1081 Carling Avenue

TIA Report

October 2022

Prepared for:
Taggart Realty Management, as agents for:
1081 Carling Avenue 2019 Co-Tenancy
225 Metcalfe Street, Suite 708
Ottawa, ON K2P 1P9

Prepared by:
Parsons
1223 Michael Street North, Suite 100
Ottawa, ON K1J 7T2

477892 - 01000

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
Tel. : 613-580-2424
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 6 day of October, 2022
(City)

Name: Austin Shih, P.Eng.
(Please Print)

Professional Title: Senior Project Manager

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

Office Contact Information (Please Print)
Address: 1223 Michael Street North, Suite 100
City / Postal Code: Ottawa, Ontario, K1J 7T2
Telephone / Extension: 613-738-4160
E-Mail Address: austin.shih@parsons.com

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REVIEWER:	Austin Shih, P.Eng.
AUTHORIZATION:	
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TIA REPORT

Parsons has been retained by 1081 Carling Avenue Co-Tenancy to prepare a Transportation Impact Assessment (TIA) in support of a Zoning By-Law Amendment (ZBLA) application for a mixed-use development located at 1081 Carling Avenue. This document follows the TIA process, as outlined in the City Transportation Impact Assessment (TIA) Guidelines (2017). The following report represents Step 5 – TIA Report.

1. Screening Form

The screening form confirmed the need for a TIA Report based on the site meeting the trip generation, location and safety triggers. The trip generation trigger is met due to the number of person trips anticipated to be generated by the development exceeding 60 person trips per hour. The location trigger is met due to the site location in a Design Priority Area. The safety trigger is met due to the documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development. The Screening Form has been provided in Appendix A.

2. Scoping Report

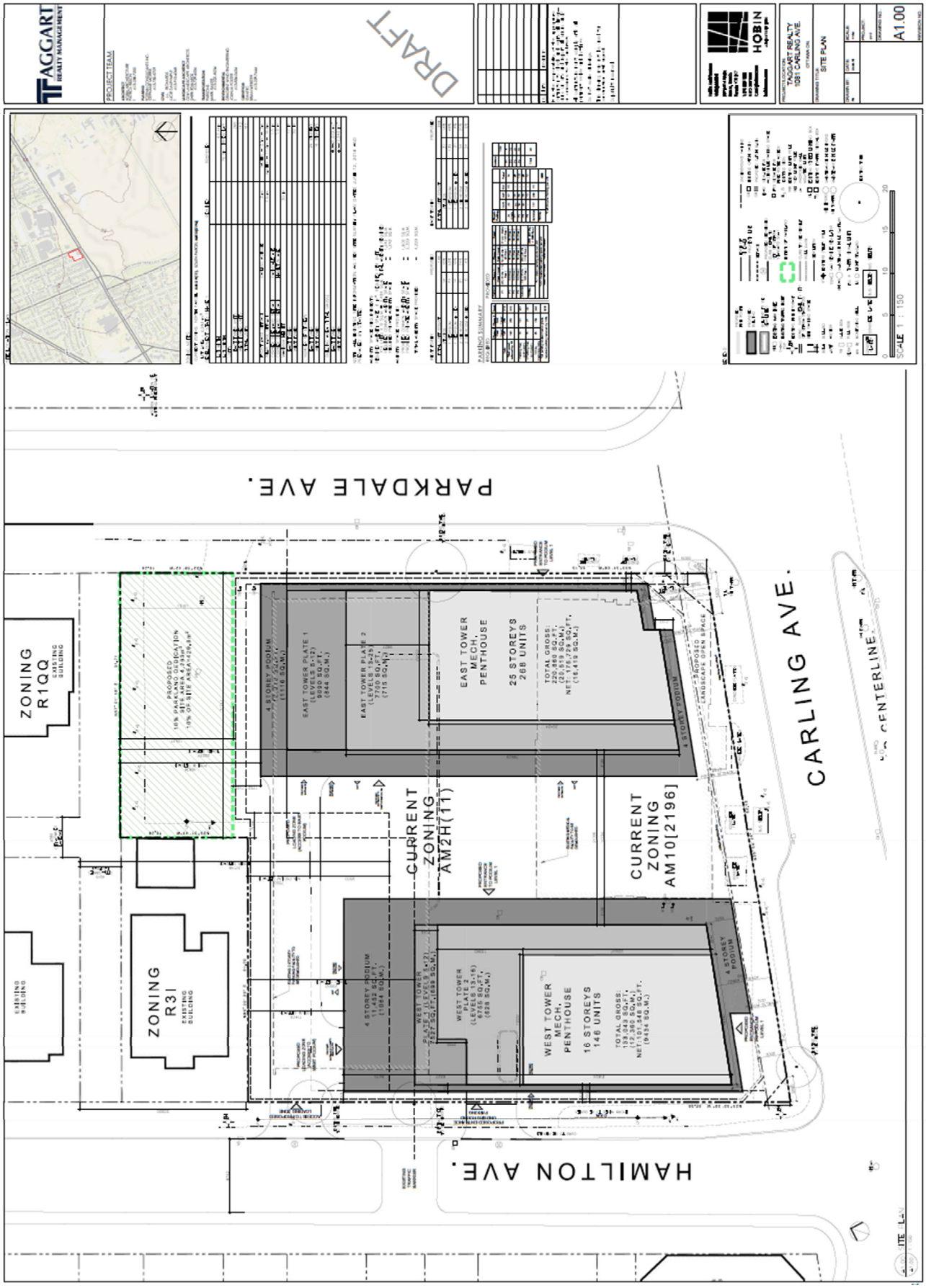
2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development is located on Carling Avenue, at the municipal address of 1081 Carling Ave. It is understood that the development proposes two residential towers. The west tower is 16 storeys with approximately 146 units and the east tower is 25 storeys with approximately 268 units. Parking is proposed in a four-level underground parking garage with access on Hamilton Avenue, where 322 vehicle and 400 bicycle parking spaces will be provided. The development is expected to be constructed in a single phase by 2028. The site is currently zoned as AM2 H(11) and AM10[2196]. The site is currently occupied by a multi-storey office building with attached parking garage and a surface parking lot. Local context is provided in Figure 1 and the proposed Site Plan is illustrated in Figure 2.

Figure 1: Local Context

Figure 2: Proposed Site Plan



2.1.2. Existing Conditions

Area Road Network

Carling Avenue is an east-west municipal road that extends from March Road in the west to Bronson Avenue in the east. Within the study area, Carling Avenue is classified as an arterial road and operates with a four-lane divided cross-section. Auxiliary turn lanes are provided at major intersections. The posted speed limit is 60km/h.

Parkdale Avenue is a north-south municipal road that extends from Carling Avenue in the south to the Sir John A. MacDonald Parkway in the north. Within the study area, Parkdale Avenue is classified as an arterial road and operates with a two-lane undivided cross-section. The posted speed limit is 40 km/h. On-street parking is provided on east side of the roadway within the study area.

Holland Avenue is a north-south municipal road that extends from Fisher Avenue in the south to Scott Street in the north where it continues as Tunney's Pasture Driveway. Within the study area, Parkdale Avenue is classified as a major collector road and operates with a two-lane undivided cross-section. The posted speed limit is 50 km/h. On-street parking is provided on both sides of the roadway within the study area.

Island Park Drive is a north-south federal road that extends from Holland Avenue in the south to the Sit John A. MacDonald Parkway in the north where it continues over the Champlain Bridge to Gatineau. Within the study area, Island Park Drive operates with a two-lane undivided cross-section. The posted speed limit is 40km/h.

Ruskin Street is an east-west municipal local road that extends from Island Park Drive in the west to Gwynne Avenue in the east. Ruskin Street operates with a two-lane cross-section with on-street parking provided on the south side of the road. The posted speed limit is 40 km/h.

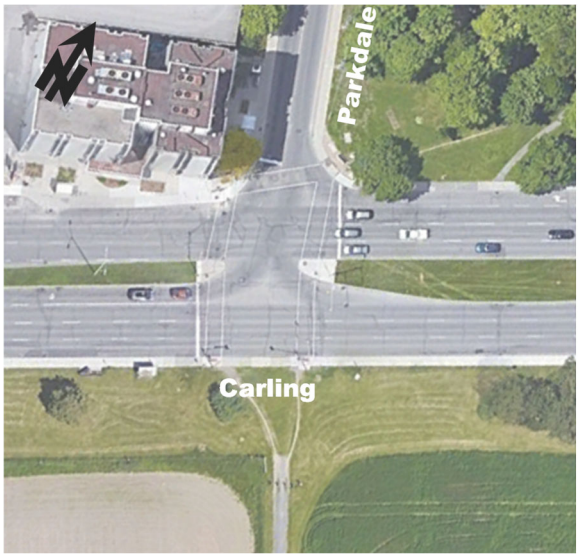
Hamilton Avenue S is a north-south municipal local road that extends from Carling Avenue in the south to Sherwood Drive in the north. Hamilton Avenue S operates with a two-lane cross-section with on-street parking provided on the east side of the road. The unposted speed limit is understood to be 50 km/h. Note that access to Carling Avenue is closed.

Existing Study Area Intersections

The following describes the existing physical geometry of the study area intersections.

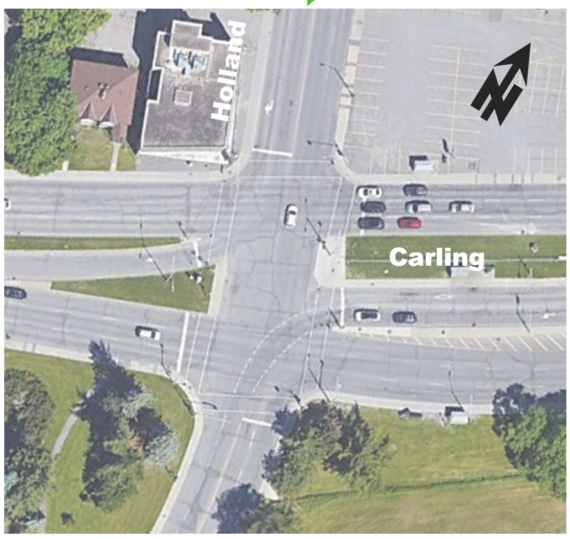
Parkdale/Carling

The Parkdale/Carling intersection is a signalized 'T' intersection. The eastbound approach consists of an auxiliary left-turn lane and three through lanes. The westbound approach consists of three through lanes and an auxiliary right-turn lane. The southbound approach consists of a single all-movement lane. All movements are permitted at this location. Painted crosswalks are provided on all legs of this intersection. Trucks are not permitted on Parkdale Avenue.



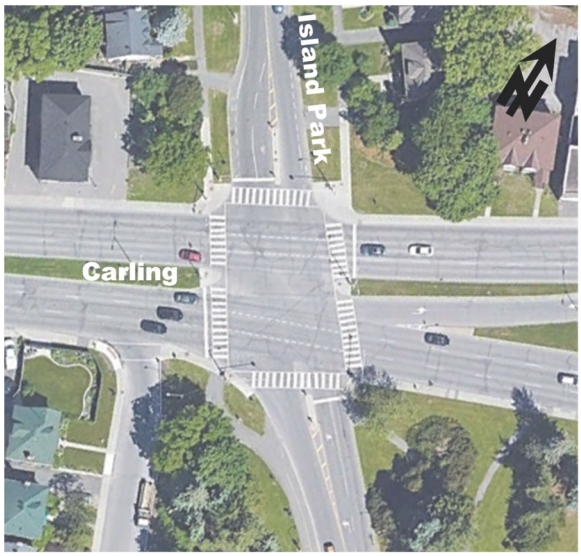
Holland/Carling

The Holland/Carling intersection is a signalized four-legged intersection. The eastbound approach consists of channelized left-turn lane, two through lanes and a shared through/right lane. The westbound approach consists of channelized dual left-turn lanes, two through lanes, and a shared through/right-turn lane. Note that the outside westbound left-turn lane is for transit only. The northbound approach consists of a shared left/through lane and a shared through/right lane. The southbound approach consists of a shared left/through lane and an auxiliary right-turn lane. All movements are permitted at this location. Painted crosswalks are provided on all legs of this intersection.



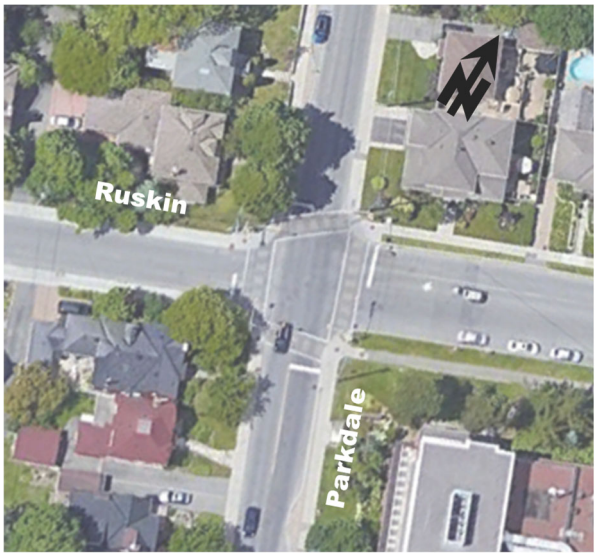
Island Park/Carling

The Island Park/Carling intersection is a signalized four-legged intersection. The east and westbound approaches consist of two through lanes and a shared through/right lane. The north and southbound approaches consist of an auxiliary left-turn lane and a shared through/right lane. The eastbound left-turn and westbound left-turn movements are prohibited at this location. Zebra stripe crosswalks are provided on all legs of this intersection.



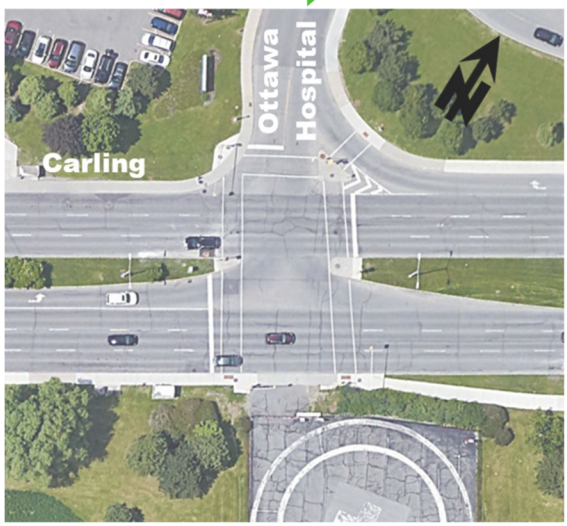
Ruskin/Parkdale

The Ruskin/Parkdale intersection is a signalized four-legged intersection. The eastbound approach consists of a shared all-movement lane. The westbound approach consists of an auxiliary left-turn lane and a shared through/right lane. The north and southbound approaches consist of a shared all-movement lane. All movements are permitted at this location. Textured crosswalks are provided on all legs of this intersection.



