	
LOS		A		A	B		E	A			A	
Approach Delay		4.7			12.7			46.8				
Approach LOS		A			B			D				
Queue Length 50th (m)		37.1		1.1	48.3		24.8	0.0			0.0	
Queue Length 95th (m)		84.0		m7.2	162.3		40.6	0.0			0.0	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2378		486	2422		249	559			405	
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		0.28		0.05	0.51		0.44	0.09			0.00	

Intersection Summary

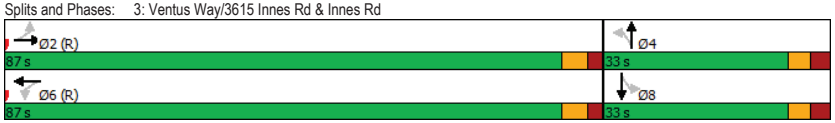
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	625	10	39	1195	45	29	5	16	49	3	32
Future Volume (vph)	21	625	10	39	1195	45	29	5	16	49	3	32
Satd. Flow (prot)	1311	3161	1483	1537	3164	0	1537	1483	1427	0	1510	0
Flt Permitted	0.950			0.950			0.741				0.818	
Satd. Flow (perm)	1311	3161	1444	1533	3164	0	1198	1483	1427	0	1270	0
Satd. Flow (RTOR)			115		4				105		25	
Lane Group Flow (vph)	21	625	10	39	1240	0	29	5	16	0	84	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	12.0	66.0	66.0	12.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%		30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.5	84.0	84.0	8.6	90.2		14.7	14.7	14.7		14.7	
Actuated g/C Ratio	0.06	0.70	0.70	0.07	0.75		0.12	0.12	0.12		0.12	
v/c Ratio	0.26	0.28	0.01	0.36	0.52		0.20	0.03	0.06		0.47	
Control Delay	85.4	3.5	0.0	61.3	11.6		47.1	41.0	0.4		41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	85.4	3.5	0.0	61.3	11.6		47.1	41.0	0.4		41.7	
LOS	F	A	A	E	B		D	D	A		D	
Approach Delay		6.1			13.1			31.6			41.7	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	5.3	3.3	0.0	8.9	42.0		6.5	1.1	0.0		13.5	
Queue Length 95th (m)	14.1	53.1	0.0	19.8	148.0		13.3	4.2	0.0		25.1	
Internal Link Dist (m)		561.5			183.4			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	82	2211	1045	110	2378		296	367	432		333	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.26	0.28	0.01	0.35	0.52		0.10	0.01	0.04		0.25	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

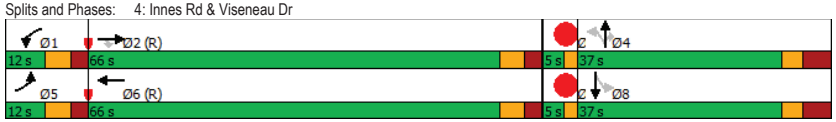
Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Innes Rd & Viseneau Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	565	77	51	1295	172	100	
Future Volume (vph)	565	77	51	1295	172	100	
Satd. Flow (prot)	3191	1455	1658	3221	1642	1469	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3191	1419	1654	3221	1640	1469	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	565	77	51	1295	172	100	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	22.5	22.5	11.7	22.5	22.5	22.5	5.5
Total Split (s)	41.5	41.5	30.0	71.5	43.0	48.5	5.5
Total Split (%)	34.6%	34.6%	25.0%	59.6%	35.8%	40.4%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None	Max
Act Effct Green (s)	70.9	70.9	9.1	84.2	18.0	23.3	
Actuated g/C Ratio	0.59	0.59	0.08	0.70	0.15	0.19	
v/c Ratio	0.30	0.09	0.41	0.57	0.70	0.35	
Control Delay	18.4	18.9	59.7	10.3	63.0	44.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.4	18.9	59.7	10.3	63.0	44.0	
LOS	B	B	E	B	E	D	
Approach Delay	18.5			12.1	56.0		
Approach LOS	B			B	E		
Queue Length 50th (m)	31.5	7.2	11.5	80.3	39.0	20.6	
Queue Length 95th (m)	80.3	27.5	m25.0	109.7	58.5	34.3	
Internal Link Dist (m)	206.5			221.9	77.9		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1884	838	321	2260	502	514	
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	0.30	0.09	0.16	0.57	0.34	0.19	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 19.2	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 5: Lamarche Ave & Innes Rd

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	71	46	0	31	19
Future Vol, veh/h	0	71	46	0	31	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	71	46	0	31	19

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	127	46	0	0	46	0
Stage 1	46	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	868	1023	-	-	1562	-
Stage 1	976	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	851	1023	-	-	1562	-
Mov Cap-2 Maneuver	851	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	923	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	4.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1023	1562	-
HCM Lane V/C Ratio	-	-	0.069	0.02	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	31	15	0	13	6
Future Vol, veh/h	0	31	15	0	13	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	31	15	0	13	6

