101(A), 103 Schneider Road

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Prepared for:

Kepali Holdings Ltd.

Prepared by:

13 Markham Avenue
Ottawa, ON K2G 3Z1

March 2021

PN: 2021-013

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) 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 was not required for the Trip Generation or Location Triggers, and a review of the Safety Trigger was required. This report is part of a site plan application.

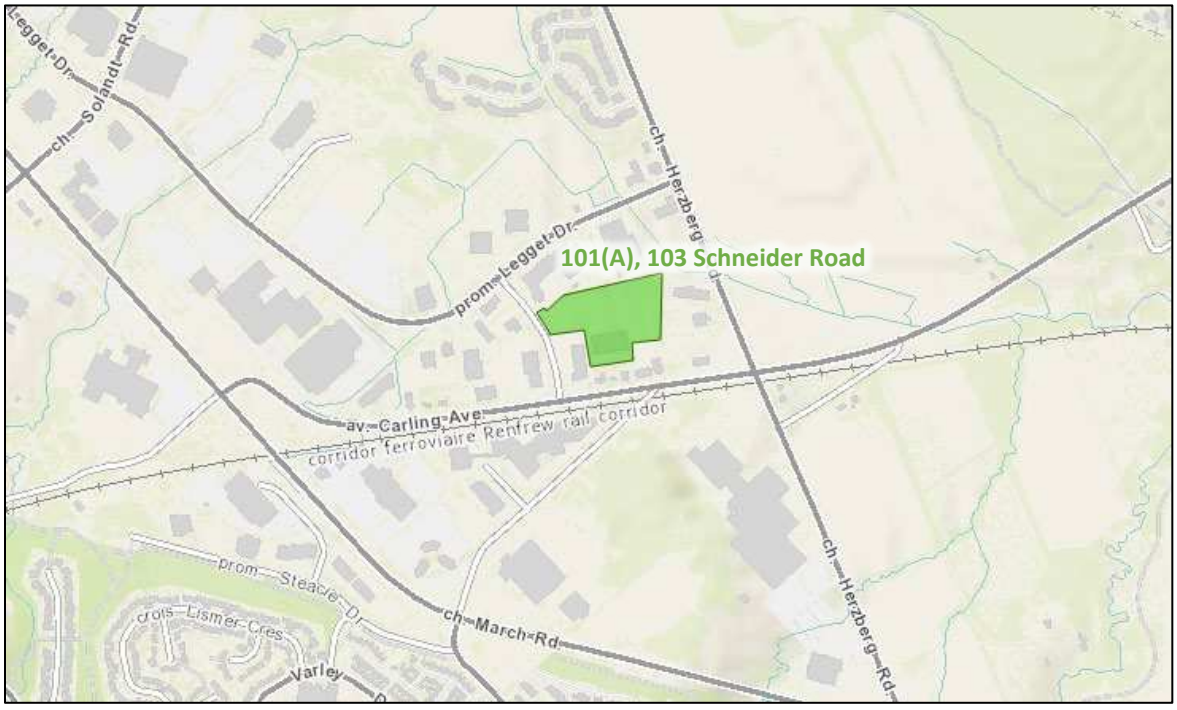
2 Existing and Planned Conditions

2.1 Proposed Development

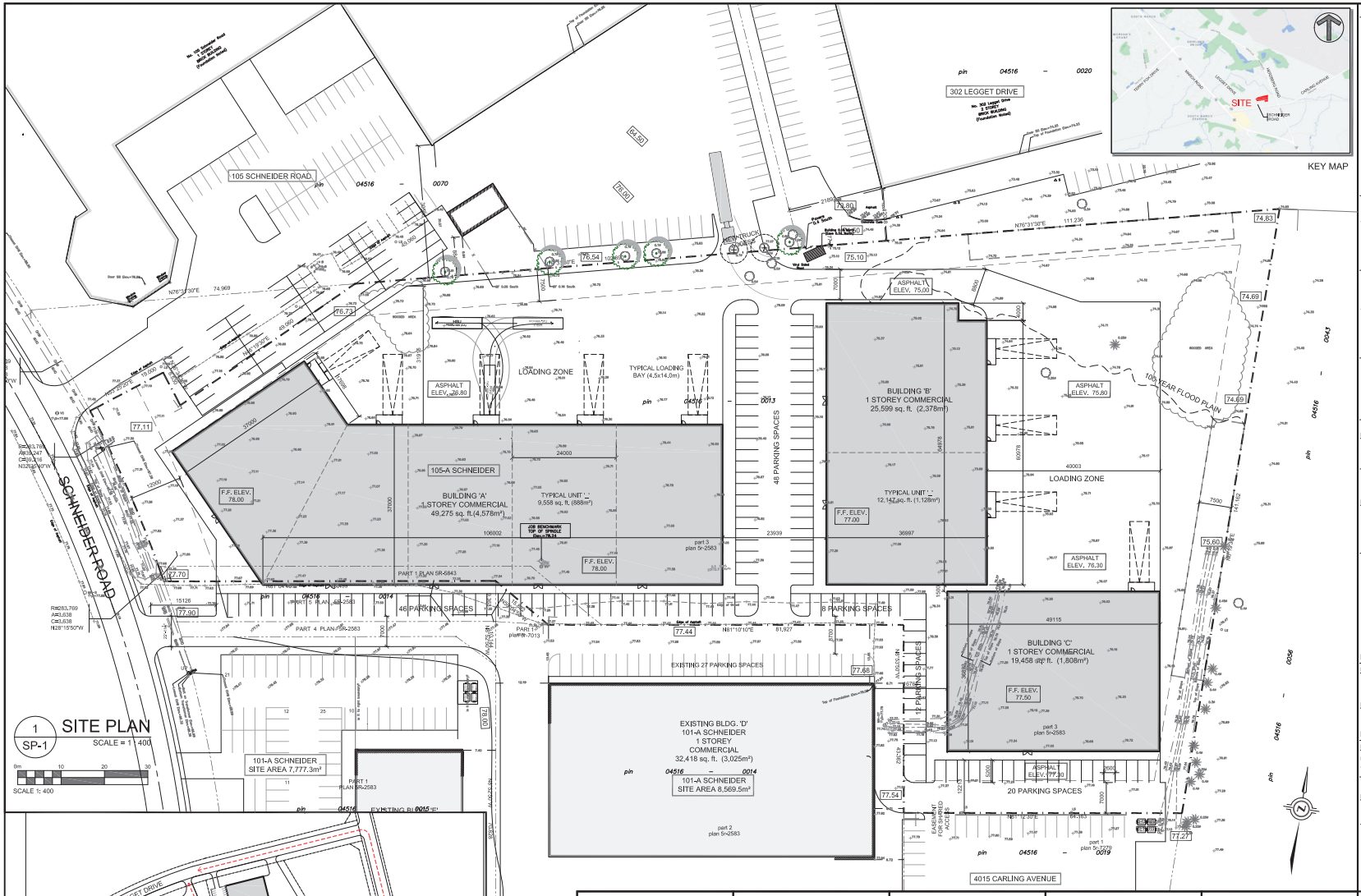
The subject site, zoned as General Industrial (IG and IG6[300]), currently consists of a large undeveloped area and a freestanding brewery including surrounding surface parking lots. The subject development proposes the addition of three light industrial buildings comprising 94,332ft^2 to the undeveloped site area. The development proposes the connection of parking facilities to those of the development to the north that accesses Legget Drive, to those of the development to the south that accesses Carling Avenue, and a connection through the existing access onto Schneider Road. The development is planned to occur in a single phase, built-out and occupied by 2023. Parking spaces will be refined as the site plan is finalized, but will be within surface parking lots surrounding existing and planned site buildings.

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: January 31, 2021



PROJECT INFORMATION

ZONING	106 & 106 [300]
SITE AREA	42,860 sq. m. (471,340) sq. ft.
BUILDING HEIGHT	15.0 M
FRONT YARD SETBACK	12.0 M
CORNER YARD SETBACK	12.0 M
INTERIOR YARD SETBACK	7.5 M
REAR YARD SETBACK	7.5 M
LOT COVERAGE	45%
LANDSCAPE BUFFER AROUND A PARKING LOT	3.0 M
LOADING SPACE	-
PARKING	
LIGHT INDUSTRIAL	
1st 5,000m²	- 0.6 PER 100m² OF G.F.A.
ABOVE 5,000m²	- 0.4 PER 100m² OF G.F.A.

PROJECT STATISTICS

GROSS BUILDING - AREAS

GFA - CITY OF OTTAWA'S DEFINITION

BUILDING 'A' - LIGHT INDUSTRIAL	
BUILDING 'B' - LIGHT INDUSTRIAL	
BUILDING 'C' - LIGHT INDUSTRIAL	
TOTAL AREA	

GFA - BUILDING FOOTPRINT

BUILDING 'A' - LIGHT INDUSTRIAL	4,578.0 sq. m. (49,275) sq. ft.
BUILDING 'B' - LIGHT INDUSTRIAL	2,378.0 sq. m. (25,599) sq. ft.
BUILDING 'C' - LIGHT INDUSTRIAL	1,808.0 sq. m. (19,458) sq. ft.
TOTAL AREA	8,764.0 sq. m. (94,332) sq. ft.

CAR PARKING

REQUIRED BASED ON BUILDING FOOTPRINT

BLDG. 'A' - LIGHT INDUSTRIAL	- 0.8 PER 100 m² OF GFA	37
BLDG. 'B' - LIGHT INDUSTRIAL	- 0.8 PER 100 m² OF GFA	18
BLDG. 'C' - LIGHT INDUSTRIAL	- 0.8 PER 100 m² OF GFA	15
TOTAL		70

PROVIDED BASED ON BUILDING FOOTPRINT

BLDG. 'A' - LIGHT INDUSTRIAL	
BLDG. 'B' - LIGHT INDUSTRIAL	
BLDG. 'C' - LIGHT INDUSTRIAL	
BLDG. 'D' - EXISTING LIGHT INDUSTRIAL	
TOTAL	

BICYCLE PARKING

REQUIRED

LIGHT INDUSTRIAL	- 1.0 PER 1000 m² OF GFA	8
COMMERCIAL RETAIL	- 1.0 PER 250 m² OF GFA	0

PROVIDED

LOADING PER BUILDING

REQUIRED

LIGHT INDUSTRIAL	- 1,000m² - 9,999m² OF G.F.A.	3
OTHER USES	- 1,000m² - 1,999m² OF G.F.A.	
TOTAL		

PROVIDED

LOT COVERAGE

PAVED SURFACE =	
BUILDING FOOTPRINT =	
LANDSCAPE OPEN SPACE =	
TOTAL =	

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (N) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (A) INDICATES ASSEMBLIES TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDULE.
- (W) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (900) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- DETAIL NUMBER
- TITLE
- SHEET — DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
1	ISSUED FOR OWNER REVIEW	Mar. 10, 21
2	ISSUED FOR OWNER REVIEW	Feb. 11, 21
3	ISSUED FOR OWNER REVIEW	Feb. 5, 21

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK J. LAHEY — LICENCE 4375 — SEAL DATE: STAMP DATE

NORTH ARROW

CLIENT: RENFROE LAND MANAGEMENT

ARCHITECT: rla/architecture — roderick lahey architect inc. — 56 beech street, ottawa, ontario K1S 3J9 — t.613.724.9932 f.613.724.1209 rlaarchitecture.ca

PROJECT TITLE: 105A SCHNEIDER ROAD

OTTAWA ONTARIO

SHEET TITLE: SITE PLAN

DRAWN: RV	CHECKED: R.V.
SCALE: 1:300	SHEET No. SP-1
PROJECT No. 1948	

CIVIL ENGINEER	URBAN PLANNER	PROJECT DEVELOPER
WSP Canada 300-1145 Hunt Club Road Ottawa ON K1V 0Y3 Tel: (613) 736-7200 Email: Ishaque.Jafferjee@wsp.com	**Novatech Eng. Consultants Limited** 200 - 240 Michael Cowpland Drive Ottawa, Ontario, K2M 1P6 Tel: 613 254-9643 Fax: 613 254-5867 Email: m.Chown@novatech-eng.com	Kepall Holdings Ltd. 2-371 A Richmond Road Ottawa, Ontario K2L 1Y3 Tel: (613) 883-4124 Email: davidrenfroe@outlook.com
LANDSCAPE ARCHITECT	**GEOTECHNICAL ENGINEER**	**DEVELOPMENT MANAGER**
Glno J. Alello Landscape Architect 110 Didsbury Road Unit 9, Ottawa, Ontario K2E 0C2 Tel: (613) 852-1343 Cell: (613) Email: glno@glala.com	**paterson group** 154 Colonnade Road South Ottawa, Ontario K2E 7J5 Tel: 613.226-7381 Email: DGilbert@Patersongroup.ca	Renfroe Land Management 2-371 A Richmond Road Ottawa, Ontario K2L 1Y3 Tel: (613) 883-6124 Email: davidrenfroe@outlook.com
TRANSPORTATION ENGINEER	**SURVEYOR**	**LEGAL DESCRIPTION**
CGH Transportation Inc. 13 Markham Avenue Ottawa, ON K2G 3Z1 Tel: (343) 999-9117 Email: Christopher.Gordon@CGHTransportation.com	Annis O'Sullivan Vollebekk Ltd. Ontario Land Surveyors 14 Concourse Gate, Suite 500, Nepean, Ontario K2E 7S6 Tel: (613) 727-0850 Fax: (613) 727-1079 E-Mail: EdH@aovltd.com	*TOPOGRAPHICAL PLAN OF* **PART OF LOT 6** **CONCESSION 4** **Geographic Township of March** **CITY OF OTTAWA** Prepared by Annis, O'Sullivan, Vollebekk Ltd. February 12, 2021

DRAWING NOTES

SITE PLAN SYMBOLS

- BIKE RACK
- VEHICLE CIRCULATION
- MAIN ENTRANCE
- SERVICE DOOR / FIRE EXIT
- PROPERTY LINE
- ZONING SETBACKS
- PARKING LOT LIGHTING
- BARRIER FREE PARING SPACE AS PER PARKING BYLAW SECTION 3.1
  TYPE 'A' = 3.4M X 5.2M
  TYPE 'B' = 2.4M X 5.2M
  ACCESS AISLE = 1.5M WIDE
- BUILDING ROOF DRAINS

PAPER SIZE: ISO_B1_(707.00_x_1000.00_MM) | PLOT DATE: Wednesday, March 10, 2021 | PLOT SCALE: 1:1 | PEN STYLE: 0-RLA-MASTER-100%.ctb

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2.2 Existing Conditions

2.2.1 Area Road Network

March Road: March Road is a City of Ottawa arterial road with a divided four-lane urban cross-section including curbside bike lanes and sidewalks on both sides of the road. The posted speed limit is 80 km/h and the City of Ottawa official plan reserves a 44.5-metre right of way within the study area. March Road is a truck route.

Carling Avenue: Carling Avenue is a City of Ottawa arterial road with a two-lane rural cross-section including paved shoulders on both sides of the road within the study area. On-street parking is permitted on both sides of Carling Avenue for approximately 100 metres roughly along its frontage of the 390 March Road property. The posted speed limit is 60 km/h and the City-protected right of way between March Road and Herzberg Road is 44.5 metres and the right of way east of Herzberg Road is categorized as being within the Greenbelt. Carling Avenue is a truck route.

Herzberg Road: Herzberg Road is a City of Ottawa major collector road with a divided two-lane urban cross-section with curbside bike lanes on both sides of the road. North of Carling Avenue, Herzberg Road has a sidewalk on the west side of the road for most of its length, where the sidewalk along Marsh Sparrow Private serves to connect this facility where discontinuous. The posted speed limit is 50 km/h and the City of Ottawa official plan reserves a 26.0-metre right of way. Herzberg Road is a truck route.

Teron Road: Teron Road is a City of Ottawa major collector road with a two-lane urban cross-section with curbside bike lanes on both sides of the road and a sidewalk on the east side of the road south of March Road. North of March Road, Teron Road is a local road with a two-lane rural cross-section with a gravel shoulder on both sides of the road. The posted speed limit is 50 km/h and the City of Ottawa official plan reserves a 26.0-metre right of way south of March Road and the measured right of way is 26.0 metres to the north.

Legget Drive: Legget Drive is a City of Ottawa collector road with a two-lane urban cross-section with on-street parking permitted and with sidewalks on both sides of the road. The posted speed limit is 50 km/h and the City of Ottawa official plan reserves a 24.0-metre right of way.

Schneider Road: Schneider Road is a City of Ottawa local road with a two-lane rural cross-section with paved shoulders on both sides of the road. The posted speed limit is 50 km/h and the measured right of way is 26.0 metres.

Station Road: Station Road is a City of Ottawa local road with a two-lane rural cross-section with gravel shoulders on both sides of the road. The unposed speed limit is assumed to be 50 km/h and the measured right of way within the study area is 20.0 metres.

2.2.2 Existing Intersections

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

Legget Drive at Herzberg Road	The intersection of Legget Drive at Herzberg Road is an unsignalized T-intersection stop-controlled on the minor approach of Legget Drive. The northbound approach consists of an auxiliary left-turn lane, a through lane, and a bike lane, and the southbound approach consists of a shared through/channelized right-turn lane and a bike lane. The eastbound approach consists of a shared left-turn/through lane and an auxiliary channelized right-turn lane. No turn restrictions were noted.

Carling Avenue/Station Road at March Road	The intersection of Carling Avenue/Station Road at March Road is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, two through lanes, a bike lane, and an auxiliary channelized right-turn lane, and the southbound approach consists of two auxiliary left-turn lanes, two through lanes, a bike lane, and an auxiliary right-turn lane. The eastbound approach consists of a shared through/left-turn lane and an auxiliary channelized right-turn lane, and the westbound approach consists of a shared left-turn/through lane, a bike lane, and an auxiliary channelized right-turn lane. No turn restrictions were noted.
Carling Avenue at Schneider Road	The intersection of Carling Avenue at Schneider Road is an unsignalized T-intersection stop-controlled on the minor approach of Schneider Road. The southbound approach consists of a shared all-movements lane. The eastbound approach consists of a through lane and an auxiliary left-turn lane, and the westbound approach consists of a shared through/right-turn lane. No turn restrictions were noted.
Carling Avenue at Herzberg Road	The intersection of Carling Avenue at Herzberg Road is a signalized intersection. The northbound approach consists of a shared all-movements lane and a bike lane, and the southbound approach consists of an auxiliary left-turn lane, a shared through/right-turn lane, and a bike lane. The eastbound approach consists of an auxiliary left-turn 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 bike lane, and an auxiliary right-turn lane. Northbound right turns on red are prohibited at this intersection and LED blank out turn restriction signs are found on the east and west legs to prohibit turns onto the south leg of the intersection when trains are passing.
Teron Road at March Road	The intersection of Teron Road at March Road is a signalized intersection. The northbound and southbound approaches (March Road) each consist of an auxiliary left-turn lane, two through lanes, a bike lane, and an auxiliary channelized right-turn lane, and the eastbound and westbound approaches (Teron Road) each consist of an auxiliary left-turn lane, a through lane, and an auxiliary channelized right-turn lane. No turn restrictions were noted.
Carling Avenue at Teron Road	The intersection of Carling Avenue at Teron Road is an unsignalized T-intersection, stop-controlled on the minor approach of Teron Road. The northbound approach consists of shared all-movements lane, the eastbound approach consists of a through lane and an auxiliary right-turn lane, and westbound approach consists of shared left-turn/through lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Within 200 metres of the proposed site access: on the east side of Schneider Road, a driveway to a commercial complex exists north of the site and three driveways to the subject property currently exist which are proposed as being consolidated with development; on the west side of Schneider Road, there are four driveways to office

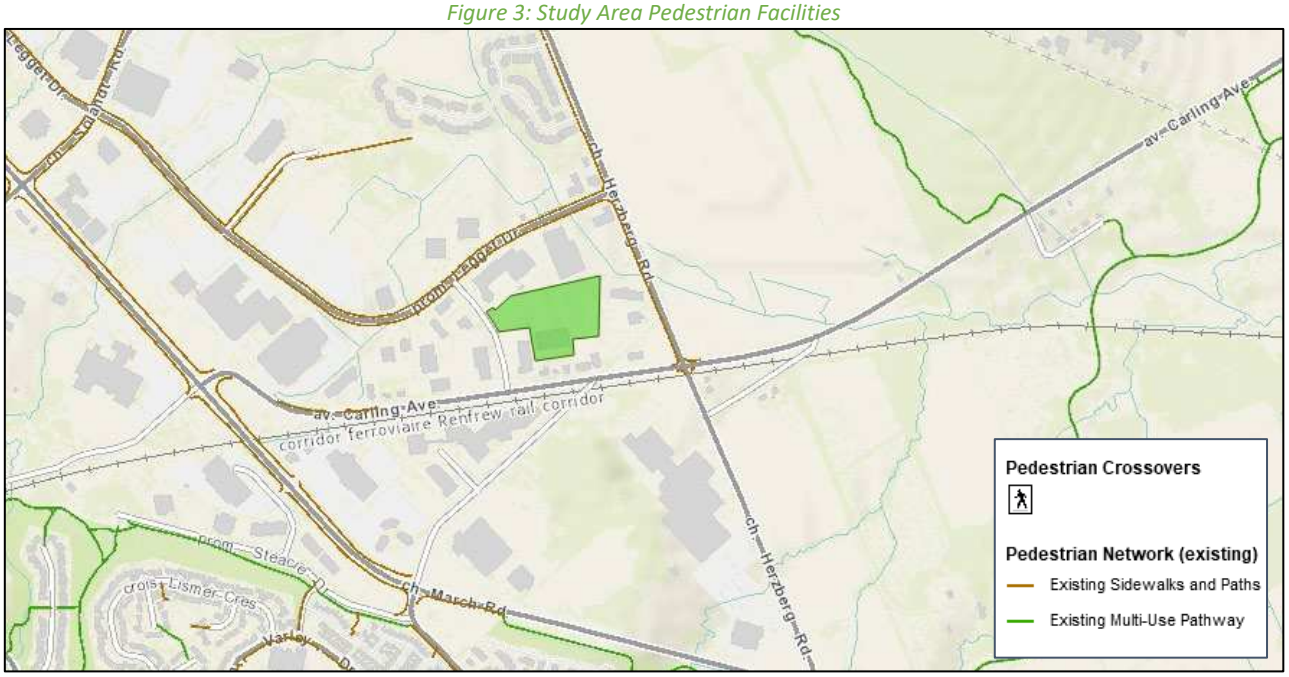
and industrial buildings and a gym; on the north side of Carling Avenue is a driveway to a single detached dwelling, and; on the north side of Legget Drive is a driveway to an office building.

2.2.4 Cycling and Pedestrian Facilities

Figure 3 illustrates the pedestrian facilities in the study area and Figure 4 illustrates the cycling facilities.

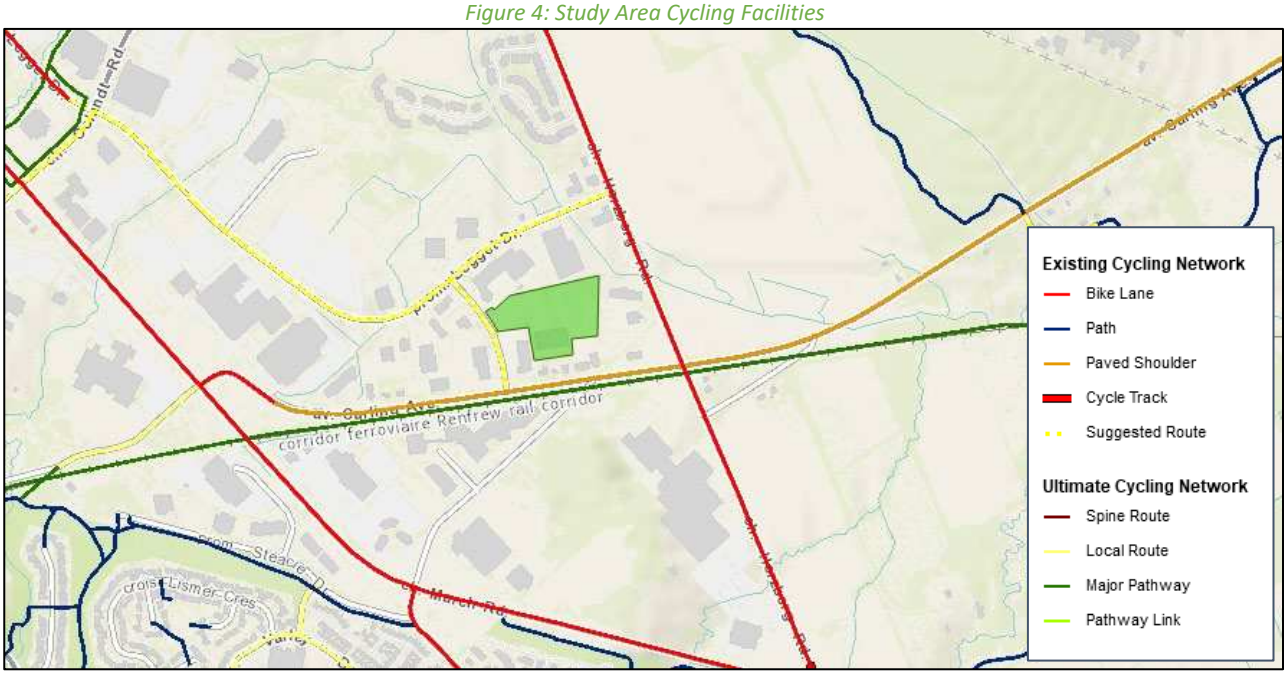
Sidewalks are provided along both sides of March Road and Legget Drive, and on one side of Herzberg Road within the study area. Cycling facilities include bike lanes on both sides of Herzberg Road, March Road, and Teron Road south of March Road, and paved shoulders on both sides of Carling Avenue. March Road, Herzberg Road, and Carling Avenue are spine routes, Station Road, Teron Road South of March Road, Schneider Road and Legget drive are local routes, where Legget Road is also a suggested route.

Figure 3: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 31, 2021

Figure 4: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 31, 2021

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 5 and Figure 6 respectively.