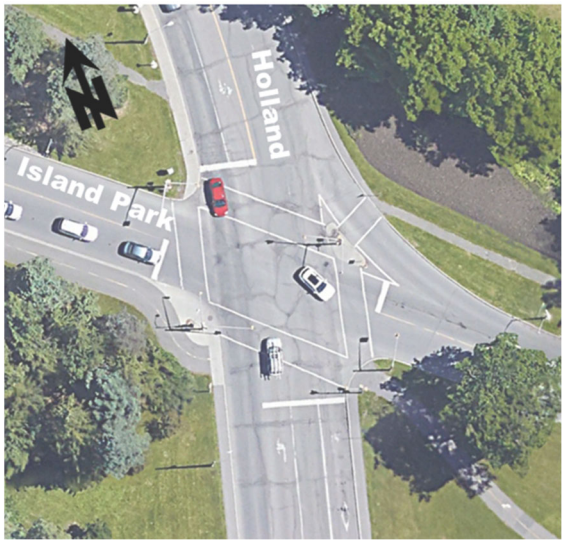
Ottawa Civic Hospital/Carling

The Island Park/Carling intersection is a signalized four-legged intersection. The eastbound approach consists of an auxiliary left-turn lane and three through lanes. The westbound approach consists of three through lanes and an auxiliary right-turn lane. The southbound approach consists of a single all-movement lane. The northbound approach consists of a single all-movement lane exclusively for a helicopter landing zone. All movements are permitted at this location. Painted crosswalks are provided on all legs of this intersection.



Holland/Island Park

The Holland/Island Park intersection is a signalized four-legged intersection. The eastbound approach (Island Park) consists of a shared all-movement lane. The westbound approach (Island Park) consists of channelized right-turn lane and a shared through/left-turn lane. The northbound approach (Holland) consists of an auxiliary left-turn lane, a through lane and a dedicated bus lane. The southbound approach (Holland) consists of an auxiliary left-turn lane and a shared through/right-turn lane. Northbound right-turns are prohibited for all vehicles, while southbound right and left-turn lanes are prohibited for commercial vehicles. Painted crosswalks are provided on all legs of this intersection.



Existing Driveways to Adjacent Developments

The subject site is proposing a driveway on Hamilton Ave S, south of the road block, for future residents to access the underground parking garage. Figure 3 illustrates adjacent driveways located within 200m of the proposed site access. There are 2 existing adjacent driveway accesses on the west side of the roadway. Another access to Hamilton Ave S is proposed for the development north of the road closure and will be utilized only as a garbage pick-up/move-in laneway.

Figure 3: Adjacent Driveway Locations

Existing Area Traffic Management Measures

Existing area traffic management measures within the study area include:

- Sidewalks;
- Painted or textured crosswalks;
- Bulb-outs;
- On-street parking; and,
- Curbs.

Pedestrian/Cycling Network

Figure 4 illustrates active transportation facilities within the study area. Sidewalks are provided on both sides of the roadway on all study area roads. Cycle tracks are provided on Island Park Drive north of Carling Avenue and on Holland Avenue south of Carling Avenue. Access to the Experimental Farm Pathway is located between the Island Park/Carling and Holland/Carling intersections. A local pathway is available along an Experimental Farm service road and is accessed at the Parkdale/Carling intersection. Based on the City of Ottawa Transportation Master Plan (TMP), Carling Avenue, Holland Avenue, and Island Park Drive are classified as Spine Routes.

Figure 4: Existing Pedestrian and Cycling Network

Transit Network

The existing transit network surrounding the proposed development site is illustrated in Figure 5. Bus stops within walking distance are located adjacent to the site. Transit stop locations are shown highlighted blue in Figure 6. Currently, Frequent Route #85 and Local Routes #55, #56, and #114 service the site.

- **Route #55 (Westgate <-> Elmvale)**: Identified by OC Transpo as a 'local' route that operates approximately every 30 minutes or less. Nearest stops are located along Carling Avenue, adjacent to the proposed site.
- **Route #56 (King Edward <-> Tunney's Pasture)**: Identified by OC Transpo as a 'local' route that operates approximately every 30 minutes. Nearest stops are located along Parkdale Avenue, adjacent to the proposed site.
- **Route #85 (Bayshore <-> Gatineau)**: Identified by OC Transpo as a 'frequent' route that operates approximately every 15 minutes of less seven days a week during all time periods. Nearest stops are located along Carling Avenue, adjacent to the proposed site.
- **Route #114 (Carlington <-> Rideau)**: Identified by OC Transpo as a 'local' route that only operates during peak periods. It travels northbound during the morning peak period and southbound during the afternoon peak period. When in operation, the bus runs on a schedule of approximately 1-hr interval, arriving only twice during the morning and afternoon peak periods. Nearest stops are located along Parkdale Avenue, adjacent to the proposed site.

Figure 5: Area Transit Network

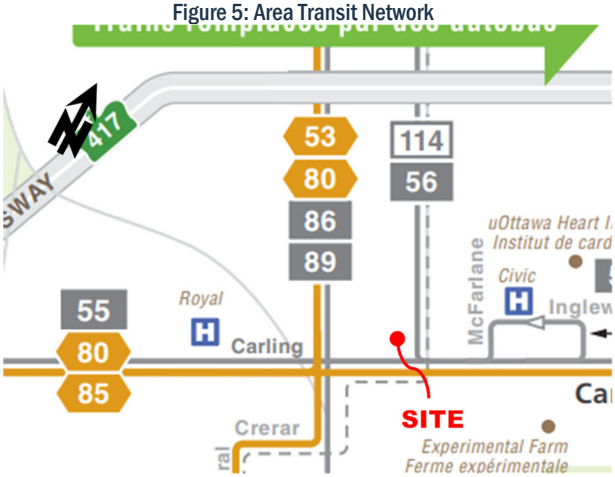
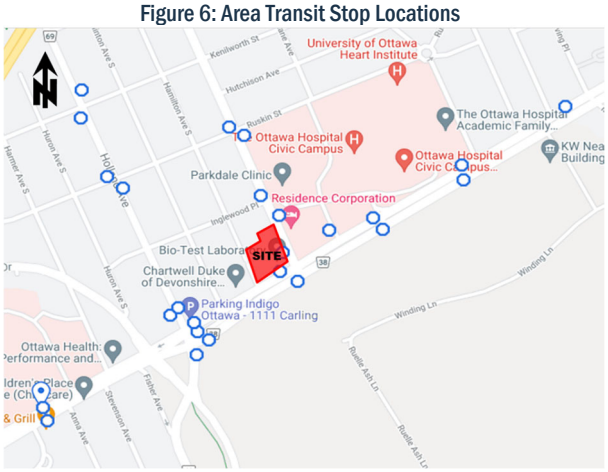


Figure 6: Area Transit Stop Locations



Peak Hour Travel Demands

The existing peak hour traffic volumes within the study area were obtained from the City of Ottawa for the following intersections:

- Carling/Parkdale – conducted Tuesday, January 21, 2020;
- Carling/Holland– conducted Tuesday, January 21, 2020;
- Carling/Island Park – conducted Wednesday, March 21, 2018;
- Ruskin/Parkdale – conducted Tuesday, January 21, 2020;
- Carling/Civic Hospital – conducted Wednesday, April 12, 2017; and,
- Holland/Island Park – conducted Tuesday, November 19, 2019.

Figure 7 displays the existing vehicle traffic volumes while Figure 8 shows the existing pedestrian and cyclist volumes. Peak hour count data is provided in Appendix B. Note that the traffic volumes at intersection in Figure 7 were balanced conservatively to the higher volumes of their respective upstream or downstream intersection.

The through traffic volumes at the intersection of Carling/Hamilton were inferred using volumes from the westbound egress and eastbound approach at the intersection of Carling/Parkdale. The right-turn in/out volumes at Hamilton were determined using trip generation calculations shown in Section 3 of this report.

Figure 7: Existing Peak Hour Vehicle Traffic Volumes

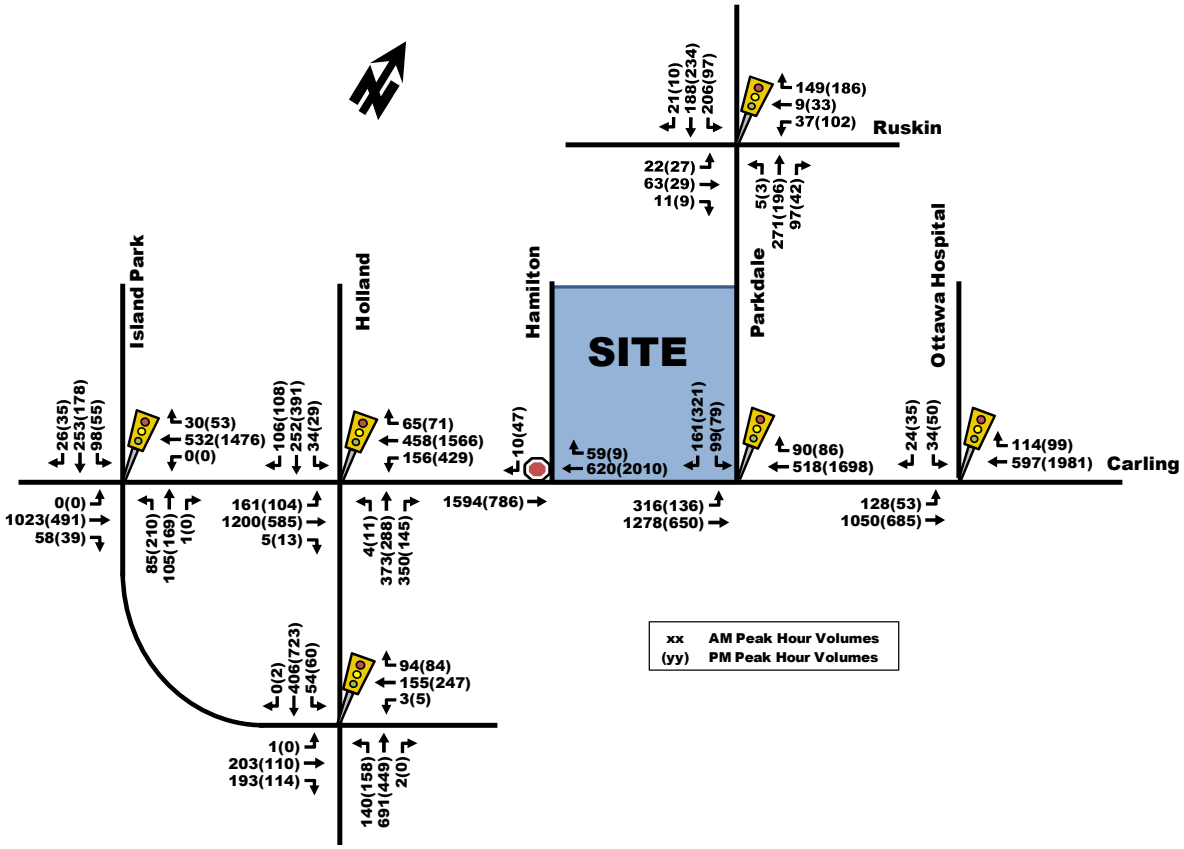
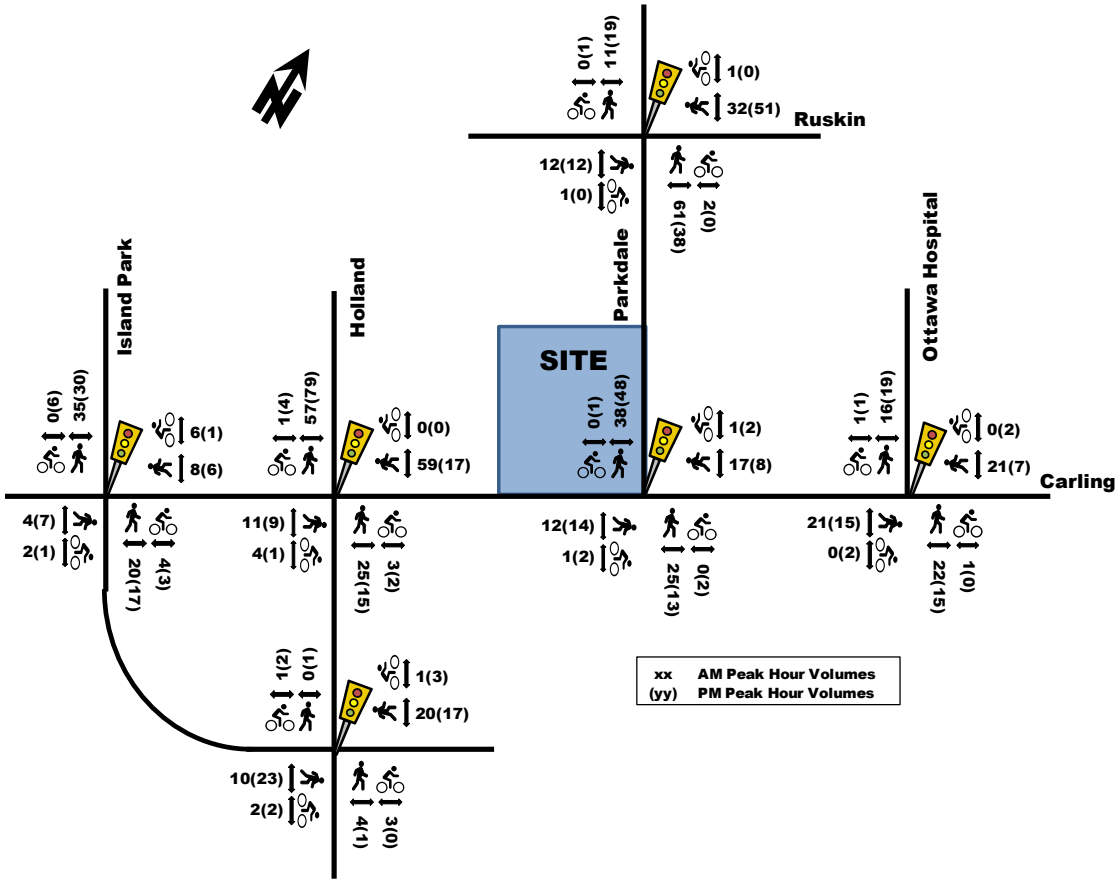


Figure 8: Existing Peak Hour Pedestrian and Cyclist Volumes



Existing Road Safety Conditions

A five-year collision history data (2015-2019, inclusive) was requested and obtained from the City of Ottawa for all intersections and road segments within the study area. Upon analyzing the collision data, the total number of collisions occurring within the study area was determined to be 151 collisions within the past five-years. Of the reported collisions, 119 (79%) resulted in property damage and 32 (21%) resulted in non-fatal injury. The types of impact were broken down into the following: 47 (31%) rear-end, 31 (21%) angle, 27 (18%) turning movement, 27 (18%) sideswipe, 11 (3%) single vehicle (unattended vehicle), 5 (3%) single vehicle (other), and 3 (2%) other. It is noted that of the total collisions, 2 collisions involved a pedestrian, and 7 collisions involved a cyclist, all which resulted in non-fatal injuries.