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	47	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	963	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	955	1065	-	-	1603	-
Mov Cap-2 Maneuver	955	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	983	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1065	1603	-
HCM Lane V/C Ratio	-	-	0.029	0.008	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1398	97	75	772	196	56	192	95	230	253	267
Future Volume (vph)	462	1398	97	75	772	196	56	192	95	230	253	267
Satd. Flow (prot)	3216	3316	1455	1642	3221	1483	1658	3283	1483	1658	3221	1469
Flt Permitted	0.950			0.950			0.482			0.631		
Satd. Flow (perm)	3192	3316	1421	1639	3221	1446	831	3283	1446	1090	3221	1422
Satd. Flow (RTOR)			165			230			159			267
Lane Group Flow (vph)	462	1398	97	75	772	196	56	192	95	230	253	267
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	31.0	49.0	49.0	16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	33.0
Total Split (%)	28.2%	44.5%	44.5%	14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max	Max
Act Effct Green (s)	20.6	46.2	46.2	8.8	31.6	31.6	38.3	38.3	38.3	28.7	28.7	28.7
Actuated g/C Ratio	0.19	0.42	0.42	0.08	0.29	0.29	0.35	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.77	1.00	0.14	0.57	0.83	0.34	0.17	0.17	0.16	0.81	0.30	0.47
Control Delay	51.3	58.3	0.6	56.1	53.1	14.8	25.7	25.3	0.9	62.5	34.8	7.2
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	51.3	58.3	0.6	56.1	53.1	14.8	25.7	25.3	0.9	62.5	34.8	7.2
LOS	D	E	A	E	D	B	C	C	A	E	C	A
Approach Delay		53.8			46.1			18.6			33.5	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	48.8	~177.4	0.0	13.7	67.0	3.6	8.1	14.8	0.0	47.8	23.7	0.0
Queue Length 95th (m)	63.6	#219.1	0.8	32.3	#127.8	43.6	16.8	23.2	1.3	#92.1	35.3	20.5
Internal Link Dist (m)		265.9			463.6			172.9			182.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	713	1394	692	146	926	579	329	1143	607	284	840	568
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	0.65	1.00	0.14	0.51	0.83	0.34	0.17	0.17	0.16	0.81	0.30	0.47

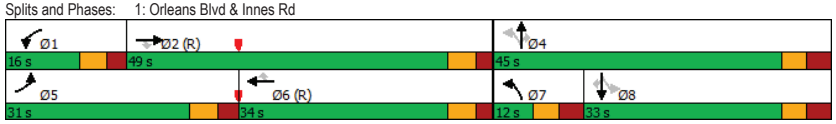
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 45.2	Intersection LOS: D
Intersection Capacity Utilization 101.8%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans Blvd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1650	19	116	991	72	18	18	108	91	17	34
Future Volume (vph)	64	1650	19	116	991	72	18	18	108	91	17	34
Satd. Flow (prot)	1658	3308	0	1658	3242	0	0	1536	0	0	1597	0
Flt Permitted	0.240			0.100				0.952			0.659	
Satd. Flow (perm)	417	3308	0	175	3242	0	0	1471	0	0	1082	0
Satd. Flow (RTOR)		2			11			20			15	
Lane Group Flow (vph)	64	1669	0	116	1063	0	0	144	0	0	142	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	68.0	68.0		68.0	68.0		42.0	42.0		42.0	42.0	
Total Split (%)	61.8%	61.8%		61.8%	61.8%		38.2%	38.2%		38.2%	38.2%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	77.6	77.6		77.6	77.6			19.4			19.4	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.18			0.18	
v/c Ratio	0.22	0.72		0.94	0.46			0.52			0.70	
Control Delay	3.2	6.2		90.1	8.1			40.0			54.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	3.2	6.2		90.1	8.1			40.0			54.3	
LOS	A	A		F	A			D			D	
Approach Delay		6.1			16.1			40.0			54.3	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	1.4	27.2		21.2	19.2			24.9			26.6	
Queue Length 95th (m)	m2.5	m33.3		#58.5	0.0			36.2			39.3	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	294	2334		123	2291			484			356	
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	0.72		0.94	0.46			0.30			0.40	

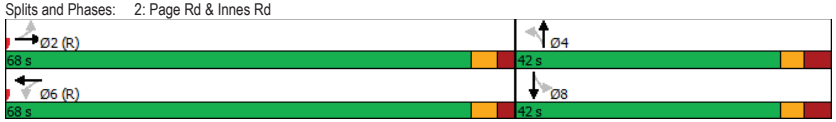
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 103.0%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1610	128	51	1063	10	77	0	46	4	0	7
Future Volume (vph)	11	1610	128	51	1063	10	77	0	46	4	0	7
Satd. Flow (prot)	1658	3256	0	1551	3312	0	1595	1388	0	0	1551	0
Flt Permitted	0.250			0.105			0.750				0.901	
Satd. Flow (perm)	436	3256	0	171	3312	0	1255	1388	0	0	1423	0
Satd. Flow (RTOR)		15			2			37			31	
Lane Group Flow (vph)	11	1738	0	51	1073	0	77	46	0	0	11	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.1	34.1		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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	87.6	87.6		87.6	87.6		14.5	14.5			14.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.13	0.13			0.13	
v/c Ratio	0.03	0.67		0.38	0.41		0.47	0.21			0.05	
Control Delay	2.6	11.2		17.2	5.7		51.6	17.7			2.4	
Queue Delay	0.0	0.6		0.0	0.0		0.0	0.0			0.0	
Total Delay	2.6	11.8		17.2	5.7		51.6	17.7			2.4	
LOS	A	B		B	A		D	B			A	
Approach Delay		11.7			6.2			39.0			2.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.1	201.4		2.8	32.6		15.9	1.8			0.0	
Queue Length 95th (m)	m0.8	m224.0		19.1	71.5		26.8	10.7			1.2	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)	85.0			40.0								
Base Capacity (vph)	347	2596		136	2637		304	364			368	
Starvation Cap Reductn	0	431		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.03	0.80		0.38	0.41		0.25	0.13			0.03	