Figure 5: Existing Pedestrian Counts

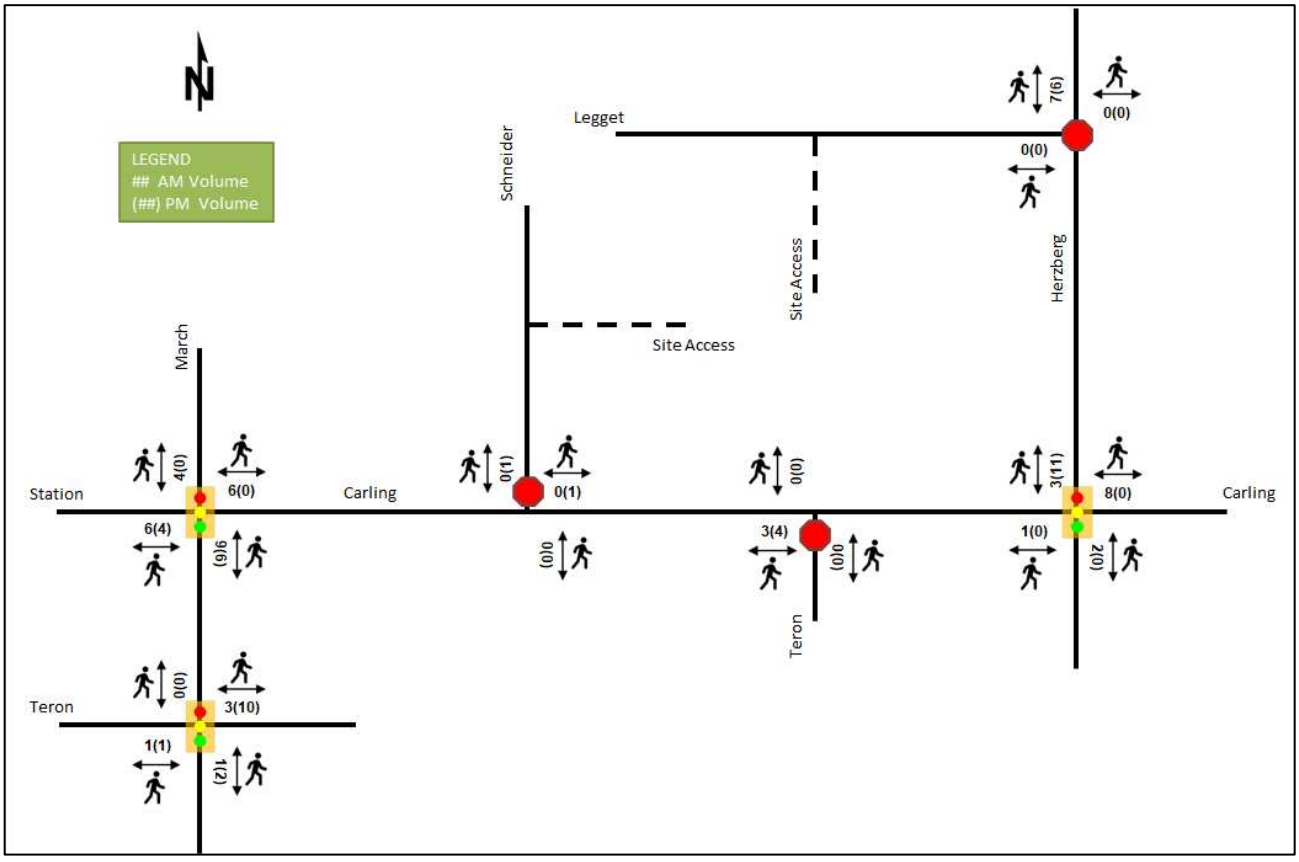
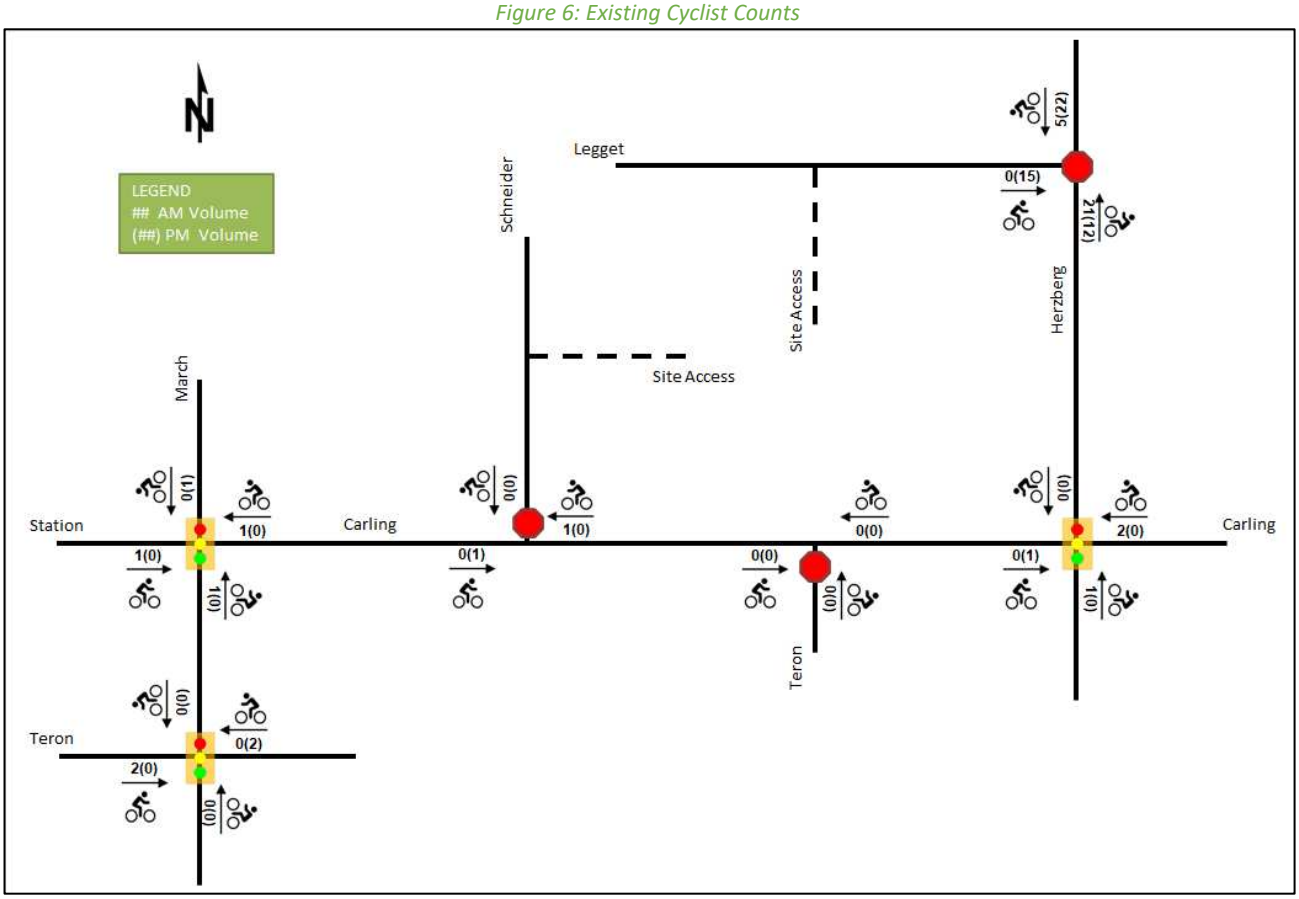


Figure 6: Existing Cyclist Counts



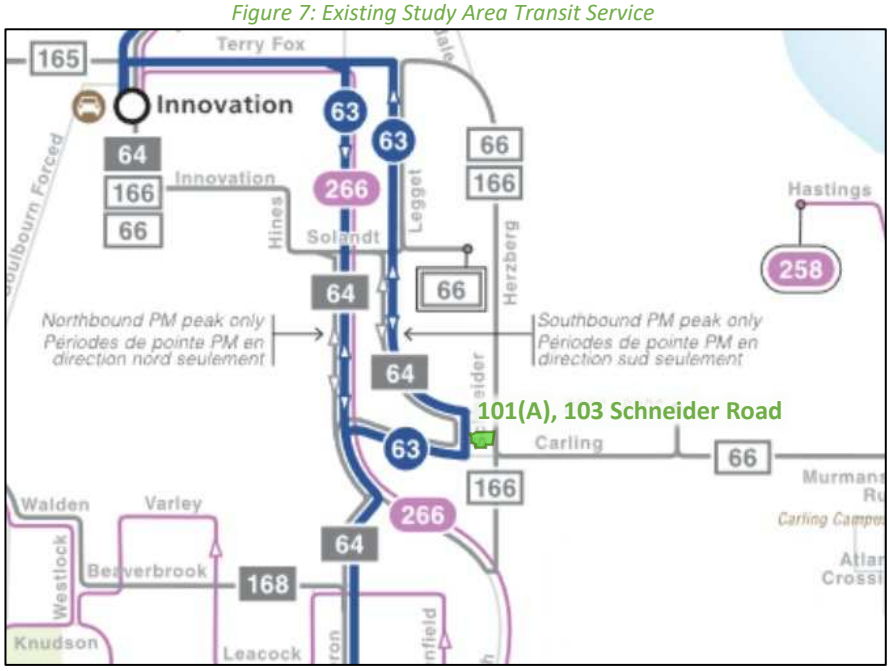
2.2.5 Existing Transit

Having stops within the 400 metres walk of the site, the routes #63 and 64 travel along Schneider Road continuing to Legget Drive, and along March Road continuing to Teron Road to the south. Within the remaining study area, the routes #66 and 166 travel along Herzberg Road, with route #66 continuing along Carling Avenue, and the route #266 travels along March Road. The frequency of these routes within proximity of the proposed site currently are:

- Route # 63 – 15-minute service during peak periods, 30-minute service all day
- Route # 64 – 15-minute service during peak periods, 30-minute service all day
- Route # 66 – 15-minute service during peak period/direction only
- Route #166 – One bus per peak direction daily
- Route # 266 – 15-minute service during peak period/direction only

Figure 7 illustrates the transit system map in the study area and Figure 8 illustrates nearby transit stops.

Figure 7: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: January 31, 2021

Figure 8: Existing Study Area Transit Stops

Source: http://www.octranspo.com/ Accessed: January 31, 2021

2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures within the study area.

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.

Table 1: Intersection Count Date

Intersection	Count Date
Legget Drive at Herzberg Road	Tuesday, August 29, 2017
Carling Avenue/Station Road at March Road	Tuesday, March 10, 2020
Carling Avenue at Schneider Road	Wednesday, April 10, 2019
Carling Avenue at Herzberg Road	Tuesday, March 10, 2020
March Road at Teron Road	Thursday, November 2, 2017

Figure 9 illustrates the existing traffic counts, balanced through the Carling Avenue Corridor and along Herzberg Road, and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on HCM 2010 v/c calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and HCM 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 9: Existing Traffic Counts

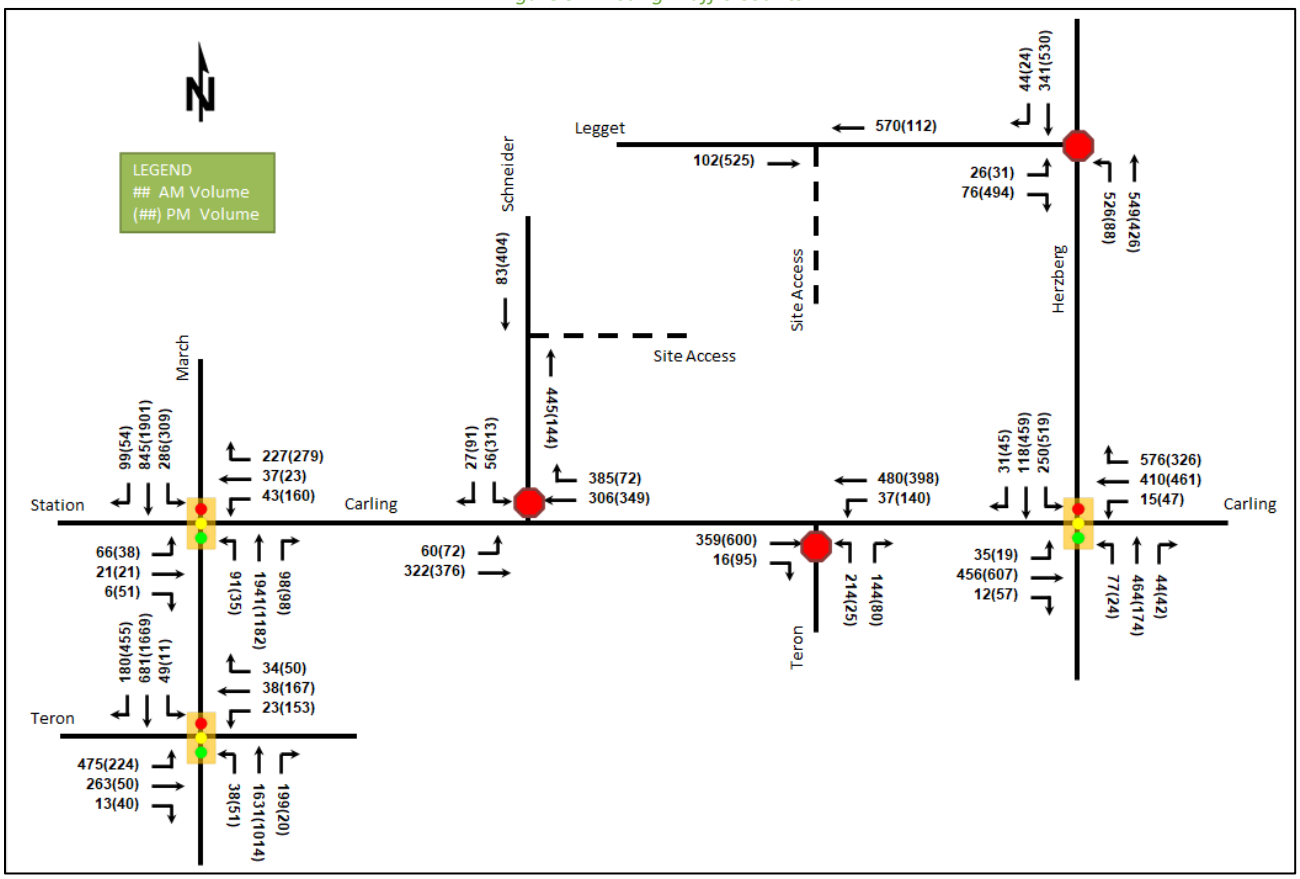


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Legget Drive at Herzberg Road ***Unsignalized***	EBR	B	0.07	11.5	1.5	B	0.08	12.1	1.5
	EBL	B	0.16	11.0	4.5	**F**	**1.11**	**85.5**	**120.0**
	NBL	E	0.95	48.4	96.0	B	0.24	14.0	6.0
	NBT	E	0.91	38.1	86.3	**F**	**1.08**	**73.4**	**96.8**
	SBT/R	C	0.66	18.7	36.8	**F**	**1.30**	**158.3**	**183.0**
	Overall	**D**	-	**35.0**	-	**F**	-	**102.2**	-

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Carling Avenue / Station Road at March Road *Signalized*	EBL/T	A	0.56	63.0	36.0	A	0.32	46.4	26.5
	EBR	A	0.03	0.2	0.0	A	0.16	3.7	4.7
	WBL/T	A	0.48	58.2	33.4	D	0.83	75.1	74.2
	WBR	B	0.65	17.3	29.5	B	0.69	26.2	57.6
	NBL	B	0.63	63.0	m23.6	A	0.36	56.1	m15.6
	NBT	F	1.12	71.6	m#302.7	C	0.79	31.9	162.6
	NBR	A	0.13	0.8	m0.1	A	0.14	10.0	m15.4
	SBL	C	0.75	66.1	#62.9	C	0.74	64.7	#85.9
	SBT	A	0.46	16.3	112.0	F	1.06	65.7	#399.1
	SBR	A	0.12	5.1	13.4	A	0.07	1.6	3.5
	Overall	**E**	**0.98**	**51.1**	-	F	1.02	**50.5**	-
Carling Avenue at Schneider Road *Unsignalized*	EBL	A	0.08	9.6	2.3	A	0.07	8.6	1.5
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	C	0.32	23.6	10.5	F	1.57	304.8	200.3
	Overall	**A**	-	**2.2**	-	F	-	97.2	-
Carling Avenue at Herzberg Road *Signalized*	EBL	A	0.29	34.4	16.1	A	0.10	21.6	8.2
	EBT/R	D	0.90	58.0	#164.1	F	1.01	68.1	#244.9
	WBL	A	0.19	32.5	8.8	D	0.87	119.3	#35.5
	WBT	C	0.79	46.6	129.6	B	0.69	32.8	130.9
	WBR	E	0.92	36.4	#147.6	A	0.43	3.9	16.7
	NB	E	1.00	70.5	#236.2	C	0.78	59.2	#95.7
	SBL	C	0.72	28.5	#62.8	F	1.23	146.5	#186.7
	SBT/R	A	0.17	13.2	29.9	C	0.71	30.7	139.1
	Overall	**E**	**0.94**	**47.9**	-	F	1.17	**62.4**	-
Teron Road at March Road *Signalized*	EBL	F	1.36	214.1	#250.7	C	0.73	48.7	#74.9
	EBT	A	0.60	48.3	100.2	A	0.15	42.3	23.5
	EBR	A	0.03	0.1	0.0	A	0.10	0.5	0.0
	WBL	A	0.10	33.0	m11.3	A	0.41	31.3	m43.4
	WBT	A	0.10	42.1	m18.1	A	0.49	46.4	m65.3
	WBR	A	0.08	0.4	m0.1	A	0.13	0.7	m0.1
	NBL	A	0.14	13.8	9.9	A	0.46	27.6	14.7
	NBT	F	1.11	90.6	#329.1	B	0.66	26.6	148.2
	NBR	A	0.28	8.9	28.1	A	0.03	0.1	0.0
	SBL	A	0.43	39.6	26.3	A	0.06	14.5	m1.1
	SBT	A	0.46	32.8	128.4	F	1.17	104.2	m#279.5
	SBR	A	0.24	13.5	50.0	A	0.59	6.7	m22.9
	Overall	F	1.22	81.0	-	**E**	**1.00**	**59.2**	-
Carling Avenue at Teron Road *Signalized*	EBT	-	-	-	-	-	-	-	-
	EBR	-	-	-	-	-	-	-	-
	WBL/T	A	0.04	8.3	0.8	B	0.19	10.2	5.3
	NB	F	1.20	147.5	126.8	D	0.44	28.9	15.8
	Overall	**C**	-	**42.5**	-	**A**	-	**3.4**	-

Notes: Saturation flow rate of 1800 veh/h/lane
PHF = 0.90
m = metered queue
# = queue exceeds storage or mid-block length

The study area intersections experience a number of capacity issues at both peak hours.

At the intersection of Legget Drive and Herzberg Road, during the AM peak hour, the northbound left and movement is modelled as approaching capacity. During the PM peak hour at this intersection, the overall

intersection, and the eastbound left, northbound through, and southbound through/right movements are modelled as being over capacity with high delays.

The intersection of Carling Avenue/Station Road and March Road is modelled as having its northbound through movement as being over capacity with extended queuing, the southbound left movement as experiencing extended queuing, and the overall intersection as approaching capacity during the AM peak hour. The southbound through movement is modelled as being over capacity with extended queuing, the southbound left movement as experiencing extended queuing, and the overall intersection as being over capacity during the PM peak hour.

The intersection of Carling Avenue and Schneider Road during the PM peak hour is modelled as having its southbound left/right movement as being over capacity with an approximately five-minute average delay and potential queueing past the existing site access due to the left-turning vehicles, where if the southbound movements were split, the right-turn movement would operate with a LOS of B and the left-turn movement would be left with an approximately four-minute average delay. Given the presence of the paved and gravel shoulders creating approximately 7.2 metres of driveable surface width between the stop sign and the centreline, the southbound approach will operate as split movements. The overall intersection is additionally modelled as being over capacity during the PM peak hour.

The intersection of Carling Avenue at Herzberg Road is, during the AM peak hour, modelled as having its northbound movement as being at capacity with extended queuing, and the eastbound through/right, westbound right, and southbound left movements as experiencing extended queueing, and the westbound right movement and the overall intersection are approaching capacity. The PM peak hour is modelled as having the eastbound through/right as being over capacity with extended queuing, the southbound left movements as being over capacity with high delay and extended queueing, the westbound left as experiencing high delay and extended queuing, and the northbound movement as experiencing extended queueing. The overall intersection is additionally modelled as being over capacity during the PM peak hour.

The intersection of Teron Road at March Road during the AM peak hour is modelled as having its eastbound left and northbound through movements as being over capacity with high delay and extended queuing, with the overall intersection being over capacity. During the PM peak hour, the intersection is modelled as having the southbound through movement as being over capacity with high delay and extended queueing, the eastbound left movement as experiencing extended queueing, and the overall intersection as being at capacity.

The intersection of Carling Avenue at Teron Road during the AM peak hour is modelled as having the northbound movement as being over capacity with high delays.

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 are road network. Table 3 summarizes the collisions types and conditions in the study area, Figure 10 illustrates the intersections and segments analyzed, and Table 4 summarizes the total collisions for each of these locations. Collision data are included in Appendix E.

Table 3: Study Area Collision Summary, 2015-2019

		Number	%
Total Collisions		**54**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	17	31%
	Property Damage Only	37	69%
Initial Impact Type	**Angled**	4	7%

		Number	%
Total Collisions		**54**	**100%**
	Rear end	26	48%
	Sideswipe	3	6%
	Turning Movement	11	20%
	SMV Unattended	1	2%
	SMV Other	9	17%
Road Surface Condition	**Dry**	32	59%
	Wet	18	33%
	Loose Snow	1	2%
	Packed Snow	2	4%
	Ice	1	2%
Pedestrian Involved		0	0%
Cyclists Involved		3	6%

Figure 10: Study Area Collision Records – Representation of 2015-2019

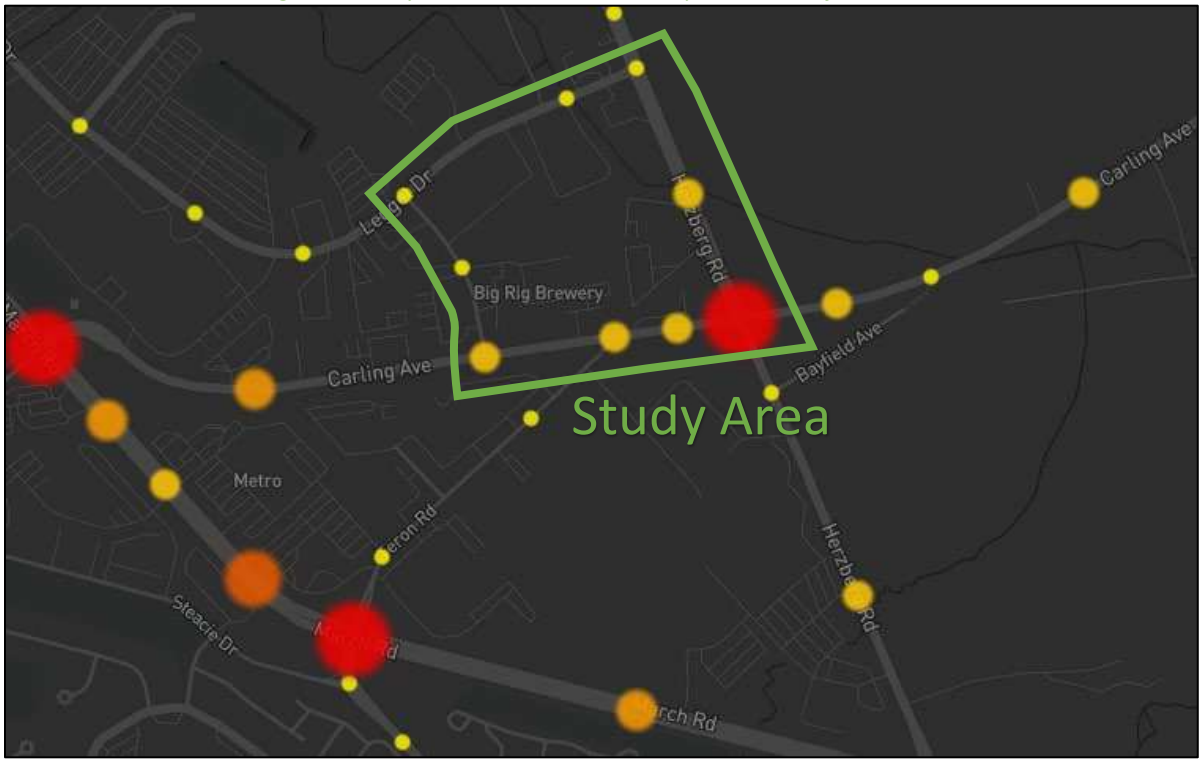


Table 4: Summary of Collision Locations, 2015-2019

	Number	%
Intersections / Segments	**54**	**100%**
Legget Dr at Schneider Rd	3	6%
Legget Dr at Herzberg Rd	2	4%
Carling Ave at Schneider Rd	4	7%
Carling Ave at Richardson Side Rd	5	9%
Carling Ave at Herzberg Rd	25	46%
Legget Dr btwn Farrar Rd & Herzberg Rd	2	4%
Schneider Rd btwn Legget Dr & Carling Ave	2	4%
Herzberg Rd btwn Legget Dr & Carling Ave	7	13%
Carling Ave btwn Richardson Side Rd & Herzberg Rd	4	7%

Within the study area, the intersection of Carling Avenue at Herzberg Road is noted to have experienced higher collisions than other locations. Table 5 summarizes the collision types and conditions for the intersection of Carling Avenue and Herzberg Road.

Table 5: Carling Avenue at Herzberg Road Collision Summary

		Number	%
Total Collisions		**25**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	8	32%
	Property Damage Only	17	68%
Initial Impact Type	**Rear end**	16	64%
	Sideswipe	1	4%
	Turning Movement	4	16%
	SMV Other	4	16%
Road Surface Condition	**Dry**	15	60%
	Wet	9	36%
	Packed Snow	1	4%
Pedestrian Involved		0	0%
Cyclists Involved		1	4%

The Carling Avenue at Herzberg Road intersection had a total of 25 collisions during the 2015-2019 time period, with 17 involving property damage only and the remaining eight having non-fatal injuries. The collision types are most represented by rear end with 16 collisions, followed by turning movement and single motor vehicle (other) with four each and sideswipe with one collision. Rear end collisions are typically represented at congested intersections. No geometric issues are noted and not mitigation is recommended. Weather conditions are not considered to impact collisions at this location.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

Within the Transportation Master Plan, the Rapid Transit and Transit Priority Network's Affordable Network diagram shows an at-grade bus rapid transit corridor along March Road through the study area. In the Network Concept diagram, this corridor is continuous through to its connection with an east-west BRT corridor along Highway 417.

From the Kanata LRT EA, this BRT corridor is replaced by an LRT corridor, and thus the north-south BRT corridor will connect to the planned March/Eagleson LRT station approximately 3.0 kilometres south of the intersection of March Road and Carling Avenue.

2.3.2 Other Study Area Developments

100 Steacie Drive

The proposed development application includes a zoning by-law amendment to allow the construction of two 4-storey apartment buildings comprising 258 residential dwelling units. The development is anticipated to be built out by 2025 and to generate 75 new AM and 95 new PM peak hour two-way auto trips. (Parsons, 2020)

329 March Road

The proposed development application includes a site plan for the construction of a 2,006 ft^2 coffee shop and 2,096 ft^2 of restaurant. The development was initially anticipated to be built out by 2017 and to generate 100 new AM and 40 new PM peak hour two-way primary auto trips. (McIntosh Perry, 2016)

1131-1151 Teron Road

The proposed development application includes a site plan and zoning by-law amendment for the construction a three-storey 30-unit building and a nine-storey mixed-use building consisting of 109 residential dwelling units, 7,600 ft^2 of ground floor commercial and 3,900 ft^2 of sit-down restaurant. The development is anticipated to be built-out by 2021 and to generate 73 new AM and 118 new PM peak hour two-way auto trips. (Parsons, 2019)

231-251 Penfield Drive

The proposed development application includes a zoning by-law amendment to permit townhouse dwellings as a permitted land use. No TIA is available for this development.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of:

- Legget Drive at:
  - Herzberg Road
- Carling Avenue at:
  - March Road
  - Schneider Road
  - Herzberg Road
- March Road at Teron Drive

The boundary road will be Schneider Road, Legget Drive, and Carling Avenue and no screenlines are present within proximity to the site.

3.2 Time Periods

As the proposed development is composed primarily of industrial land uses, AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2023. As a result, the full build-out plus five years horizon year is 2028.

4 Exemption Review

Table 6 summarizes the exemptions for this TIA.

Table 6: Exemption Review

Module	Element	Explanation	Exempt/Required
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	Exempt – Will be provided through site plan design
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	Exempt – Will be provided through site plan design
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
Network Impact Component			

Module	Element	Explanation	Exempt/Required
4.5 Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Exempt
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Exempt
4.8 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

In addition to the above TIA requirements and exemptions, the following exemptions in Table 7 are also recommended for this TIA.

Table 7: Recommended Additional Exemptions

Module	Element	Explanation
Forecasting		
3.1 Development Generated Travel Demand	All Elements	Trip generation trigger not met, confirmed with City Transportation Project Manager
3.2 Background Network Travel Demand	All Elements	
3.3 Demand Rationalization	All Elements	
Design Review Component		
4.1 Development Design	4.1.1 Design for Sustainable Modes	Trip generation trigger not met, confirmed with City Transportation Project Manager
4.3 Boundary Street Design	All Elements	
4.4 Access Intersection Design	All Elements	
Network Impact Components		
4.7 Transit	All Elements	Trip generation trigger not met, confirmed with City Transportation Project Manager
4.9 Network Intersections	All Elements	

5 Summary and Conclusion

The proposed site will consist of three light industrial buildings, with area totalling 94,332ft^2, where access is provided through the existing driveways onto Schneider Road, Herzberg Road, and Carling Avenue. The TIA Screening form noted that the proposed building areas would be near the thresholds for a TIA report and that there was potentially a safety concern due to the collisions noted at the Carling Avenue and Herzberg Road intersection. The trip generation was confirmed, as provided in Appendix A, to fall below the 60-person trip threshold due to the proposed land use. As the proposed new build area was near the threshold for a TIA, the trip generation was verified to ensure the site generated more than 60 trips per peak hour to warrant a TIA being

completed. Therefore, trip generation trigger was not met and the scope of work was reduced er the modular nature of the TIA guideline requirements.