To help quantify the relative safety risk at intersections within the study area, an industry standard unit of measure for assessing collisions at an intersection was used based on the number of collisions per million entering vehicles (MEV). An MEV value greater than 1.00 indicates a relatively high frequency of collisions. Furthermore, the City of Ottawa TIA Guidelines identifies more than six collisions of the same nature occurring within a five-year period to be a collision pattern. Reported collisions have historically taken place at a rate of:

- Carling/Parkdale: 0.54 collisions/MEV, with a total of 34 collisions occurring within the five-year period. Of these 34 collisions, 15 were recorded as rear-ends and 7 were recorded as sideswipes. However, the rear-end and sideswipe collisions resulted from different combinations of movements, where no more than 5 rear-end and 4 sideswipe collisions have occurred for any single combination, indicating that no collision pattern is present.
- Carling/Holland: 0.65 collisions/MEV, with a total of 49 collisions occurring within the five-year period. Of these 49 collisions, 15 were recorded as rear-ends, 13 were recorded as turning movement, 9 collisions were recorded as sideswipes, and 9 collisions were recorded as angle. However, these collisions resulted from different combinations of movements, where no more than 6 rear-end, 5 turning movement, 3 sideswipe and 3 angled collisions have occurred for any single combination, indicating that no collision pattern is present.
- Carling/Island Park: 0.47 collisions/MEV, with a total of 24 collisions occurring within the five-year period. Of these 24 collisions, 12 were recorded as angled. However, the angled collisions resulted from different combinations of movements, where no more than 5 angled collisions have occurred for any single combination, indicating that no collision pattern is present.
- Ruskin/Parkdale: 0.34 collisions/MEV, with a total of 9 collisions occurring within the five-year period. There are no collision patterns apparent in the subject data.

With regards to road segments within the study area, the following collision data is identified:

- Carling Avenue between Parkdale Avenue and Holland Avenue: a total of 12 collisions occurred along this road segment within the past five-years. No particular collision pattern is present.
- Parkdale Avenue between Carling Avenue and Ruskin Street: a total of 13 collisions occurred along this road segment within the past five-years. No particular collision pattern is present.
- Holland Avenue between Carling Avenue and Inglewood Place: a total of 10 collisions occurred along this road segment within the past five-years. No particular collision pattern is present.

The source collision data as provided by the City of Ottawa and related analysis are provided as Appendix C.

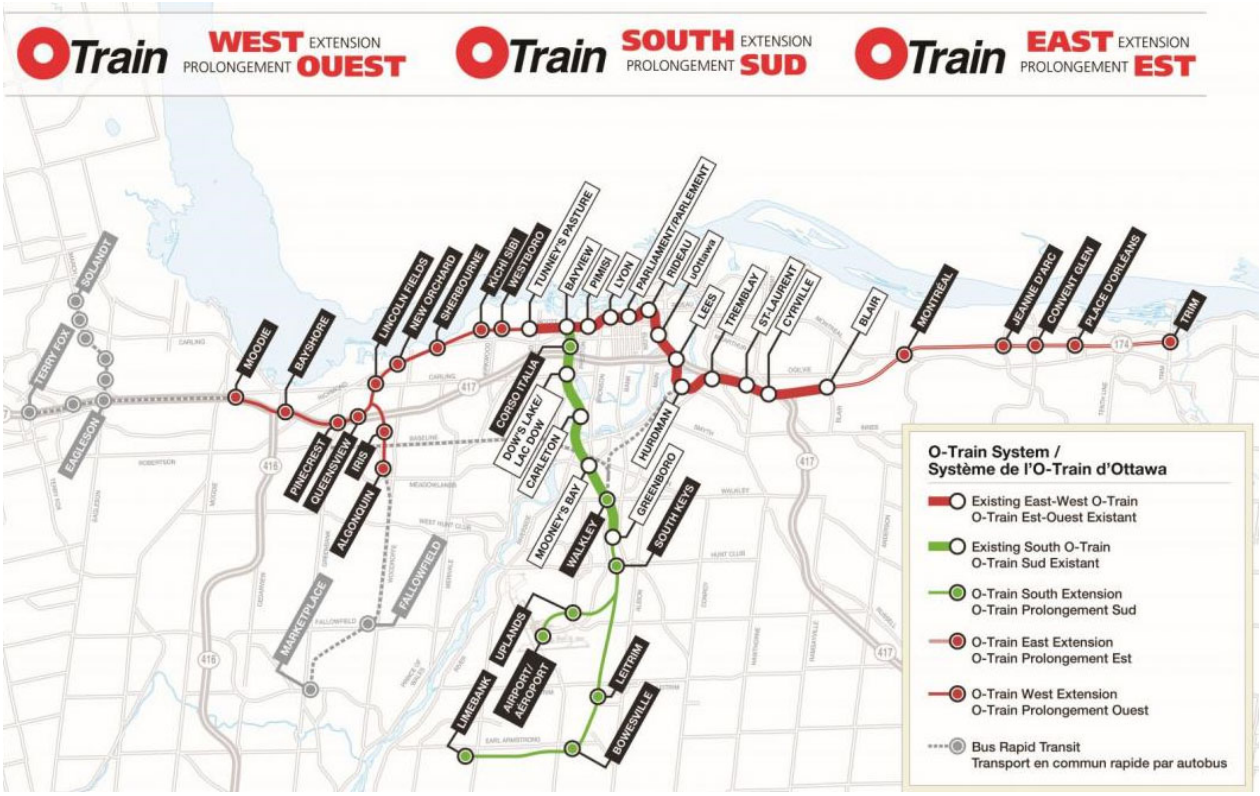
2.1.3. Planned Conditions

Planned Study Area Transportation Network Changes

LRT Stage 2

Stage 2 of the City of Ottawa LRT system is currently under construction. Stage 2, as shown in Figure 9, is a combination of three extensions – south, east and west – totaling 44 km of new rail and 24 new LRT stations. The proposed development site is located approximately 1.3km walking distance of the LRT's Dow's Lake Station (previously named Carling Station).

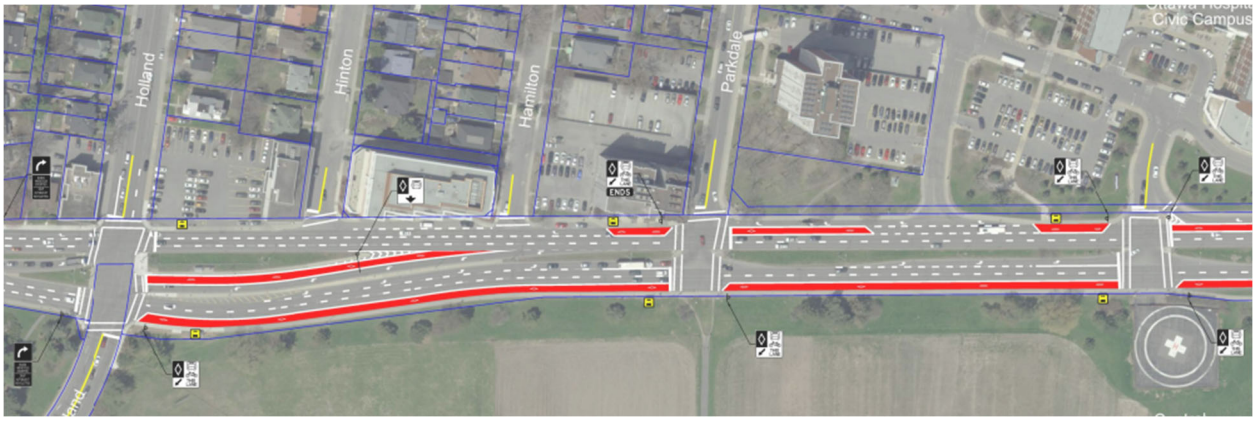
Figure 9: Stage 2 LRT System Map



Carling Transit Priority Study

The Carling Avenue Transit Priority Study is currently underway to provide a Recommended Functional Design Plan. The current plan within the vicinity of the site is shown as Figure 10. The plan is to convert a general traffic lane to a transit lane in both travel directions of Carling Ave, along different sections between Lincoln Fields and Bronson Ave. The timing of the planned modifications along Carling Ave are expected to take place by 2022 between Sherwood Dr and the project's western limit at Lincoln Fields. Whereas between Sherwood Dr and the eastern limit at Bronson Ave, the modifications are expected to take place sometime between 2026 and 2028.

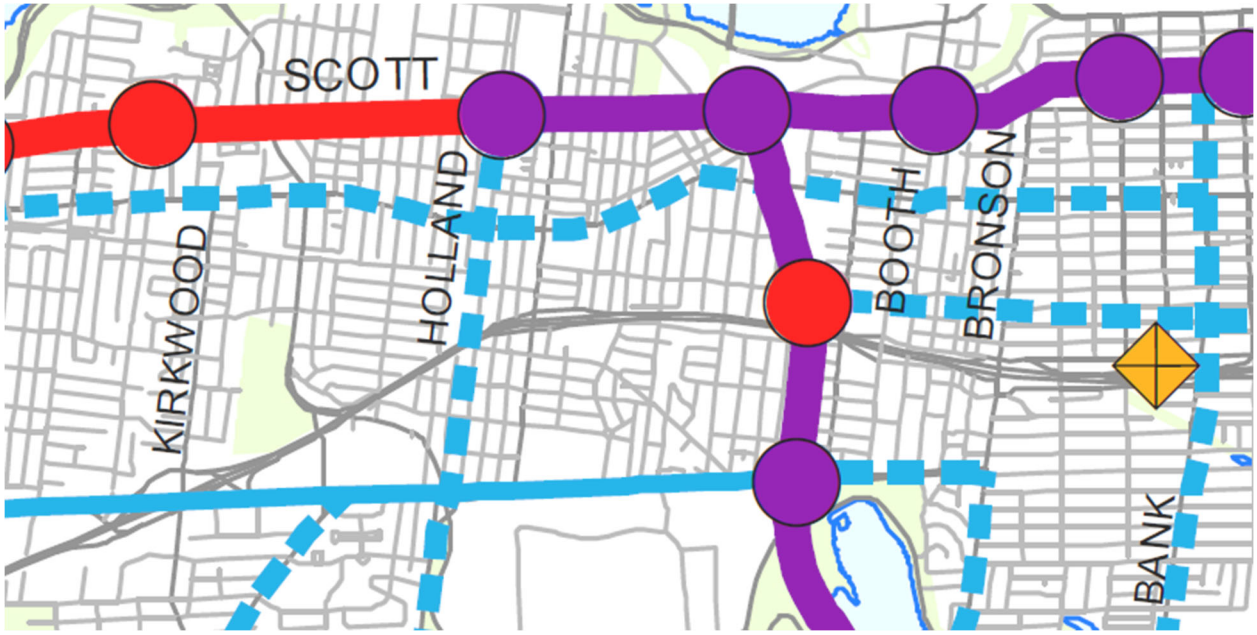
Figure 10: Carling Avenue Transit Priority Plan within Study Area



Holland Transit Priority

As seen in Figure 11, Holland Avenue is proposed a transit priority corridor with isolated measures as per the 2031 Affordable Network within the Transportation Master Plan. The isolated transit priority corridor measures are proposed from Scott Street to Carling Avenue and then continuing south on Fisher Avenue.

Figure 11: Transportation Master Plan: 2031 Affordable Network



Other Area Developments

The following section outlines adjacent developments in the general area that were considered in the TIA. The criteria for inclusion of other area developments is the proximity to the proposed development site and the potential impact to study area intersections. Developments that are either approved or have an active planning application in the City are included below.

The Ottawa Hospital

The new campus for the Ottawa Hospital is proposed to be located in close proximity to the subject development at 930 Carling Avenue and 520 Preston Street. No Transportation Impact Assessment Study has been completed at this stage; however, it is understood that there will be a focus on promoting active and transit modes of travel.

2.2. Study Area and Time Periods

Proposed study area intersections and boundary roads are outlined below and highlighted in Figure 12.

For the purpose of this TIA report, full buildout of the proposed residential development is anticipated in a single phase by 2028. As such, the horizon year being analyzed in this report is 2028 using the weekday morning and afternoon peak hour time periods. It is possible that the development may be constructed in more than one phase, however, this has yet to be confirmed and will be addressed in detail during the future Site Plan Application (SPA).

Note that the TIA Guidelines typically require analysis of a second horizon year at five-years after full buildout (i.e. 2033). However, the City of Ottawa TMP and affordable networks only provide plans for future City infrastructure up to year 2031. As such, the 2033 horizon year was not assessed in this TIA report. Considering the applicant is applying for a Site Plan Application in the future, there will be subsequent opportunities to assess

the long-term transportation implications of this development, at which time there may be more clarity on the long-term plans for the City's transportation network beyond the 2031 horizon.

Figure 12: Study Area Intersections

- Carling/Parkdale (signalized)
- Carling/Holland (signalized)
- Carling/Island Park (signalized)
- Ruskin/Parkdale (signalized)
- Carling/Civic Hospital (signalized)
- Holland/Island Park (signalized)
- Carling/Hamilton (unsignalized)
- Carling Avenue adjacent to the site
- Parkdale Avenue adjacent to the site
- Hamilton Avenue S adjacent to the site

2.3. Exemption Review

The following modules/elements of the TIA process recommended to be exempt in the subsequent steps of the TIA process, based on the City's TIA guidelines and the subject site:

Table 1: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 – 4.4 Design Review Component	All elements	Not required for applications involving ZBLA or OPA. However, a brief description may be provided.
4.8 Network Concept	4.8 Network Concept	Only required if proposed development is anticipated to generate more than 200 person-trips over the permitted zoning

3. Forecasting Report

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and mode shares

Existing Development Trips

As mentioned previously, the site is currently occupied by an office building that is 7-storeys high. The trips that are currently generated by the office building are accounted for as they reduce the number of 'new' trips that will be generated by the proposed development within the study area. Appropriate trip rates for an office building have been obtained from the ITE Trip Generation Manual (10th edition) and provided as shown in Table 2.

Table 2: Existing Office Building Trip Rates

Land Use	Data Source	Trip Rates	
		AM Peak Hour	PM Peak Hour
Office Building (7-Storey)	ITE 710	T = 1.16(x); T = 0.94(x) + 26.49;	T = 1.15(x); Ln(T) = 0.95Ln(x) + 0.36;
Notes:	*T = Average Vehicle Trip Ends* *x = Gross Floor Area (GFA) (1000 ft²)*		

The gross floor area used for the office building were determined using the GeoOttawa measuring tool, as shown in Figure 13, which indicates a total area of approximately 7,515 ft² per floor (i.e. a total area of 52,600 ft² for 7 storeys).

Figure 13: Existing Office Building Area

Using the total gross floor area and the office building trip rates, the person trips generated by the existing office building can be calculated. Note that the trip rates are multiplied by a factor of 1.28, as per TIA standards, to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. The resulting total person trips/hour for the existing office building are provided in Table 3. The inbound and outbound percentages were also obtained from the ITE Manual.

Table 3: Existing Office Building Peak Hour Person Trip Generation

Land Use	Area (ft^2)	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In (86%)	Out (14%)	Total	In (16%)	Out (84%)	Total
Office Building (7-Storey)	52,600	83	14	97	12	67	79

As shown in Table 3, the existing office building generates a total of 97 and 79 person trips during the morning and afternoon peak hours. Mode shares for different travel modes were obtained from the 2020 TRANS Trip Generation Manual for Employment Generators in the Merivale district. As such, a breakdown of the trips generated by the different travel modes is provided in Table 4 below.