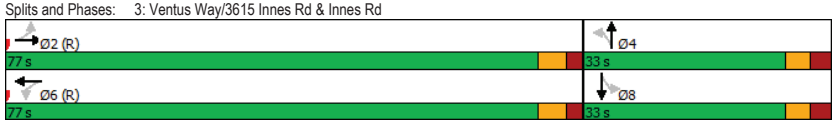
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1558	39	103	1039	90	73	24	112	68	24	17
Future Volume (vph)	38	1558	39	103	1039	90	73	24	112	68	24	17
Satd. Flow (prot)	1566	3316	1483	1658	3177	0	1658	1745	1483	0	1576	0
Flt Permitted	0.950			0.950			0.688				0.796	
Satd. Flow (perm)	1562	3316	1450	1657	3177	0	1197	1745	1462	0	1291	0
Satd. Flow (RTOR)			106		9				112		7	
Lane Group Flow (vph)	38	1558	39	103	1129	0	73	24	112	0	109	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	20.0	68.0	68.0	20.0	68.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	15.4%	52.3%	52.3%	15.4%	52.3%		28.5%	28.5%	28.5%	28.5%	28.5%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.6	79.6	79.6	13.3	86.7		17.2	17.2	17.2		17.2	
Actuated g/C Ratio	0.07	0.61	0.61	0.10	0.67		0.13	0.13	0.13		0.13	
v/c Ratio	0.37	0.77	0.04	0.61	0.53		0.46	0.10	0.39		0.62	
Control Delay	67.2	23.7	0.1	70.3	14.4		59.4	46.8	11.6		63.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	67.2	23.7	0.1	70.3	14.4		59.4	46.8	11.6		63.3	
LOS	E	C	A	E	B		E	D	B		E	
Approach Delay		24.2			19.1			32.4			63.3	
Approach LOS		C			B			C			E	
Queue Length 50th (m)	9.5	140.3	0.0	25.7	73.5		17.8	5.6	0.0		25.4	
Queue Length 95th (m)	20.5	#255.3	0.0	42.8	129.2		29.8	12.3	15.2		40.0	
Internal Link Dist (m)		561.5			183.0			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	165	2029	928	191	2120		273	398	420		300	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.23	0.77	0.04	0.54	0.53		0.27	0.06	0.27		0.36	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 105 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

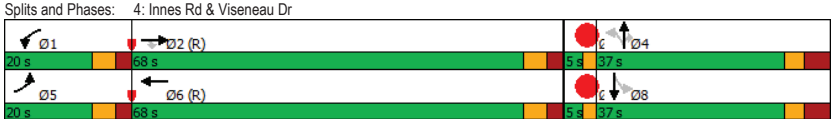
Intersection Summary

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 82.2%	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: 4: Innes Rd & Viseneau Dr



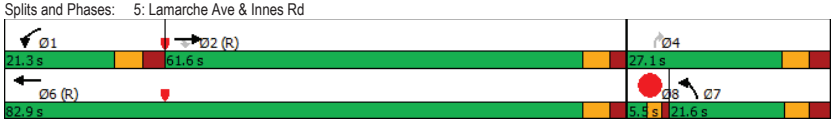
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	1661	182	110	1043	130	90	
Future Volume (vph)	1661	182	110	1043	130	90	
Satd. Flow (prot)	3316	1483	1658	3316	1658	1483	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3316	1437	1656	3316	1658	1483	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1661	182	110	1043	130	90	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	24.0	24.0	11.7	16.0	11.3	22.5	5.5
Total Split (s)	61.6	61.6	21.3	82.9	21.6	27.1	5.5
Total Split (%)	56.0%	56.0%	19.4%	75.4%	19.6%	24.6%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	58.2	58.2	12.0	76.9	15.3	20.6	
Actuated g/C Ratio	0.53	0.53	0.11	0.70	0.14	0.19	
v/c Ratio	0.95	0.24	0.61	0.45	0.57	0.32	
Control Delay	31.4	16.3	55.8	10.4	54.7	42.5	
Queue Delay	0.5	0.0	0.0	0.0	0.0	1.8	
Total Delay	31.8	16.3	55.8	10.4	54.7	44.3	
LOS	C	B	E	B	D	D	
Approach Delay	30.3			14.7	50.5		
Approach LOS	C			B	D		
Queue Length 50th (m)	111.8	17.0	23.0	41.5	26.4	16.9	
Queue Length 95th (m)	#232.7	m24.8	40.3	108.1	45.8	31.8	
Internal Link Dist (m)	206.5			221.9	87.7		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1754	760	220	2318	230	277	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	11	0	0	0	0	92	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.95	0.24	0.50	0.45	0.57	0.49	