As the safety trigger still potentially warranted a TIA, the Step 2 report was completed to review the transportation network in the area, and specifically, review the collisions noted in the study area. As summarized in Section 2.2.8, 25 collisions were observed at the intersection of Carling Avenue and Herzberg Road within the 2015-2019 period. The collision review noted 64% of the collisions at the intersection of were rear end collisions, where the remainder were split amongst other types with no further patterns of note, thus any potential outstanding road safety concerns within the study area were resolved.

Given that the review confirmed the trip generation trigger was not met, and that the potential safety concerns did not present definable pattern beyond congestion related rear-end collisions, it was confirmed with the City's Transportation Project Manager that the TIA process was complete, as provided in Appendix E.

Notwithstanding the conclusion of the TIA process, the site plan submission will review the site circulation, access, and parking design and the requirements of each, including through the provision of turning templates.

Prepared By:

John Kingsley, EIT
Transportation Engineering-Intern

Reviewed By:

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

CGH TRANSPORTATION

13 Markham Avenue
Ottawa ON K2G 3Z1

City of Ottawa 2017 TIA Guidelines
Step 1 - Screening Form

Date: 23-Mar-21
Project Number: 2021-013
Project Reference: 101-103 Schneider

1.1 Description of Proposed Development	
Municipal Address	101A, and 103 Schneider Road
Description of Location	Northeast of Carling Ave and Schneider Rd Inersection
Land Use Classification	General Industrial (IG6)
Development Size	94,332 sq. ft. industrial buildings
Accesses	One existing full-moves onto Schneider Rd, connection to existing full-moves onto Legget Dr, connection to existing full-moves onto Carling Av
Phase of Development	Three phases
Buildout Year	2023
TIA Requirement	Design Review Component

1.2 Trip Generation Trigger		
Land Use Type	Industrial	
Development Size	94,332	G.F.A.
Trip Generation Trigger	**No**	Attached trip generation shows fewer than 60 person trips are generated based upon development size

1.3 Location Triggers		
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	No	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?	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)?	No	Existing, and horizontal curvature on Schneider Road is beyond departure sight considerations
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?	Yes	Carling Avenue at Herzberg Road: 25 collisions '15-'19
Does the development include a drive-thru facility?	No	
Safety Trigger	Yes	

Table 8: Trip Generation Person Trip Rates

Dwelling Type	Land Use Code	Peak Hour	Vehicle Trip Rate	Person Trip Rates
General Light Industrial	110 (ITE)	AM	0.46	0.59
		PM	0.38	0.49

Table 9: Total Person Trip Generation

Land Use	Units / GFA	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
General Light Industrial	94,332ft^2	48	7	55	6	39	45

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

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 s/he meets the four criteria listed below.

CERTIFICATION

1. 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;
2. 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;
3. 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
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering √ or transportation planning □.

[1,2] **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.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
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Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at ___Ottawa_____ this __20__ day of _____September_____, 2018.
(City)

Name: _____Andrew Harte_____
(Please Print)

Professional Title: _____Professional Engineer_____

_____
Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)
Address: 13 Markham Avenue
City / Postal Code: Ottawa / K2G 3Z1
Telephone / Extension: (613) 697-3797
E-Mail Address: Andrew.Harte@CGHTransportation.com

Appendix B

Turning Movement Counts

Transportation Services - Traffic Services

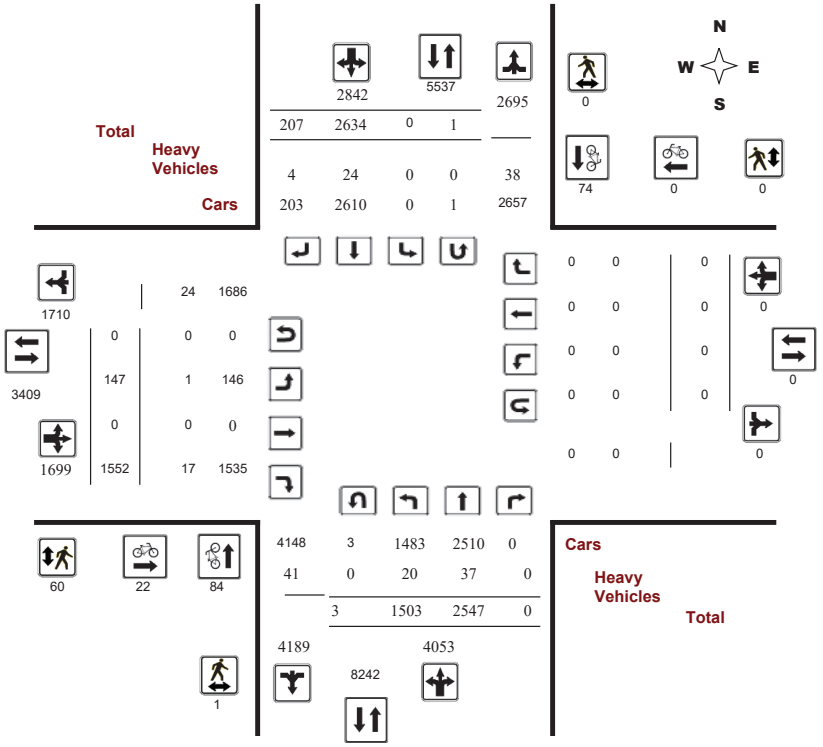
Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Diagram



Transportation Services - Traffic Services

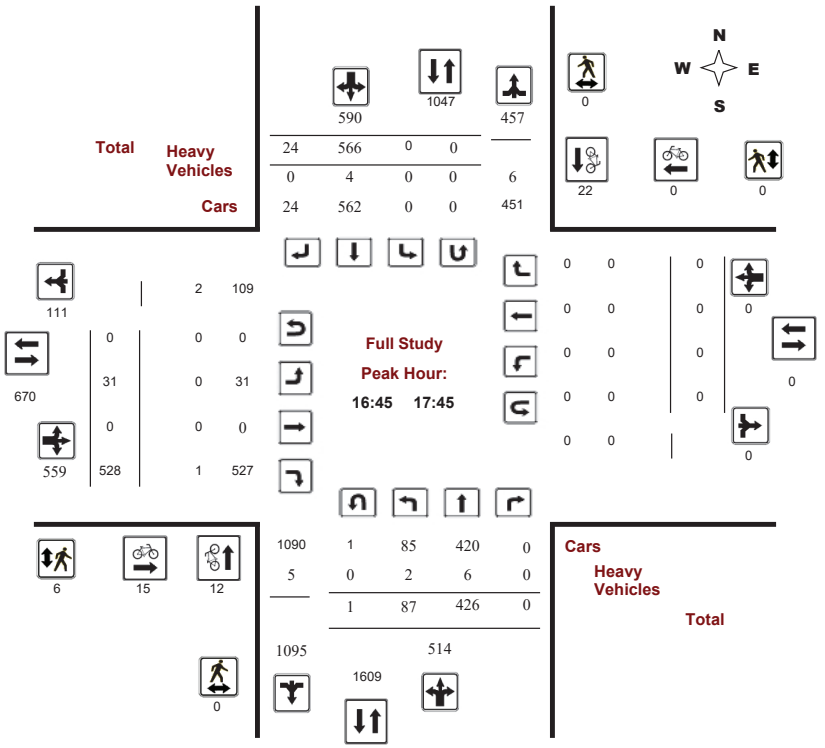
Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Peak Hour Diagram



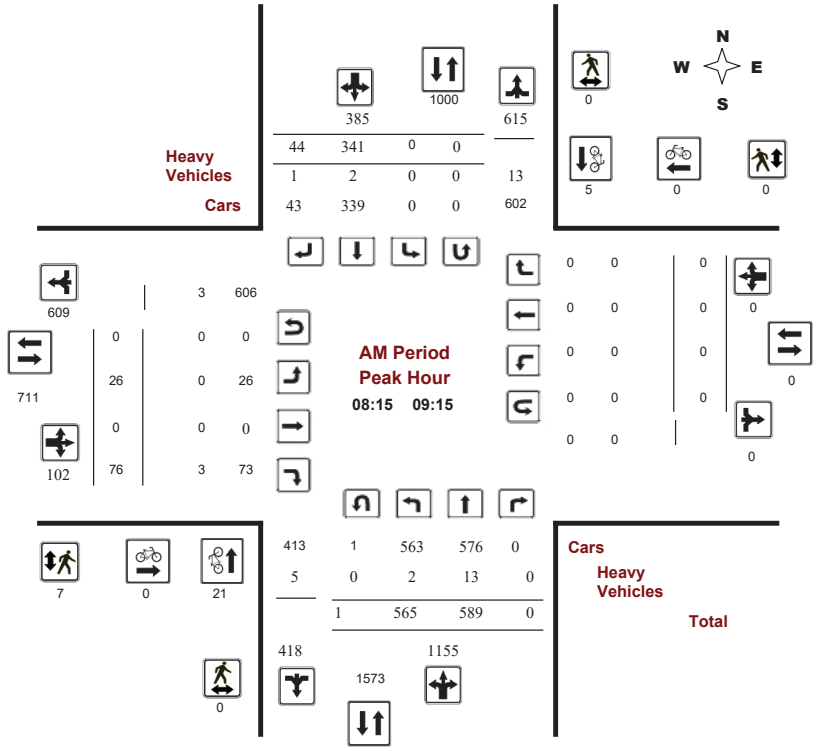
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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



Comments

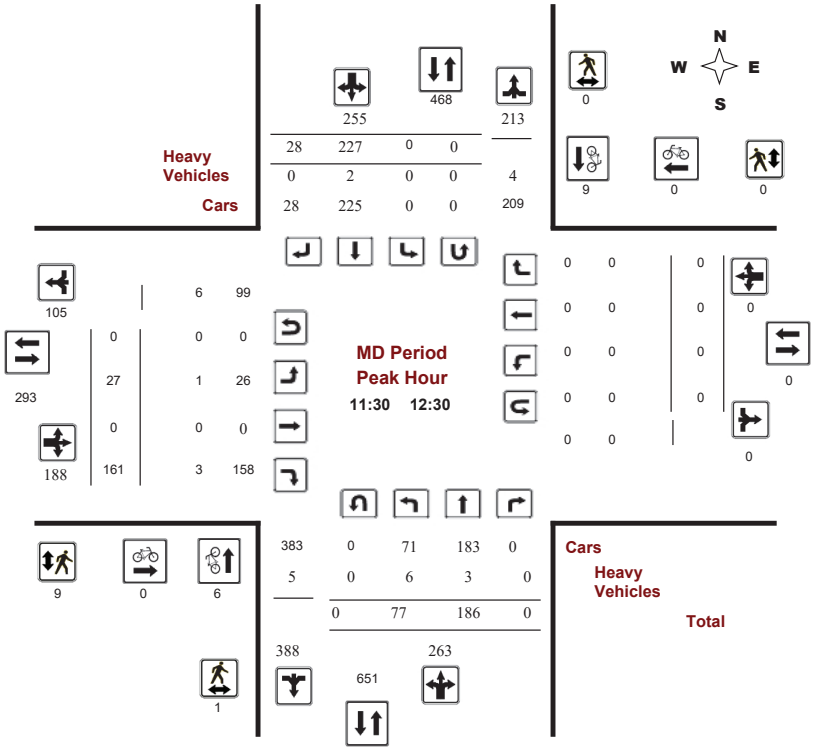
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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



Comments

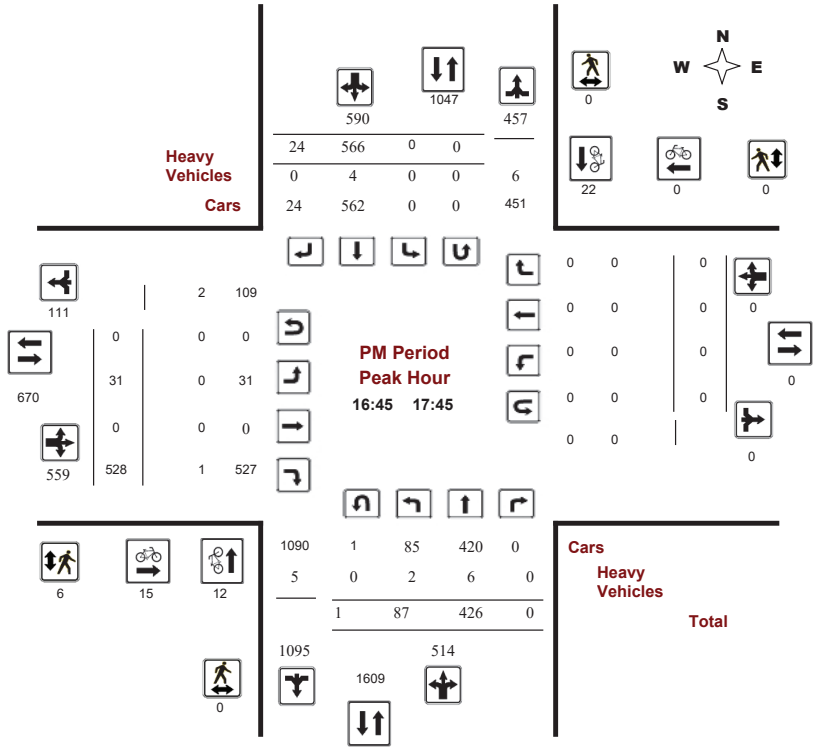
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, August 29, 2017

Total Observed U-Turns

Northbound: 3 Southbound: 1

Eastbound: 0 Westbound: 0

AADT Factor .90

	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	321	241	0	**562**	0	444	33	**477**	**1039**	8	0	67	**75**	0	0	0	**0**	**75**	**1114**
08:00 09:00	548	526	0	**1074**	0	409	47	**456**	**1530**	15	0	82	**97**	0	0	0	**0**	**97**	**1627**
09:00 10:00	249	285	0	**534**	0	128	18	**146**	**680**	15	0	37	**52**	0	0	0	**0**	**52**	**732**
11:30 12:30	77	186	0	**263**	0	227	28	**255**	**518**	27	0	161	**188**	0	0	0	**0**	**188**	**706**
12:30 13:30	120	222	0	**342**	0	196	29	**225**	**567**	16	0	69	**85**	0	0	0	**0**	**85**	**652**
15:00 16:00	51	286	0	**337**	0	230	11	**241**	**578**	8	0	218	**226**	0	0	0	**0**	**226**	**804**
16:00 17:00	69	393	0	**462**	0	474	19	**493**	**955**	31	0	433	**464**	0	0	0	**0**	**464**	**1419**
17:00 18:00	68	408	0	**476**	0	526	22	**548**	**1024**	27	0	485	**512**	0	0	0	**0**	**512**	**1536**
Sub Total	1503	2547	0	**4050**	0	2634	207	**2841**	**6891**	147	0	1552	**1699**	0	0	0	**0**	**1699**	**8590**
U Turns	3			**3**	1			**1**	**4**	**0**			**0**	0			**0**	**0**	**4**
Total	1506	2547	0	**4053**	1	2634	207	**2842**	**6895**	147	0	1552	**1699**	0	0	0	**0**	**1699**	**8594**
EQ 12Hr	2093	3540	0	**5633**	1	3661	288	**3950**	**9583**	204	0	2157	**2361**	0	0	0	**0**	**2361**	**11944**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1884	3186	0	**5070**	1	3295	259	**3555**	**8625**	184	0	1941	**2125**	0	0	0	**0**	**2125**	**10750**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	2468	4174	0	**6642**	1	4316	339	**4656**	**11298**	241	0	2543	**2784**	0	0	0	**0**	**2784**	**14082**
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

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study 15 Minute Increments

Time Period		Northbound				Southbound					Eastbound				Westbound					Grand Total
		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	
07:00	07:15	44	36	0	80	0	99	5	104	**184**	0	0	11	11	0	0	0	0	**11**	**195**
07:15	07:30	96	44	0	140	0	113	8	121	**261**	1	0	17	18	0	0	0	0	**18**	**279**
07:30	07:45	83	67	0	150	0	130	10	140	**290**	2	0	25	27	0	0	0	0	**27**	**317**
07:45	08:00	98	94	0	192	0	102	10	112	**304**	5	0	14	19	0	0	0	0	**19**	**323**
08:00	08:15	125	94	0	219	0	132	12	144	**363**	2	0	22	24	0	0	0	0	**24**	**387**
08:15	08:30	129	125	0	254	0	95	13	108	**362**	7	0	22	29	0	0	0	0	**29**	**391**
08:30	08:45	139	149	0	288	0	96	11	107	**395**	4	0	21	25	0	0	0	0	**25**	**420**
08:45	09:00	156	158	0	314	0	86	11	97	**411**	2	0	17	19	0	0	0	0	**19**	**430**
09:00	09:15	142	157	0	299	0	64	9	73	**372**	13	0	16	29	0	0	0	0	**29**	**401**
09:15	09:30	33	33	0	66	0	14	3	17	**83**	1	0	3	4	0	0	0	0	**4**	**87**
09:30	09:45	16	15	0	31	0	6	1	7	**38**	1	0	3	4	0	0	0	0	**4**	**42**
09:45	10:00	58	80	0	138	0	44	5	49	**187**	0	0	15	15	0	0	0	0	**15**	**202**
11:30	11:45	18	42	0	60	0	49	8	57	**117**	4	0	40	44	0	0	0	0	**44**	**161**
11:45	12:00	19	54	0	73	0	72	10	82	**155**	9	0	47	56	0	0	0	0	**56**	**211**
12:00	12:15	16	37	0	53	0	49	4	53	**106**	9	0	45	54	0	0	0	0	**54**	**160**
12:15	12:30	24	53	0	77	0	57	6	63	**140**	5	0	29	34	0	0	0	0	**34**	**174**
12:30	12:45	24	48	0	72	0	60	4	64	**136**	1	0	21	22	0	0	0	0	**22**	**158**
12:45	13:00	39	56	0	95	0	48	15	63	**158**	8	0	16	24	0	0	0	0	**24**	**182**
13:00	13:15	34	61	0	95	0	49	5	54	**149**	6	0	14	20	0	0	0	0	**20**	**169**
13:15	13:30	24	57	0	81	0	39	5	44	**125**	1	0	18	19	0	0	0	0	**19**	**144**
15:00	15:15	10	58	0	68	0	63	1	64	**132**	2	0	56	58	0	0	0	0	**58**	**190**
15:15	15:30	13	79	0	92	0	64	3	67	**159**	1	0	44	45	0	0	0	0	**45**	**204**
15:30	15:45	18	100	0	118	1	58	4	63	**181**	2	0	87	89	0	0	0	0	**89**	**270**
15:45	16:00	10	49	0	59	0	45	3	48	**107**	3	0	31	34	0	0	0	0	**34**	**141**
16:00	16:15	7	73	0	80	0	92	2	94	**174**	3	0	80	83	0	0	0	0	**83**	**257**
16:15	16:30	15	106	0	121	0	106	3	109	**230**	8	0	98	106	0	0	0	0	**106**	**336**
16:30	16:45	15	102	0	117	0	127	8	135	**252**	11	0	126	137	0	0	0	0	**137**	**389**
16:45	17:00	32	112	0	144	0	149	6	155	**299**	9	0	129	138	0	0	0	0	**138**	**437**
17:00	17:15	14	115	0	129	0	139	4	143	**272**	8	0	132	140	0	0	0	0	**140**	**412**
17:15	17:30	14	117	0	131	0	124	7	131	**262**	8	0	134	142	0	0	0	0	**142**	**404**
17:30	17:45	28	82	0	110	0	154	7	161	**271**	6	0	133	139	0	0	0	0	**139**	**410**
17:45	18:00	13	94	0	107	0	109	4	113	**220**	5	0	86	91	0	0	0	0	**91**	**311**
Total:		1506	2547	0	4053	1	2634	207	2842	**6895**	147	0	1552	1699	0	0	0	0	**6895**	**8,594**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Cyclist Volume

Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	4	1	**5**	0	0	**0**	**5**
07:15	07:30	4	2	**6**	0	0	**0**	**6**
07:30	07:45	1	2	**3**	0	0	**0**	**3**
07:45	08:00	5	2	**7**	0	0	**0**	**7**
08:00	08:15	9	4	**13**	0	0	**0**	**13**
08:15	08:30	6	0	**6**	0	0	**0**	**6**
08:30	08:45	7	2	**9**	0	0	**0**	**9**
08:45	09:00	1	0	**1**	0	0	**0**	**1**
09:00	09:15	7	3	**10**	0	0	**0**	**10**
09:15	09:30	1	1	**2**	0	0	**0**	**2**
09:30	09:45	1	1	**2**	0	0	**0**	**2**
09:45	10:00	5	0	**5**	0	0	**0**	**5**
11:30	11:45	1	0	**1**	0	0	**0**	**1**
11:45	12:00	0	3	**3**	0	0	**0**	**3**
12:00	12:15	4	3	**7**	0	0	**0**	**7**
12:15	12:30	1	3	**4**	0	0	**0**	**4**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	3	0	**3**	0	0	**0**	**3**
13:00	13:15	1	0	**1**	0	0	**0**	**1**
13:15	13:30	4	1	**5**	0	0	**0**	**5**
15:00	15:15	1	2	**3**	0	0	**0**	**3**
15:15	15:30	0	0	**0**	1	0	**1**	**1**
15:30	15:45	1	0	**1**	0	0	**0**	**1**
15:45	16:00	0	1	**1**	0	0	**0**	**1**
16:00	16:15	1	2	**3**	0	0	**0**	**3**
16:15	16:30	1	1	**2**	3	0	**3**	**5**
16:30	16:45	2	8	**10**	0	0	**0**	**10**
16:45	17:00	2	6	**8**	1	0	**1**	**9**
17:00	17:15	3	4	**7**	3	0	**3**	**10**
17:15	17:30	4	8	**12**	2	0	**2**	**14**
17:30	17:45	3	4	**7**	9	0	**9**	**16**
17:45	18:00	1	10	**11**	3	0	**3**	**14**
Total		84	74	**158**	22	0	**22**	**180**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Pedestrian Volume

Time Period	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	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**
07:45 08:00	0	0	**0**	0	0	**0**	**0**
08:00 08:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	0	0	**0**	0	0	**0**	**0**
08:30 08:45	0	0	**0**	1	0	**1**	**1**
08:45 09:00	0	0	**0**	4	0	**4**	**4**
09:00 09:15	0	0	**0**	2	0	**2**	**2**
09:15 09:30	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**	2	0	**2**	**2**
11:30 11:45	0	0	**0**	1	0	**1**	**1**
11:45 12:00	1	0	**1**	2	0	**2**	**3**
12:00 12:15	0	0	**0**	3	0	**3**	**3**
12:15 12:30	0	0	**0**	3	0	**3**	**3**
12:30 12:45	0	0	**0**	4	0	**4**	**4**
12:45 13:00	0	0	**0**	4	0	**4**	**4**
13:00 13:15	0	0	**0**	3	0	**3**	**3**
13:15 13:30	0	0	**0**	5	0	**5**	**5**
15:00 15:15	0	0	**0**	3	0	**3**	**3**
15:15 15:30	0	0	**0**	4	0	**4**	**4**
15:30 15:45	0	0	**0**	8	0	**8**	**8**
15:45 16:00	0	0	**0**	0	0	**0**	**0**
16:00 16:15	0	0	**0**	1	0	**1**	**1**
16:15 16:30	0	0	**0**	3	0	**3**	**3**
16:30 16:45	0	0	**0**	1	0	**1**	**1**
16:45 17:00	0	0	**0**	0	0	**0**	**0**
17:00 17:15	0	0	**0**	3	0	**3**	**3**
17:15 17:30	0	0	**0**	3	0	**3**	**3**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	0	**0**	0	0	**0**	**0**
Total	1	0	**1**	60	0	**60**	**61**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study Heavy Vehicles

		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	1	2	0	**3**	0	1	0	**1**	**4**	0	0	1	**1**	0	0	0	**0**	**1**	**5**
07:15	07:30	1	1	0	**2**	0	1	0	**1**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
07:30	07:45	1	3	0	**4**	0	1	0	**1**	**5**	0	0	2	**2**	0	0	0	**0**	**2**	**7**
07:45	08:00	1	2	0	**3**	0	0	0	**0**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
08:00	08:15	1	1	0	**2**	0	0	0	**0**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
08:15	08:30	0	3	0	**3**	0	0	0	**0**	**3**	0	0	1	**1**	0	0	0	**0**	**1**	**4**
08:30	08:45	1	3	0	**4**	0	1	0	**1**	**5**	0	0	1	**1**	0	0	0	**0**	**1**	**6**
08:45	09:00	0	2	0	**2**	0	1	1	**2**	**4**	0	0	1	**1**	0	0	0	**0**	**1**	**5**
09:00	09:15	1	5	0	**6**	0	0	0	**0**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
09:15	09:30	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
09:30	09:45	1	1	0	**2**	0	0	0	**0**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
09:45	10:00	1	0	0	**1**	0	2	0	**2**	**3**	0	0	1	**1**	0	0	0	**0**	**1**	**4**
11:30	11:45	2	0	0	**2**	0	0	0	**0**	**2**	0	0	1	**1**	0	0	0	**0**	**1**	**3**
11:45	12:00	2	1	0	**3**	0	1	0	**1**	**4**	1	0	2	**3**	0	0	0	**0**	**3**	**7**
12:00	12:15	0	1	0	**1**	0	0	0	**0**	**1**	0	0	0	**0**	0	0	0	**0**	**0**	**1**
12:15	12:30	2	1	0	**3**	0	1	0	**1**	**4**	0	0	0	**0**	0	0	0	**0**	**0**	**4**
12:30	12:45	0	2	0	**2**	0	0	0	**0**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
12:45	13:00	1	1	0	**2**	0	1	1	**2**	**4**	0	0	2	**2**	0	0	0	**0**	**2**	**6**
13:00	13:15	1	1	0	**2**	0	1	1	**2**	**4**	0	0	0	**0**	0	0	0	**0**	**0**	**4**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
15:00	15:15	0	0	0	**0**	0	1	0	**1**	**1**	0	0	1	**1**	0	0	0	**0**	**1**	**2**
15:15	15:30	0	0	0	**0**	0	1	0	**1**	**1**	0	0	0	**0**	0	0	0	**0**	**0**	**1**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
15:45	16:00	0	0	0	**0**	0	1	0	**1**	**1**	0	0	0	**0**	0	0	0	**0**	**0**	**1**
16:00	16:15	1	0	0	**1**	0	1	0	**1**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
16:15	16:30	0	0	0	**0**	0	1	0	**1**	**1**	0	0	2	**2**	0	0	0	**0**	**2**	**3**
16:30	16:45	0	1	0	**1**	0	2	1	**3**	**4**	0	0	1	**1**	0	0	0	**0**	**1**	**5**
16:45	17:00	1	0	0	**1**	0	0	0	**0**	**1**	0	0	1	**1**	0	0	0	**0**	**1**	**2**
17:00	17:15	0	1	0	**1**	0	2	0	**2**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
17:15	17:30	1	3	0	**4**	0	1	0	**1**	**5**	0	0	0	**0**	0	0	0	**0**	**0**	**5**
17:30	17:45	0	2	0	**2**	0	1	0	**1**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
17:45	18:00	0	0	0	**0**	0	2	0	**2**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
Total:	None	20	37	0	**57**	0	24	4	**28**	**85**	1	0	17	**18**	0	0	0	**0**	**18**	**103**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

LEGGET DR @ HERZBERG RD

Survey Date: Tuesday, August 29, 2017 **WO No:** 37218

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

Full Study 15 Minute U-Turn Total

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	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	0	0	**0**
08:30	08:45	0	0	0	0	**0**
08:45	09:00	1	0	0	0	**1**
09:00	09:15	0	0	0	0	**0**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
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	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	1	0	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	0	0	**0**
15:00	15:15	0	0	0	0	**0**
15:15	15:30	0	0	0	0	**0**
15:30	15:45	0	1	0	0	**1**
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	1	0	0	0	**1**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		3	1	0	0	**4**