Table 4: Existing Office Building Morning and Afternoon Travel Mode Breakdown

Travel Mode	Mode Shares	AM Peak (Person Trips/h)			Mode Shares	PM Peak (Person Trips/h)		
		In (86%)	Out (14%)	Total		In (16%)	Out (84%)	Total
Auto Driver	69%	57	10	67	69%	9	46	55
Passenger	7%	6	1	7	7%	1	4	5
Transit	16%	14	2	16	16%	2	11	13
Bike	3%	3	0	3	3%	0	3	3
Walk	4%	3	1	4	4%	0	3	3
Total Person Trips	**100%**	**83**	**14**	**97**	**100%**	**12**	**67**	**79**

The existing office building generates a total of 67 and 55 vehicle trips during the morning and afternoon peak hours, respectively.

Proposed Development Trips

The proposed development will consist of 414 residential units within a 16 and 25-storey high-rise apartment buildings. The appropriate trip generation rates for a high-rise apartment land use were obtained from the 2020 TRANS Trip Generation Manual and the trip generation presented herein has been estimated using a TRANS Trip Calculator spreadsheet prepared by the City of Ottawa (received Sept. 2021) created using the 2020 Trip Generation Manual. The trip rates are summarized in Table 5 below.

Table 5: Residential Trip Generation Trip Rates

Land Use	Data Source	Trip Rates	
		AM Peak Period (7-9:30am)	PM Peak Period (3:30-6pm)
High-Rise Apartment Buildings	TRANS 2020	T = 0.8(du);	T = 0.9(du);
Notes: *T = Average Vehicle Trip Ends* *du = Dwelling unit*			

Using the trip rates provided in Table 5, the total number of person trips generated during the morning and afternoon peak periods can be found in Table 6.

Table 6: Apartment Units Peak Period Person Trip Generation

Land Use	Dwelling Units	AM Peak Period Person Trips	PM Peak Period Person Trips
High-Rise Apartment Buildings	414	331	373

The proposed development is anticipated to generate 331 and 373 person trips during the morning and afternoon peak periods, respectively. The total peak period person trips in Table 6 are then divided into different travel modes, as shown in Table 7, using mode share percentages obtained from the 2020 TRANS Manual, which is aggregated for the Merivale zone.

Table 7: Peak Period Trips Mode Shares Breakdown

Travel Mode	Mode Share	AM Peak Period Person Trip	Mode Share	PM Peak Period Person Trips
Auto Driver	41%	136	41%	154
Auto Passenger	6%	20	11%	40
Transit	42%	139	33%	121
Cycling	2%	8	2%	7
Walking	8%	28	13%	50
Total Person Trips	**100%**	**331**	**100%**	**373**

Standard traffic analysis is usually conducted using the morning and afternoon peak hour trips as they represent a worst-case scenario. In the 2020 TRANS Manual, Table 4 provides conversions rates from peak period to peak hours for different mode shares. The conversion rates are provided in Table 8 below.

Table 8: Peak Period to Peak Hour Conversion Factors (2020 TRANS Manual)

Travel Mode	Peak Period to Peak Hour Conversion Factors	
	AM	PM
Auto Driver and Passenger	0.48	0.44
Transit	0.55	0.47
Bike	0.58	0.48
Walk	0.58	0.52

Using the conversion rates in Table 8 and the peak period person trips for different travel modes in Table 7, the peak hour trips for different travel modes can be calculated as shown in Table 9.

Table 9: Peak Hour Trips Mode Share Breakdown

Travel Mode	AM Peak Hour Trips	PM Peak Hour Trips
Auto Driver	65	68
Auto Passenger	10	18
Transit	77	57
Cycling	5	4
Walking	16	26
Total Person Trips	**172**	**172**

As shown in Table 9, the proposed development is anticipated to generate a total of 171 person trips during the morning and afternoon peak hours. Inbound and outbound percentages were obtained from Table 9 of the 2020 TRANS Manual and applied to each travel mode in Table 9 as shown in Table 10.

Table 10: Residential Site Trip Generation

Travel Mode	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
	In (31%)	Out (69%)	Total	In (58%)	Out (42%)	Total
Auto Driver	20	45	65	39	28	68
Passenger	3	7	10	10	7	18
Transit	24	53	77	33	24	57
Bike	1	3	5	2	1	4
Walk	5	11	16	15	11	26
Total Person Trips	**53**	**119**	**172**	**100**	**72**	**172**

As shown in Table 10, approximately 65 to 68 new vehicular trips, 57 to 77 new transit trips, and 21 to 30 active transportation trips (walking and cycling) are expected in the morning and afternoon peak hours from the proposed development.

Net Total Trips Generated

The net 'new' number of trips that are anticipated to be generated by the proposed development are provided in Table 11, which reflect the difference between the total trips in Table 10 and the removed existing office building trips in Table 4.

Table 11: Net 'New' Site Trip Generation

Travel Mode	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
	In	Out	Total	In	Out	Total
Auto Driver	-37	35	-2	30	-18	13
Passenger	-3	6	3	9	3	13
Transit	10	51	61	31	13	44
Bike	-2	3	2	2	-2	1
Walk	2	10	12	15	8	23
Total Person Trips	**-30**	**105**	**75**	**88**	**5**	**93**

The total 'net' new person trips anticipated to be generated by the proposed development are 75 to 93 person trips during the morning and afternoon peak hours, respectively. The proposed development is anticipated to generate a net negative number of vehicle trips during the morning peak hour and up to 13 new vehicle trips during the afternoon peak hour. Additionally, 61 to 44 new transit trips and 14 to 24 active transport trips are expected during the morning and afternoon peak hours, respectively.

3.1.2. Trip Distribution and Assignment

Based on the 2011 OD Survey (Merivale district) and the location of adjacent arterial roadways and neighbourhoods, the distribution of site-generated traffic volumes was estimated as follows:

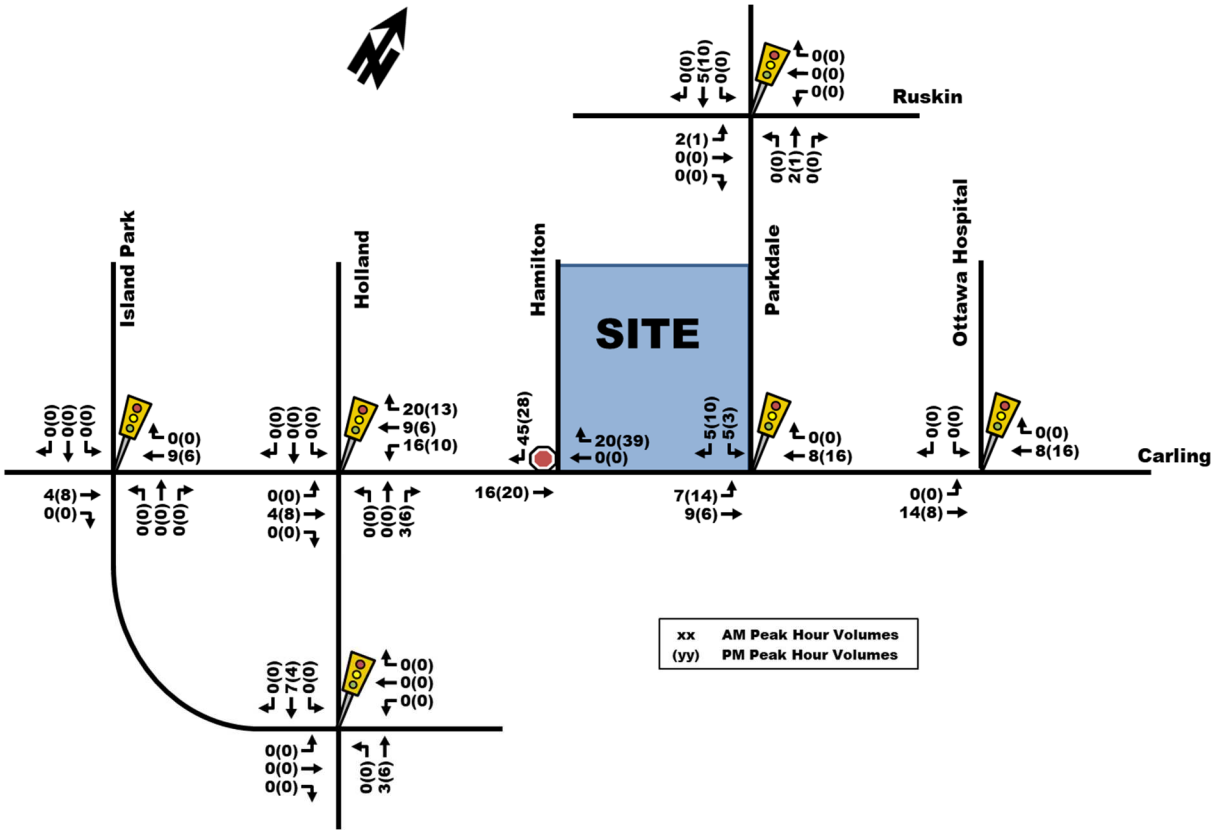
- 25% to/from the north
  - Arriving traffic travel SB on Parkdale Ave, followed by a right-turn onto Carling Ave, a right-turn onto Hamilton Ave and into the site.
  - Departing traffic turn right onto Carling Ave from Hamilton Ave, followed by right-turn onto Holland Ave to travel NB.
- 15% to/from the south
  - Arriving traffic travel NB on Fisher Ave/Holland Ave, turn right onto Carling Ave, make a U-turn at the Carling/Parkdale intersection and finally turn right onto Hamilton Ave and into the site.
  - Departing traffic turn right into the left-turn lane of the Carling/Holland intersection and travel SB on Holland Ave/Fisher Ave.
- 40% to/from the east
  - Arriving traffic travel WB via Carling Ave, followed by a right-turn onto Hamilton Ave and into the site.
  - Departing traffic turn right onto Carling Ave from Hamilton Ave, followed by 1 of 2 circuitous routes. Route 1 turns right onto Holland Ave, followed by a right-turn onto Inglewood Pl and a

right-turn onto Parkdale Ave, to turn left onto Carling Ave and travel EB. Route 2 makes a U-turn at the intersection of Carling/Holland to travel EB on Carling Ave.

- 20% to/from the west
    - Arriving traffic travel EB on Carling Ave, make a U-turn at the Carling/Parkdale intersection and finally turn right onto Hamilton Ave and into the site.
    - Departing traffic turn right onto Carling Ave from Hamilton Ave and travel WB on Carling Ave.

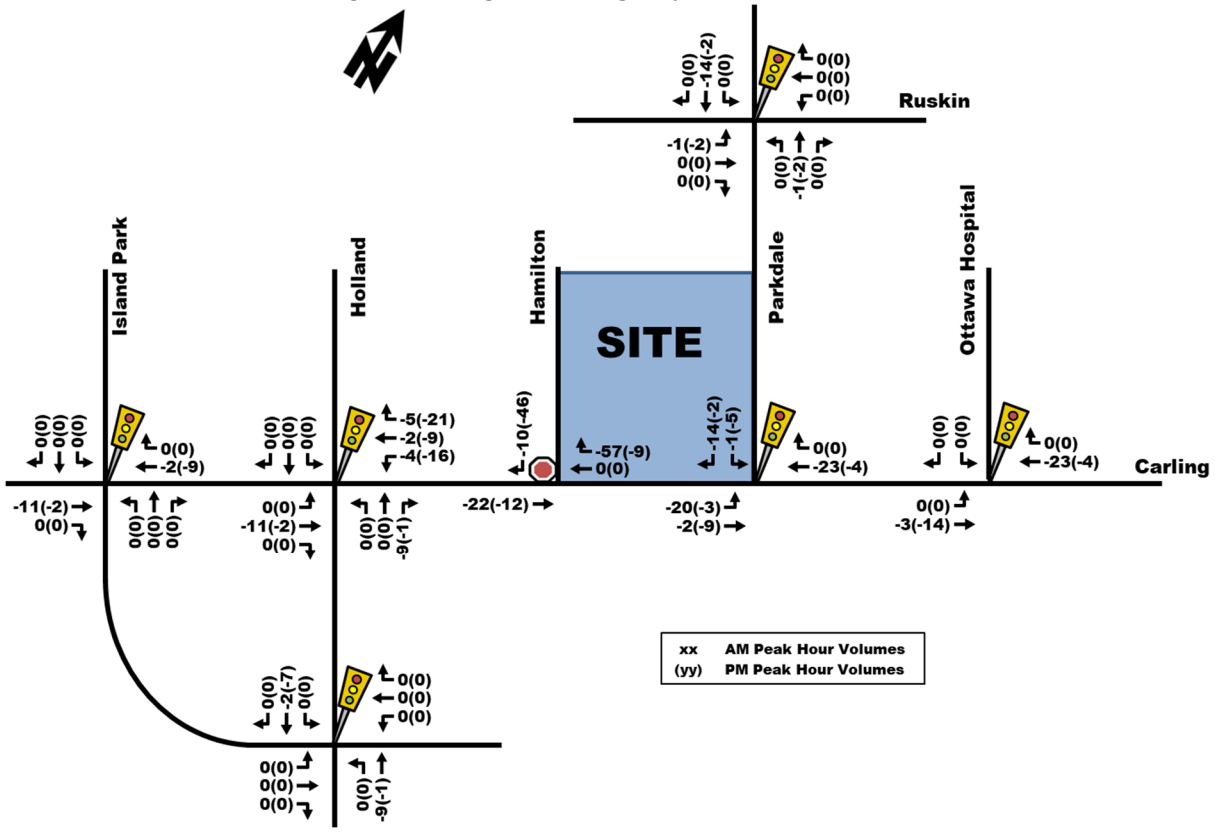
The anticipated site-generated auto trips for the proposed development from Table 10 were then assigned to the road networks as shown in Figure 14. As mentioned previously, these volumes reflect the total trips that are anticipated to be generated by the proposed development, without accounting for the reduction in overall study area traffic volumes due to the existing office building.

Figure 14: Proposed Development Site-Generated Traffic



Based on the site-generated vehicle trips of the existing office building (provided in Table 4), study area traffic volumes are expected to decrease as shown in Figure 15. A similar trip distribution and assignment has been assumed for the existing office building's vehicle trips as the proposed residential development. This reduction in traffic volumes will be applied to the total projected traffic volumes for horizon year 2028.