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: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95
Intersection Signal Delay: 26.1 — Intersection LOS: C
Intersection Capacity Utilization 78.3% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lamarche Ave & Innes Rd



Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	32	0	67	46
Future Vol, veh/h	0	52	32	0	67	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	32	0	67	46

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	212	32	0	0	32	0
Stage 1	32	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	776	1042	-	-	1580	-
Stage 1	991	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	742	1042	-	-	1580	-
Mov Cap-2 Maneuver	742	-	-	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1042	1580	-
HCM Lane V/C Ratio	-	-	0.05	0.042	-
HCM Control Delay (s)	-	-	8.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	10	0	29	17
Future Vol, veh/h	0	22	10	0	29	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	10	0	29	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	85	10	0	0	10	0
Stage 1	10	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	916	1071	-	-	1610	-
Stage 1	1013	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	900	1071	-	-	1610	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	4.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1071	1610	-
HCM Lane V/C Ratio	-	-	0.021	0.018	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Appendix O

Synchro Intersection Worksheets – 2031 Future Total Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	499	32	23	1356	185	123	268	46	121	111	489
Future Volume (vph)	106	499	32	23	1356	185	123	268	46	121	111	489
Satd. Flow (prot)	3124	3103	1427	1658	3316	1427	1642	3252	1441	1658	3221	1483
Flt Permitted	0.950			0.950			0.546			0.587		
Satd. Flow (perm)	3107	3103	1394	1648	3316	1380	943	3252	1388	1006	3221	1463
Satd. Flow (RTOR)			143			143			82			193
Lane Group Flow (vph)	106	499	32	23	1356	185	123	268	46	121	111	489
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	13.0	65.0	65.0	13.0	65.0	65.0	19.0	52.0	52.0	33.0	33.0	33.0
Total Split (%)	10.0%	50.0%	50.0%	10.0%	50.0%	50.0%	14.6%	40.0%	40.0%	25.4%	25.4%	25.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	64.0	64.0	6.4	58.8	58.8	45.3	45.3	45.3	26.9	26.9	26.9
Actuated g/C Ratio	0.05	0.49	0.49	0.05	0.45	0.45	0.35	0.35	0.35	0.21	0.21	0.21
v/c Ratio	0.69	0.33	0.04	0.28	0.90	0.26	0.31	0.24	0.09	0.58	0.17	1.07
Control Delay	83.8	21.7	0.1	68.3	42.8	6.9	32.4	30.8	1.5	59.4	43.5	93.0
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	83.8	21.7	0.1	68.3	42.8	6.9	32.4	30.8	1.5	59.4	43.5	93.0
LOS	F	C	A	E	D	A	C	C	A	E	D	F
Approach Delay		30.9			38.9			28.2			79.8	
Approach LOS		C			D			C			E	
Queue Length 50th (m)	14.0	43.1	0.0	5.8	166.2	6.0	22.1	25.5	0.0	28.4	12.4	~98.6
Queue Length 95th (m)	#27.1	56.4	0.0	15.1	#202.5	20.1	37.2	36.3	2.2	49.6	20.9	#165.1
Internal Link Dist (m)		265.9			463.6			69.4			101.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	153	1527	758	86	1499	702	394	1133	537	208	667	455
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	0.69	0.33	0.04	0.27	0.90	0.26	0.31	0.24	0.09	0.58	0.17	1.07

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: 1.07

Intersection Signal Delay: 44.8	Intersection LOS: D
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

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

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

Splits and Phases: 1: Orleans Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	620	21	58	1499	28	14	12	61	51	11	51
Future Volume (vph)	24	620	21	58	1499	28	14	12	61	51	11	51
Satd. Flow (prot)	1483	3176	0	1658	3303	0	0	1508	0	0	1590	0
Flt Permitted	0.136			0.406				0.943			0.824	
Satd. Flow (perm)	212	3176	0	708	3303	0	0	1433	0	0	1339	0
Satd. Flow (RTOR)		5			3			61			35	
Lane Group Flow (vph)	24	641	0	58	1527	0	0	87	0	0	113	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	78.0	78.0		78.0	78.0		42.0	42.0		42.0	42.0	
Total Split (%)	65.0%	65.0%		65.0%	65.0%		35.0%	35.0%		35.0%	35.0%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	90.4	90.4		90.4	90.4			16.6			16.6	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.14			0.14	
v/c Ratio	0.15	0.27		0.11	0.61			0.35			0.53	
Control Delay	9.8	6.0		10.6	16.3			19.3			39.5	
Queue Delay	0.0	0.0		0.0	0.4			0.0			0.0	
Total Delay	9.8	6.0		10.6	16.7			19.3			39.5	
LOS	A	A		B	B			B			D	
Approach Delay		6.1			16.5			19.3			39.5	
Approach LOS		A			B			B			D	
Queue Length 50th (m)	1.1	17.2		5.8	127.3			5.7			17.8	
Queue Length 95th (m)	7.6	48.1		m12.9	202.6			16.6			29.2	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	159	2395		533	2490			463			417	
Starvation Cap Reductn	0	0		0	443			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.15	0.27		0.11	0.75			0.19			0.27	