Transportation Services - Traffic Services

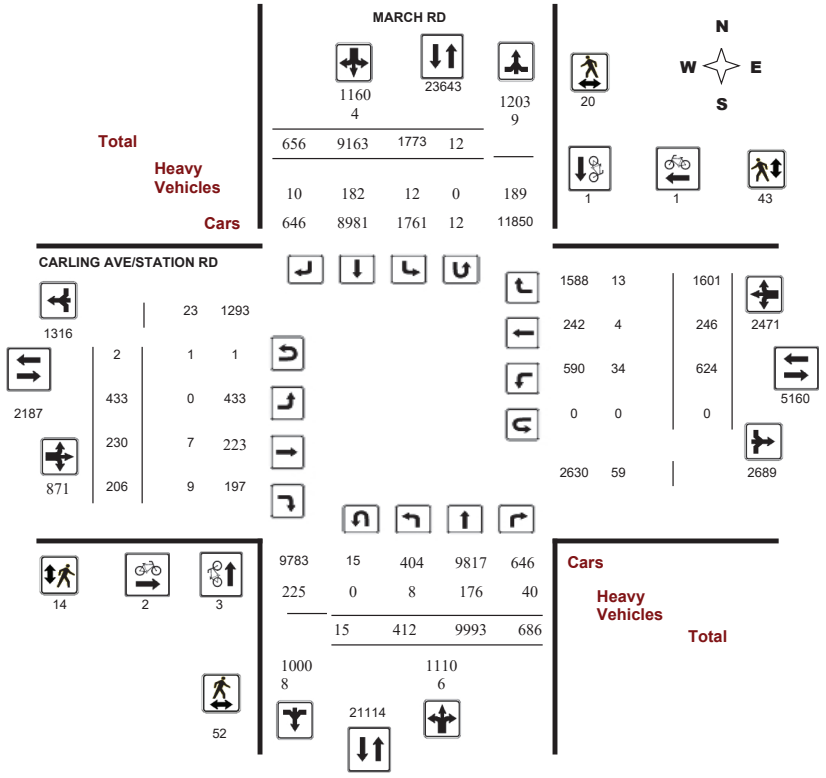
Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Diagram



5479342 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

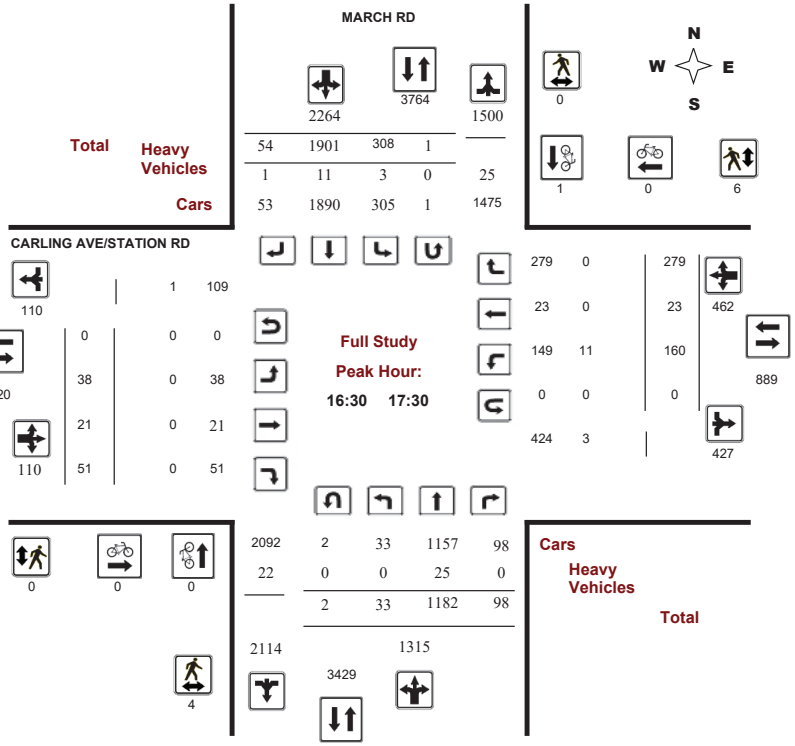
Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Peak Hour Diagram



5479342 - MAR 10 2020 - 8HRS - LORETTA

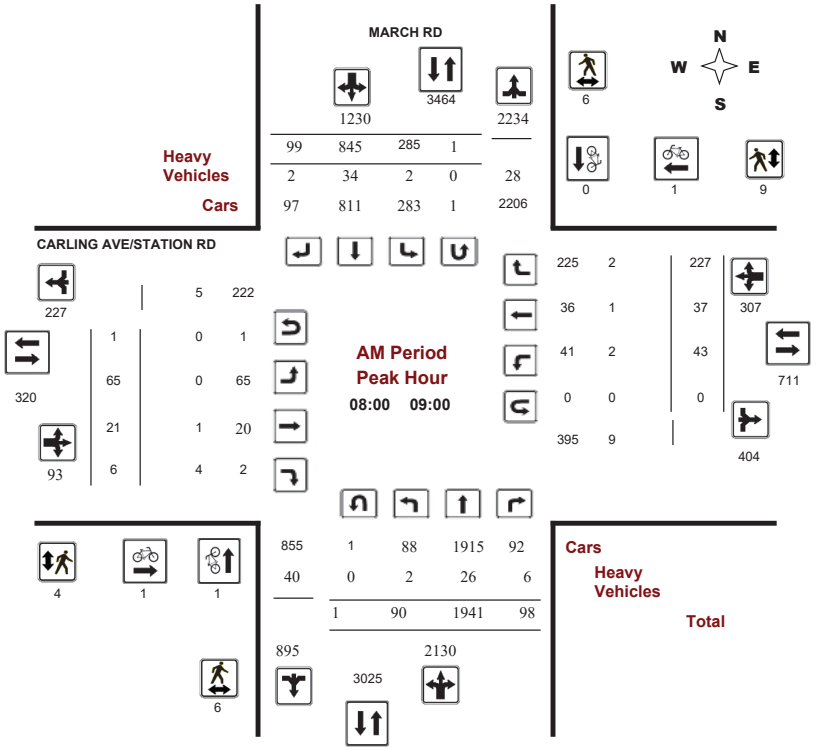
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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



Comments 5479342 - MAR 10 2020 - 8HRS - LORETTA

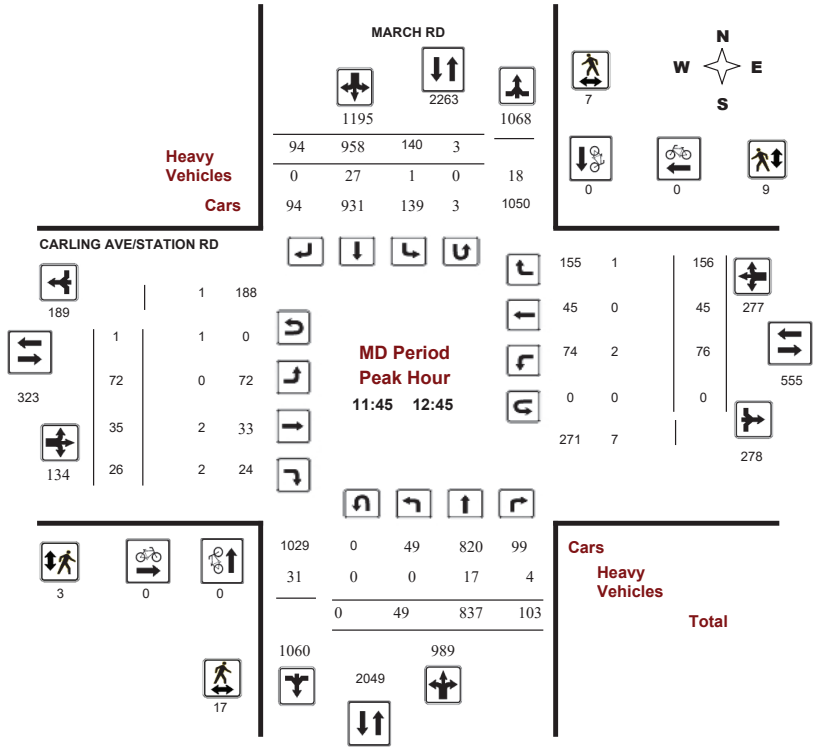
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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



Comments 5479342 - MAR 10 2020 - 8HRS - LORETTA

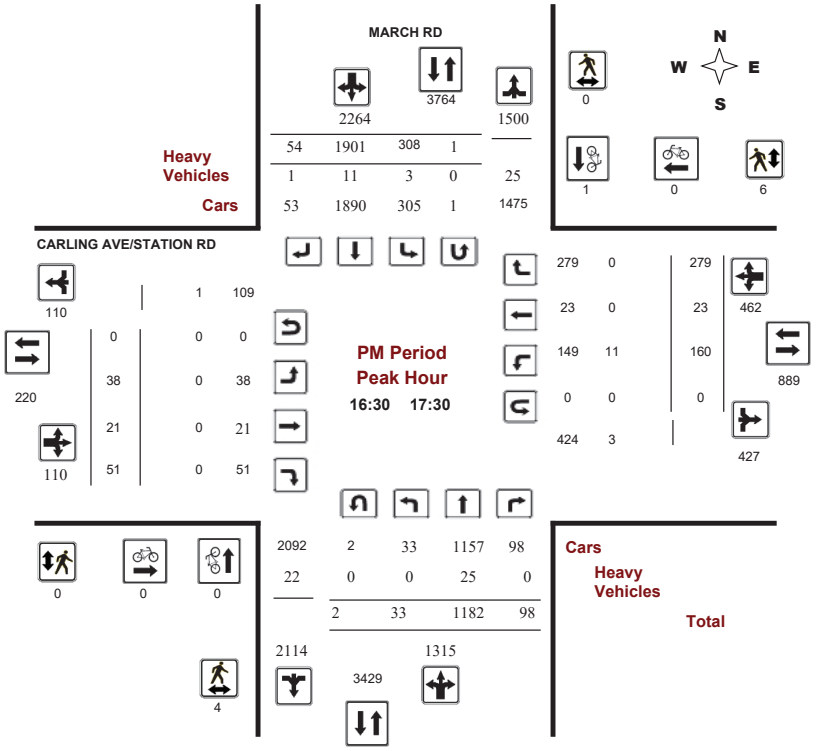
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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



Comments 5479342 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 10, 2020

Total Observed U-Turns

Northbound: 15 Southbound: 12

Eastbound: 2 Westbound: 0

AADT Factor 1.00

	MARCH RD									CARLING AVE/STATION 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	61	1337	116	**1514**	370	871	106	**1347**	**2861**	45	32	7	**84**	26	17	134	**177**	**261**	**3122**
08:00 09:00	90	1941	98	**2129**	285	845	99	**1229**	**3358**	65	21	6	**92**	43	37	227	**307**	**399**	**3757**
09:00 10:00	50	1708	91	**1849**	151	812	103	**1066**	**2915**	52	42	8	**102**	36	39	185	**260**	**362**	**3277**
11:30 12:30	51	815	99	**965**	129	997	97	**1223**	**2188**	59	29	26	**114**	73	47	141	**261**	**375**	**2563**
12:30 13:30	55	804	80	**939**	131	787	81	**999**	**1938**	79	39	18	**136**	78	38	155	**271**	**407**	**2345**
15:00 16:00	43	1066	51	**1160**	130	1180	48	**1358**	**2518**	45	21	52	**118**	85	26	234	**345**	**463**	**2981**
16:00 17:00	31	1176	74	**1281**	284	1813	69	**2166**	**3447**	42	30	61	**133**	133	20	283	**436**	**569**	**4016**
17:00 18:00	31	1146	77	**1254**	293	1858	53	**2204**	**3458**	46	16	28	**90**	150	22	242	**414**	**504**	**3962**
Sub Total	412	9993	686	**11091**	1773	9163	656	**11592**	**22683**	433	230	206	**869**	624	246	1601	**2471**	**3340**	**26023**
U Turns	15			**15**	12			**12**	**27**	**2**			**2**	0			**0**	**2**	**29**
Total	427	9993	686	**11106**	1785	9163	656	**11604**	**22710**	435	230	206	**871**	624	246	1601	**2471**	**3342**	**26052**
EQ 12Hr	594	13890	954	**15438**	2481	12737	912	**16130**	**31568**	605	320	286	**1211**	867	342	2225	**3434**	**4645**	**36213**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	594	13890	954	**15438**	2481	12737	912	**16130**	**31568**	605	320	286	**1211**	867	342	2225	**3434**	**4645**	**36213**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	778	18196	1250	**20224**	3250	16685	1195	**21130**	**41354**	793	419	375	**1587**	1136	448	2915	**4499**	**6086**	**47440**
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

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study 15 Minute Increments

		MARCH RD									CARLING AVE/STATION 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	10	221	19	250	89	203	19	311	**561**	7	8	2	17	7	1	27	35	**52**	**613**
07:15	07:30	14	323	35	372	111	223	41	375	**747**	6	10	1	17	6	4	34	44	**61**	**808**
07:30	07:45	15	353	26	394	98	227	24	349	**743**	16	7	2	25	5	8	28	41	**66**	**809**
07:45	08:00	22	440	36	498	75	218	22	315	**813**	16	7	2	25	8	4	45	57	**82**	**895**
08:00	08:15	28	470	23	521	82	215	28	325	**846**	14	6	1	21	11	8	29	48	**69**	**915**
08:15	08:30	29	508	34	571	64	218	25	307	**878**	21	3	2	26	12	5	51	68	**94**	**972**
08:30	08:45	15	477	23	515	75	204	22	301	**816**	14	7	2	23	6	11	65	82	**105**	**921**
08:45	09:00	19	486	18	523	65	208	24	297	**820**	17	5	1	23	14	13	82	109	**132**	**952**
09:00	09:15	10	472	20	502	60	221	21	302	**804**	11	12	0	23	10	12	64	86	**109**	**913**
09:15	09:30	22	483	26	531	49	228	34	311	**842**	16	11	3	30	14	11	47	72	**102**	**944**
09:30	09:45	11	379	25	415	30	199	24	253	**668**	12	10	1	23	7	10	41	58	**81**	**749**
09:45	10:00	11	374	20	405	14	164	24	202	**607**	13	9	4	26	5	6	33	44	**70**	**677**
11:30	11:45	22	172	20	214	29	238	25	292	**506**	13	7	4	24	17	11	34	62	**86**	**592**
11:45	12:00	11	223	31	265	41	251	18	310	**575**	19	8	8	35	15	10	34	59	**94**	**669**
12:00	12:15	6	205	20	231	30	271	29	330	**561**	16	4	7	27	25	10	37	72	**99**	**660**
12:15	12:30	14	215	28	257	31	237	25	293	**550**	12	10	7	29	16	16	36	68	**97**	**647**
12:30	12:45	18	194	24	236	41	199	22	262	**498**	26	13	4	43	20	9	49	78	**121**	**619**
12:45	13:00	19	219	18	256	32	225	15	272	**528**	15	12	6	33	18	14	37	69	**102**	**630**
13:00	13:15	10	201	23	234	31	186	29	246	**480**	21	6	3	30	25	8	42	75	**105**	**585**
13:15	13:30	10	190	15	215	29	177	15	221	**436**	17	8	5	30	15	7	27	49	**79**	**515**
15:00	15:15	12	225	16	253	35	298	8	341	**594**	9	4	10	23	23	4	38	65	**88**	**682**
15:15	15:30	10	271	9	290	36	229	17	282	**572**	9	3	5	17	14	13	58	85	**102**	**674**
15:30	15:45	16	299	14	329	26	340	11	377	**706**	18	10	28	56	30	7	67	104	**160**	**866**
15:45	16:00	7	271	12	290	34	313	12	359	**649**	9	4	9	22	18	2	71	91	**113**	**762**
16:00	16:15	6	279	15	300	65	451	12	528	**828**	8	9	15	32	37	6	69	112	**144**	**972**
16:15	16:30	5	321	11	337	74	444	21	539	**876**	12	4	11	27	23	6	69	98	**125**	**1001**
16:30	16:45	7	286	23	316	74	469	18	561	**877**	10	5	19	34	39	4	79	122	**156**	**1033**
16:45	17:00	15	290	25	330	71	449	18	538	**868**	12	12	16	40	34	4	66	104	**144**	**1012**
17:00	17:15	5	310	28	343	90	486	10	586	**929**	7	1	10	18	43	7	56	106	**124**	**1053**
17:15	17:30	8	296	22	326	74	497	8	579	**905**	9	3	6	18	44	8	78	130	**148**	**1053**
17:30	17:45	9	275	18	302	86	483	20	589	**891**	10	11	7	28	36	1	53	90	**118**	**1009**
17:45	18:00	11	265	9	285	44	392	15	451	**736**	20	1	5	26	27	6	55	88	**114**	**850**
Total:		427	9993	686	1110	1785	9163	656	11604	**22710**	435	230	206	871	624	246	1601	2471	**22710**	**26,052**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Cyclist Volume

Time Period		MARCH RD			CARLING AVE/STATION RD			Grand Total
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street 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**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	1	0	**1**	**1**
08:15	08:30	0	0	**0**	0	1	**1**	**1**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	1	0	**1**	0	0	**0**	**1**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	2	0	**2**	0	0	**0**	**2**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	1	**1**	0	0	**0**	**1**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	1	0	**1**	**1**
17:45	18:00	0	0	**0**	0	0	**0**	**0**
Total		3	1	**4**	2	1	**3**	**7**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Pedestrian Volume

Time Period		MARCH RD			CARLING AVE/STATION RD			Grand Total
		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	
07:00	07:15	1	0	**1**	0	0	**0**	**1**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	2	1	**3**	0	1	**1**	**4**
07:45	08:00	1	0	**1**	0	1	**1**	**2**
08:00	08:15	1	2	**3**	1	1	**2**	**5**
08:15	08:30	2	1	**3**	1	3	**4**	**7**
08:30	08:45	1	3	**4**	2	4	**6**	**10**
08:45	09:00	2	0	**2**	0	1	**1**	**3**
09:00	09:15	1	0	**1**	1	1	**2**	**3**
09:15	09:30	1	0	**1**	2	0	**2**	**3**
09:30	09:45	0	0	**0**	0	1	**1**	**1**
09:45	10:00	0	2	**2**	2	0	**2**	**4**
11:30	11:45	0	2	**2**	0	2	**2**	**4**
11:45	12:00	0	0	**0**	0	2	**2**	**2**
12:00	12:15	5	0	**5**	0	0	**0**	**5**
12:15	12:30	9	2	**11**	1	3	**4**	**15**
12:30	12:45	3	5	**8**	2	4	**6**	**14**
12:45	13:00	3	0	**3**	0	1	**1**	**4**
13:00	13:15	1	1	**2**	1	0	**1**	**3**
13:15	13:30	2	0	**2**	0	1	**1**	**3**
15:00	15:15	1	1	**2**	1	0	**1**	**3**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	2	0	**2**	0	1	**1**	**3**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	2	0	**2**	0	2	**2**	**4**
16:15	16:30	3	0	**3**	0	3	**3**	**6**
16:30	16:45	0	0	**0**	0	1	**1**	**1**
16:45	17:00	1	0	**1**	0	2	**2**	**3**
17:00	17:15	3	0	**3**	0	0	**0**	**3**
17:15	17:30	0	0	**0**	0	3	**3**	**3**
17:30	17:45	3	0	**3**	0	4	**4**	**7**
17:45	18:00	2	0	**2**	0	1	**1**	**3**
Total	.....	52	20	**72**	14	43	**57**	**129**

5479342 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study Heavy Vehicles

MARCH RD **CARLING AVE/STATION RD**

Time Period		Northbound				Southbound					Eastbound				Westbound					Grand Total
		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	
07:00	07:15	0	7	3	**10**	0	7	2	**9**	**19**	0	1	0	**1**	0	0	0	**0**	**1**	**20**
07:15	07:30	0	3	3	**6**	0	5	1	**6**	**12**	0	1	0	**1**	0	0	1	**1**	**2**	**14**
07:30	07:45	1	7	3	**11**	1	8	1	**10**	**21**	0	1	1	**2**	0	0	1	**1**	**3**	**24**
07:45	08:00	1	5	4	**10**	0	5	0	**5**	**15**	0	0	0	**0**	2	0	1	**3**	**3**	**18**
08:00	08:15	1	5	2	**8**	0	10	0	**10**	**18**	0	0	0	**0**	1	0	0	**1**	**1**	**19**
08:15	08:30	1	5	1	**7**	1	6	0	**7**	**14**	0	0	1	**1**	0	0	0	**0**	**1**	**15**
08:30	08:45	0	11	3	**14**	1	5	2	**8**	**22**	0	1	2	**3**	1	0	0	**1**	**4**	**26**
08:45	09:00	0	5	0	**5**	0	13	0	**13**	**18**	0	0	1	**1**	0	1	2	**3**	**4**	**22**
09:00	09:15	0	3	2	**5**	1	7	0	**8**	**13**	0	1	0	**1**	0	0	1	**1**	**2**	**15**
09:15	09:30	0	9	0	**9**	1	10	0	**11**	**20**	0	0	0	**0**	2	1	0	**3**	**3**	**23**
09:30	09:45	0	6	4	**10**	1	10	0	**11**	**21**	0	0	0	**0**	1	0	0	**1**	**1**	**22**
09:45	10:00	0	7	1	**8**	1	5	0	**6**	**14**	0	0	1	**1**	1	0	0	**1**	**2**	**16**
11:30	11:45	1	5	1	**7**	0	5	0	**5**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
11:45	12:00	0	1	1	**2**	1	7	0	**8**	**10**	0	1	0	**1**	2	0	0	**2**	**3**	**14**
12:00	12:15	0	8	1	**9**	0	10	0	**10**	**19**	0	0	1	**1**	0	0	1	**1**	**2**	**21**
12:15	12:30	0	4	0	**4**	0	2	0	**2**	**6**	0	0	1	**1**	0	0	0	**0**	**1**	**7**
12:30	12:45	0	4	2	**6**	0	8	0	**8**	**14**	0	1	0	**1**	0	0	0	**0**	**1**	**15**
12:45	13:00	0	2	2	**4**	1	6	1	**8**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
13:00	13:15	0	0	1	**1**	0	4	0	**4**	**5**	0	0	0	**0**	0	1	1	**2**	**2**	**7**
13:15	13:30	0	2	2	**4**	0	5	1	**6**	**10**	0	0	0	**0**	0	0	1	**1**	**1**	**11**
15:00	15:15	3	6	1	**10**	0	9	0	**9**	**19**	0	0	0	**0**	0	0	2	**2**	**2**	**21**
15:15	15:30	0	6	0	**6**	0	4	0	**4**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
15:30	15:45	0	4	1	**5**	0	4	0	**4**	**9**	0	0	0	**0**	1	0	1	**2**	**2**	**11**
15:45	16:00	0	13	2	**15**	0	4	0	**4**	**19**	0	0	1	**1**	2	0	0	**2**	**3**	**22**
16:00	16:15	0	9	0	**9**	0	1	0	**1**	**10**	0	0	0	**0**	2	1	1	**4**	**4**	**14**
16:15	16:30	0	6	0	**6**	0	5	1	**6**	**12**	0	0	0	**0**	2	0	0	**2**	**2**	**14**
16:30	16:45	0	9	0	**9**	1	4	1	**6**	**15**	0	0	0	**0**	3	0	0	**3**	**3**	**18**
16:45	17:00	0	6	0	**6**	1	4	0	**5**	**11**	0	0	0	**0**	2	0	0	**2**	**2**	**13**
17:00	17:15	0	6	0	**6**	1	1	0	**2**	**8**	0	0	0	**0**	4	0	0	**4**	**4**	**12**
17:15	17:30	0	4	0	**4**	0	2	0	**2**	**6**	0	0	0	**0**	2	0	0	**2**	**2**	**8**
17:30	17:45	0	4	0	**4**	0	2	0	**2**	**6**	0	0	0	**0**	1	0	0	**1**	**1**	**7**
17:45	18:00	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	5	0	0	**5**	**5**	**13**
Total:	None	8	176	40	**224**	12	182	10	**204**	**428**	0	7	9	**16**	34	4	13	**51**	**67**	**496**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE/STATION RD @ MARCH RD

Survey Date: Tuesday, March 10, 2020 **WO No:** 39592

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

Full Study 15 Minute U-Turn Total

MARCH RD **CARLING AVE/STATION 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	1	0	0	**1**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	2	0	0	**2**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	1	0	**1**
08:30	08:45	0	1	0	0	**1**
08:45	09:00	1	0	0	0	**1**
09:00	09:15	0	2	0	0	**2**
09:15	09:30	2	0	0	0	**2**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	2	0	0	0	**2**
11:30	11:45	2	0	0	0	**2**
11:45	12:00	0	0	1	0	**1**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	2	0	0	**2**
12:30	12:45	0	1	0	0	**1**
12:45	13:00	2	1	0	0	**3**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
15:00	15:15	0	1	0	0	**1**
15:15	15:30	1	0	0	0	**1**
15:30	15:45	0	0	0	0	**0**
15:45	16:00	1	0	0	0	**1**
16:00	16:15	1	0	0	0	**1**
16:15	16:30	0	0	0	0	**0**
16:30	16:45	1	0	0	0	**1**
16:45	17:00	0	0	0	0	**0**
17:00	17:15	1	0	0	0	**1**
17:15	17:30	0	1	0	0	**1**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	1	0	0	0	**1**
Total		15	12	2	0	**29**

Transportation Services - Traffic Services

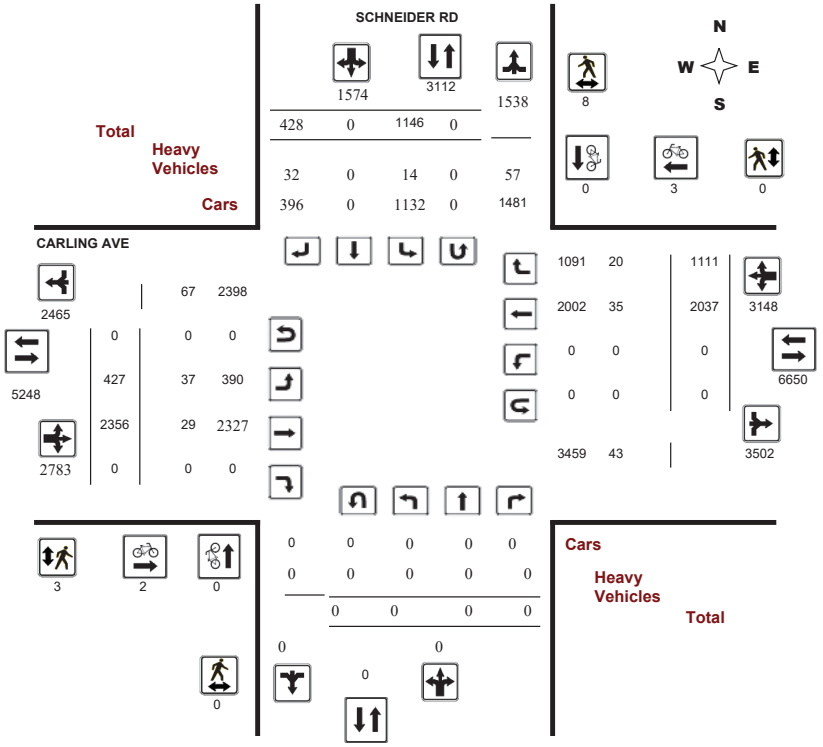
Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study Diagram



Transportation Services - Traffic Services

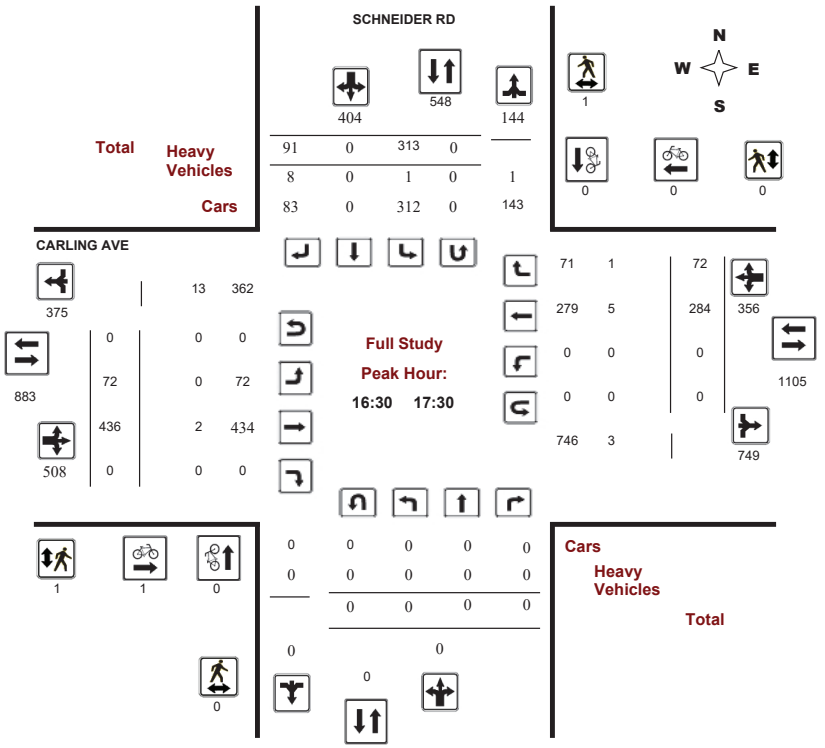
Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study Peak Hour Diagram