Figure 15: Existing Office Building Study Area Traffic Reductions



3.2. Background Network Traffic

3.2.1. Transportation network plans

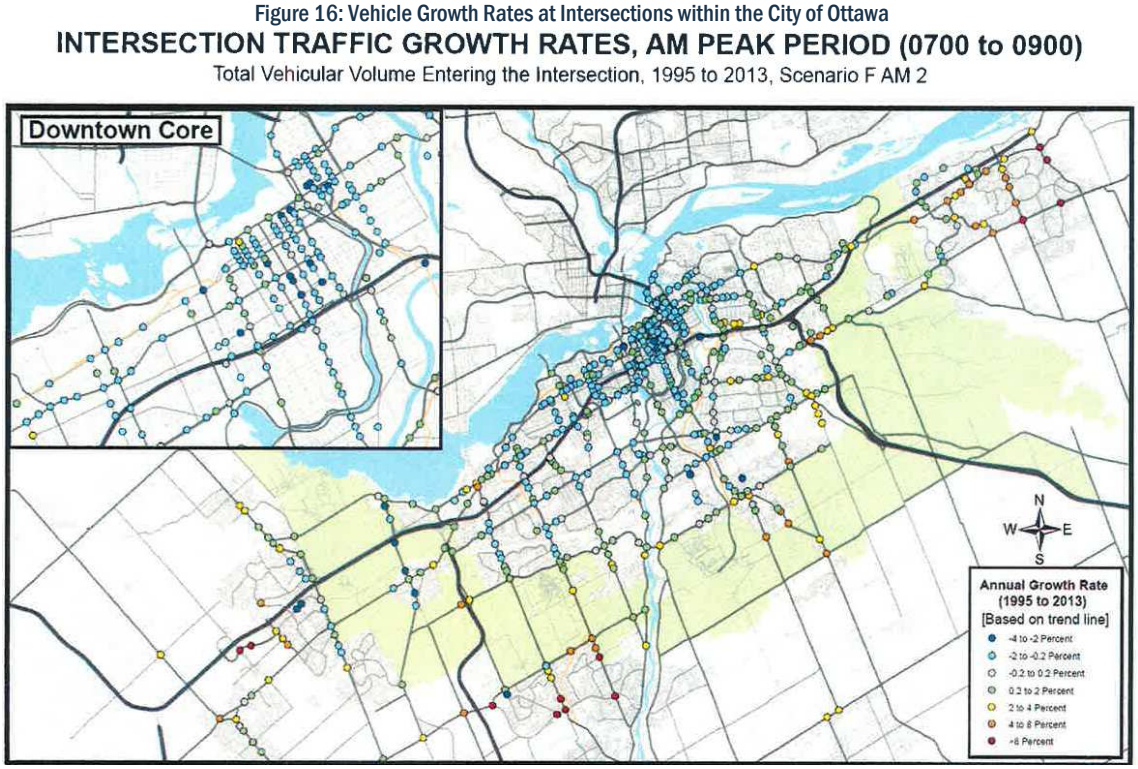
Refer to Section 2.1.3: Planned Study Area Transportation Network Changes. Major transportation network plans in the area include:

- LRT Stage 2 expansions with the nearby Dow's Lake station, and
- Carling Transit Priority Measures where transit lanes will be provided along Carling Ave.

3.2.2. Background Growth

The proposed development site is located in a well-developed area of the City of Ottawa that is near the downtown core. Historically, traffic within the study area has seen a decline in growth, as illustrated by the growth rates map obtained from the City of Ottawa in Figure 16.

Figure 16: Vehicle Growth Rates at Intersections within the City of Ottawa



In the near future, transit will be improved greatly in the area due to the Carling Transit Priority Measures, which will convert a general traffic lane in both directions of Carling Ave, to a dedicated transit lane along different sections of the corridor. This will result in increased transit usage along the corridor and surrounding areas, while simultaneously decreasing general traffic.

Due to the reduced capacity of the corridor, traffic may be further reduced along Carling Ave as some traffic will choose to reroute to Highway 417. Additionally, the LRT's Dow's Lake Station along the Trillium Line is located within a 1.3km distance from the proposed site and stage 2 of the LRT network is currently underway.

Based on the above, traffic volumes are anticipated to decrease along Carling Ave, which is further discussed in Section 3.3. The effects of this decrease in traffic is anticipated to be experienced at all study area roads and intersections. As such, a background growth rate of 0% has been assumed for the study area.

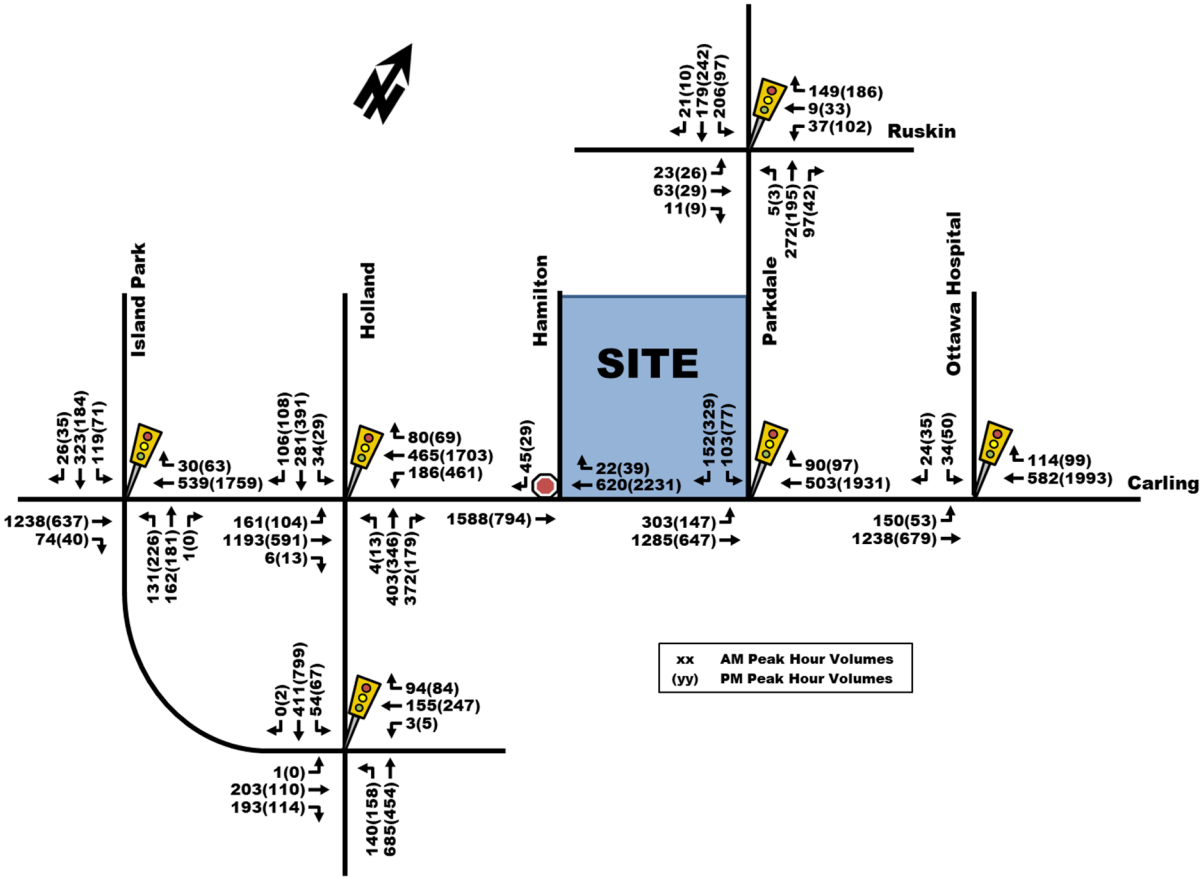
3.2.3. Other Developments

Description of other area developments taking place within the study area was provided in Section 2.1.3: Other Area Developments. Construction of the new Ottawa Hospital is anticipated to be beyond the horizon year of the proposed 1081 Carling Ave development. As such, there are currently no major adjacent developments in the area to be included in the analysis for future conditions.

3.3. Demand Rationalization

The purpose of this module is to provide a realistic projection of future traffic volumes, based on anticipated future network changes and potential capacity constraints. Figure 17 provides the initial projection of traffic volumes within the study area, without taking into account the future Carling Transit Priority Measures.

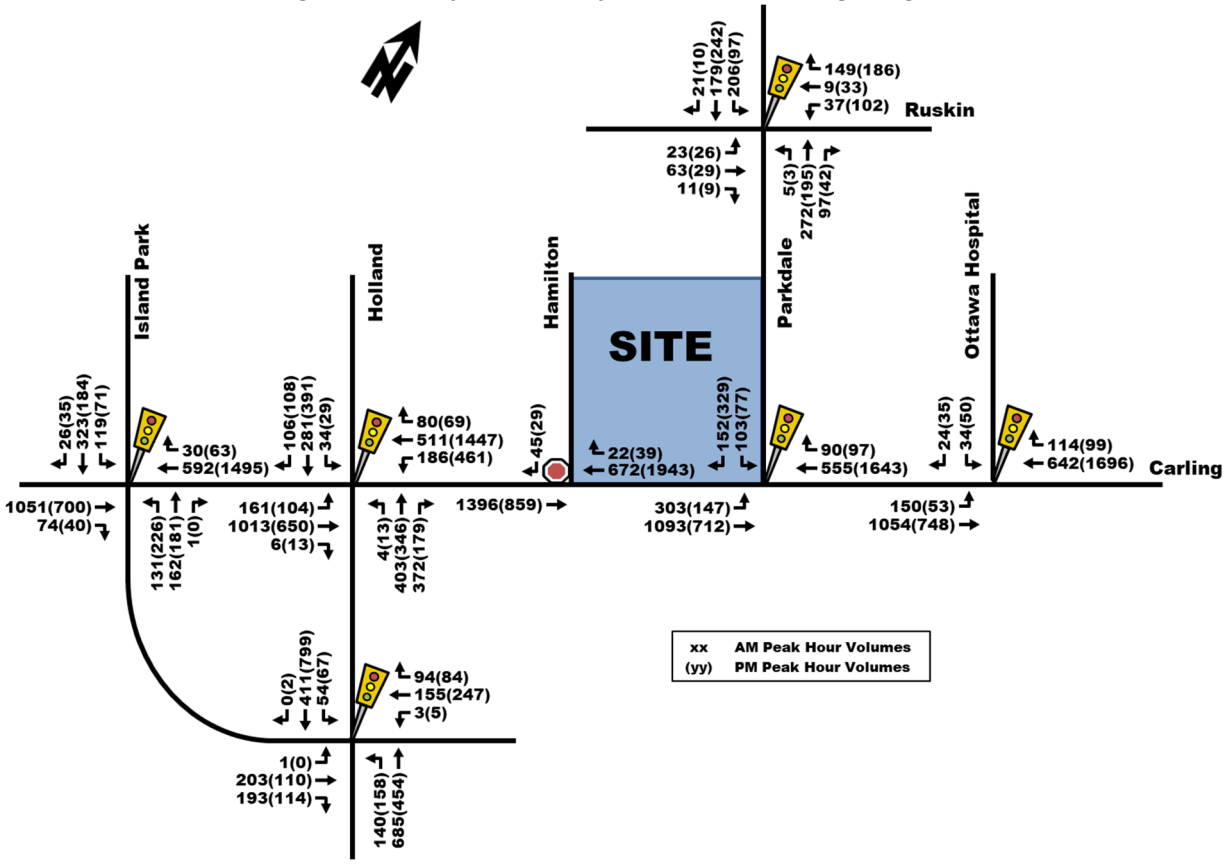
Figure 17: Total Projected 2028 Traffic Volumes



The Carling Avenue Transit Priority Measures Study (WSP, June 2017) indicated that the transit priority measures will result in a decrease of up to 20% in the peak direction along Carling Ave. However, in the off-peak direction, an increase of 15% was anticipated along Carling Ave, between Merivale Rd and Sherwood Dr. Since these changes in general traffic volumes were expected to occur by 2031, reduced percentages have been applied to the through movements of Carling Ave, where for horizon year 2028, a decrease of 15% has been applied to the general traffic in the peak direction and an increase of 10% has been applied in the off-peak direction.

Figure 18 below illustrates the projected traffic volumes in the study area with the above noted changes to volumes along Carling Ave, for horizon year 2028. The change in volumes will result in a net reduction of two-way volumes along Carling Ave of approximately 125 vehicles during the morning peak hour and 230 vehicles during the afternoon peak hour by 2028. Since reductions occur in the peak directions where poor traffic operations may be experienced at the study area intersections, operations can be expected to improve significantly in the future.

Figure 18: Total Projected 2028– Adjusted Traffic Volumes Along Carling Ave



4. Analysis

4.1. Development Design

As this is a ZBLA, design related elements will be provided in more detail in the future Site Plan Application (SPA) submission of the proposed development. Vehicle and bicycle parking spaces will be provided mostly in a four-level underground parking garage. Existing pedestrian facilities at the frontage of the site will be maintained in the future.

A garbage pick-up/move-in laneway for the two proposed buildings will be located on the north end of the site, and can be accessed via an access that will be located on the north side of the dead-end structure on Hamilton Ave S (as shown in Figure 2).

The City of Ottawa's TDM-supportive Development Design and Infrastructure has been provided in Appendix D.

4.2. Parking

Based on City of Ottawa Parking Provisions, Schedule 1A, the proposed development is located in "Area Y". A total of 322 vehicle and 400 bicycle parking spaces will be provided for the proposed development, which will be located in an underground parking garage. Table 12 compares the parking requirements based on City of Ottawa Parking Provisions to the proposed number of parking spaces.

Table 12: The Required and Provided Vehicle and Bicycle Parking Supplys

Land Use	Size	Parking Rates			Required Spaces			Proposed Spaces		
		Base	Visitors	Bicycle	Base	Visitors	Bicycle	Base	Visitors	Bicycle
Two High-Rise Residential Building	414 Units Total (146 +268)	0.5 per unit, excluding first 12 units	0.1 per unit, excluding first 12 units and max 30 spaces per building	0.5 per unit	201 Total	40 Total (14 +26)	207 Total	322		400
				Total	241		206	322		400

As shown in Table 12, the proposed number of parking spaces meet the minimum parking requirements for vehicle and bicycle parking.

4.3. Boundary Street Design

The detailed Multi-Modal Level of Service (MMLOS) analysis for boundary streets and signalized intersections will be provided in the future Site Plan Application.

4.4. Access Intersection Design

Vehicle access for residents and visitors to the proposed development's underground parking garage will be provided via a single access on Hamilton Ave S, which will be located south of the dead-end structure, approximately 40 m north of Carling Ave. The access will use Stop control for vehicles exiting the site. Another access will be provided north of the dead-end structure on Hamilton Ave S and will be used exclusively as a garbage pick-up/move-in laneway.

Hamilton/Carling Intersection Sight Triangle

It is understood that the City has requested a 5mx5m site triangle at the northeast corner of the Hamilton/Carling intersection, however, the proponent is requesting a 3mx3m site triangle given that Hamilton Ave S is a short/dead-end local road with low traffic volumes and permits right-in/right-out movements only at Carling Ave.

4.5. Transportation Demand Management

4.5.1. Context for TDM

Based on the type of development, it is assumed that most trips generated by the proposed site will be residents leaving the site in the AM peak to go to work and returning from work to the proposed site in the PM peak. Sections 3.1.1 and 3.1.2 describe how many trips are anticipated per travel mode and anticipates the likely locations that they will travel to and from based on the 2011 OD Survey. The site is located along Carling Avenue, which is designated as an Arterial Mainstreet according to the City of Ottawa Official Plan. Additionally, transit-oriented measures are being implemented along Carling Ave at the frontage of the site in 2022.

4.5.2. Need and Opportunity

As transit facilities develop along Carling Ave and the LRT Stage 2 construction nears completion, transit trips in the area are anticipated to increase, while vehicle trips are anticipated to decrease. In addition, the proposed development is expected to utilize measures to maintain sustainable transit and active mode shares, as described in more detail in Section 4.5.3 below.