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: 85
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	704	47	23	1347	2	109	0	49	0	0	1
Future Volume (vph)	0	704	47	23	1347	2	109	0	49	0	0	1
Satd. Flow (prot)	1745	3164	0	1566	3221	0	1409	1368	0	0	1489	0
Flt Permitted				0.357			0.757					
Satd. Flow (perm)	1745	3164	0	588	3221	0	1121	1368	0	0	1489	0
Satd. Flow (RTOR)		12						278			74	
Lane Group Flow (vph)	0	751	0	23	1349	0	109	49	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		90.2		90.2	90.2		17.4	17.4			17.4	
Actuated g/C Ratio		0.75		0.75	0.75		0.14	0.14			0.14	
v/c Ratio		0.32		0.05	0.56		0.68	0.11			0.00	
Control Delay		0.9		9.9	13.8		67.7	0.5			0.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		0.9		9.9	13.8		67.7	0.5			0.0	
LOS		A		A	B		E	A			A	
Approach Delay		0.9			13.7			46.9				
Approach LOS		A			B			D				
Queue Length 50th (m)		0.4		1.1	56.5		24.8	0.0			0.0	
Queue Length 95th (m)		2.9		m5.9	178.7		40.6	0.0			0.0	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)				40.0								
Base Capacity (vph)		2382		442	2422		249	520			388	
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		0.32		0.05	0.56		0.44	0.09			0.00	

Intersection Summary

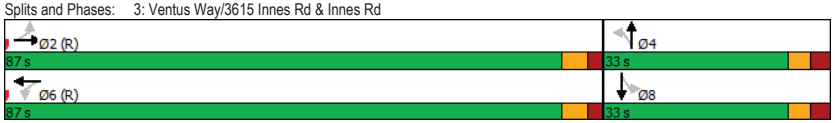
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	708	10	39	1313	45	29	5	16	49	3	32
Future Volume (vph)	21	708	10	39	1313	45	29	5	16	49	3	32
Satd. Flow (prot)	1311	3161	1483	1537	3165	0	1537	1483	1427	0	1510	0
Flt Permitted	0.950			0.950			0.741				0.818	
Satd. Flow (perm)	1311	3161	1444	1533	3165	0	1198	1483	1427	0	1270	0
Satd. Flow (RTOR)			115		4				105		25	
Lane Group Flow (vph)	21	708	10	39	1358	0	29	5	16	0	84	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	12.0	66.0	66.0	12.0	66.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%		30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	7.5	84.0	84.0	8.6	90.2		14.7	14.7	14.7		14.7	
Actuated g/C Ratio	0.06	0.70	0.70	0.07	0.75		0.12	0.12	0.12		0.12	
v/c Ratio	0.26	0.32	0.01	0.36	0.57		0.20	0.03	0.06		0.47	
Control Delay	74.0	5.6	0.0	61.3	12.5		47.1	41.0	0.4		41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	74.0	5.6	0.0	61.3	12.5		47.1	41.0	0.4		41.7	
LOS	E	A	A	E	B		D	D	A		D	
Approach Delay		7.5			13.9			31.6			41.7	
Approach LOS		A			B			C			D	
Queue Length 50th (m)	5.2	13.0	0.0	8.9	49.0		6.5	1.1	0.0		13.5	
Queue Length 95th (m)	14.2	23.5	m0.0	19.8	172.3		13.3	4.2	0.0		25.1	
Internal Link Dist (m)		561.5			183.4			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	82	2211	1045	110	2379		296	367	432		333	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.26	0.32	0.01	0.35	0.57		0.10	0.01	0.04		0.25	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	4.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

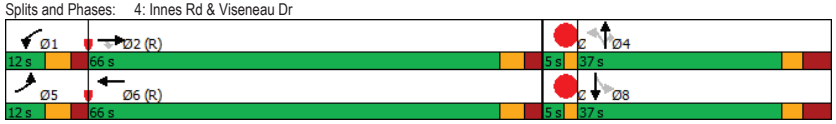
Intersection Summary

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 63.4%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 4: Innes Rd & Viseneau Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	541	185	178	1286	299	207	
Future Volume (vph)	541	185	178	1286	299	207	
Satd. Flow (prot)	3191	1455	1658	3221	1642	1469	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3191	1419	1654	3221	1640	1469	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	541	185	178	1286	299	207	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	22.5	22.5	11.7	22.5	22.5	22.5	5.5
Total Split (s)	41.5	41.5	30.0	71.5	43.0	48.5	5.5
Total Split (%)	34.6%	34.6%	25.0%	59.6%	35.8%	40.4%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None	Max
Act Effct Green (s)	50.4	50.4	18.0	75.1	27.1	32.4	
Actuated g/C Ratio	0.42	0.42	0.15	0.63	0.23	0.27	
v/c Ratio	0.40	0.31	0.71	0.64	0.81	0.52	
Control Delay	32.3	33.9	61.9	16.0	60.1	41.1	
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0	
Total Delay	32.3	33.9	61.9	16.0	60.7	41.1	
LOS	C	C	E	B	E	D	
Approach Delay	32.7			21.6	52.7		
Approach LOS	C			C	D		
Queue Length 50th (m)	42.4	26.4	42.1	90.0	67.0	41.5	
Queue Length 95th (m)	88.5	68.6	64.9	127.2	90.4	59.0	
Internal Link Dist (m)	206.5			221.9	77.9		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1339	595	324	2015	502	514	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	42	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.31	0.55	0.64	0.65	0.40	