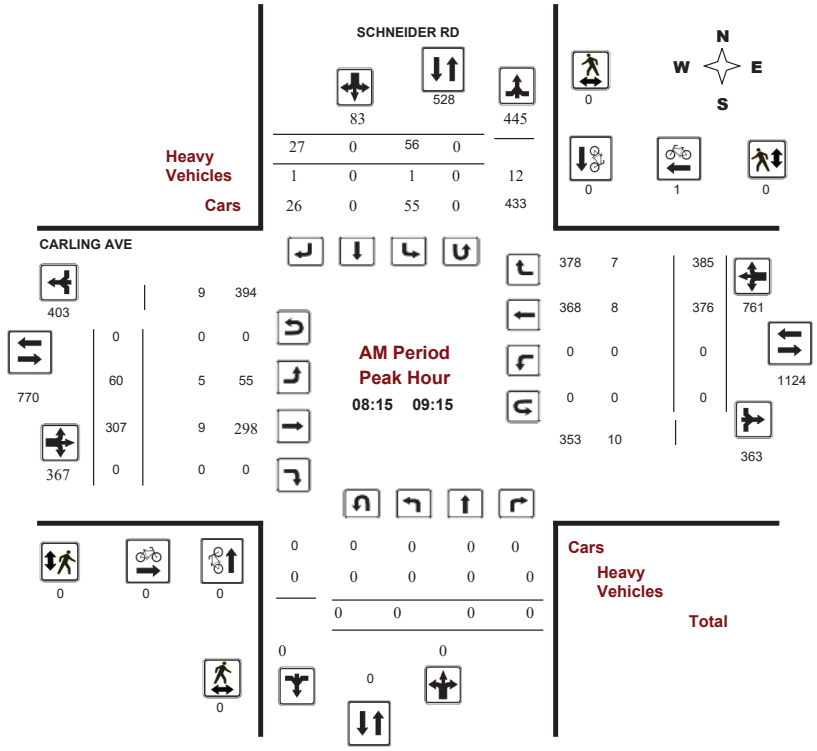
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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



Comments

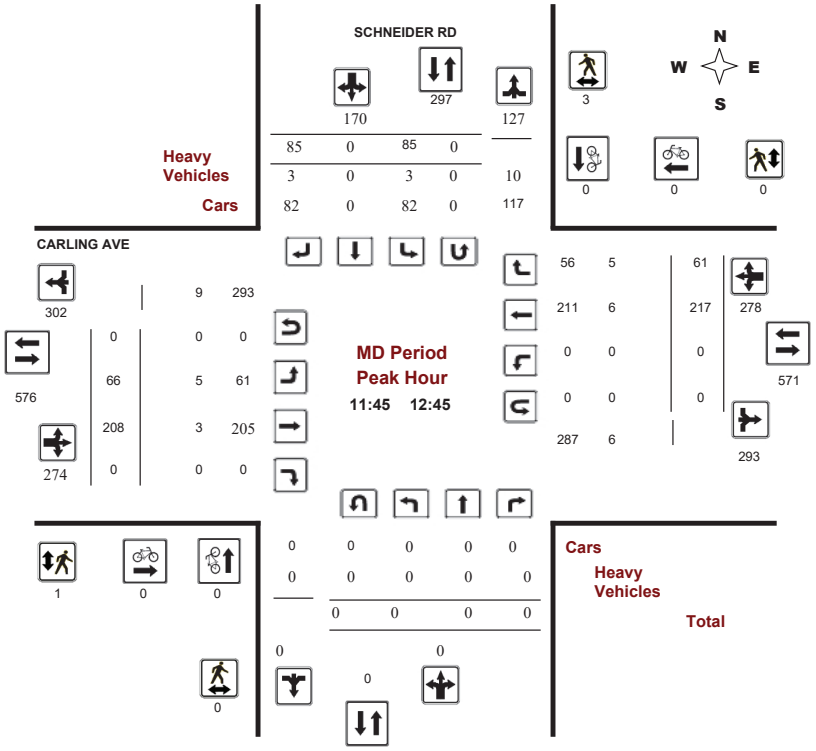
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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



Comments

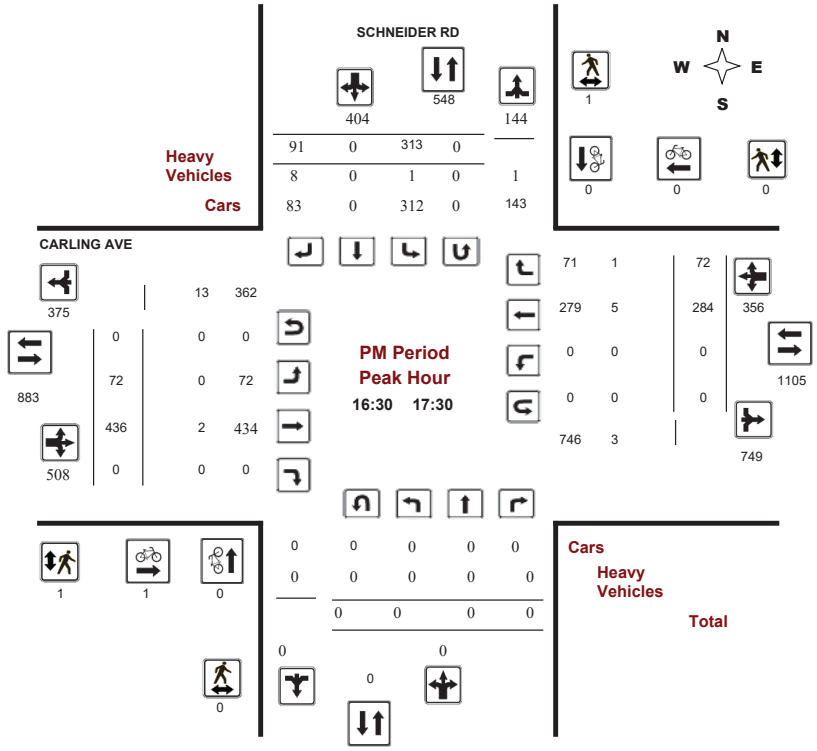
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, April 10, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor .90

	SCHNEIDER RD								CARLING AVE								
	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	0	0	0	**0**	62	0	17	**79**	**79**	39	450	0	**489**	0	157	166	**323**	**812**	**891**
08:00 09:00	0	0	0	**0**	61	0	26	**87**	**87**	50	342	0	**392**	0	334	328	**662**	**1054**	**1141**
09:00 10:00	0	0	0	**0**	34	0	31	**65**	**65**	55	200	0	**255**	0	321	302	**623**	**878**	**943**
11:30 12:30	0	0	0	**0**	95	0	83	**178**	**178**	60	195	0	**255**	0	219	62	**281**	**536**	**714**
12:30 13:30	0	0	0	**0**	84	0	65	**149**	**149**	60	175	0	**235**	0	164	61	**225**	**460**	**609**
15:00 16:00	0	0	0	**0**	228	0	35	**263**	**263**	34	189	0	**223**	0	268	50	**318**	**541**	**804**
16:00 17:00	0	0	0	**0**	281	0	69	**350**	**350**	68	405	0	**473**	0	298	78	**376**	**849**	**1199**
17:00 18:00	0	0	0	**0**	301	0	102	**403**	**403**	61	400	0	**461**	0	276	64	**340**	**801**	**1204**
Sub Total	0	0	0	**0**	1146	0	428	**1574**	**1574**	427	2356	0	**2783**	0	2037	1111	**3148**	**5931**	**7505**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	0			**0**	**0**	**0**
Total	0	0	0	**0**	1146	0	428	**1574**	**1574**	427	2356	0	**2783**	0	2037	1111	**3148**	**5931**	**7505**
EQ 12Hr	0	0	0	**0**	1593	0	595	**2188**	**2188**	594	3275	0	**3869**	0	2831	1544	**4375**	**8244**	**10432**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																	**1.39**		
AVG 12Hr	0	0	0	**0**	1434	0	536	**1970**	**1970**	535	2948	0	**3483**	0	2548	1390	**3938**	**7421**	**9391**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																	**.90**		
AVG 24Hr	0	0	0	**0**	1879	0	702	**2581**	**2581**	701	3862	0	**4563**	0	3338	1821	**5159**	**9722**	**12303**

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

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study 15 Minute Increments

		SCHNEIDER RD									CARLING AVE									
		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	0	11	0	4	15	**15**	8	118	0	126	0	24	30	54	**180**	**195**
07:15	07:30	0	0	0	0	12	0	2	14	**14**	11	123	0	134	0	47	34	81	**215**	**229**
07:30	07:45	0	0	0	0	17	0	3	20	**20**	11	103	0	114	0	34	52	86	**200**	**220**
07:45	08:00	0	0	0	0	22	0	8	30	**30**	9	106	0	115	0	52	50	102	**217**	**247**
08:00	08:15	0	0	0	0	13	0	8	21	**21**	10	95	0	105	0	61	58	119	**224**	**245**
08:15	08:30	0	0	0	0	21	0	3	24	**24**	15	98	0	113	0	86	90	176	**289**	**313**
08:30	08:45	0	0	0	0	18	0	11	29	**29**	13	76	0	89	0	89	90	179	**268**	**297**
08:45	09:00	0	0	0	0	9	0	4	13	**13**	12	73	0	85	0	98	90	188	**273**	**286**
09:00	09:15	0	0	0	0	8	0	9	17	**17**	20	60	0	80	0	103	115	218	**298**	**315**
09:15	09:30	0	0	0	0	11	0	6	17	**17**	13	55	0	68	0	85	89	174	**242**	**259**
09:30	09:45	0	0	0	0	7	0	11	18	**18**	11	38	0	49	0	80	62	142	**191**	**209**
09:45	10:00	0	0	0	0	8	0	5	13	**13**	11	47	0	58	0	53	36	89	**147**	**160**
11:30	11:45	0	0	0	0	28	0	19	47	**47**	9	35	0	44	0	45	13	58	**102**	**149**
11:45	12:00	0	0	0	0	16	0	22	38	**38**	15	44	0	59	0	63	26	89	**148**	**186**
12:00	12:15	0	0	0	0	41	0	26	67	**67**	17	66	0	83	0	61	13	74	**157**	**224**
12:15	12:30	0	0	0	0	10	0	16	26	**26**	19	50	0	69	0	50	10	60	**129**	**155**
12:30	12:45	0	0	0	0	18	0	21	39	**39**	15	48	0	63	0	43	12	55	**118**	**157**
12:45	13:00	0	0	0	0	26	0	11	37	**37**	20	40	0	60	0	48	18	66	**126**	**163**
13:00	13:15	0	0	0	0	22	0	21	43	**43**	15	49	0	64	0	33	23	56	**120**	**163**
13:15	13:30	0	0	0	0	18	0	12	30	**30**	10	38	0	48	0	40	8	48	**96**	**126**
15:00	15:15	0	0	0	0	46	0	10	56	**56**	4	49	0	53	0	50	10	60	**113**	**169**
15:15	15:30	0	0	0	0	49	0	10	59	**59**	6	44	0	50	0	70	12	82	**132**	**191**
15:30	15:45	0	0	0	0	71	0	5	76	**76**	11	40	0	51	0	70	10	80	**131**	**207**
15:45	16:00	0	0	0	0	62	0	10	72	**72**	13	56	0	69	0	78	18	96	**165**	**237**
16:00	16:15	0	0	0	0	66	0	20	86	**86**	17	103	0	120	0	85	17	102	**222**	**308**
16:15	16:30	0	0	0	0	70	0	13	83	**83**	15	114	0	129	0	74	15	89	**218**	**301**
16:30	16:45	0	0	0	0	86	0	16	102	**102**	10	100	0	110	0	70	18	88	**198**	**300**
16:45	17:00	0	0	0	0	59	0	20	79	**79**	26	88	0	114	0	69	28	97	**211**	**290**
17:00	17:15	0	0	0	0	86	0	26	112	**112**	23	115	0	138	0	63	11	74	**212**	**324**
17:15	17:30	0	0	0	0	82	0	29	111	**111**	13	133	0	146	0	82	15	97	**243**	**354**
17:30	17:45	0	0	0	0	75	0	15	90	**90**	14	98	0	112	0	65	22	87	**199**	**289**
17:45	18:00	0	0	0	0	58	0	32	90	**90**	11	54	0	65	0	66	16	82	**147**	**237**
Total:		0	0	0	0	1146	0	428	1574	**1574**	427	2356	0	2783	0	2037	1111	3148	**1574**	**7,505**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study Cyclist Volume

		SCHNEIDER RD			CARLING AVE			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	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**
07:45	08:00	0	0	**0**	0	0	**0**	**0**
08:00	08:15	0	0	**0**	0	0	**0**	**0**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	0	**0**	0	1	**1**	**1**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	0	0	**0**	0	0	**0**	**0**
09:30	09:45	0	0	**0**	0	1	**1**	**1**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	1	0	**1**	**1**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	1	1	**2**	**2**
Total		0	0	**0**	2	3	**5**	**5**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study Pedestrian Volume

	SCHNEIDER RD			CARLING AVE			
Time Period	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	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**
07:45 08:00	0	1	**1**	0	0	**0**	**1**
08:00 08:15	0	0	**0**	0	0	**0**	**0**
08:15 08:30	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**
09:00 09:15	0	0	**0**	0	0	**0**	**0**
09:15 09:30	0	1	**1**	0	0	**0**	**1**
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**
11:45 12:00	0	0	**0**	0	0	**0**	**0**
12:00 12:15	0	0	**0**	0	0	**0**	**0**
12:15 12:30	0	0	**0**	0	0	**0**	**0**
12:30 12:45	0	3	**3**	1	0	**1**	**4**
12:45 13:00	0	0	**0**	0	0	**0**	**0**
13:00 13:15	0	0	**0**	0	0	**0**	**0**
13:15 13:30	0	0	**0**	0	0	**0**	**0**
15:00 15:15	0	0	**0**	0	0	**0**	**0**
15:15 15:30	0	0	**0**	0	0	**0**	**0**
15:30 15:45	0	0	**0**	0	0	**0**	**0**
15:45 16:00	0	0	**0**	0	0	**0**	**0**
16:00 16:15	0	1	**1**	1	0	**1**	**2**
16:15 16:30	0	0	**0**	0	0	**0**	**0**
16:30 16:45	0	0	**0**	0	0	**0**	**0**
16:45 17:00	0	1	**1**	1	0	**1**	**2**
17:00 17:15	0	0	**0**	0	0	**0**	**0**
17:15 17:30	0	0	**0**	0	0	**0**	**0**
17:30 17:45	0	0	**0**	0	0	**0**	**0**
17:45 18:00	0	1	**1**	0	0	**0**	**1**
Total	0	8	**8**	3	0	**3**	**11**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 WO No: 38519

Start Time: 07:00 Device: Miovision

Full Study Heavy Vehicles

	SCHNEIDER RD									CARLING AVE									
	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	**0**	1	0	0	**1**	**1**	3	0	0	**3**	0	1	0	**1**	**4**	**5**
07:15 07:30	0	0	0	**0**	0	0	0	**0**	**0**	3	1	0	**4**	0	1	0	**1**	**5**	**5**
07:30 07:45	0	0	0	**0**	0	0	0	**0**	**0**	3	1	0	**4**	0	0	0	**0**	**4**	**4**
07:45 08:00	0	0	0	**0**	0	0	1	**1**	**1**	1	0	0	**1**	0	1	0	**1**	**2**	**3**
08:00 08:15	0	0	0	**0**	0	0	1	**1**	**1**	2	0	0	**2**	0	0	0	**0**	**2**	**3**
08:15 08:30	0	0	0	**0**	0	0	0	**0**	**0**	1	2	0	**3**	0	1	3	**4**	**7**	**7**
08:30 08:45	0	0	0	**0**	0	0	0	**0**	**0**	2	1	0	**3**	0	2	2	**4**	**7**	**7**
08:45 09:00	0	0	0	**0**	1	0	1	**2**	**2**	1	0	0	**1**	0	2	0	**2**	**3**	**5**
09:00 09:15	0	0	0	**0**	0	0	0	**0**	**0**	1	6	0	**7**	0	3	2	**5**	**12**	**12**
09:15 09:30	0	0	0	**0**	0	0	1	**1**	**1**	2	0	0	**2**	0	3	2	**5**	**7**	**8**
09:30 09:45	0	0	0	**0**	0	0	0	**0**	**0**	2	1	0	**3**	0	2	1	**3**	**6**	**6**
09:45 10:00	0	0	0	**0**	1	0	0	**1**	**1**	1	2	0	**3**	0	1	0	**1**	**4**	**5**
11:30 11:45	0	0	0	**0**	1	0	2	**3**	**3**	0	1	0	**1**	0	1	0	**1**	**2**	**5**
11:45 12:00	0	0	0	**0**	0	0	1	**1**	**1**	1	1	0	**2**	0	2	0	**2**	**4**	**5**
12:00 12:15	0	0	0	**0**	2	0	0	**2**	**2**	3	0	0	**3**	0	3	1	**4**	**7**	**9**
12:15 12:30	0	0	0	**0**	1	0	0	**1**	**1**	0	2	0	**2**	0	1	1	**2**	**4**	**5**
12:30 12:45	0	0	0	**0**	0	0	2	**2**	**2**	1	0	0	**1**	0	0	3	**3**	**4**	**6**
12:45 13:00	0	0	0	**0**	2	0	1	**3**	**3**	2	1	0	**3**	0	2	0	**2**	**5**	**8**
13:00 13:15	0	0	0	**0**	1	0	0	**1**	**1**	1	1	0	**2**	0	0	1	**1**	**3**	**4**
13:15 13:30	0	0	0	**0**	1	0	0	**1**	**1**	3	0	0	**3**	0	1	0	**1**	**4**	**5**
15:00 15:15	0	0	0	**0**	0	0	1	**1**	**1**	1	1	0	**2**	0	0	1	**1**	**3**	**4**
15:15 15:30	0	0	0	**0**	1	0	1	**2**	**2**	0	2	0	**2**	0	1	1	**2**	**4**	**6**
15:30 15:45	0	0	0	**0**	0	0	1	**1**	**1**	1	0	0	**1**	0	0	0	**0**	**1**	**2**
15:45 16:00	0	0	0	**0**	0	0	1	**1**	**1**	1	1	0	**2**	0	0	0	**0**	**2**	**3**
16:00 16:15	0	0	0	**0**	1	0	2	**3**	**3**	1	1	0	**2**	0	2	1	**3**	**5**	**8**
16:15 16:30	0	0	0	**0**	0	0	3	**3**	**3**	0	1	0	**1**	0	0	0	**0**	**1**	**4**
16:30 16:45	0	0	0	**0**	1	0	2	**3**	**3**	0	1	0	**1**	0	3	1	**4**	**5**	**8**
16:45 17:00	0	0	0	**0**	0	0	1	**1**	**1**	0	0	0	**0**	0	0	0	**0**	**0**	**1**
17:00 17:15	0	0	0	**0**	0	0	2	**2**	**2**	0	1	0	**1**	0	0	0	**0**	**1**	**3**
17:15 17:30	0	0	0	**0**	0	0	3	**3**	**3**	0	0	0	**0**	0	2	0	**2**	**2**	**5**
17:30 17:45	0	0	0	**0**	0	0	2	**2**	**2**	0	1	0	**1**	0	0	0	**0**	**1**	**3**
17:45 18:00	0	0	0	**0**	0	0	3	**3**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
Total: None	0	0	0	**0**	14	0	32	**46**	**46**	37	29	0	**66**	0	35	20	**55**	**121**	**167**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ SCHNEIDER RD

Survey Date: Wednesday, April 10, 2019 **WO No:** 38519

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

Full Study 15 Minute U-Turn Total

		SCHNEIDER RD	SCHNEIDER RD	CARLING AVE	CARLING AVE	
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	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	0	0	**0**
08:30	08:45	0	0	0	0	**0**
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	0	0	**0**
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	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
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	0	0	0	**0**

Transportation Services - Traffic Services

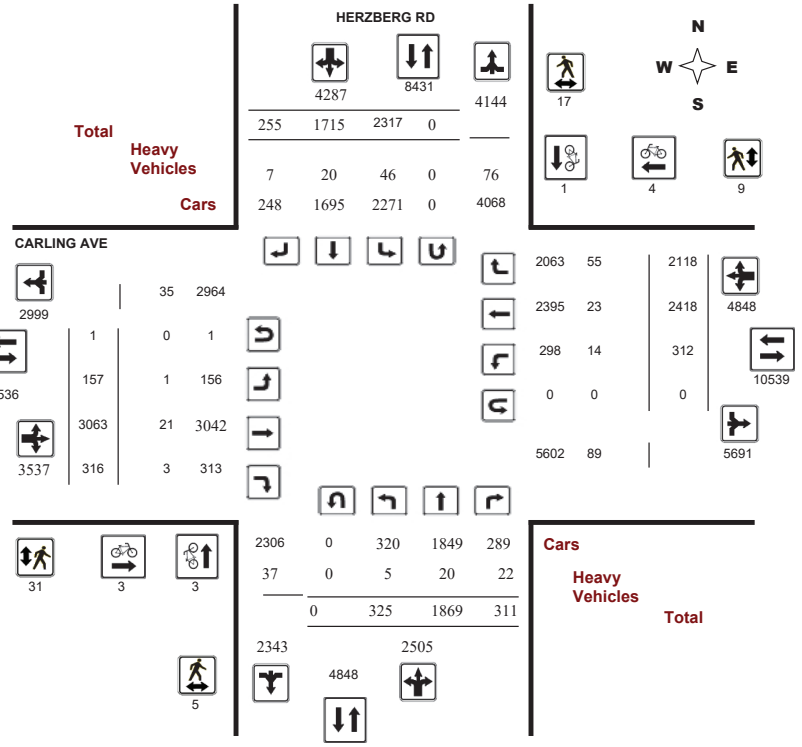
Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Diagram



5479341 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

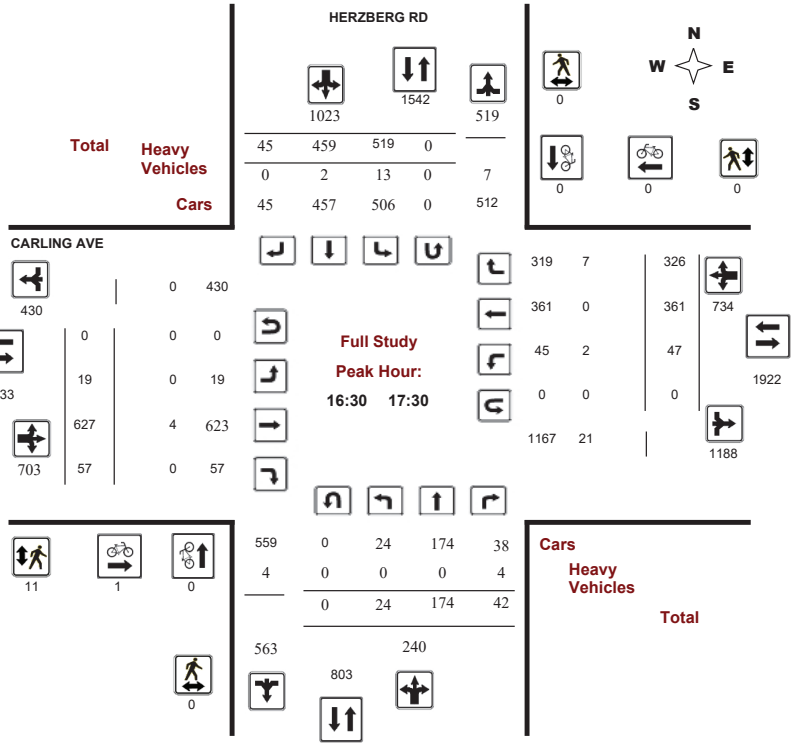
Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Peak Hour Diagram



5479341 - MAR 10 2020 - 8HRS - LORETTA

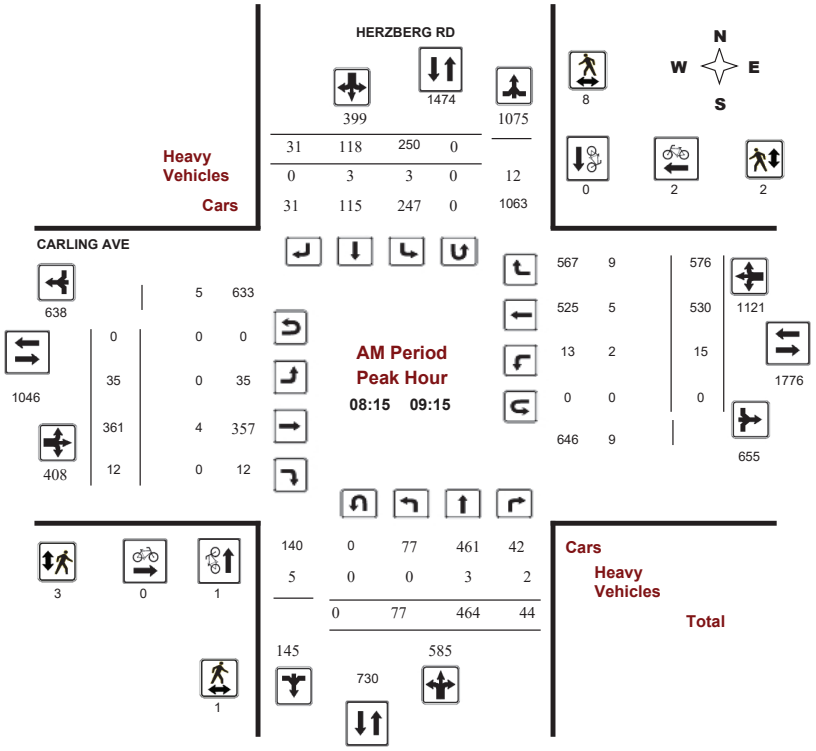
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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



Comments 5479341 - MAR 10 2020 - 8HRS - LORETTA

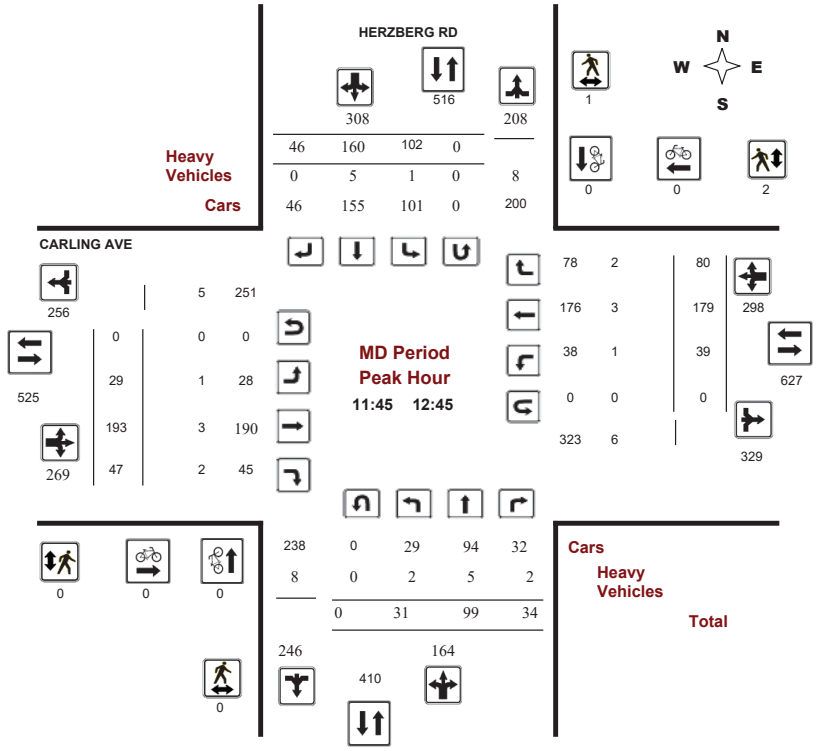
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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