4.5.3. TDM Program

The TDM Infrastructure and TDM Measures Checklists have been provided in Appendix D. The proposed measures for each respective checklist are provided below.

<u>Proposed measures identified in the TDM Measures Checklist are:</u>

- Display local area maps with walking/cycling access routes and key destinations at major entrances
- Display relevant transit schedules and route maps at entrances

- Contract with provider to install on-site carshare vehicles and promote their use by residents (note that this will be further investigated and confirmed as part of the future SPA)
- Unbundle parking cost from monthly rent
- Provide a multimodal travel option information package to new residents

<u>Proposed measures identified in the TDM-supportive Development Design and Infrastructure Checklist are:</u>

- Locate building close to the street, and do not locate parking areas between the street and building
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort
- Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations
- Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible
- Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks
- Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps
- Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on- road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians
- Provide safe, direct and attractive walking routes from building entrances to nearby transit stops
- Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible
- Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible
- Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well- used areas
- Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored
- Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists
- Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers
- Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)
- Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for (note that parking is being provided at a rate of approximately 0.65 spaces per unit)

4.6. Neighbourhood Traffic Management

This module compares the maximum Two-way traffic of a local or collector road during morning and afternoon peak hours, to the recommended thresholds outlined in the City of Ottawa TIA Guidelines. Traffic generated by the proposed development are anticipated to use local road Hamilton Ave S and major collector road Holland Ave as part of their access to/from the development.

The thresholds provided in the TIA Guidelines indicates a maximum number of vehicles of 120 veh/h for local roads and 600 veh/h for major collector roads as ideal recommendations. Using the total projected 2028 traffic volumes in Figure 18, future traffic volumes along the respective local and major collector roads can be compared to their thresholds as follows:

- For Hamilton Ave S, the projected two-way traffic volume is approximately 68 veh/h, which occurs during the afternoon peak hour. This volume is well below the 120 veh/h threshold of a local road.

- For Holland Ave, the projected two-way traffic volume is approximately 1,068 veh/h, which occurs during the morning peak hour. This volume exceeds the 600 veh/h threshold of a major collector road and is nearly the same volume in existing conditions. These volumes are not unexpected, given that Holland Ave is a north-south connection that transitions from an arterial road south of Carling Ave to a major collector north of thereof.

4.7. Transit

Transit operations along Carling Ave will be improved in the future as a result of providing the dedicated transit lanes in both travel directions. There are no plans currently indicating the existing bus routes in the study area will be modified in the future. It is expected that the existing bus routes can accommodate the transit trips anticipated to be generated by the proposed development.

Existing conditions (pre-COVID) transit ridership data was obtained from OC Transpo for six bus stops near the proposed development site, as shown in Figure 19. The data, provided in Table 13, is a summary of average bus boarding, alighting and occupancy information for bus routes at each of the respective stop numbers, during morning and afternoon peak hours.

Figure 19: Transit Ridership Bus Stop Locations

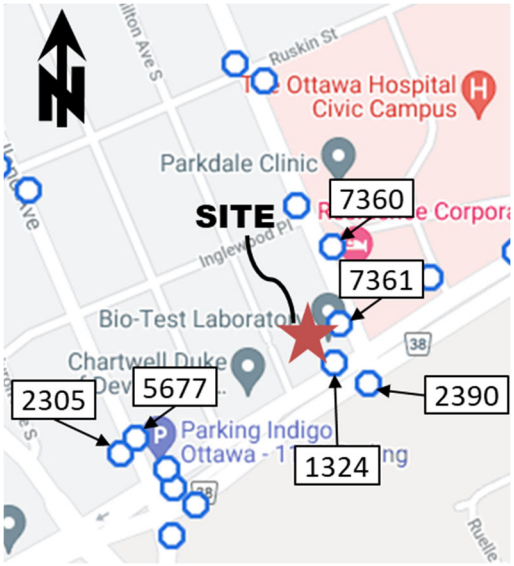


Table 13: Transit Ridership Data (5 Jan 2020 - 16 Mar 2020)

Stop No.	Location	Route	Direction	AM			PM		
				Boarding	Alighting	Avg. Load at Depart.	Boarding	Alighting	Avg. Load at Depart.
1324	CARLING / PARKDALE	55	WB	0	3	20	8	3	31
		56	WB	18	12	8	2	10	16
		85	WB	4	3	19	9	13	30
2305	HOLLAND / CARLING	80	SB	17	14	17	38	12	26
		86	WB	10	10	7	61	16	39
		89	SB	14	16	10	34	19	27
2390	CARLING / PARKDALE	55	EB	2	6	34	2	1	16
		56	EB	1	1	10	3	0	8
		85	EB	5	6	33	5	10	21
5677	HOLLAND / CARLING	56	WB	6	10	7	5	29	11
		80	NB	10	16	17	17	8	17
		86	EB	5	12	24	16	14	12
		89	NB	7	7	19	7	4	20
7360	PARKDALE / INGLEWOOD	53	EB	5	12	11	21	1	5
		114	EB	-	-	-	-	-	-
7361	PARKDALE / CARLING	53	WB	1	6	4	19	2	12
		114	WB	-	-	-	1	0	6

As shown in Table 13, the average load of each bus route at its respective bus stop currently ranges from about 4 to 39 persons during the peak hours.

Bus routes #53, #80 and #85 are all frequent routes that arrive 4 to 5 times during peak hours, for a total of 8 to 10 buses for each route in both directions. The remaining bus routes are all local routes that travel on custom timing. However, the majority arrives every 30 minutes during peak hours.

Based on information obtained from the OC Transpo website, the person capacity of OC Transpo buses, which includes the number of seats on the bus plus the standing capacity, ranges from approximately 65 occupants in its smallest vehicles to approximately 150 occupants in its largest vehicles. Based on the current average bus loads and the available capacity of the existing bus routes, the proposed development generating up to approximately 70 new transit trips during peak hours is anticipated to be accommodated by the existing services.

4.8. Review of Network Concept

Exempt – see Table 1. The proposed development is not anticipated to generate more than 200 person-trips over the permitted zoning.

4.9. Intersection Design

4.9.1. Intersection control

Since the access is located south of a dead-end, there is no conflicting traffic for vehicles entering and exiting the site. As such, free flow of traffic in/out of the site access may be permissible. Nonetheless, it is assumed that stop control will be provided for vehicles exiting the proposed site access on Hamilton Ave S.

4.9.2. Intersection design

Synchro 11 Trafficware was used to analyze intersection performance of signalized and unsignalized intersections within the study area. Critical movements at each of the intersections were assessed based on either the movement with the highest volume-to-capacity ratio (at signalized intersections), or the movement experiencing the highest average delay (at unsignalized intersections).

It should be noted that, as per the TIA Guidelines, the Peak Hour Factor (PHF) used for analysis was 0.9 in existing conditions and 1.0 in all future scenario conditions. All Synchro reports for existing and future conditions have been provided in Appendix E.

Existing Conditions

Table 14 below summarizes the intersection performance of study area intersections, based on the existing conditions traffic volumes illustrated in Figure 7.

Table 14: Existing Conditions Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Carling Ave/Parkdale Ave (S)	E(E)	0.97(0.93)	EBL(SBL)	28.6(47.7)	B(E)	0.63(0.92)
Holland Ave/Carling Ave (S)	F(F)	2.43(1.65)	SBT(SBT)	100.2(93.9)	E(F)	0.99(1.05)
Island Park Dr/Carling Ave (S)	B(E)	0.66(0.97)	EBT(WBT)	22.8(67.3)	B(D)	0.62(0.86)
Parkdale Ave/Ruskin St (S)	A(B)	0.58(0.61)	SBT(WBT)	11.5(15.6)	A(A)	0.46(0.40)
Carling Ave/Ottawa Hospital (S)	A(B)	0.40(0.62)	SBL(WBT)	4.9(9.7)	A(B)	0.33(0.61)
Holland Dr/Island Park Dr (S)	D(F)	0.81(1.09)	EBT(NBL)	35.6(55.7)	B(C)	0.68(0.79)
Note: Analysis of signalized intersections assumes a PHF of 0.9 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection, critical movement based on max v/c						

As shown in Table 14, the intersection of Holland/Carling 'as a whole' operates near capacity during the morning peak hour and at capacity during the afternoon peak hour. With regards to critical movements, the SBT operates at capacity at the intersection of Holland/Carling, during both peak hours, while the NBL operates at capacity at the intersection of Holland/Island Park during the afternoon peak hour.

Poor operation at the intersection of Holland/Carling are the result of the SB approach's lane configuration, where the SBT and SBL movements share a single lane and the SBL movement operates on permissive timing. However, traffic operations are better in reality, as SBT traffic will maneuver around the SBL traffic to avoid the wait time. Additionally, the SBL traffic is relatively low with a maximum of 34 veh during peak hours. As such, it is not anticipated that there are operational concerns at the SB approach of the intersection of Holland/Carling.

Total Projected 2028 (No Change to Traffic Volumes)

Intersection capacity analysis was conducted assuming no change to the total projected traffic volumes along Carling Ave. The analysis results are summarized in Table 15 based on traffic volumes illustrated in Figure 17, Note that the lane configurations along Carling Ave have been modified in the analysis based on the future plans for providing dedicated transit lanes in both travel directions (see Figure 10).

Table 15: Total Projected 2028 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Carling Ave/Parkdale Ave (S)	B(F)	0.66(1.16)	WBT(EBL)	26.2(72.3)	B(F)	0.64(1.08)
Holland Ave/Carling Ave (S)	E(E)	0.93(0.94)	EBT(SBT)	46.1(54.9)	D(D)	0.87(0.82)
Island Park Dr/Carling Ave (S)	B(D)	0.68(0.87)	EBT(WBT)	22.3(56.7)	B(D)	0.64(0.82)
Parkdale Ave/Ruskin St (S)	A(A)	0.50(0.58)	SBT(WBT)	10.7(14.2)	A(A)	0.41(0.36)
Carling Ave/Ottawa Hospital (S)	A(C)	0.43(0.80)	EBT(WBT)	5.5(13.1)	A(C)	0.43(0.78)
Holland Dr/Island Park Dr (S)	C(C)	0.72(0.73)	EBT(SBT)	27.8(46.2)	B(B)	0.61(0.68)
Carling Ave/Hamilton Ave S (U)	A(B)	9.0(12.1)	SB(SB)	0.2(0.1)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection, critical movement based on max v/c (U) – Unsignalized intersection, critical movement based on highest average delay						

As shown in Table 15, study area intersections 'as a whole' are anticipated to operate at a LOS 'E' or better during peak hours, except at the intersection of Carling/Parkdale, which operates at capacity during the afternoon peak hour. Similarly, the critical EBL movement at the intersection of Carling/Parkdale operates at capacity during the afternoon peak hour, while critical movements at other intersections operate at a LOS 'E' or better.

Improvement in operations compared to existing conditions is attributed to a higher PHF of 1.0, as well as the optimization of phasing in Synchro, particularly at the intersection of Carling/Holland, where optimization provides significantly more time that is needed for the northbound and southbound movements.

Total Projected 2028 (Adjusted Traffic Volumes Along Carling Ave)

This scenario is based on total projected 2028 traffic volumes in Figure 18, where traffic volumes are adjusted due to the implementation of Carling Avenue Transit Priority measures. The study are intersections were analyzed using Synchro (V11) and the results are summarized in Table 16 below. This scenario takes into consideration both lane reconfigurations and traffic volume adjustments as a result of the future transit priority measures on Carling Ave.

Table 16: Total Projected 2028 Intersection Performance (Adjusted Traffic Volumes)

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Carling Ave/Parkdale Ave (S)	C(E)	0.71(0.98)	WBT(WBT)	27.0(64.7)	B(E)	0.66(0.95)
Holland Ave/Carling Ave (S)	D(E)	0.88(0.98)	SBT(SBT)	39.1(57.1)	C(D)	0.79(0.85)
Island Park Dr/Carling Ave (S)	B(C)	0.61(0.79)	EBT(WBT)	21.4(53.7)	A(C)	0.58(0.73)
Parkdale Ave/Ruskin St (S)	A(A)	0.50(0.58)	SBT(WBT)	10.7(14.2)	A(A)	0.41(0.36)
Carling Ave/Ottawa Hospital (S)	A(B)	0.37(0.68)	EBT(WBT)	5.5(10.2)	A(B)	0.37(0.66)
Holland Dr/Island Park Dr (S)	C(C)	0.72(0.73)	EBT(SBT)	28.4(46.5)	B(B)	0.61(0.68)
Carling Ave/Hamilton Ave S (U)	A(B)	9.1(11.8)	SB(SB)	0.2(0.1)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane. (S) – Signalized intersection, critical movement based on max v/c (U) – Unsignalized intersection, critical movement based on highest average delay						

As indicated by Table 16, intersection operations are improved from existing conditions despite the future modifications to Carling Ave. This is due to several factors, including increasing the PHF to 1.0 for future analysis, as well as the decrease applied to the peak direction traffic at the through movements along Carling Ave. Phase timings have also been optimized at three intersections: Holland/Carling, Island Park/Carling, and Carling/Parkdale.

As such, study area intersections 'as a whole' are anticipated to operate at a LOS 'E' or better during peak hours. Similarly, critical movements operate at a LOS 'E' or better during peak hours.

95th Percentile Queue Lengths

As per the request of City staff, 95th percentile queue lengths were obtained from Synchro analysis for all scenarios and compared to available storage lengths as shown in Table 17. The 95th percentile queue length provides an estimate of the maximum back of queue that can take place for a particular movement with 95th percentile traffic volumes.

The queuing results shown indicate that most future traffic queues are expected to be similar or better compared to existing conditions. However, traffic queues for the eastbound and westbound through movements on Carling Ave may experience an increase as a result of the lane reductions, particularly the westbound through movement at the intersection of Carling/Parkdale and the eastbound through movement at the intersection of Carling/Holland.