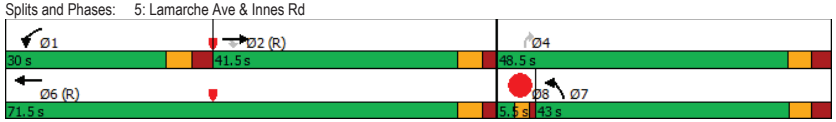
Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Lamarche Ave & Innes Rd



Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	71	280	0	31	146
Future Vol, veh/h	0	71	280	0	31	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	71	280	0	31	146

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	488	280	0	0	280	0
Stage 1	280	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	539	759	-	-	1283	-
Stage 1	767	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	525	759	-	-	1283	-
Mov Cap-2 Maneuver	525	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	759	1283	-
HCM Lane V/C Ratio	-	-	0.094	0.024	-
HCM Control Delay (s)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	31	132	0	13	70
Future Vol, veh/h	0	31	132	0	13	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	31	132	0	13	70

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	228	132	0	0	132	0
Stage 1	132	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	760	917	-	-	1453	-
Stage 1	894	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	917	-	-	1453	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	917	1453	-
HCM Lane V/C Ratio	-	-	0.034	0.009	-
HCM Control Delay (s)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1518	107	75	855	209	56	192	95	245	279	267
Future Volume (vph)	462	1518	107	75	855	209	56	192	95	245	279	267
Satd. Flow (prot)	3216	3316	1455	1642	3221	1483	1658	3283	1483	1658	3221	1469
Flt Permitted	0.950			0.950			0.462			0.631		
Satd. Flow (perm)	3195	3316	1421	1639	3221	1446	797	3283	1446	1090	3221	1422
Satd. Flow (RTOR)			165			230			159			267
Lane Group Flow (vph)	462	1518	107	75	855	209	56	192	95	245	279	267
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases			2			6	4		4	8		8
Detector Phase	5	2	2	1	6	6	7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.6	26.2	26.2	11.2	26.2	26.2	11.7	32.7	32.7	32.7	32.7	32.7
Total Split (s)	31.0	49.0	49.0	16.0	34.0	34.0	12.0	45.0	45.0	33.0	33.0	33.0
Total Split (%)	28.2%	44.5%	44.5%	14.5%	30.9%	30.9%	10.9%	40.9%	40.9%	30.0%	30.0%	30.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.5	2.5	2.5	2.5	2.5	3.4	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	0.0	0.0
Total Lost Time (s)	6.6	6.2	6.2	6.2	6.2	6.2	6.7	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	Max	Max	Max
Act Effct Green (s)	20.6	46.2	46.2	8.8	31.6	31.6	38.3	38.3	38.3	28.7	28.7	28.7
Actuated g/C Ratio	0.19	0.42	0.42	0.08	0.29	0.29	0.35	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.77	1.09	0.15	0.57	0.92	0.36	0.18	0.17	0.16	0.86	0.33	0.47
Control Delay	51.3	84.5	1.2	55.8	59.0	15.7	25.8	25.3	0.9	69.2	35.2	7.2
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	51.3	84.5	1.2	55.8	59.0	15.7	25.8	25.3	0.9	69.2	35.2	7.2
LOS	D	F	A	E	E	B	C	C	A	E	D	A
Approach Delay		72.9			50.8			18.6			36.3	
Approach LOS		E			D			B			D	
Queue Length 50th (m)	48.8	~205.7	0.0	14.3	69.1	3.8	8.1	14.8	0.0	51.9	26.3	0.0
Queue Length 95th (m)	63.6	#247.8	2.5	32.4	#149.1	45.8	16.8	23.2	1.3	#99.7	38.5	20.5
Internal Link Dist (m)		265.9			463.6			172.9			182.9	
Turn Bay Length (m)	135.5		87.0	106.0		57.0	48.0		43.5	50.0		53.0
Base Capacity (vph)	713	1394	692	146	926	579	318	1143	607	284	840	568
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	0.65	1.09	0.15	0.51	0.92	0.36	0.18	0.17	0.16	0.86	0.33	0.47