Comments 5479341 - MAR 10 2020 - 8HRS - LORETTA

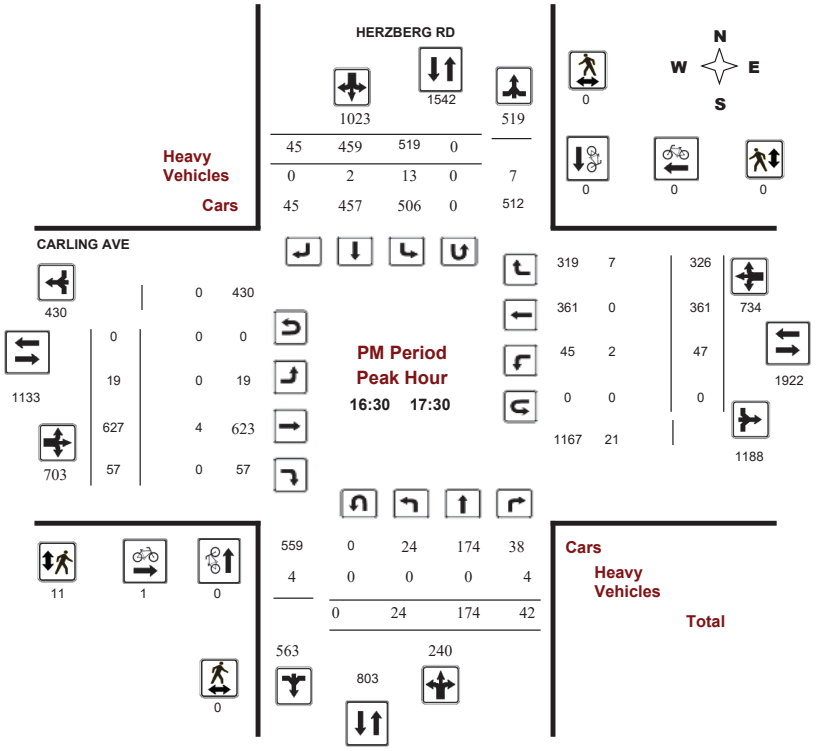
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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



Comments 5479341 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 10, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 0

AADT Factor 1.00

	HERZBERG RD								CARLING AVE									
	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	51	335	77	**463**	398	80	15	**493**	**956**	10	566	9	**585**	19	224	206	**449**	**1034**	**1990**
08:00 09:00	81	442	51	**574**	280	119	33	**432**	**1006**	30	395	10	**435**	18	474	546	**1038**	**1473**	**2479**
09:00 10:00	60	424	25	**509**	168	108	30	**306**	**815**	24	241	16	**281**	12	356	372	**740**	**1021**	**1836**
11:30 12:30	31	96	35	**162**	104	172	41	**317**	**479**	26	187	43	**256**	40	183	79	**302**	**558**	**1037**
12:30 13:30	26	138	30	**194**	97	95	33	**225**	**419**	24	176	49	**249**	31	163	90	**284**	**533**	**952**
15:00 16:00	23	115	27	**165**	255	251	23	**529**	**694**	15	305	58	**378**	83	336	214	**633**	**1011**	**1705**
16:00 17:00	23	170	32	**225**	448	429	35	**912**	**1137**	16	628	73	**717**	67	392	333	**792**	**1509**	**2646**
17:00 18:00	30	149	34	**213**	567	461	45	**1073**	**1286**	12	565	58	**635**	42	290	278	**610**	**1245**	**2531**
Sub Total	325	1869	311	**2505**	2317	1715	255	**4287**	**6792**	157	3063	316	**3536**	312	2418	2118	**4848**	**8384**	**15176**
U Turns	0			**0**	0			**0**	**0**	**1**			**1**	0			**0**	**1**	**1**
Total	325	1869	311	**2505**	2317	1715	255	**4287**	**6792**	158	3063	316	**3537**	312	2418	2118	**4848**	**8385**	**15177**
EQ 12Hr	452	2598	432	**3482**	3221	2384	354	**5959**	**9441**	220	4258	439	**4917**	434	3361	2944	**6739**	**11656**	**21097**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	452	2598	432	**3482**	3221	2384	354	**5959**	**9441**	220	4258	439	**4917**	434	3361	2944	**6739**	**11656**	**21097**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	592	3403	566	**4561**	4220	3123	464	**7807**	**12368**	288	5578	575	**6441**	569	4403	3857	**8829**	**15270**	**27638**
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

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study 15 Minute Increments

		HERZBERG RD									CARLING AVE									
		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	9	59	16	84	104	16	1	121	**205**	3	122	2	127	1	42	38	81	**208**	**413**
07:15	07:30	14	79	18	111	113	20	2	135	**246**	1	152	3	156	2	54	44	100	**256**	**502**
07:30	07:45	10	81	25	116	97	27	3	127	**243**	3	171	0	174	9	50	57	116	**290**	**533**
07:45	08:00	18	116	18	152	84	17	9	110	**262**	4	121	4	129	7	78	67	152	**281**	**543**
08:00	08:15	17	96	16	129	88	25	11	124	**253**	2	123	2	127	7	71	108	186	**313**	**566**
08:15	08:30	19	114	19	152	61	24	7	92	**244**	10	92	2	104	3	115	134	252	**356**	**600**
08:30	08:45	19	105	9	133	73	40	8	121	**254**	7	91	3	101	4	131	155	290	**391**	**645**
08:45	09:00	26	127	7	160	58	30	7	95	**255**	11	89	3	103	4	157	149	310	**413**	**668**
09:00	09:15	13	118	9	140	58	24	9	91	**231**	7	89	4	100	4	127	138	269	**369**	**600**
09:15	09:30	16	136	5	157	45	29	10	84	**241**	6	75	3	84	2	102	104	208	**292**	**533**
09:30	09:45	10	96	5	111	41	24	6	71	**182**	6	43	4	53	2	71	84	157	**210**	**392**
09:45	10:00	21	74	6	101	24	31	5	60	**161**	5	34	5	44	4	56	46	106	**150**	**311**
11:30	11:45	7	29	9	45	27	39	7	73	**118**	2	46	9	57	11	51	22	84	**141**	**259**
11:45	12:00	8	21	12	41	31	43	8	82	**123**	7	40	13	60	14	38	14	66	**126**	**249**
12:00	12:15	8	20	8	36	23	53	14	90	**126**	7	53	13	73	8	57	22	87	**160**	**286**
12:15	12:30	8	26	6	40	23	37	12	72	**112**	10	48	8	66	7	37	21	65	**131**	**243**
12:30	12:45	7	32	8	47	25	27	12	64	**111**	5	52	13	70	10	47	23	80	**150**	**261**
12:45	13:00	6	45	5	56	27	23	6	56	**112**	9	46	12	67	6	41	21	68	**135**	**247**
13:00	13:15	8	35	9	52	19	33	7	59	**111**	6	45	13	64	5	44	20	69	**133**	**244**
13:15	13:30	5	26	8	39	26	12	8	46	**85**	4	33	11	48	10	31	26	67	**115**	**200**
15:00	15:15	5	18	8	31	53	72	3	128	**159**	4	70	17	91	18	64	41	123	**214**	**373**
15:15	15:30	6	25	3	34	60	48	5	113	**147**	2	70	10	82	21	87	44	152	**234**	**381**
15:30	15:45	4	41	7	52	75	57	7	139	**191**	6	95	18	119	22	93	59	174	**293**	**484**
15:45	16:00	8	31	9	48	67	74	8	149	**197**	3	70	13	86	22	92	70	184	**270**	**467**
16:00	16:15	5	43	8	56	79	98	8	185	**241**	4	177	31	212	19	97	75	191	**403**	**644**
16:15	16:30	6	41	3	50	133	113	12	258	**308**	2	144	13	159	25	92	88	205	**364**	**672**
16:30	16:45	4	40	7	51	107	110	7	224	**275**	5	166	15	186	12	112	73	197	**383**	**658**
16:45	17:00	8	46	14	68	129	108	8	245	**313**	5	141	14	160	11	91	97	199	**359**	**672**
17:00	17:15	5	44	15	64	146	119	15	280	**344**	6	162	15	183	10	60	84	154	**337**	**681**
17:15	17:30	7	44	6	57	137	122	15	274	**331**	3	158	13	174	14	98	72	184	**358**	**689**
17:30	17:45	11	30	7	48	168	119	6	293	**341**	1	149	15	165	10	68	71	149	**314**	**655**
17:45	18:00	7	31	6	44	116	101	9	226	**270**	2	96	15	113	8	64	51	123	**236**	**506**
Total:		325	1869	311	2505	2317	1715	255	4287	**6792**	158	3063	316	3537	312	2418	2118	4848	**6792**	**15,177**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Cyclist Volume

Time Period		HERZBERG RD Northbound	HERZBERG RD Southbound	HERZBERG RD Street Total	CARLING AVE Eastbound	CARLING AVE Westbound	CARLING AVE Street Total	Grand Total
07:00	07:15	1	0	**1**	0	0	**0**	**1**
07:15	07:30	0	0	**0**	0	0	**0**	**0**
07:30	07:45	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**
08:15	08:30	0	0	**0**	0	2	**2**	**2**
08:30	08:45	1	0	**1**	0	0	**0**	**1**
08:45	09:00	0	0	**0**	0	0	**0**	**0**
09:00	09:15	0	0	**0**	0	0	**0**	**0**
09:15	09:30	1	0	**1**	0	0	**0**	**1**
09:30	09:45	0	0	**0**	0	1	**1**	**1**
09:45	10:00	0	0	**0**	0	0	**0**	**0**
11:30	11:45	0	0	**0**	0	1	**1**	**1**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	1	0	**1**	**1**
17:00	17:15	0	0	**0**	0	0	**0**	**0**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	1	**1**	0	0	**0**	**1**
17:45	18:00	0	0	**0**	2	0	**2**	**2**
Total		3	1	**4**	3	4	**7**	**11**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Pedestrian Volume

Time Period		HERZBERG RD NB Approach (E or W Crossing)	HERZBERG RD SB Approach (E or W Crossing)	HERZBERG RD Total	CARLING AVE EB Approach (N or S Crossing)	CARLING AVE WB Approach (N or S Crossing)	CARLING AVE Total	Grand Total
07:00	07:15	0	0	**0**	0	0	**0**	**0**
07:15	07:30	0	2	**2**	2	0	**2**	**4**
07:30	07:45	1	1	**2**	0	1	**1**	**3**
07:45	08:00	1	1	**2**	1	0	**1**	**3**
08:00	08:15	0	1	**1**	2	1	**3**	**4**
08:15	08:30	1	5	**6**	1	2	**3**	**9**
08:30	08:45	0	0	**0**	0	0	**0**	**0**
08:45	09:00	0	3	**3**	1	0	**1**	**4**
09:00	09:15	0	0	**0**	1	0	**1**	**1**
09:15	09:30	1	1	**2**	0	3	**3**	**5**
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	1	1	**2**	1	0	**1**	**3**
11:45	12:00	0	1	**1**	0	2	**2**	**3**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	2	0	**2**	**2**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	6	0	**6**	**6**
15:45	16:00	0	0	**0**	1	0	**1**	**1**
16:00	16:15	0	1	**1**	1	0	**1**	**2**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	0	**0**	2	0	**2**	**2**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	8	0	**8**	**8**
17:15	17:30	0	0	**0**	1	0	**1**	**1**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	0	**0**	1	0	**1**	**1**
Total	.....	5	17	**22**	31	9	**40**	**62**

5479341 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study Heavy Vehicles

HERZBERG RD **CARLING AVE**

Time Period		Northbound				Southbound					Eastbound				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	2	2	**4**	4	0	0	**4**	**8**	0	1	0	**1**	0	0	3	**3**	**4**	**12**
07:15	07:30	0	0	0	**0**	1	1	1	**3**	**3**	0	1	0	**1**	0	1	3	**4**	**5**	**8**
07:30	07:45	0	0	2	**2**	2	1	0	**3**	**5**	0	2	0	**2**	0	1	2	**3**	**5**	**10**
07:45	08:00	0	2	0	**2**	1	0	0	**1**	**3**	0	0	0	**0**	1	2	4	**7**	**7**	**10**
08:00	08:15	0	0	1	**1**	2	0	0	**2**	**3**	0	0	0	**0**	0	0	2	**2**	**2**	**5**
08:15	08:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	1	2	4	**7**	**9**	**9**
08:30	08:45	0	1	0	**1**	2	1	0	**3**	**4**	0	0	0	**0**	0	0	3	**3**	**3**	**7**
08:45	09:00	0	1	1	**2**	0	0	0	**0**	**2**	0	0	0	**0**	1	2	2	**5**	**5**	**7**
09:00	09:15	0	1	1	**2**	1	2	0	**3**	**5**	0	2	0	**2**	0	1	0	**1**	**3**	**8**
09:15	09:30	1	0	0	**1**	0	1	0	**1**	**2**	0	2	0	**2**	1	2	4	**7**	**9**	**11**
09:30	09:45	2	0	1	**3**	2	1	0	**3**	**6**	0	0	0	**0**	0	1	1	**2**	**2**	**8**
09:45	10:00	0	2	0	**2**	0	2	0	**2**	**4**	0	2	0	**2**	1	1	1	**3**	**5**	**9**
11:30	11:45	0	0	1	**1**	1	0	0	**1**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
11:45	12:00	0	3	0	**3**	0	1	0	**1**	**4**	0	0	0	**0**	1	2	1	**4**	**4**	**8**
12:00	12:15	0	2	0	**2**	0	2	0	**2**	**4**	0	1	1	**2**	0	1	0	**1**	**3**	**7**
12:15	12:30	0	0	0	**0**	0	2	0	**2**	**2**	0	0	0	**0**	0	0	0	**0**	**0**	**2**
12:30	12:45	2	0	2	**4**	1	0	0	**1**	**5**	1	2	1	**4**	0	0	1	**1**	**5**	**10**
12:45	13:00	0	1	0	**1**	0	0	0	**0**	**1**	0	1	0	**1**	0	0	0	**0**	**1**	**2**
13:00	13:15	0	1	0	**1**	1	0	2	**3**	**4**	0	0	0	**0**	1	1	3	**5**	**5**	**9**
13:15	13:30	0	1	0	**1**	1	1	1	**3**	**4**	0	0	1	**1**	0	1	0	**1**	**2**	**6**
15:00	15:15	0	0	1	**1**	2	1	0	**3**	**4**	0	0	0	**0**	1	2	2	**5**	**5**	**9**
15:15	15:30	0	1	0	**1**	2	0	0	**2**	**3**	0	0	0	**0**	0	0	0	**0**	**0**	**3**
15:30	15:45	0	0	2	**2**	2	0	1	**3**	**5**	0	0	0	**0**	1	1	4	**6**	**6**	**11**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	1	**1**	**1**	**1**
16:00	16:15	0	2	2	**4**	3	1	0	**4**	**8**	0	0	0	**0**	1	1	3	**5**	**5**	**13**
16:15	16:30	0	0	0	**0**	5	0	2	**7**	**7**	0	1	0	**1**	0	0	1	**1**	**2**	**9**
16:30	16:45	0	0	1	**1**	3	0	0	**3**	**4**	0	0	0	**0**	1	0	3	**4**	**4**	**8**
16:45	17:00	0	0	1	**1**	5	0	0	**5**	**6**	0	2	0	**2**	0	0	0	**0**	**2**	**8**
17:00	17:15	0	0	2	**2**	1	2	0	**3**	**5**	0	2	0	**2**	1	0	3	**4**	**6**	**11**
17:15	17:30	0	0	0	**0**	4	0	0	**4**	**4**	0	0	0	**0**	0	0	1	**1**	**1**	**5**
17:30	17:45	0	0	1	**1**	0	1	0	**1**	**2**	0	0	0	**0**	1	1	3	**5**	**5**	**7**
17:45	18:00	0	0	1	**1**	0	0	0	**0**	**1**	0	0	0	**0**	1	0	0	**1**	**1**	**2**
Total:	None	5	20	22	**47**	46	20	7	**73**	**120**	1	21	3	**25**	14	23	55	**92**	**117**	**237**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

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

Full Study 15 Minute U-Turn Total

HERZBERG RD **CARLING AVE**

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	0	0	1	0	**1**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	0	0	0	0	**0**
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	0	0	**0**
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	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	0	0	0	0	**0**
13:00	13:15	0	0	0	0	**0**
13:15	13:30	0	0	0	0	**0**
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	0	1	0	**1**

Transportation Services - Traffic Services

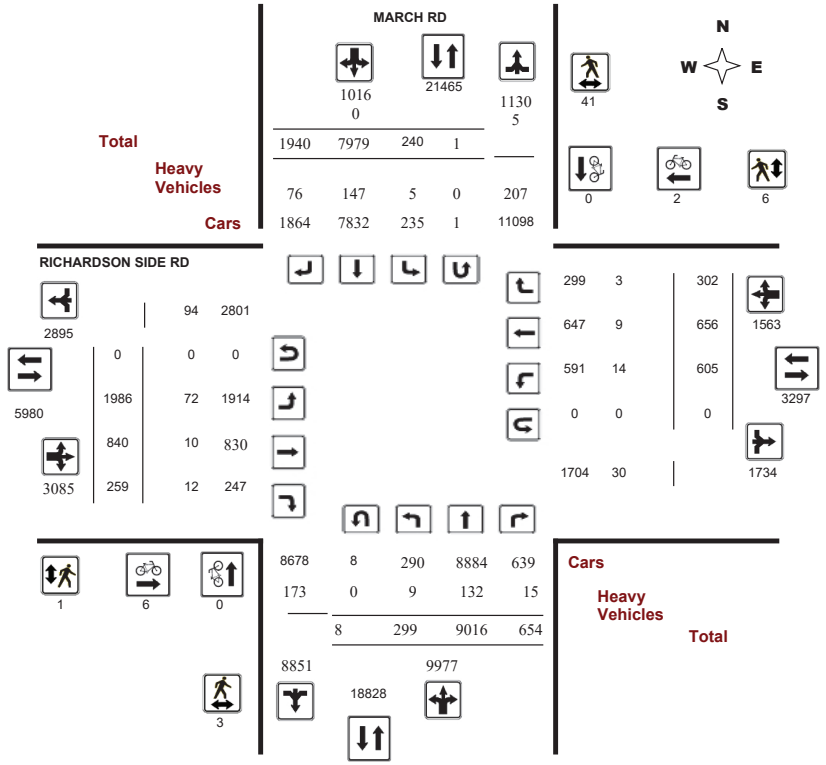
Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Diagram



Transportation Services - Traffic Services

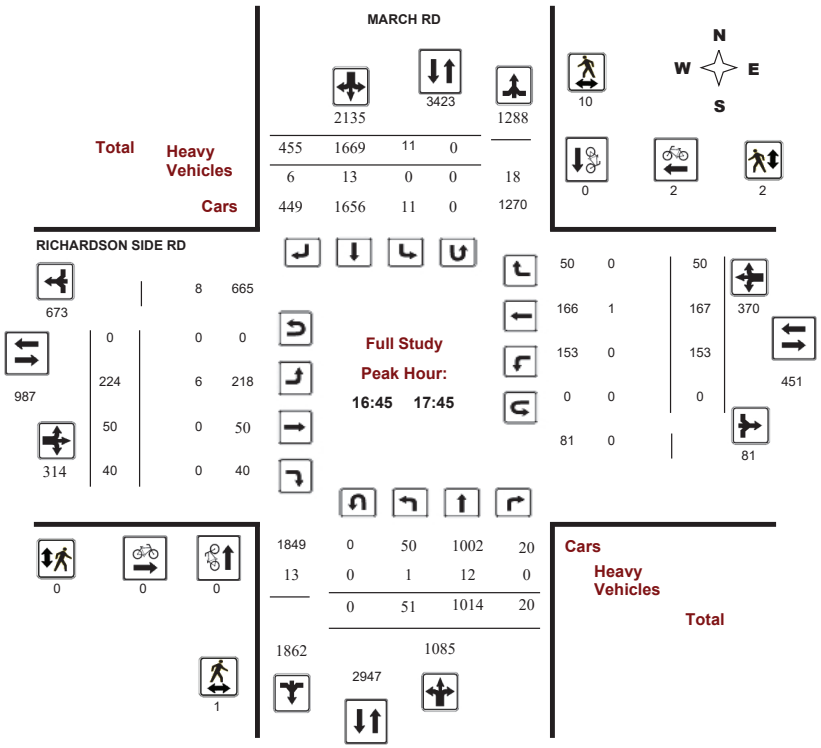
Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Peak Hour Diagram



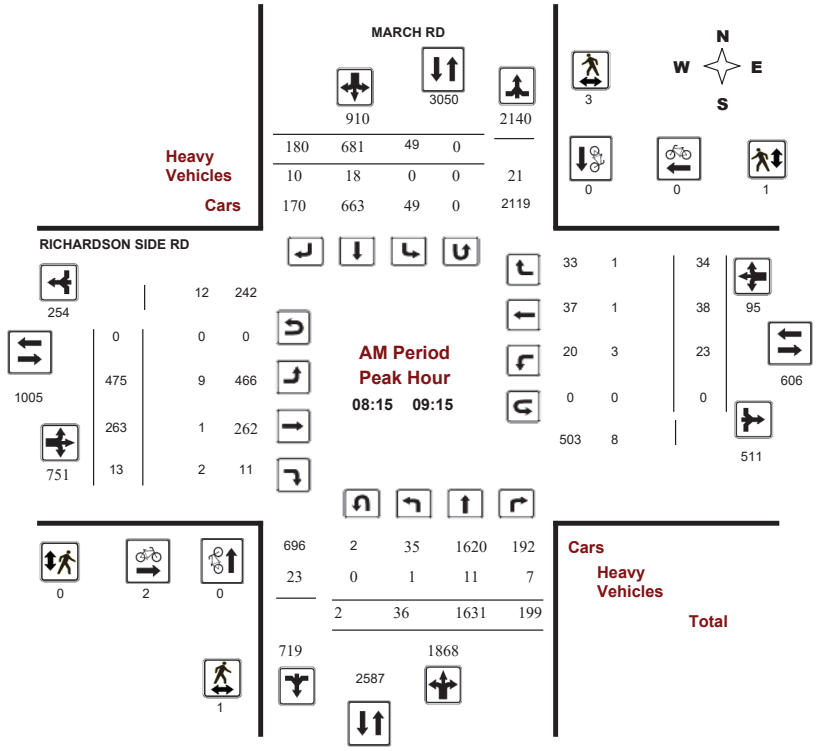
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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



Comments

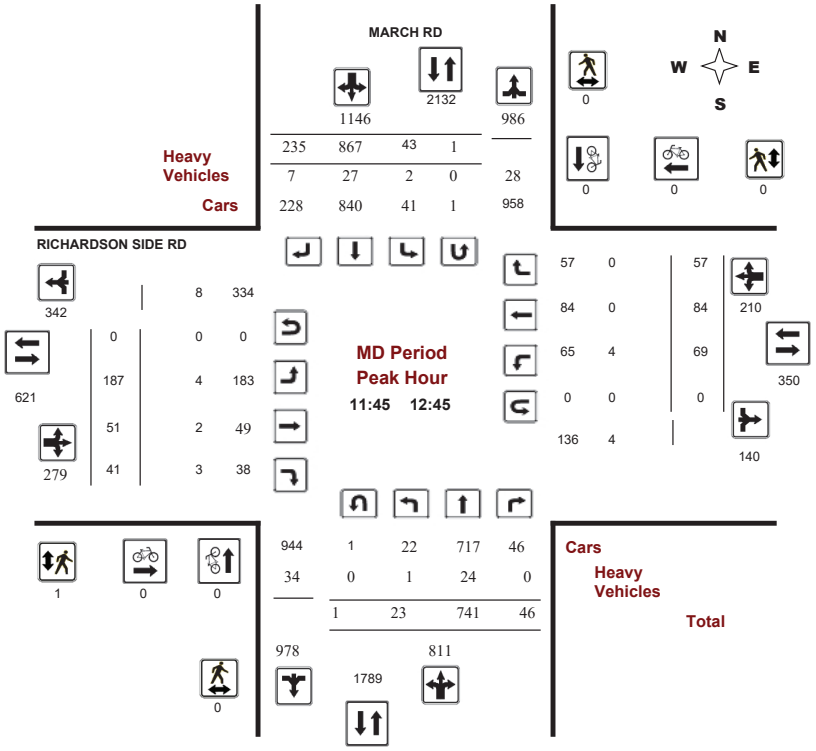
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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



Comments

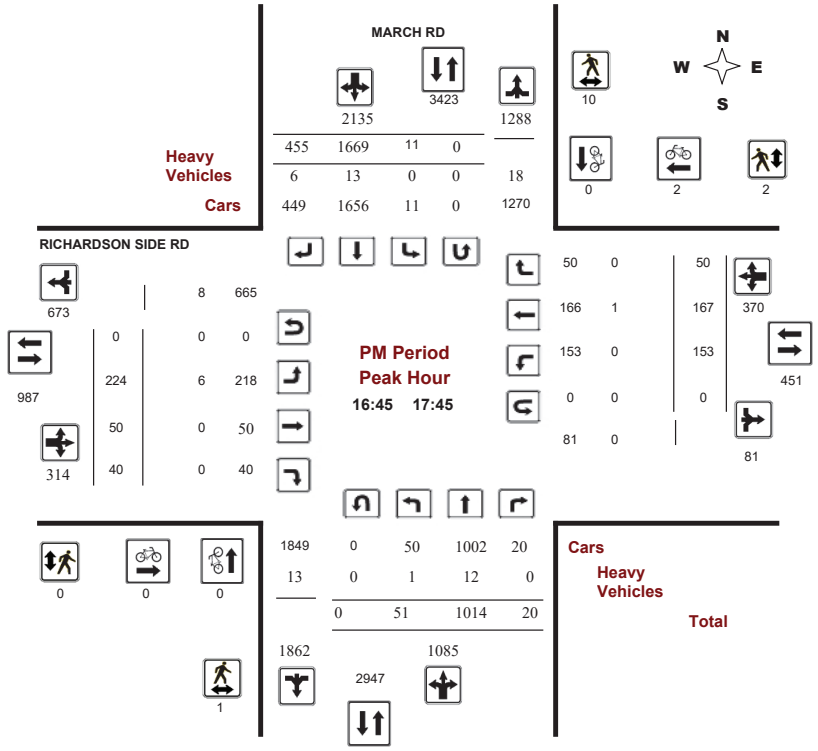
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Summary (8 HR Standard)

Survey Date: Thursday, November 02, 2017

Total Observed U-Turns

Northbound: 8 Southbound: 1

Eastbound: 0 Westbound: 0

AADT Factor .90

	MARCH RD								RICHARDSON SIDE 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	28	1288	100	**1416**	31	762	106	**899**	**2315**	188	165	42	**395**	8	14	5	**27**	**422**	**2737**
08:00 09:00	45	1645	193	**1883**	44	653	189	**886**	**2769**	446	249	13	**708**	31	32	34	**97**	**805**	**3574**
09:00 10:00	33	1545	147	**1725**	33	735	151	**919**	**2644**	345	186	18	**549**	37	35	26	**98**	**647**	**3291**
11:30 12:30	25	748	45	**818**	38	884	231	**1153**	**1971**	172	44	35	**251**	66	76	62	**204**	**455**	**2426**
12:30 13:30	31	824	70	**925**	39	680	171	**890**	**1815**	196	77	27	**300**	51	75	50	**176**	**476**	**2291**
15:00 16:00	49	954	52	**1055**	24	1094	226	**1344**	**2399**	211	31	37	**279**	89	103	27	**219**	**498**	**2897**
16:00 17:00	46	973	31	**1050**	21	1505	395	**1921**	**2971**	213	36	54	**303**	186	156	61	**403**	**706**	**3677**
17:00 18:00	42	1039	16	**1097**	10	1666	471	**2147**	**3244**	215	52	33	**300**	137	165	37	**339**	**639**	**3883**
Sub Total	299	9016	654	**9969**	240	7979	1940	**10159**	**20128**	1986	840	259	**3085**	605	656	302	**1563**	**4648**	**24776**
U Turns	8			**8**	1			**1**	**9**	**0**			**0**	0			**0**	**0**	**9**
Total	307	9016	654	**9977**	241	7979	1940	**10160**	**20137**	1986	840	259	**3085**	605	656	302	**1563**	**4648**	**24785**
EQ 12Hr	427	12532	909	**13868**	335	11091	2697	**14123**	**27991**	2761	1168	360	**4289**	841	912	420	**2173**	**6462**	**34453**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	384	11279	818	**12481**	302	9982	2427	**12711**	**25192**	2485	1051	324	**3860**	757	821	378	**1956**	**5816**	**31008**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	503	14775	1072	**16350**	396	13076	3179	**16651**	**33001**	3255	1377	424	**5056**	992	1076	495	**2563**	**7619**	**40620**
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