Table 17: Synchro 95th Percentile Queue Lengths for All Scenarios

Intersection	Scenario	Storage/95th Percentile Queue Lengths (m) AM (PM) Peak Hours											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Carling Ave/Parkdale Ave	Storage	160	230			170	100				125		
	Existing	113 (72)	76 (34)			52 (208)	13 (11)				77 (144)		
	Projected 2028 NA	49 (87)	118 (47)			77 (342)	14 (12)				67 (118)		
	Projected 2028 VA	49 (80)	92 (53)			85 (269)	13 (10)				67 (118)		
Holland Ave/Carling Ave	Storage	45	45	45*	160	225		80			477		45
	Existing	62 (47)	18 (63)		109 (240)	45 (213)		116 (125)			193 (238)		8 (11)
	Projected 2028 NA	44 (54)	178 (105)	0 (0)	93 (183)	45 (162)		88 (80)			127 (167)		5 (7)
	Projected 2028 VA	47 (45)	63 (116)	0 (0)	86 (186)	50 (134)		91 (80)			122 (172)		5 (7)
Island Park Dr/Carling Ave	Storage		510	60*		50	50*	20	70		15	670	
	Existing		111 (70)			12 (220)		41 (70)	45 (53)		34 (22)	94 (56)	
	Projected 2028 NA		132 (71)	8 (4)		12 (227)	0 (7)	50 (94)	43 (62)		35 (26)	94 (66)	
	Projected 2028 VA		110 (85)	8 (5)		79 (184)	0 (7)	43 (84)	43 (60)		34 (25)	90 (62)	
Parkdale Ave/Ruskin St	Storage	230			40	350		135			300		
	Existing	29 (28)			15 (40)	18 (29)		32 (19)			56 (33)		
	Projected 2028 NA	27 (23)			14 (34)	17 (27)		28 (17)			44 (30)		
	Projected 2028 VA	27 (23)			14 (34)	17 (27)		28 (17)			44 (30)		
Carling Ave/Ottawa Hospital	Storage	85	170			445	130				37		
	Existing	12 (10)	33 (20)			27 (129)	6 (6)				22 (33)		
	Projected 2028 NA	11 (7)	49 (26)			35 (231)	6 (6)				21 (31)		
	Projected 2028 VA	11 (5)	39 (29)			39 (161)	6 (5)				21 (31)		
Holland Dr/Island Park Dr	Storage	75			-		15	25	640		25	75	
	Existing	133 (73)			50 (89)		17 (24)	33 (96)	173 (88)		0(15)	1 (228)	
	Projected 2028 NA	123 (77)			45 (79)		15 (21)	28 (67)	142 (78)		1(14)	9 (184)	
	Projected 2028 VA	123 (77)			45 (79)		15 (21)	28 (67)	142 (78)		2(14)	22 (184)	

NA – No Volume Adjustments
VA – With Volume Adjustments
** – Future Storage*
xx* – *Exceeding available storage

5. Findings, Conclusions and Recommendations

Based on the results summarized herein, the following transportation related conclusions are offered:

Proposed Development

- The proposed development will be located at the municipal address of 1081 Carling Ave. The site is currently occupied by a multi-storey office building with an attached parking garage, which will be replaced by the proposed development.
- The development will consist of two residential towers. The west tower will be 16-storeys high with 146 apartment units and the east tower will 25-storeys high with 268 apartment units. The development is anticipated to be constructed in a single phase by 2028.
- Vehicle access to the underground parking lot will be provided via a driveway on Hamilton Ave S, south of the dead-end structure.
- A garbage pick-up/move-in laneway on the north side of the buildings can be accessed via a driveway on Hamilton Ave S, north of the dead-end structure.
- A total of 322 vehicle parking spaces and 400 bicycle parking spaces are proposed, which meets the requirements of City of Ottawa Parking Provisions.

- At full buildout in 2028, the development is expected to generate approximately 172 person trips during the morning and afternoon peak hours respectively. Up to 68 vehicle trips and 77 transit trips are anticipated during peak hours. However, after accounting for existing trips from the existing office building, the proposed development is anticipated to generate up to 93 'new' total person trips, 13 'new' vehicle trips and 61 'new' transit trips during peak hours.
- The proponent is providing a 3mx3m site triangle at the northeast corner of Carling/Hamilton and a 5mx5m site triangle at the northwest corner of Carling/Parkdale.

Existing and Background Conditions

- In existing conditions, the following traffic operations are noted:
    - Study area intersections 'as a whole' operate at a LOS 'E' or better during peak hours, with the exception of Carling/Parkdale, which operates at capacity during afternoon peak hour.
    - The critical SBT movement at the intersection of Holland/Carling was determined to operate at capacity during both peak hours. This is the result of SBT traffic being delayed by SBL traffic in their shared lane. In reality, SBT traffic will bypass SBL traffic to avoid these delays. Notably, the SBL traffic volume is relatively low (up to 34 vehicles during peak hours).

Projected Conditions

- Total projected 2028 conditions were analyzed assuming future lane configurations on Carling Ave, based on plans from the Carling Ave Transit Priority project. Analysis results indicated the study area intersection 'as a whole' and critical movements are anticipated to operate at a LOS 'E' or better, with the exception of Carling/Parkdale which operates at capacity during afternoon peak hour. Phase times were optimized in Synchro at the intersections of Holland/Carling and Island Park/Carling, resulting in improved traffic operations compared to existing conditions.
- The Carling Avenue Transit Priority Measures Study (WSP, June 2017) indicated that there are anticipated changes to traffic volumes on Carling Ave as a result of implementing the future transit measures. As such, for horizon year 2028, a decrease of 15% has been applied to the general traffic in the peak direction and an increase of 10% has been applied in the off-peak direction
    - The resulting traffic operations for this scenario showed improved operations at study area intersections compared to the no volume adjustment scenario.
- Queueing results from all scenarios indicate that most future traffic queues are expected to be similar or better compared to existing conditions. However, traffic queues for the eastbound and westbound through movements on Carling Ave may experience an increase because of the lane reductions, particularly the westbound through movement at the intersection of Carling/Parkdale and the eastbound through movement at the intersection of Carling/Holland.
- The maximum total projected 2028 traffic volume along Hamilton Ave S is approximately 68 veh/h, which does not exceed the 120 veh/h threshold of a local road set by the TIA Guidelines. The maximum total projected 2028 traffic volume along Holland Ave is approximately 1,068 veh/h, which exceeds the 600 veh/h threshold of a major collector road set by the TIA Guidelines. This is due to Holland Ave being utilized by high traffic volumes as it is a north-south connection that transitions from an arterial road south of Carling Ave to a major collector north of thereof.
- Existing and future transit boarding and alighting data indicates available capacity can well accommodate anticipated future site-generated transit trips.

In summary, the adjacent road network is expected to accommodate anticipated development traffic in the future. Therefore, the proposed development is recommended to proceed from a transportation perspective.

Prepared By:

Basel Ansari, P.Eng.
Transportation Engineer

Reviewed By:

Austin Shih, P.Eng.
Senior Transportation Engineer

APPENDIX A

SCREENING FORM AND COMMENT RESPONSES

PARSONS

1223 Michael Street, Suite 100, Ottawa, Ontario, K1J 7T2
P: +1 613.738.4160 l F: +1 613.739.7105 l www.parsons.com

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	31-Aug-21
Project	1081 Carling Avenue
Project Number	477892-01000

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

Module 1.1 - Description of Proposed Development	
Municipal Address	1081 Carling Avenue
Description of location	Bounded by Carling Avenue to the south, Hamiton Avenue to the west, and Parkdale Avenue to the east. Property currently occupied by a multi-storey office building with attached parking garage, a surface parking lot, and a private dwelling.
Land Use	Residential
Development Size	462 residential units total
Number of Accesses and Locations	2 driveways on Hamilton Ave S, one south of road block and one north fo road block.
Development Phasing	1 phase
Buildout Year	2023
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Townhomes or Apartments	
Development Size	462	Units
Trip Generation Trigger Met?	Yes	

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

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

1223 Michael Street North, Suite 100 | Ottawa, ON K1J 7T2
P: +1 613.738.4160 | F: +1 613.739.7105 | www.parsons.com

5 October 2022

City of Ottawa
Development Review Services
110 Laurier Avenue West
Ottawa, ON K1P 1J1

Attention: Wally Dubyk

Dear Wally:

Re: 1081 Carling Ave TIA

Step 5 – Response to City Comments

The following response has been prepared in response to City of Ottawa TIA Strategy Report comments received on October 19, 2021. City comments have been noted in black with the corresponding responses from Parsons in Green.

1081 Carling Avenue
D02-02-21-0093 (Zoning Bylaw Amendment)

TIA Strategy – Parsons, Dated September 17, 2021
Site Plan A100, Revision #2, Dated August 27, 2021

General

1. The new Transit along Carling Avenue is targeted to start this season.

   Noted.

2. Carling Avenue is targeted for resurfacing starting this season.

   Noted.

3. Carling Avenue is designated as an Arterial road within the City's Official Plan with a ROW protection limit of 44.5 metres. The ROW protection limit and the offset distance (22.25 metres) are to be dimensioned from the existing centerline of pavement and shown on the drawings. The Certified Ontario Land Surveyor is to confirm the ROW protected limits and any portion that may fall within the private property to be conveyed to the City.

   Taggart Realty Management will proceed to comply with the minimum ROW limits.

4. ROW interpretation – Land for a road widening will be taken equally from both sides of a road, measured from the centreline in existence at the time of the widening if required by the City. The centreline is a line running down the middle of a road surface, equidistant from both edges of the pavement. In determining the centreline, paved shoulders, bus lay-bys, auxiliary lanes, turning lanes and other special circumstances are not included in the road surface.

   Noted.

5. Parkdale Avenue is classified as an Arterial road. There are no additional protected ROW limits identified in the OP.

   Noted.

6. A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Carling Avenue and Parkdale Avenue. The sight triangle area is to be conveyed to the City and is to be shown on all drawings. The sight triangle dimensions are to be measured from the ROW protected limits.

   A 5.0m x 5.0m sight triangle is illustrated at the intersection of Carling/Parkdale.

7. A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Parkdale Avenue and Hamilton Avenue. The sight triangle area is to be conveyed to the City and is to be shown on all drawings. The sight triangle dimensions are to be measured from the ROW protected limits.

   A 3.0m x 3.0m sight triangle is proposed by the proponent at the northeast corner of the intersection of Carling/Hamilton, given the rationale that Hamilton Ave is a dead-end street with low traffic volumes and only right-in/right-out movements possible at Carling Ave.

8. The proponent shall comply with the Private Approach By-Law 2003-447.

   Noted.

9. No private approach shall be constructed within 0.3 metres of any adjacent property measured at the highway line, and at the curb line or roadway edge.

   Noted. Private approaches provided comply with required minimum distance.

10. The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.

    Noted.

11. Ensure that the driveway grade does not exceed 2% within the private property for a distance of 9.0 metres from the ROW limit; see Section 25 (u) of the Private Approach By-Law #2003-447. Any grade exceeding 6% will require a subsurface melting device. For private property, the mechanism to vary the slope is a minor variance. The consultant would need to provide technical rationale.

    Noted. Proposed driveways expected to comply with grade requirements.

12. All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines, sight triangles and/or future road widening protection limits.

    This is shown on the latest Site Plan.

13. The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

    Noted.

14. Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.

    Noted. Indoor bicycle parking which exceeds the minimum by-law requirement provided inside the building.

15. A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.

    Noted.

Transportation Engineering Services

16. Table 6 person-trip forecasting information is correct.

    Noted.

17. Figure 14 shows sight-generated volumes for the SB movements at the Parkdale Ave / Carling Ave intersection. Provide details on the site accesses to justify these movements.

    As noted in Section 3.1.2, these volumes represent departing traffic travelling to the east via Route 1.

18. In Section 3.3, there are no actual demand rationalization deductions or conclusions presented after Figures 18 and 19. Please provide some conclusion to the data provided.

    Section 3.3 updated.

19. Section 4.1 states that "existing pedestrian and cycling facilities will be maintained in the future". Please reference the cycling facilities being maintained.

    Section 4.1 updated to provide more accurate wording.

20. Table 12 shows only 30 visitor parking spaces. Note that the 30 visitor parking spaces cap mentioned in the ZBL only applies per each building, not the entire site. Confirm that the required combined total of 45 visitor parking spaces should be provided for the two buildings.

    Table 12 has been updated.

21. Section 4.4 Access discusses the two accesses on Hamilton Avenue. Ensure that the provision of truck access conforms to the truck route bylaws and that the councillor and neighbours are aware of this planned route.

    The garbage pick-up/move-in laneway is expected to conform to the City of Ottawa Regulations. All parties are notified by way of the ZBLA submission, public consultations and private discussions.

22. Ensure the provision and design of accessible parking is consistent with the AODA IASR. Also consider only providing the minimum amount of total vehicular parking spaces required by the ZBL to encourage use of sustainable modes of transportation.

    Noted. AODA requirements to be confirmed during SPA.

23. The report is requesting to only provide a 3m x 3m site triangle instead of 5m x 5m at the northeast corner of the Hamilton Ave S / Carling Ave intersection. Maintaining the requested 5m x 5m sight triangle is required. Consider modifying details regarding the west building to achieve the desired sight triangle.

    A 3.0m x 3.0m sight triangle is proposed by the proponent at the northeast corner of the intersection of Carling/ Hamilton, given the rationale that Hamilton Ave is a dead-end street with low traffic volumes and only right-in/ right-out movements possible at Carling Ave.

24. We encourage the protection of the OP required ROW. Carling Avenue is a cycling spine route and future requirements may require cycle tracks, enhanced transit facilities and wider sidewalks along the site frontage.

    Noted.

25. The layby provided on Carling Avenue is not to be assumed as a final design of the frontage and Carling Avenue reconstruction. With redevelopment of the site, the need for the layby must be demonstrated.

    No modifications are being proposed to the curb-line on Carling Avenue.

26. To encourage transit usage, providing a prepaid Presto pass is a proven tool to supporting this mode share.

    Proponent notified.

27. Section 4.6 mentions that the volume thresholds provided in the TIA guidelines are only for one-way traffic. Please justify the basis for this assumption.

    Section 4.6 updated to account for two-way traffic volumes.

28. Section 4.7 should provide more details such as the actual existing/future transit demand/capacities.

    Section 4.7 updated.

29. In Design Priority Areas, all public projects, private developments, and community partnerships within the public realm will be reviewed for their contribution to an enhanced pedestrian environment and their response to the distinct character and unique opportunities of the area. The public realm/domain refers to all those private and publicly owned spaces and places, which are freely available to the public to see and use.

    Noted.

30. During Site Plan application, provide all necessary dimensions, grades, etc. on the site plan to clearly demonstrate conformance to the private approach bylaw and TAC guidance.

    Noted.

Traffic Signal Operations

31. There is limited storage distance between Carling Ave / Holland Ave and the signalized intersection at Holland Ave / Island Park Dr. The latter should also be included in the Synchro models.

    Intersection added to study area analysis.

32. Under existing conditions, the southbound movement at Carling Ave / Holland Ave appears to experience heavy queuing and operates above capacity (v/c = 1.78, delay = 400s) during the AM Peak Hour. However, under future traffic conditions, the southbound movement no longer experiences capacity issues (v/c = 0.83, delay = 60s). Please explain this improvement in performance.

    As mentioned in the TIA report, this is attributed to several factors, including increasing PHF to 1.0, optimization of traffic signal phasing which gives the northbound and southbound movements along Holland Ave the significantly higher green time needed, and the reduction in through traffic for some scenarios.

33. Carling Ave typically experiences heavy westbound volumes and queuing during the PM Peak Hour. The SimTraffic simulations for the Existing Conditions scenarios do not capture this because the eastbound and westbound volumes are missing at Carling Ave/ Hamilton Ave S.

    Existing volumes at Carling/Hamilton added in Synchro.

34. Provide 95th percentile queue lengths and indicate when storage length, or distance to upstream intersection, is exceeded.

    The 95th percentile queue lengths and the respected storage lengths have been added to Section 4.9 of the TIA.

35. During PM Peak Hour, Timing Plan 9 (130s cycle length) should be used at Carling Ave/ Island Park Dr.

    Synchro updated.

36. At Carling Ave / Parkdale Ave, the advance walk phase should have a pedestrian recall and the southbound phase should have a max recall.

    Synchro updated.