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: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 56.2	Intersection LOS: E
Intersection Capacity Utilization 106.2%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Orleans Blvd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	1785	19	116	1087	72	18	18	108	91	17	34
Future Volume (vph)	64	1785	19	116	1087	72	18	18	108	91	17	34
Satd. Flow (prot)	1658	3308	0	1658	3246	0	0	1536	0	0	1597	0
Flt Permitted	0.212			0.078				0.952			0.659	
Satd. Flow (perm)	369	3308	0	136	3246	0	0	1471	0	0	1082	0
Satd. Flow (RTOR)		2			10			14			15	
Lane Group Flow (vph)	64	1804	0	116	1159	0	0	144	0	0	142	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	42.2	42.2		42.2	42.2		41.8	41.8		41.8	41.8	
Total Split (s)	68.0	68.0		68.0	68.0		42.0	42.0		42.0	42.0	
Total Split (%)	61.8%	61.8%		61.8%	61.8%		38.2%	38.2%		38.2%	38.2%	
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-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	77.6	77.6		77.6	77.6			19.4			19.4	
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.18			0.18	
v/c Ratio	0.25	0.77		1.22	0.51			0.53			0.70	
Control Delay	2.7	8.1		181.2	9.7			42.2			54.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.7	8.1		181.2	9.7			42.2			54.3	
LOS	A	A		F	A			D			D	
Approach Delay		7.9			25.3			42.2			54.3	
Approach LOS		A			C			D			D	
Queue Length 50th (m)	1.3	31.6		~28.9	30.0			26.2			26.6	
Queue Length 95th (m)	m2.3	m33.0		m#59.5	m0.0			37.3			39.3	
Internal Link Dist (m)		463.6			206.5			143.5			112.1	
Turn Bay Length (m)	104.5			106.0								
Base Capacity (vph)	260	2334		95	2293			480			356	
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	0.25	0.77		1.22	0.51			0.30			0.40	

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: 145
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 107.0%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Page Rd & Innes Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1735	128	51	1169	10	77	0	46	4	0	7
Future Volume (vph)	11	1735	128	51	1169	10	77	0	46	4	0	7
Satd. Flow (prot)	1658	3260	0	1551	3312	0	1595	1388	0	0	1551	0
Flt Permitted	0.220			0.086			0.750				0.901	
Satd. Flow (perm)	384	3260	0	140	3312	0	1255	1388	0	0	1423	0
Satd. Flow (RTOR)		14			2			31			31	
Lane Group Flow (vph)	11	1863	0	51	1179	0	77	46	0	0	11	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	34.1	34.1		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			0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1		6.3	6.3			6.3	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	87.6	87.6		87.6	87.6		14.5	14.5			14.5	
Actuated g/C Ratio	0.80	0.80		0.80	0.80		0.13	0.13			0.13	
v/c Ratio	0.04	0.72		0.46	0.45		0.47	0.22			0.05	
Control Delay	2.5	9.9		25.7	6.0		51.6	21.0			2.4	
Queue Delay	0.0	0.8		0.0	0.0		0.0	0.0			0.0	
Total Delay	2.5	10.7		25.7	6.0		51.6	21.0			2.4	
LOS	A	B		C	A		D	C			A	
Approach Delay		10.7			6.8			40.2			2.4	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.0	198.4		3.2	37.6		15.9	2.9			0.0	
Queue Length 95th (m)	m0.7	m227.5		#27.1	82.1		26.8	11.8			1.2	
Internal Link Dist (m)		221.9			561.5			129.3			33.2	
Turn Bay Length (m)	85.0			40.0								
Base Capacity (vph)	305	2599		111	2637		304	360			368	
Starvation Cap Reductn	0	398		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.04	0.85		0.46	0.45		0.25	0.13			0.03	

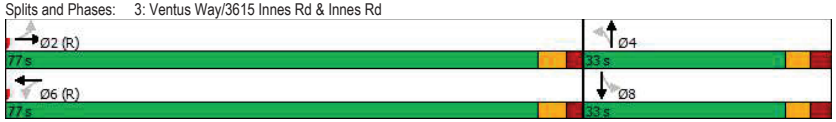
Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 36 (33%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 10.3	Intersection LOS: B
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 3: Ventus Way/3615 Innes Rd & Innes Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1683	39	103	1145	90	73	24	112	68	24	17
Future Volume (vph)	38	1683	39	103	1145	90	73	24	112	68	24	17
Satd. Flow (prot)	1566	3316	1483	1658	3180	0	1658	1745	1483	0	1576	0
Flt Permitted	0.950			0.950			0.688				0.796	
Satd. Flow (perm)	1562	3316	1450	1657	3180	0	1197	1745	1462	0	1291	0
Satd. Flow (RTOR)			106		8				112		7	
Lane Group Flow (vph)	38	1683	39	103	1235	0	73	24	112	0	109	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases			2				4		4	8		
Detector Phase	5	2	2	1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	32.3	32.3	11.3	32.3		36.3	36.3	36.3	36.3	36.3	
Total Split (s)	20.0	68.0	68.0	20.0	68.0		37.0	37.0	37.0	37.0	37.0	
Total Split (%)	15.4%	52.3%	52.3%	15.4%	52.3%		28.5%	28.5%	28.5%	28.5%	28.5%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6		4.3	4.3	4.3	4.3	4.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		7.3	7.3	7.3		7.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	8.6	79.6	79.6	13.3	86.7		17.2	17.2	17.2		17.2	
Actuated g/C Ratio	0.07	0.61	0.61	0.10	0.67		0.13	0.13	0.13		0.13	
v/c Ratio	0.37	0.83	0.04	0.61	0.58		0.46	0.10	0.39		0.62	
Control Delay	67.2	26.3	0.1	70.3	15.4		59.4	46.8	11.6		63.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	67.2	26.3	0.1	70.3	15.4		59.4	46.8	11.6		63.3	
LOS	E	C	A	E	B		E	D	B		E	
Approach Delay		26.6			19.6			32.4			63.3	
Approach LOS		C			B			C			E	
Queue Length 50th (m)	9.5	163.0	0.0	25.7	84.8		17.8	5.6	0.0		25.4	
Queue Length 95th (m)	20.5	#290.1	0.0	42.8	148.5		29.8	12.3	15.2		40.0	
Internal Link Dist (m)		561.5			183.0			77.4			48.4	
Turn Bay Length (m)	47.5		58.5	58.5			48.5		20.0			
Base Capacity (vph)	165	2029	928	191	2122		273	398	420		300	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.23	0.83	0.04	0.54	0.58		0.27	0.06	0.27		0.36	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 105 (81%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Lane Group	Ø3	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	3.0	3.0
Total Split (s)	5.0	5.0
Total Split (%)	4%	4%
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	None	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