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study 15 Minute Increments

		MARCH RD									RICHARDSON SIDE 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	5	227	9	241	4	191	21	216	**457**	42	36	7	85	3	3	1	7	**92**	**549**
07:15	07:30	8	314	26	348	3	204	25	232	**580**	47	40	15	102	1	3	0	4	**106**	**686**
07:30	07:45	5	343	29	377	10	199	30	239	**616**	39	37	15	91	3	2	2	7	**98**	**714**
07:45	08:00	10	404	36	450	14	168	30	212	**662**	60	52	5	117	1	6	2	9	**126**	**788**
08:00	08:15	12	419	40	471	8	158	51	217	**688**	93	54	4	151	16	6	8	30	**181**	**869**
08:15	08:30	18	424	47	489	9	168	54	231	**720**	108	62	5	175	5	7	6	18	**193**	**913**
08:30	08:45	7	415	52	474	10	169	43	222	**696**	118	65	4	187	5	9	8	22	**209**	**905**
08:45	09:00	9	387	54	450	17	158	41	216	**666**	127	68	0	195	5	10	12	27	**222**	**888**
09:00	09:15	4	405	46	455	13	186	42	241	**696**	122	68	4	194	8	12	8	28	**222**	**918**
09:15	09:30	11	440	32	483	5	188	33	226	**709**	104	70	3	177	11	9	6	26	**203**	**912**
09:30	09:45	8	400	48	456	6	178	38	222	**678**	55	25	8	88	13	7	6	26	**114**	**792**
09:45	10:00	12	300	21	333	9	183	38	230	**563**	64	23	3	90	5	7	6	18	**108**	**671**
11:30	11:45	8	178	13	199	4	198	52	254	**453**	34	9	7	50	12	14	18	44	**94**	**547**
11:45	12:00	5	179	9	193	12	234	59	305	**498**	42	17	9	68	18	23	14	55	**123**	**621**
12:00	12:15	7	183	13	203	8	234	60	302	**505**	54	7	12	73	21	19	17	57	**130**	**635**
12:15	12:30	6	208	10	224	15	218	60	293	**517**	42	11	7	60	15	20	13	48	**108**	**625**
12:30	12:45	6	171	14	191	9	181	56	246	**437**	49	16	13	78	15	22	13	50	**128**	**565**
12:45	13:00	10	235	24	269	12	180	37	229	**498**	48	27	3	78	10	20	14	44	**122**	**620**
13:00	13:15	12	201	16	229	9	160	37	206	**435**	44	20	6	70	16	18	13	47	**117**	**552**
13:15	13:30	7	217	16	240	9	159	41	209	**449**	55	14	5	74	10	15	10	35	**109**	**558**
15:00	15:15	10	207	14	231	10	266	51	327	**558**	63	6	5	74	17	15	7	39	**113**	**671**
15:15	15:30	9	240	10	259	3	272	52	327	**586**	49	8	9	66	19	27	6	52	**118**	**704**
15:30	15:45	18	251	13	282	7	262	68	337	**619**	52	7	6	65	38	36	11	85	**150**	**769**
15:45	16:00	12	256	15	283	4	294	55	353	**636**	47	10	17	74	15	25	3	43	**117**	**753**
16:00	16:15	6	240	7	253	7	367	95	469	**722**	51	12	15	78	60	38	25	123	**201**	**923**
16:15	16:30	13	228	7	248	6	355	103	464	**712**	54	5	12	71	37	47	8	92	**163**	**875**
16:30	16:45	12	250	5	267	5	389	104	498	**765**	58	12	13	83	48	36	11	95	**178**	**943**
16:45	17:00	15	255	12	282	3	394	93	490	**772**	50	7	14	71	41	35	17	93	**164**	**936**
17:00	17:15	18	236	3	257	2	394	114	510	**767**	58	19	9	86	58	56	13	127	**213**	**980**
17:15	17:30	8	268	2	278	4	452	137	593	**871**	55	15	11	81	32	38	8	78	**159**	**1030**
17:30	17:45	10	255	3	268	2	429	111	542	**810**	61	9	6	76	22	38	12	72	**148**	**958**
17:45	18:00	6	280	8	294	2	391	109	502	**796**	41	9	7	57	25	33	4	62	**119**	**915**
Total:		307	9016	654	9977	241	7979	1940	10160	**20137**	1986	840	259	3085	605	656	302	1563	**20137**	**24,785**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Cyclist Volume

		MARCH RD			RICHARDSON SIDE RD			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	**0**	1	0	**1**	**1**
07:15	07:30	0	0	**0**	1	0	**1**	**1**
07:30	07:45	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**
08:15	08:30	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**
09:00	09:15	0	0	**0**	2	0	**2**	**2**
09:15	09:30	0	0	**0**	1	0	**1**	**1**
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**
11:45	12:00	0	0	**0**	0	0	**0**	**0**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	0	**0**	**0**
13:00	13:15	0	0	**0**	0	0	**0**	**0**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	0	**0**	0	0	**0**	**0**
15:45	16:00	0	0	**0**	0	0	**0**	**0**
16:00	16:15	0	0	**0**	0	0	**0**	**0**
16:15	16:30	0	0	**0**	0	0	**0**	**0**
16:30	16:45	0	0	**0**	0	0	**0**	**0**
16:45	17:00	0	0	**0**	0	0	**0**	**0**
17:00	17:15	0	0	**0**	0	1	**1**	**1**
17:15	17:30	0	0	**0**	0	0	**0**	**0**
17:30	17:45	0	0	**0**	0	1	**1**	**1**
17:45	18:00	0	0	**0**	1	0	**1**	**1**
Total		0	0	**0**	6	2	**8**	**8**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Pedestrian Volume

		MARCH RD			RICHARDSON SIDE RD			
Time Period		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	0	1	**1**	0	0	**0**	**1**
07:15	07:30	0	0	**0**	0	1	**1**	**1**
07:30	07:45	0	0	**0**	0	0	**0**	**0**
07:45	08:00	0	2	**2**	0	0	**0**	**2**
08:00	08:15	1	0	**1**	0	0	**0**	**1**
08:15	08:30	0	0	**0**	0	0	**0**	**0**
08:30	08:45	0	2	**2**	0	0	**0**	**2**
08:45	09:00	0	1	**1**	0	0	**0**	**1**
09:00	09:15	1	0	**1**	0	1	**1**	**2**
09:15	09:30	0	3	**3**	0	0	**0**	**3**
09:30	09:45	0	2	**2**	0	0	**0**	**2**
09:45	10:00	0	3	**3**	0	0	**0**	**3**
11:30	11:45	0	0	**0**	0	0	**0**	**0**
11:45	12:00	0	0	**0**	1	0	**1**	**1**
12:00	12:15	0	0	**0**	0	0	**0**	**0**
12:15	12:30	0	0	**0**	0	0	**0**	**0**
12:30	12:45	0	0	**0**	0	0	**0**	**0**
12:45	13:00	0	0	**0**	0	1	**1**	**1**
13:00	13:15	0	2	**2**	0	1	**1**	**3**
13:15	13:30	0	1	**1**	0	0	**0**	**1**
15:00	15:15	0	0	**0**	0	0	**0**	**0**
15:15	15:30	0	0	**0**	0	0	**0**	**0**
15:30	15:45	0	2	**2**	0	0	**0**	**2**
15:45	16:00	0	3	**3**	0	0	**0**	**3**
16:00	16:15	0	2	**2**	0	0	**0**	**2**
16:15	16:30	0	1	**1**	0	0	**0**	**1**
16:30	16:45	0	4	**4**	0	0	**0**	**4**
16:45	17:00	0	3	**3**	0	0	**0**	**3**
17:00	17:15	1	4	**5**	0	1	**1**	**6**
17:15	17:30	0	3	**3**	0	1	**1**	**4**
17:30	17:45	0	0	**0**	0	0	**0**	**0**
17:45	18:00	0	2	**2**	0	0	**0**	**2**
Total		3	41	**44**	1	6	**7**	**51**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study Heavy Vehicles

		MARCH RD									RICHARDSON SIDE 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	8	0	**8**	0	2	2	**4**	**12**	5	0	0	**5**	0	0	0	**0**	**5**	**17**
07:15	07:30	0	5	0	**5**	0	4	3	**7**	**12**	1	0	0	**1**	0	0	0	**0**	**1**	**13**
07:30	07:45	0	1	1	**2**	0	5	6	**11**	**13**	3	0	1	**4**	0	0	0	**0**	**4**	**17**
07:45	08:00	1	5	0	**6**	0	4	3	**7**	**13**	3	1	0	**4**	0	0	0	**0**	**4**	**17**
08:00	08:15	0	4	0	**4**	0	4	3	**7**	**11**	3	0	0	**3**	1	0	0	**1**	**4**	**15**
08:15	08:30	0	1	1	**2**	0	5	6	**11**	**13**	1	0	0	**1**	1	0	0	**1**	**2**	**15**
08:30	08:45	0	3	3	**6**	0	4	2	**6**	**12**	6	0	0	**6**	0	0	0	**0**	**6**	**18**
08:45	09:00	0	2	3	**5**	0	2	2	**4**	**9**	1	0	0	**1**	2	1	1	**4**	**5**	**14**
09:00	09:15	1	5	0	**6**	0	7	0	**7**	**13**	1	1	2	**4**	0	0	0	**0**	**4**	**17**
09:15	09:30	0	6	0	**6**	0	5	3	**8**	**14**	1	1	0	**2**	0	0	0	**0**	**2**	**16**
09:30	09:45	0	3	1	**4**	0	8	2	**10**	**14**	2	1	0	**3**	2	0	0	**2**	**5**	**19**
09:45	10:00	1	5	1	**7**	1	4	2	**7**	**14**	7	0	0	**7**	0	0	0	**0**	**7**	**21**
11:30	11:45	0	7	2	**9**	0	5	1	**6**	**15**	1	0	2	**3**	0	0	1	**1**	**4**	**19**
11:45	12:00	0	6	0	**6**	1	9	2	**12**	**18**	2	0	0	**2**	2	0	0	**2**	**4**	**22**
12:00	12:15	1	4	0	**5**	0	5	2	**7**	**12**	1	0	0	**1**	1	0	0	**1**	**2**	**14**
12:15	12:30	0	7	0	**7**	0	7	1	**8**	**15**	0	1	1	**2**	1	0	0	**1**	**3**	**18**
12:30	12:45	0	7	0	**7**	1	6	2	**9**	**16**	1	1	2	**4**	0	0	0	**0**	**4**	**20**
12:45	13:00	0	7	0	**7**	0	4	4	**8**	**15**	1	1	0	**2**	1	1	0	**2**	**4**	**19**
13:00	13:15	0	3	1	**4**	0	7	3	**10**	**14**	1	1	0	**2**	1	1	1	**3**	**5**	**19**
13:15	13:30	0	3	0	**3**	1	6	2	**9**	**12**	2	0	2	**4**	0	0	0	**0**	**4**	**16**
15:00	15:15	0	6	0	**6**	0	4	4	**8**	**14**	6	1	0	**7**	0	0	0	**0**	**7**	**21**
15:15	15:30	2	5	0	**7**	0	9	2	**11**	**18**	1	0	1	**2**	1	0	0	**1**	**3**	**21**
15:30	15:45	2	4	2	**8**	1	5	2	**8**	**16**	2	0	0	**2**	1	2	0	**3**	**5**	**21**
15:45	16:00	0	3	0	**3**	0	4	3	**7**	**10**	4	1	0	**5**	0	2	0	**2**	**7**	**17**
16:00	16:15	0	2	0	**2**	0	2	2	**4**	**6**	3	0	0	**3**	0	1	0	**1**	**4**	**10**
16:15	16:30	0	4	0	**4**	0	4	3	**7**	**11**	2	0	1	**3**	0	0	0	**0**	**3**	**14**
16:30	16:45	0	4	0	**4**	0	2	2	**4**	**8**	3	0	0	**3**	0	0	0	**0**	**3**	**11**
16:45	17:00	0	2	0	**2**	0	5	2	**7**	**9**	1	0	0	**1**	0	1	0	**1**	**2**	**11**
17:00	17:15	0	2	0	**2**	0	3	2	**5**	**7**	0	0	0	**0**	0	0	0	**0**	**0**	**7**
17:15	17:30	1	4	0	**5**	0	2	2	**4**	**9**	3	0	0	**3**	0	0	0	**0**	**3**	**12**
17:30	17:45	0	4	0	**4**	0	3	0	**3**	**7**	2	0	0	**2**	0	0	0	**0**	**2**	**9**
17:45	18:00	0	0	0	**0**	0	1	1	**2**	**2**	2	0	0	**2**	0	0	0	**0**	**2**	**4**
Total:	None	9	132	15	**156**	5	147	76	**228**	**384**	72	10	12	**94**	14	9	3	**26**	**120**	**504**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARCH RD @ RICHARDSON SIDE RD

Survey Date: Thursday, November 02, 2017 **WO No:** 37345

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

Full Study 15 Minute U-Turn Total

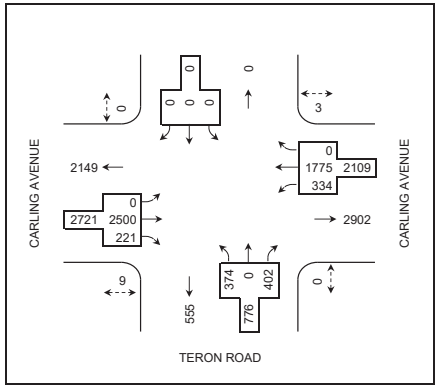
Time Period		MARCH RD Northbound U-Turn Total	MARCH RD Southbound U-Turn Total	RICHARDSON SIDE RD Eastbound U-Turn Total	RICHARDSON SIDE RD Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	**0**
07:15	07:30	0	0	0	0	**0**
07:30	07:45	0	0	0	0	**0**
07:45	08:00	0	0	0	0	**0**
08:00	08:15	0	0	0	0	**0**
08:15	08:30	0	0	0	0	**0**
08:30	08:45	1	0	0	0	**1**
08:45	09:00	0	0	0	0	**0**
09:00	09:15	1	0	0	0	**1**
09:15	09:30	0	0	0	0	**0**
09:30	09:45	0	0	0	0	**0**
09:45	10:00	1	0	0	0	**1**
11:30	11:45	0	0	0	0	**0**
11:45	12:00	1	1	0	0	**2**
12:00	12:15	0	0	0	0	**0**
12:15	12:30	0	0	0	0	**0**
12:30	12:45	0	0	0	0	**0**
12:45	13:00	2	0	0	0	**2**
13:00	13:15	2	0	0	0	**2**
13:15	13:30	0	0	0	0	**0**
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		8	1	0	0	**9**

Vehicular Turning Movements – All Vehicles and Pedestrians

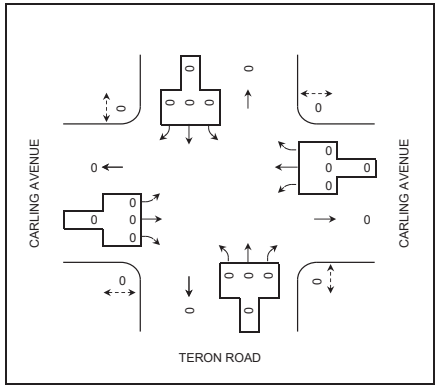
CARLING AVENUE and TERON ROAD in Ottawa, ON

Survey Date: Tuesday, 19 November 2019
Performed By: BTE

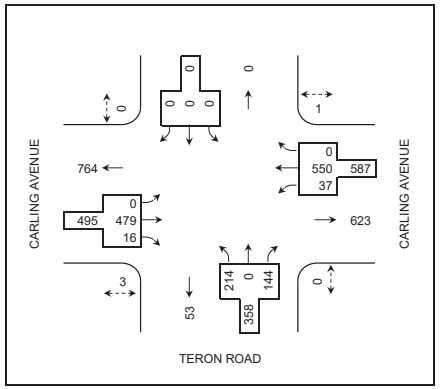
Full Period (4 hours)



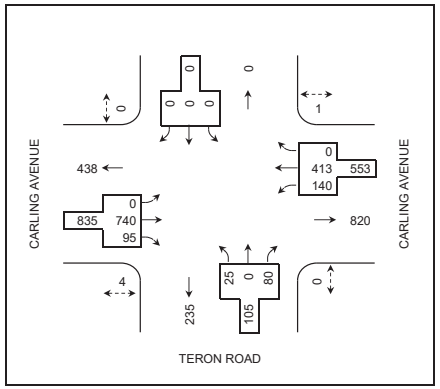
Midday Peak (11:30–12:30)



Morning Peak (8:00–9:00)



Afternoon Peak (16:00–17:00)



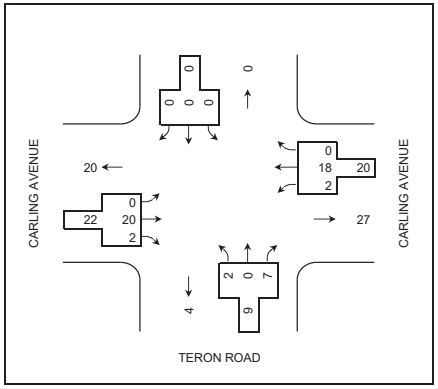
Note:
Volumes above include **cars** and **heavy vehicles**.
Cars include motorcycles, passenger cars, pick-up trucks (including "heavy-duty"), full-size vans (i.e. Econoline), and any of these with a trailer.

Vehicular Turning Movements – Heavy Vehicles

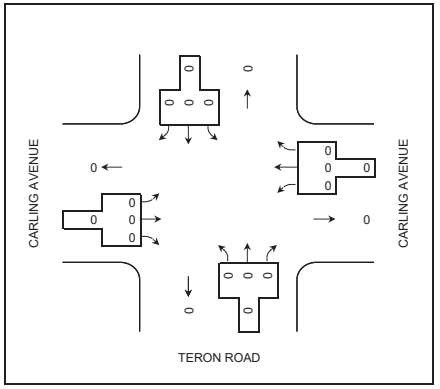
CARLING AVENUE and TERON ROAD in Ottawa, ON

Survey Date: Tuesday, 19 November 2019
Performed By: BTE

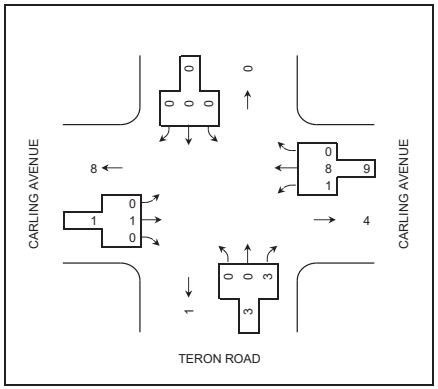
Full Period (4 hours)



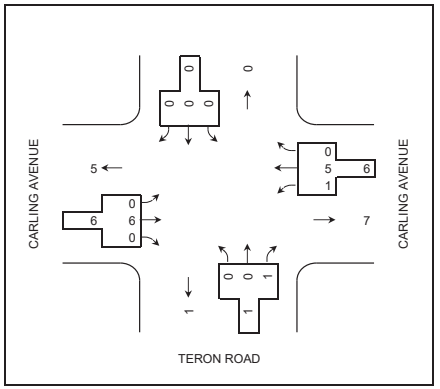
Midday Peak (11:30–12:30)



Morning Peak (8:00–9:00)



Afternoon Peak (16:00–17:00)



Note:
Heavy vehicles include vehicles with more than 2 axles (with the exception of cars with trailers).

Vehicular Turning Movements (15 Min. Volumes) – All Vehicles

CARLING AVENUE and TERON ROAD in Ottawa, ON

Survey Date: Tuesday, 19 November 2019
Performed By: BTE

Grey = Peak Hour

	TERON ROAD Northbound				TERON ROAD Southbound					CARLING AVENUE Eastbound				CARLING AVENUE Westbound					
Time Period	L	T	R	SUB TOT	L	T	R	SUB TOT	STR TOT	L	T	R	SUB TOT	L	T	R	SUB TOT	STR TOT	GRAND TOTAL
7:30 – 7:45	8	0	27	**35**	0	0	0	**0**	**35**	0	202	8	**210**	14	77	0	**91**	**301**	**336**
7:45 – 8:00	10	0	45	**55**	0	0	0	**0**	**55**	0	172	5	**177**	9	65	0	**74**	**251**	**306**
8:00 – 8:15	40	0	46	**86**	0	0	0	**0**	**86**	0	121	4	**125**	11	120	0	**131**	**256**	**342**
8:15 – 8:30	49	0	35	**84**	0	0	0	**0**	**84**	0	121	3	**124**	11	148	0	**159**	**283**	**367**
8:30 – 8:45	70	0	39	**109**	0	0	0	**0**	**109**	0	115	3	**118**	8	102	0	**110**	**228**	**337**
8:45 – 9:00	55	0	24	**79**	0	0	0	**0**	**79**	0	122	6	**128**	7	180	0	**187**	**315**	**394**
9:00 – 9:15	49	0	27	**76**	0	0	0	**0**	**76**	0	122	8	**130**	13	204	0	**217**	**347**	**423**
9:15 – 9:30	32	0	19	**51**	0	0	0	**0**	**51**	0	120	6	**126**	7	117	0	**124**	**250**	**301**
16:00 – 16:15	6	0	33	**39**	0	0	0	**0**	**39**	0	212	23	**235**	43	84	0	**127**	**362**	**401**
16:15 – 16:30	4	0	11	**15**	0	0	0	**0**	**15**	0	201	20	**221**	37	99	0	**136**	**357**	**372**
16:30 – 16:45	7	0	21	**28**	0	0	0	**0**	**28**	0	163	31	**194**	29	118	0	**147**	**341**	**369**
16:45 – 17:00	8	0	15	**23**	0	0	0	**0**	**23**	0	164	21	**185**	31	112	0	**143**	**328**	**351**
17:00 – 17:15	5	0	9	**14**	0	0	0	**0**	**14**	0	171	23	**194**	25	106	0	**131**	**325**	**339**
17:15 – 17:30	10	0	22	**32**	0	0	0	**0**	**32**	0	165	20	**185**	39	88	0	**127**	**312**	**344**
17:30 – 17:45	11	0	10	**21**	0	0	0	**0**	**21**	0	186	21	**207**	32	93	0	**125**	**332**	**353**
17:45 – 18:00	10	0	19	**29**	0	0	0	**0**	**29**	0	143	19	**162**	18	62	0	**80**	**242**	**271**
TOTAL	374	0	402	**776**	0	0	0	**0**	**776**	0	2500	221	**2721**	334	1775	0	**2109**	**4830**	**5606**

Vehicular Turning Movements (15 Min. Volumes) – Heavy Vehicles

CARLING AVENUE and TERON ROAD in Ottawa, ON

Survey Date: Tuesday, 19 November 2019
Performed By: BTE

	TERON ROAD Northbound				TERON ROAD Southbound					CARLING AVENUE Eastbound				CARLING AVENUE Westbound					
Time Period	L	T	R	SUB TOT	L	T	R	SUB TOT	STR TOT	L	T	R	SUB TOT	L	T	R	SUB TOT	STR TOT	GRAND TOTAL
7:30 – 7:45	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
7:45 – 8:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**4**	0	2	0	**2**	**6**	**6**
8:00 – 8:15	0	0	1	**1**	0	0	0	**0**	**1**	0	1	0	**1**	1	4	0	**5**	**6**	**7**
8:15 – 8:30	0	0	1	**1**	0	0	0	**0**	**1**	0	0	0	**0**	0	2	0	**2**	**2**	**3**
8:30 – 8:45	0	0	1	**1**	0	0	0	**0**	**1**	0	0	0	**0**	0	2	0	**2**	**2**	**3**
8:45 – 9:00	0	0	0	**0**	0	0	0	**0**	**0**	0	0	0	**0**	0	0	0	**0**	**0**	**0**
9:00 – 9:15	0	0	2	**2**	0	0	0	**0**	**2**	0	1	0	**1**	0	0	0	**0**	**1**	**3**
9:15 – 9:30	2	0	0	**2**	0	0	0	**0**	**2**	0	6	0	**6**	0	1	0	**1**	**7**	**9**
16:00 – 16:15	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	4	0	**4**	**6**	**6**
16:15 – 16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	0	0	**0**	**2**	**2**
16:30 – 16:45	0	0	1	**1**	0	0	0	**0**	**1**	0	0	0	**0**	1	1	0	**2**	**2**	**3**
16:45 – 17:00	0	0	0	**0**	0	0	0	**0**	**0**	0	2	0	**2**	0	0	0	**0**	**2**	**2**
17:00 – 17:15	0	0	1	**1**	0	0	0	**0**	**1**	0	0	1	**1**	0	0	0	**0**	**1**	**2**
17:15 – 17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	0	0	**0**	**1**	**1**
17:30 – 17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	0	1	**1**	0	2	0	**2**	**3**	**3**
17:45 – 18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	1	0	**1**	0	0	0	**0**	**1**	**1**
TOTAL	2	0	7	**9**	0	0	0	**0**	**9**	0	20	2	**22**	2	18	0	**20**	**42**	**51**

BT ENGINEERING

Vehicular Turning Movements (15 Min. Volumes) – Pedestrians

CARLING AVENUE and TERON ROAD in Ottawa, ON

Survey Date: Tuesday, 19 November 2019
Performed By: BTE

	TERON ROAD			CARLING AVENUE	CARLING AVENUE		
	Parallel Crossing	Parallel Crossing		Parallel Crossing	Parallel Crossing		
Time Period	East	West	STREET TOTAL	South	North	STREET TOTAL	GRAND TOTAL
7:30 – 7:45	0	0	**0**	0	0	**0**	**0**
7:45 – 8:00	0	0	**0**	0	0	**0**	**0**
8:00 – 8:15	0	0	**0**	1	0	**1**	**1**
8:15 – 8:30	0	0	**0**	0	1	**1**	**1**
8:30 – 8:45	0	0	**0**	0	0	**0**	**0**
8:45 – 9:00	0	0	**0**	2	0	**2**	**2**
9:00 – 9:15	0	0	**0**	0	0	**0**	**0**
9:15 – 9:30	0	0	**0**	0	0	**0**	**0**
16:00 – 16:15	0	0	**0**	1	0	**1**	**1**
16:15 – 16:30	0	0	**0**	3	0	**3**	**3**
16:30 – 16:45	0	0	**0**	0	0	**0**	**0**
16:45 – 17:00	0	0	**0**	0	1	**1**	**1**
17:00 – 17:15	0	0	**0**	1	1	**2**	**2**
17:15 – 17:30	0	0	**0**	0	0	**0**	**0**
17:30 – 17:45	0	0	**0**	1	0	**1**	**1**
17:45 – 18:00	0	0	**0**	0	0	**0**	**0**
TOTAL	0	0	**0**	9	3	**12**	**12**

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Intersection	
Intersection Delay, s/veh	35
Intersection LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	76	526	549	341	44
Future Vol, veh/h	26	76	526	549	341	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	84	584	610	379	49
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	11.1	43.1	18.7
HCM LOS	B	E	C