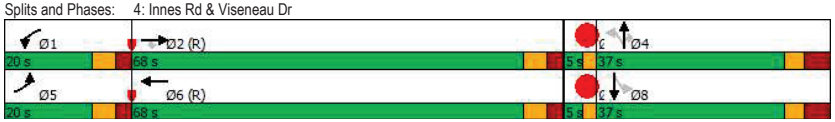
Intersection Summary

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 25.4	Intersection LOS: C
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 4: Innes Rd & Viseneau Dr

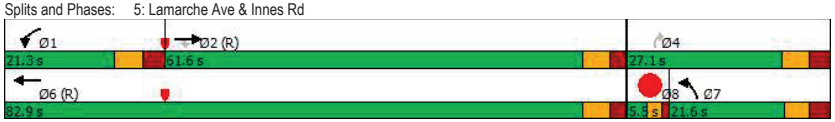


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø8
Lane Configurations							
Traffic Volume (vph)	1641	337	211	1048	221	235	
Future Volume (vph)	1641	337	211	1048	221	235	
Satd. Flow (prot)	3316	1483	1658	3316	1658	1483	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3316	1437	1656	3316	1658	1483	
Satd. Flow (RTOR)							
Lane Group Flow (vph)	1641	337	211	1048	221	235	
Turn Type	NA	Perm	Prot	NA	Prot	Perm	
Protected Phases	2		1	6	7		8
Permitted Phases		2				4	
Detector Phase	2	2	1	6	7	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	1.0
Minimum Split (s)	24.0	24.0	11.7	16.0	11.3	22.5	5.5
Total Split (s)	61.6	61.6	21.3	82.9	21.6	27.1	5.5
Total Split (%)	56.0%	56.0%	19.4%	75.4%	19.6%	24.6%	5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.5	2.0
All-Red Time (s)	2.3	2.3	3.0	2.3	3.0	3.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.7	6.0	6.3	6.5	
Lead/Lag	Lag	Lag	Lead		Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	55.6	55.6	14.6	76.9	15.3	20.6	
Actuated g/C Ratio	0.51	0.51	0.13	0.70	0.14	0.19	
v/c Ratio	0.98	0.46	0.96	0.45	0.96	0.85	
Control Delay	37.0	19.3	94.0	10.5	98.2	70.6	
Queue Delay	0.2	0.0	0.0	0.0	0.0	57.1	
Total Delay	37.2	19.3	94.0	10.5	98.2	127.7	
LOS	D	B	F	B	F	F	
Approach Delay	34.2			24.5	113.4		
Approach LOS	C			C	F		
Queue Length 50th (m)	117.1	45.0	45.9	42.2	47.8	49.2	
Queue Length 95th (m)	#227.4	m42.3	#91.8	112.3	#93.9	#90.5	
Internal Link Dist (m)	206.5			221.9	87.7		
Turn Bay Length (m)		40.0	87.0		80.0		
Base Capacity (vph)	1676	726	220	2318	230	277	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	2	0	0	0	0	92	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.98	0.46	0.96	0.45	0.96	1.27	

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: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98
Intersection Signal Delay: 40.6 — Intersection LOS: D
Intersection Capacity Utilization 89.0% — 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: 5: Lamarche Ave & Innes Rd



Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	268	0	67	147
Future Vol, veh/h	0	52	268	0	67	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	268	0	67	147

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	549	268	0	0	268	0
Stage 1	268	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	497	771	-	-	1296	-
Stage 1	777	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	469	771	-	-	1296	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	771	1296	-
HCM Lane V/C Ratio	-	-	0.067	0.052	-
HCM Control Delay (s)	-	-	10	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	128	0	29	68
Future Vol, veh/h	0	22	128	0	29	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	128	0	29	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	128	0	0	128	0
Stage 1	128	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	735	922	-	-	1458	-
Stage 1	898	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	922	-	-	1458	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	1458	-
HCM Lane V/C Ratio	-	-	0.024	0.02	-
HCM Control Delay (s)	-	-	9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-