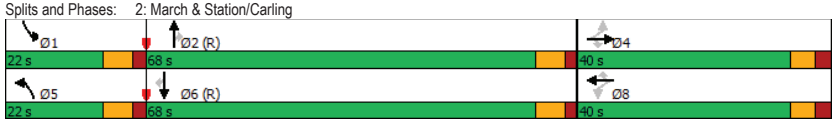
Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	89%
Vol Right, %	0%	0%	0%	100%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	526	549	26	76	385
LT Vol	526	0	26	0	0
Through Vol	0	549	0	0	341
RT Vol	0	0	0	76	44
Lane Flow Rate	584	610	29	84	428
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.947	0.903	0.066	0.163	0.658
Departure Headway (Hd)	5.835	5.33	8.182	6.952	5.537
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	614	671	441	519	646
Service Time	3.634	3.129	5.882	4.652	3.613
HCM Lane V/C Ratio	0.951	0.909	0.066	0.162	0.663
HCM Control Delay	48.4	38.1	11.5	11	18.7
HCM Lane LOS	E	E	B	B	C
HCM 95th-tile Q	12.8	11.5	0.2	0.6	4.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	21	6	43	37	227	91	1941	98	286	845	99
Future Volume (vph)	66	21	6	43	37	227	91	1941	98	286	845	99
Lane Group Flow (vph)	0	96	7	0	89	252	101	2157	109	318	939	110
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	39.5	39.5	39.5	39.5	39.5	39.5	11.7	30.6	30.6	11.7	30.6	30.6
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	22.0	68.0	68.0	22.0	68.0	68.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	16.9%	52.3%	52.3%	16.9%	52.3%	52.3%
Maximum Green (s)	33.5	33.5	33.5	33.5	33.5	33.5	15.3	61.4	61.4	15.3	61.4	61.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.1	2.0	2.0	2.1	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5	6.5		6.5	6.5	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	6	6	6	6	6	6		9	9		4	4
Act Effct Green (s)		17.8	17.8		17.8	17.8	12.7	75.3	75.3	17.1	79.7	79.7
Actuated g/C Ratio		0.14	0.14		0.14	0.14	0.10	0.58	0.58	0.13	0.61	0.61
v/c Ratio		0.56	0.03		0.48	0.65	0.63	1.12	0.13	0.75	0.46	0.12
Control Delay		63.0	0.2		58.2	17.3	63.0	71.6	0.8	66.1	16.3	5.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		63.0	0.2		58.2	17.3	63.0	71.6	0.8	66.1	16.3	5.1
LOS		E	A		E	B	E	E	A	E	B	A
Approach Delay		58.7			27.9			68.0			27.0	
Approach LOS		E			C			E			C	
Queue Length 50th (m)		23.9	0.0		21.9	7.8	25.8	~328.4	0.0	40.4	61.6	2.2
Queue Length 95th (m)		36.0	0.0		33.4	29.5	m23.6	m#302.8	m0.1	#62.9	112.0	13.4
Internal Link Dist (m)		179.9			721.6			673.4			570.4	
Turn Bay Length (m)			30.0			50.0	90.0		85.0	180.0		25.0
Base Capacity (vph)		322	438		349	537	196	1921	857	430	2033	915
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.30	0.02		0.26	0.47	0.52	1.12	0.13	0.74	0.46	0.12

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 51.1 Intersection LOS: D
Intersection Capacity Utilization 102.4% 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: March & Station/Carling



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	60	322	306	385	56	27
Future Vol, veh/h	60	322	306	385	56	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	700	-	-	-	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	67	358	340	428	62	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	768	0	-	0	1046	554
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	846	-	-	-	253	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	846	-	-	-	233	532
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	846	-	-	-	285
HCM Lane V/C Ratio	0.079	-	-	-	0.324
HCM Control Delay (s)	9.6	-	-	-	23.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4

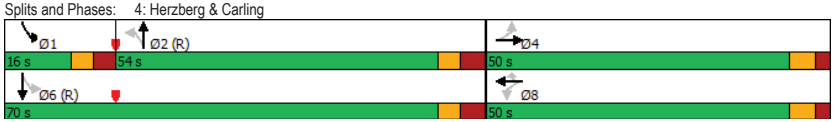
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	35	456	15	410	576	77	464	250	118
Future Volume (vph)	35	456	15	410	576	77	464	250	118
Lane Group Flow (vph)	39	520	17	456	640	0	651	278	165
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	1	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	25.1	25.1	25.1	25.1	25.1	26.2	26.2	11.4	26.2
Total Split (s)	50.0	50.0	50.0	50.0	50.0	54.0	54.0	16.0	70.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	45.0%	45.0%	13.3%	58.3%
Maximum Green (s)	43.9	43.9	43.9	43.9	43.9	46.8	46.8	9.6	62.8
Yellow Time (s)	3.7	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	2.4	3.9	3.9	3.1	3.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1		7.2	6.4	7.2
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?						Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0		12.0
Pedestrian Calls (#/hr)	1	1	8	8	8	2	2		3
Act Effct Green (s)	39.8	39.8	39.8	39.8	39.8		49.2	67.7	66.9
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33		0.41	0.56	0.56
v/c Ratio	0.29	0.90	0.19	0.79	0.92		1.00	0.72	0.17
Control Delay	34.4	58.0	32.5	46.6	36.4		70.5	28.5	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	34.4	58.0	32.5	46.6	36.4		70.5	28.5	13.2
LOS	C	E	C	D	D		E	C	B
Approach Delay		56.4		40.5			70.5		22.8
Approach LOS		E		D			E		C
Queue Length 50th (m)	6.6	112.6	2.8	93.8	74.4		~166.6	34.2	17.0
Queue Length 95th (m)	16.1	#164.1	8.8	129.6	#147.6		#236.2	#62.8	29.9
Internal Link Dist (m)		190.6		778.2			594.4		418.9
Turn Bay Length (m)	65.0		175.0		125.0			225.0	
Base Capacity (vph)	149	636	100	638	735		654	386	944
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.26	0.82	0.17	0.71	0.87		1.00	0.72	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 47.9 Intersection LOS: D
Intersection Capacity Utilization 96.7% 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: 4: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	263	13	23	38	34	38	1631	199	49	681	180
Future Volume (vph)	475	263	13	23	38	34	38	1631	199	49	681	180
Lane Group Flow (vph)	528	292	14	26	42	38	42	1812	221	54	757	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.1	34.6	34.6	11.1	34.6	34.6	11.4	25.3	25.3	11.4	25.3	25.3
Total Split (s)	12.0	38.0	38.0	12.0	38.0	38.0	12.0	68.0	68.0	12.0	68.0	68.0
Total Split (%)	9.2%	29.2%	29.2%	9.2%	29.2%	29.2%	9.2%	52.3%	52.3%	9.2%	52.3%	52.3%
Maximum Green (s)	5.9	31.4	31.4	5.9	31.4	31.4	5.6	61.7	61.7	5.6	61.7	61.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	1.8	1.7	1.7	1.8	1.7	1.7
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)	6.1	6.6	6.6	6.1	6.6	6.6	6.4	6.3	6.3	6.4	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		1	1		3	3		1	1		0	0
Act Effct Green (s)	40.2	36.2	36.2	37.7	31.4	31.4	68.5	64.1	64.1	68.5	64.1	64.1
Actuated g/C Ratio	0.31	0.28	0.28	0.29	0.24	0.24	0.53	0.49	0.49	0.53	0.49	0.49
v/c Ratio	1.36	0.60	0.03	0.10	0.10	0.08	0.14	1.11	0.28	0.43	0.46	0.24
Control Delay	214.1	48.3	0.1	33.0	42.1	0.4	13.8	90.6	8.9	39.6	32.8	13.5
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	214.1	48.3	0.1	33.0	42.1	0.4	13.8	90.6	8.9	39.6	32.8	13.5
LOS	F	D	A	C	D	A	B	F	A	D	C	B
Approach Delay		152.5			24.9			80.3			29.3	
Approach LOS		F			C			F			C	
Queue Length 50th (m)	~183.7	68.6	0.0	4.2	8.0	0.0	4.6	~287.1	12.0	8.3	56.6	0.0
Queue Length 95th (m)	#250.7	100.2	0.0	m11.3	m18.1	m0.1	9.9	#329.1	28.1	26.3	128.4	50.0
Internal Link Dist (m)		452.9			622.3			730.7			673.4	
Turn Bay Length (m)	100.0		65.0	35.0		65.0	70.0		75.0	70.0		75.0
Base Capacity (vph)	387	485	502	256	421	453	310	1634	782	126	1634	832
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	1.36	0.60	0.03	0.10	0.10	0.08	0.14	1.11	0.28	0.43	0.46	0.24

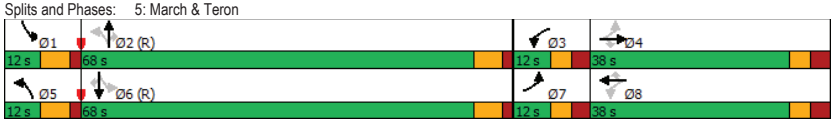
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 36 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 81.0 — Intersection LOS: F
Intersection Capacity Utilization 114.5% — ICU Level of Service H
Analysis Period (min) 15

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

Splits and Phases: 5: March & Teron



Intersection	
Int Delay, s/veh	42.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	359	16	37	480	214	144
Future Vol, veh/h	359	16	37	480	214	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	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	3	2	2	2
Mvmt Flow	399	18	41	533	238	160

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	417	0	1014	399
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1137	-	264	651
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	539	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1137	-	251	651
Mov Cap-2 Maneuver	-	-	-	-	251	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	512	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	147.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	-	-	1137	-
HCM Lane V/C Ratio	1.195	-	-	0.036	-
HCM Control Delay (s)	147.5	-	-	8.3	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	16.9	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	102.2
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	494	88	426	530	24
Future Vol, veh/h	31	494	88	426	530	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	549	98	473	589	27
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	81.2	63.2	158.3
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	96%
Vol Right, %	0%	0%	0%	100%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	426	31	494	554
LT Vol	88	0	31	0	0
Through Vol	0	426	0	0	530
RT Vol	0	0	0	494	24
Lane Flow Rate	98	473	34	549	616
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.221	1.005	0.077	1.063	1.262
Departure Headway (Hd)	8.823	8.303	8.656	7.411	7.714
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	410	440	416	494	474
Service Time	6.523	6.003	6.356	5.111	5.714
HCM Lane V/C Ratio	0.239	1.075	0.082	1.111	1.3
HCM Control Delay	14	73.4	12.1	85.5	158.3
HCM Lane LOS	B	F	B	F	F
HCM 95th-tile Q	0.8	12.9	0.2	16	24.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	21	51	160	23	279	35	1182	98	309	1901	54
Future Volume (vph)	38	21	51	160	23	279	35	1182	98	309	1901	54
Lane Group Flow (vph)	0	65	57	0	204	310	39	1313	109	343	2112	60
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	39.5	39.5	39.5	39.5	39.5	39.5	11.7	30.6	30.6	11.7	30.6	30.6
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	18.0	72.0	72.0	18.0	72.0	72.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	13.8%	55.4%	55.4%	13.8%	55.4%	55.4%
Maximum Green (s)	33.5	33.5	33.5	33.5	33.5	33.5	11.3	65.4	65.4	11.3	65.4	65.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.1	2.0	2.0	2.1	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5	6.5		6.5	6.5	6.7	6.6	6.6	6.7	6.6	6.6
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0		17.0	17.0		17.0	17.0
Pedestrian Calls (#/hr)	4	4	4	6	6	6		6	6		0	0
Act Effct Green (s)		26.1	26.1		26.1	26.1	8.4	65.4	65.4	18.7	78.1	78.1
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.06	0.50	0.50	0.14	0.60	0.60
v/c Ratio		0.32	0.16		0.83	0.69	0.36	0.79	0.14	0.74	1.06	0.07
Control Delay		46.4	3.7		75.1	26.2	56.1	31.9	10.0	64.7	65.7	1.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		46.4	3.7		75.1	26.2	56.1	31.9	10.0	64.7	65.7	1.6
LOS		D	A		E	C	E	C	A	E	E	A
Approach Delay		26.5			45.6			30.9			64.0	
Approach LOS		C			D			C			E	
Queue Length 50th (m)		14.2	0.0		50.2	28.9	10.2	93.5	0.3	44.2	~323.6	0.0
Queue Length 95th (m)		26.5	4.7		74.2	57.6	m15.6	162.8	m15.4	#85.9	#399.1	3.5
Internal Link Dist (m)		179.9			721.6			673.4			570.4	
Turn Bay Length (m)			30.0			50.0	90.0		85.0	180.0		25.0
Base Capacity (vph)		263	439		316	520	144	1668	772	461	1992	907
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.25	0.13		0.65	0.60	0.27	0.79	0.14	0.74	1.06	0.07

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145

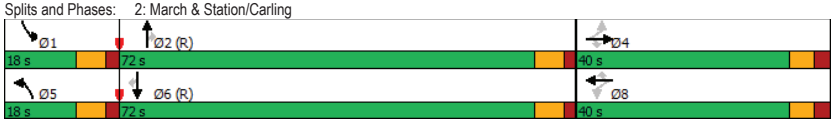
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 93.4% ICU Level of Service F
Analysis Period (min) 15

~ 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: March & Station/Carling



Intersection	
Int Delay, s/veh	97.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	72	376	349	72	313	91
Future Vol, veh/h	72	376	349	72	313	91
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	700	-	-	-	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	80	418	388	80	348	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	469	0	-	0	1007	430
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	578	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1093	-	-	-	~ 267	625
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1092	-	-	-	~ 247	624
Mov Cap-2 Maneuver	-	-	-	-	~ 247	-
Stage 1	-	-	-	-	608	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	$ 304.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1092	-	-	-	286
HCM Lane V/C Ratio	0.073	-	-	-	1.57
HCM Control Delay (s)	8.6	-	-	-	-$ 304.8
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	26.7

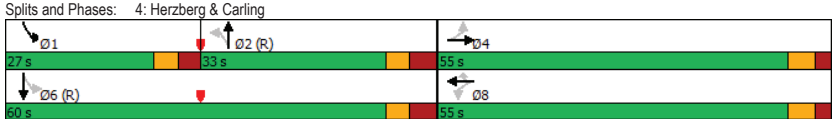
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	607	47	461	326	24	174	519	459
Future Volume (vph)	19	607	47	461	326	24	174	519	459
Lane Group Flow (vph)	21	737	52	512	362	0	267	577	560
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	1	6
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	25.1	25.1	25.1	25.1	25.1	26.2	26.2	11.4	26.2
Total Split (s)	55.0	55.0	55.0	55.0	55.0	33.0	33.0	27.0	60.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	28.7%	28.7%	23.5%	52.2%
Maximum Green (s)	48.9	48.9	48.9	48.9	48.9	25.8	25.8	20.6	52.8
Yellow Time (s)	3.7	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	2.4	3.9	3.9	3.1	3.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.1	6.1	6.1	6.1	6.1		7.2	6.4	7.2
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?						Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0		12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0		11
Act Effct Green (s)	48.9	48.9	48.9	48.9	48.9		25.8	53.6	52.8
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.22	0.47	0.46
v/c Ratio	0.10	1.01	0.87	0.69	0.43		0.78	1.23	0.71
Control Delay	21.6	68.1	119.3	32.8	3.9		59.2	146.5	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.6	68.1	119.3	32.8	3.9		59.2	146.5	30.7
LOS	C	E	F	C	A		E	F	C
Approach Delay		66.8		26.4			59.2		89.5
Approach LOS		E		C			E		F
Queue Length 50th (m)	2.8	~164.0	10.4	91.9	0.0		56.9	~118.2	97.5
Queue Length 95th (m)	8.2	#244.9	#35.5	130.9	16.7		#95.7	#186.7	139.1
Internal Link Dist (m)		186.4		778.2			594.4		418.9
Turn Bay Length (m)	65.0		175.0		125.0			225.0	
Base Capacity (vph)	207	733	60	742	838		341	469	790
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.10	1.01	0.87	0.69	0.43		0.78	1.23	0.71

Intersection Summary
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 62.4 Intersection LOS: E
Intersection Capacity Utilization 102.4% 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: 4: Herzberg & Carling

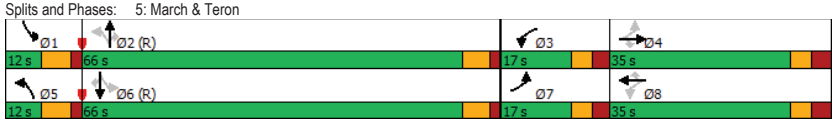


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	50	40	153	167	50	51	1014	20	11	1669	455
Future Volume (vph)	224	50	40	153	167	50	51	1014	20	11	1669	455
Lane Group Flow (vph)	249	56	44	170	186	56	57	1127	22	12	1854	506
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.1	34.6	34.6	11.1	34.6	34.6	11.4	25.3	25.3	11.4	25.3	25.3
Total Split (s)	17.0	35.0	35.0	17.0	35.0	35.0	12.0	66.0	66.0	12.0	66.0	66.0
Total Split (%)	13.1%	26.9%	26.9%	13.1%	26.9%	26.9%	9.2%	50.8%	50.8%	9.2%	50.8%	50.8%
Maximum Green (s)	10.9	28.4	28.4	10.9	28.4	28.4	5.6	59.7	59.7	5.6	59.7	59.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.8	3.3	3.3	2.8	3.3	3.3	1.8	1.7	1.7	1.8	1.7	1.7
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)	6.1	6.6	6.6	6.1	6.6	6.6	6.4	6.3	6.3	6.4	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		1	1		10	10		2	2		0	0
Act Effct Green (s)	40.0	28.6	28.6	39.6	28.4	28.4	69.0	66.9	66.9	66.5	62.1	62.1
Actuated g/C Ratio	0.31	0.22	0.22	0.30	0.22	0.22	0.53	0.51	0.51	0.51	0.48	0.48
v/c Ratio	0.73	0.15	0.10	0.41	0.49	0.13	0.46	0.66	0.03	0.06	1.17	0.59
Control Delay	48.7	42.3	0.5	31.3	46.4	0.7	27.6	26.6	0.1	14.5	104.2	6.7
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	48.7	42.3	0.5	31.3	46.4	0.7	27.6	26.6	0.1	14.5	104.2	6.7
LOS	D	D	A	C	D	A	C	C	A	B	F	A
Approach Delay		41.6			34.0			26.1			83.0	
Approach LOS		D			C			C			F	
Queue Length 50th (m)	48.3	11.7	0.0	28.2	43.0	0.0	6.5	99.3	0.0	1.0	~302.7	19.4
Queue Length 95th (m)	#74.9	23.5	0.0	m43.4	m65.3	m0.1	14.7	148.2	0.0	m1.1	m#279.5	m22.9
Internal Link Dist (m)		452.9			627.3			730.7			673.4	
Turn Bay Length (m)	100.0		65.0	35.0		65.0	70.0		75.0	70.0		75.0
Base Capacity (vph)	340	384	425	418	381	418	125	1706	808	195	1583	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.15	0.10	0.41	0.49	0.13	0.46	0.66	0.03	0.06	1.17	0.59

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 121 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 59.2 Intersection LOS: E
Intersection Capacity Utilization 101.0% 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: 5: March & Teron



Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	600	95	140	398	25	80
Future Vol, veh/h	600	95	140	398	25	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	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	667	106	156	442	28	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	773	0	1421	667
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	842	-	150	459
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	465	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	842	-	113	459
Mov Cap-2 Maneuver	-	-	-	-	113	-
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	351	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	28.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	265	-	-	842	-
HCM Lane V/C Ratio	0.44	-	-	0.185	-
HCM Control Delay (s)	28.9	-	-	10.2	0
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	2.1	-	-	0.7	-

Appendix D

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
2015-04-21	2015	7:48	CARLING AVE @ RICHARDSON SIDE RD	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	02 - Wet
2016-02-13	2016	2:00	CARLING AVE @ RICHARDSON SIDE RD	01 - Clear	07 - Dark	02 - Stop sign		03 - P.D. only	07 - SMV other	03 - Loose snow
2017-06-07	2017	17:13	CARLING AVE @ RICHARDSON SIDE RD	01 - Clear	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017-11-15	2017	16:00	CARLING AVE @ RICHARDSON SIDE RD	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	01 - Dry
2019-11-05	2019	17:30	CARLING AVE @ RICHARDSON SIDE RD (0011927)	01 - Clear	07 - Dark	02 - Stop sign		03 - P.D. only	03 - Rear end	01 - Dry
2017-01-06	2017	10:39	CARLING AVE @ SCHNEIDER RD	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	02 - Wet
2018-09-17	2018	8:03	CARLING AVE @ SCHNEIDER RD (0003192)	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	01 - Dry
2019-04-24	2019	17:20	CARLING AVE @ SCHNEIDER RD (0003192)	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	01 - Dry
2019-06-26	2019	11:50	CARLING AVE @ SCHNEIDER RD (0003192)	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	04 - Sideswipe	01 - Dry
2015-09-23	2015	8:57	CARLING AVE btwn RICHARDSON SIDE RD & HERZBERG RD	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	07 - SMV other	01 - Dry
2015-10-27	2015	7:05	CARLING AVE btwn RICHARDSON SIDE RD & HERZBERG RD	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	07 - SMV other	01 - Dry
2016-01-26	2016	8:27	CARLING AVE btwn RICHARDSON SIDE RD & HERZBERG RD	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	02 - Wet
2019-07-29	2019	12:38	CARLING AVE btwn RICHARDSON SIDE RD & HERZBERG RD (__3ZBOBG)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	04 - Sideswipe	01 - Dry
2015-09-21	2015	16:54	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015-11-25	2015	18:40	HERZBERG RD @ CARLING AVE	01 - Clear	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2015-10-22	2015	7:41	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2016-08-17	2016	17:40	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2016-08-02	2016	7:45	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2016-06-15	2016	17:43	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2016-11-30	2016	6:00	HERZBERG RD @ CARLING AVE	07 - Fog, mist, smoke, dust	07 - Dark	01 - Traffic signal		03 - P.D. only	07 - SMV other	02 - Wet
2017-10-17	2017	15:17	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2017-01-17	2017	8:45	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	04 - Sideswipe	01 - Dry
2017-01-19	2017	15:26	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017-02-12	2017	21:53	HERZBERG RD @ CARLING AVE	03 - Snow	07 - Dark	01 - Traffic signal		03 - P.D. only	07 - SMV other	05 - Packed snow
2017-04-13	2017	16:24	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017-03-03	2017	17:30	HERZBERG RD @ CARLING AVE	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2017-12-25	2017	16:29	HERZBERG RD @ CARLING AVE	01 - Clear	05 - Dusk	01 - Traffic signal		03 - P.D. only	07 - SMV other	02 - Wet
2018-09-05	2018	18:13	HERZBERG RD @ CARLING AVE (0003193)	02 - Rain	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	02 - Wet
2018-10-15	2018	8:15	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2018-10-29	2018	15:45	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2018-11-09	2018	17:20	HERZBERG RD @ CARLING AVE (0003193)	02 - Rain	07 - Dark	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2019-01-16	2019	18:37	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	07 - Dark	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2019-02-20	2019	8:47	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	01 - Dry
2019-03-20	2019	17:21	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	03 - Rear end	01 - Dry
2019-03-22	2019	14:04	HERZBERG RD @ CARLING AVE (0003193)	02 - Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	07 - SMV other	02 - Wet
2019-05-10	2019	9:20	HERZBERG RD @ CARLING AVE (0003193)	02 - Rain	01 - Daylight	01 - Traffic signal		03 - P.D. only	03 - Rear end	02 - Wet
2019-09-18	2019	17:45	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	01 - Daylight	01 - Traffic signal		02 - Non-fatal injury	05 - Turning movement	01 - Dry
2019-11-06	2019	6:35	HERZBERG RD @ CARLING AVE (0003193)	01 - Clear	03 - Dawn	01 - Traffic signal		03 - P.D. only	05 - Turning movement	02 - Wet
2015-03-04	2015	8:37	HERZBERG RD btwn LEGGET DR & CARLING AVE	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	05 - Turning movement	02 - Wet
2016-12-01	2016	12:37	HERZBERG RD btwn LEGGET DR & CARLING AVE	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	03 - Rear end	01 - Dry
2017-11-09	2017	17:09	HERZBERG RD btwn LEGGET DR & CARLING AVE	01 - Clear	05 - Dusk	10 - No control		03 - P.D. only	03 - Rear end	01 - Dry
2017-04-21	2017	16:29	HERZBERG RD btwn LEGGET DR & CARLING AVE	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2018-07-23	2018	16:44	HERZBERG RD btwn LEGGET DR & CARLING AVE (__3ZACVH)	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	05 - Turning movement	02 - Wet
2019-03-08	2019	16:30	HERZBERG RD btwn LEGGET DR & CARLING AVE (__3ZACVH)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2019-09-05	2019	7:49	HERZBERG RD btwn LEGGET DR & CARLING AVE (__3ZACVH)	01 - Clear	01 - Daylight	10 - No control		03 - P.D. only	05 - Turning movement	01 - Dry
2016-07-04	2016	8:13	LEGGET DR @ HERZBERG RD	01 - Clear	01 - Daylight	02 - Stop sign		03 - P.D. only	05 - Turning movement	01 - Dry
2017-12-15	2017	9:38	LEGGET DR @ HERZBERG RD	03 - Snow	01 - Daylight	02 - Stop sign		03 - P.D. only	03 - Rear end	06 - Ice
2015-02-06	2015	8:45	LEGGET DR @ SCHNEIDER RD	03 - Snow	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	02 - Angle	05 - Packed snow
2015-09-28	2015	14:25	LEGGET DR @ SCHNEIDER RD	02 - Rain	01 - Daylight	02 - Stop sign		03 - P.D. only	02 - Angle	02 - Wet
2018-05-31	2018	16:15	LEGGET DR @ SCHNEIDER RD (0002531)	02 - Rain	01 - Daylight	02 - Stop sign		02 - Non-fatal injury	07 - SMV other	02 - Wet
2017-08-18	2017	3:13	LEGGET DR btwn FARRAR RD & HERZBERG RD	02 - Rain	07 - Dark	10 - No control		03 - P.D. only	07 - SMV other	02 - Wet
2018-05-02	2018	17:13	LEGGET DR btwn FARRAR RD & HERZBERG RD (__3ZACVI)	01 - Clear	01 - Daylight	10 - No control		02 - Non-fatal injury	02 - Angle	01 - Dry
2017-02-10	2017	18:00	SCHNEIDER RD btwn LEGGET DR & CARLING AVE	01 - Clear	05 - Dusk	10 - No control		03 - P.D. only	06 - SMV unattended vehicle	01 - Dry
2019-10-16	2019	17:10	SCHNEIDER RD btwn LEGGET DR & CARLING AVE (__3ZACUG)	02 - Rain	05 - Dusk	10 - No control		03 - P.D. only	02 - Angle	02 - Wet

Appendix E

Correspondence with City Transportation Project Manager

From: Gervais, Josiane
To: John Kingsley; Andrew Harte
Cc: Stern, Lisa
Subject: RE: 103 Schneider Road File
Date: March 12, 2021 2:58:00 PM
Attachments: image001.png

Hi John & Andrew,

My apologies for the delay in getting back to you. Thank you for your patience.

Yes, due to the change in the proposed application, a TIA is no longer required for this site.
Please correct the Screening Form (there is still mention of a restaurant) and include it with the updated Scoping report as part of the SPA package.

Regards,

Josiane Gervais, P.Eng.
Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel |Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

Please note that I am currently working from home. E-mail is the preferred method to communicate with me. Thank you for your patience and understanding.
Veuillez noter que je travaille de la maison en ce moment. Veuillez communiquer avec moi par courriel. Merci de votre patience et compréhension.

From: John Kingsley <john.kingsley@cghtransportation.com>
Sent: March 08, 2021 8:31 AM
To: Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Andrew Harte <andrew.harte@cghtransportation.com>
Subject: 103 Schneider Road File

The project team on the 101(A)-103 Schneider Road file review the site application and has reduced the scale of the application to remove the 101 Schneider Road parcel (which originally proposed the construction of a restaurant pad). As such, if only the light industrial component is considered, the

trip generation for this component would be below the threshold for the trip generation trigger. The updated screening form has been attached, including the new site plan and trip generation table.

Given the trip generation trip trigger will not be met, the only outstanding item was the potential Safety Trigger due to the number of collisions noted at the Carling Avenue and Herzberg Road intersection. The previously submitted Step 2 provided our collision analysis at this location but did not identify any patterns or causes for mitigation. We were hoping that because of the site changes, and level of effort provided to date, that the Step 2 could satisfy the TIA process for this development application. The Step 2 could be revised per your received comments and submitted back as a final draft if this is an acceptable approach.

Feel free to call to discuss with either myself or Andrew Harte (613-697-3797) if you have any questions. Thank you, and I hope your week is off to a good start.

Regards,

John Kingsley, EIT
CGH Transportation Inc.
P:613-410-8243
E:John.Kingsley@CGHTransportation.com

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