37. At Carling Ave / Holland Ave, the southbound left turn should have a max recall during the PM Peak Hour.

    Synchro updated.

38. At Carling Ave / Holland Ave, the westbound left turn for buses is being skipped in the Synchro files. Simulate actuations using pedestrian calls per hour.

    Pedestrian calls per hour have been added to the westbound left-turn phase for buses.

39. At Carling Ave / Civic Hospital, the conflicting pedestrian volumes and the number of pedestrian calls per hour are missing.

    Synchro updated.

40. In the SimTraffic simulations, the eastbound lane adjacent to the median (lane A) is underutilized causing heavy eastbound queuing. Under Simulation Settings, modify the lane alignment for the eastbound through movement (from 'Left' to 'Right') to simulate real-world traffic conditions.

    Lane alignments modified.

41. The TIA report forecasts that a portion of vehicles arriving from the west and south will make a U-turn at Carling/Parkdale to access the proposed development. Include the proposed U-turn vehicles in the Synchro files.

    U-turn volumes are already included in the left-turn volumes.

42. There are large volume imbalances (200+ vehicles) westbound between Carling Ave/ Civic Hospital and Carling Ave / Parkdale Ave.

    Large volume imbalances have been adjusted.

43. There are large volume imbalances (150+ vehicles) between Carling Ave / Holland Ave and Carling Ave / Island Park Dr.

    Large volume imbalances have been adjusted.

44. Some offsets are incorrect in the existing scenarios (e.g., Carling Ave / Holland Ave). Revise according o the timing provided by the city.

    Synchro updated.

45. The proposed 3-second transit priority phase for the westbound left turn at Carling Ave and Holland Ave is too short (1 second green + 2 seconds amber). Maintain the existing 6-second transit priority phase (4 seconds green + 2 seconds amber).

    Synchro updated.

Traffic Signal Design

46. If approved, no protective hording is to encroach on existing traffic signals infrastructure (NW quadrant of Parkdale Ave / Carling Ave), above ground as well as underground, that is to be accessible 24/7/365. Otherwise, no comments.

Noted.

Street Lighting

47. If there are any proposed changes to the existing roadway geometry, the City of Ottawa Street Light Asset Management Group is required to provide a full street light design. Upon completion of proposed roadway geometry design changes, please submit digital Micro Station drawings with proposed roadway geometry changes to the Street Lighting Department, so that we may proceed with the detailed street light design and coordination with the Street Light maintenance provider and all necessary parties. Be advised that the applicant will be 100% responsible for all costs associated with any Street Light design as a result of the roadway geometry change.

    Alterations and /or repairs are required where the existing street light plant is directly, indirectly, or adversely affected by the scope of work under this circulation, due to the proposed road reconstruction process. All street light plant alterations and/or repairs must be performed by the City of Ottawa's Street Light maintenance provider.

    Be advised that the applicant will be 100% responsible for all costs associated with any relocations/modifications to the existing street light plant. Should a conflict arise or if you have any questions please contact Barrie Forrester at (613) 580-2424 ext 23332 or Barrie.Forrester@ottawa.ca.

    Noted.

APPENDIX B

TRAFFIC COUNT DATA

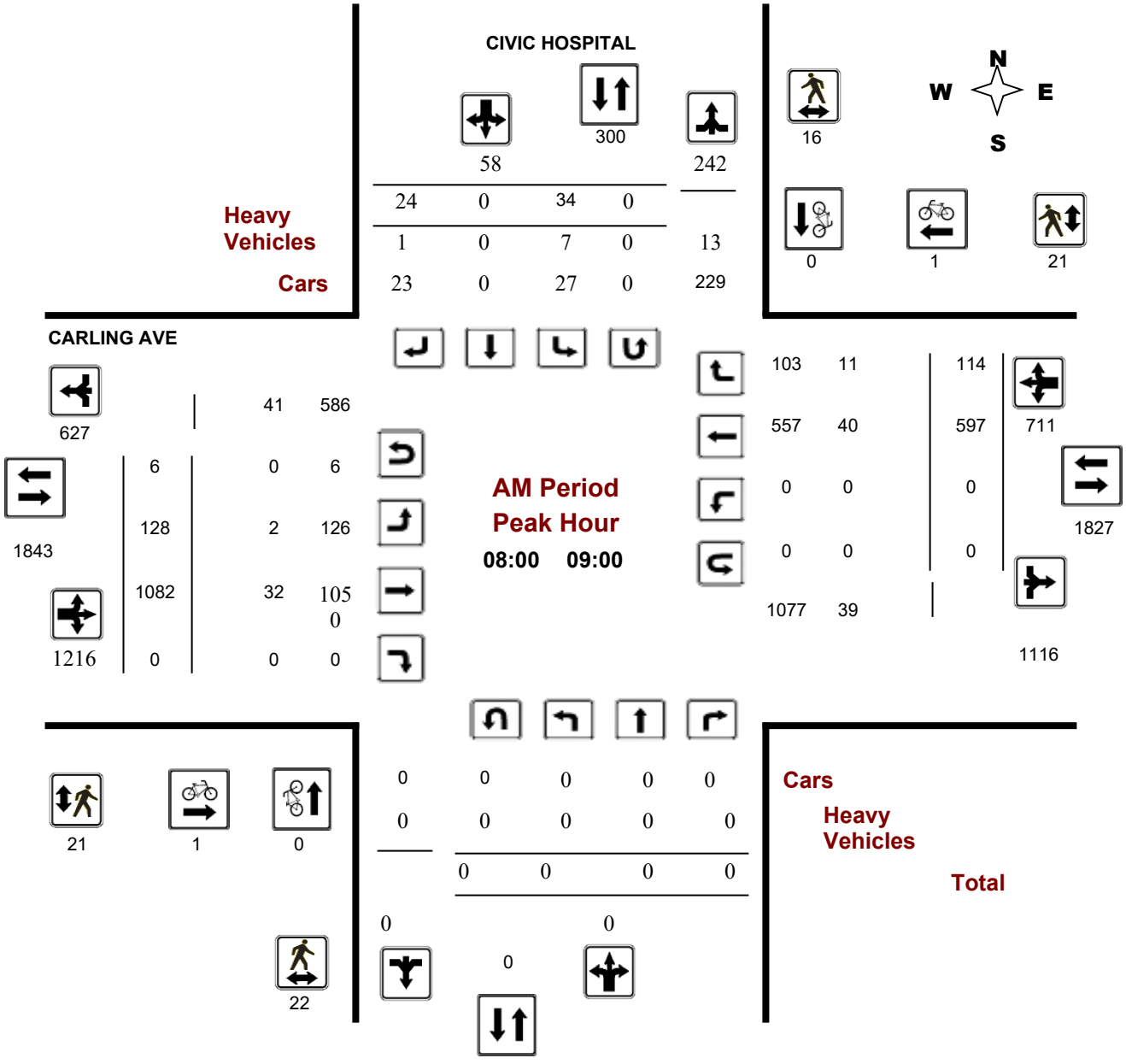
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ CIVIC HOSPITAL

Survey Date: Wednesday, April 12, 2017 **WO No:** 39604

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



Comments REQUESTED BY KERRY LYN MOHR APR 12 TH (8HR STANDARD REIMPORT)

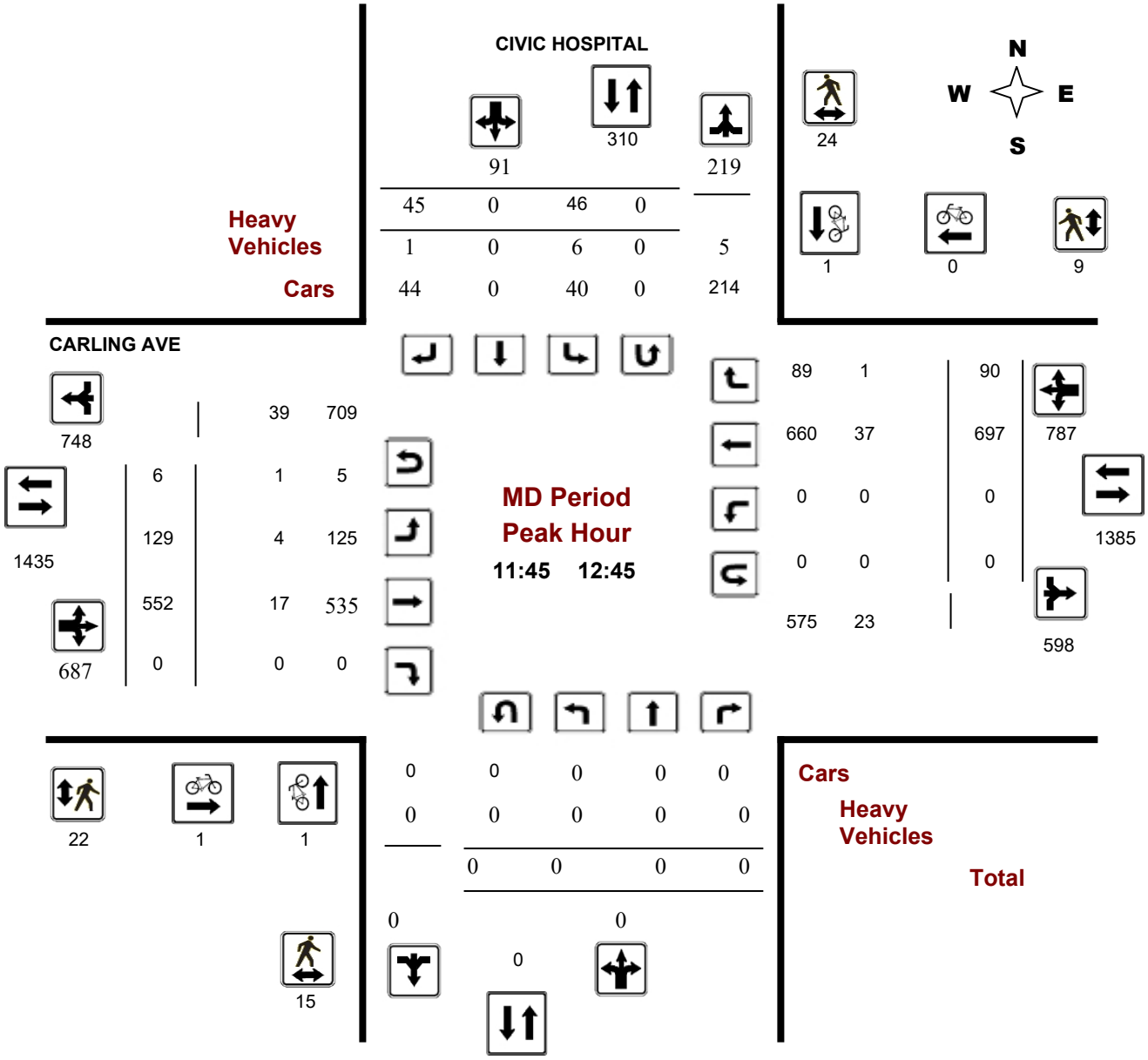
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ CIVIC HOSPITAL

Survey Date: Wednesday, April 12, 2017 **WO No:** 39604

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



Comments REQUESTED BY KERRY LYN MOHR APR 12 TH (8HR STANDARD REIMPORT)

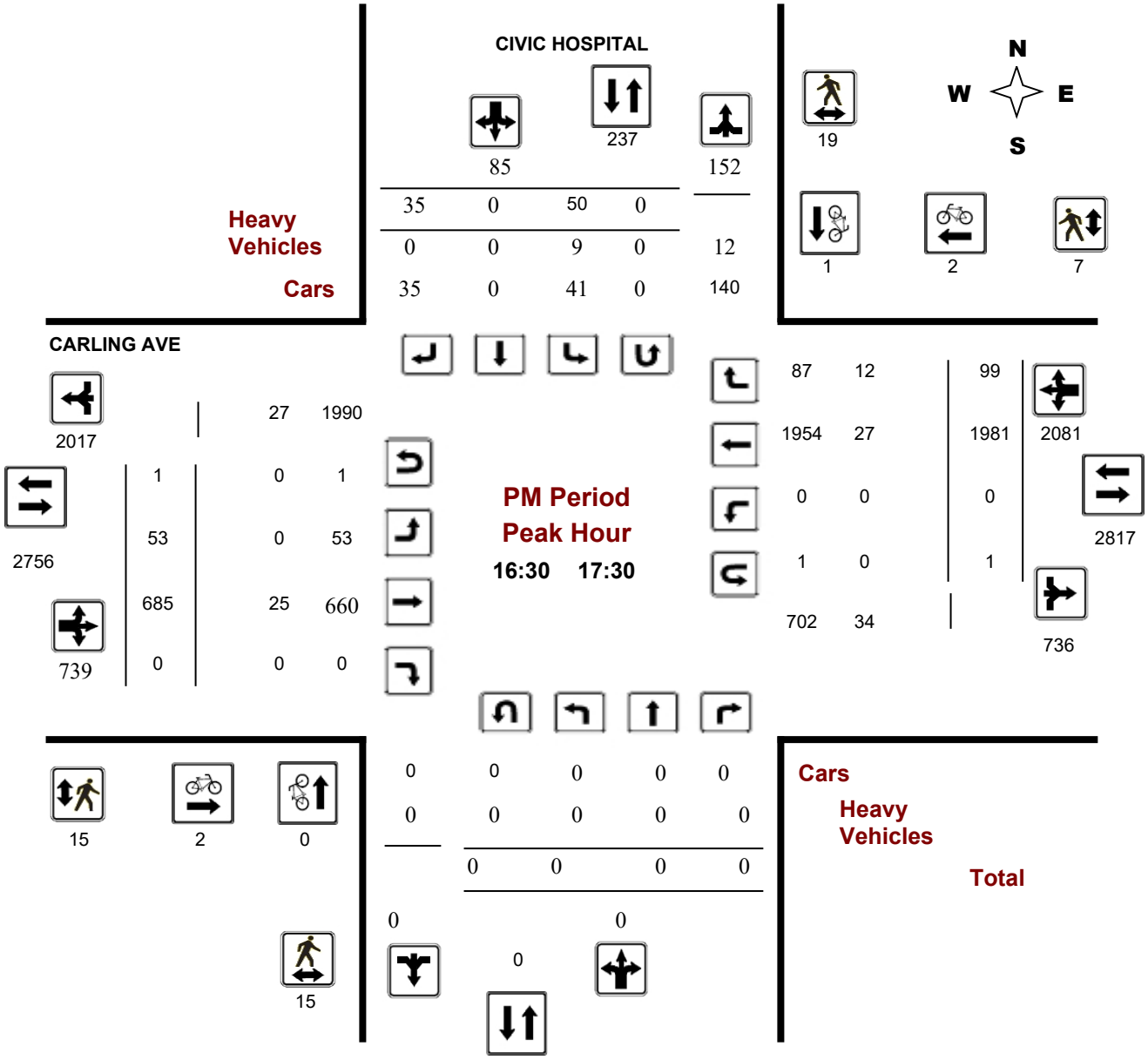
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ CIVIC HOSPITAL

Survey Date: Wednesday, April 12, 2017 **WO No:** 39604

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



Comments REQUESTED BY KERRY LYN MOHR APR 12 TH (8HR STANDARD REIMPORT)

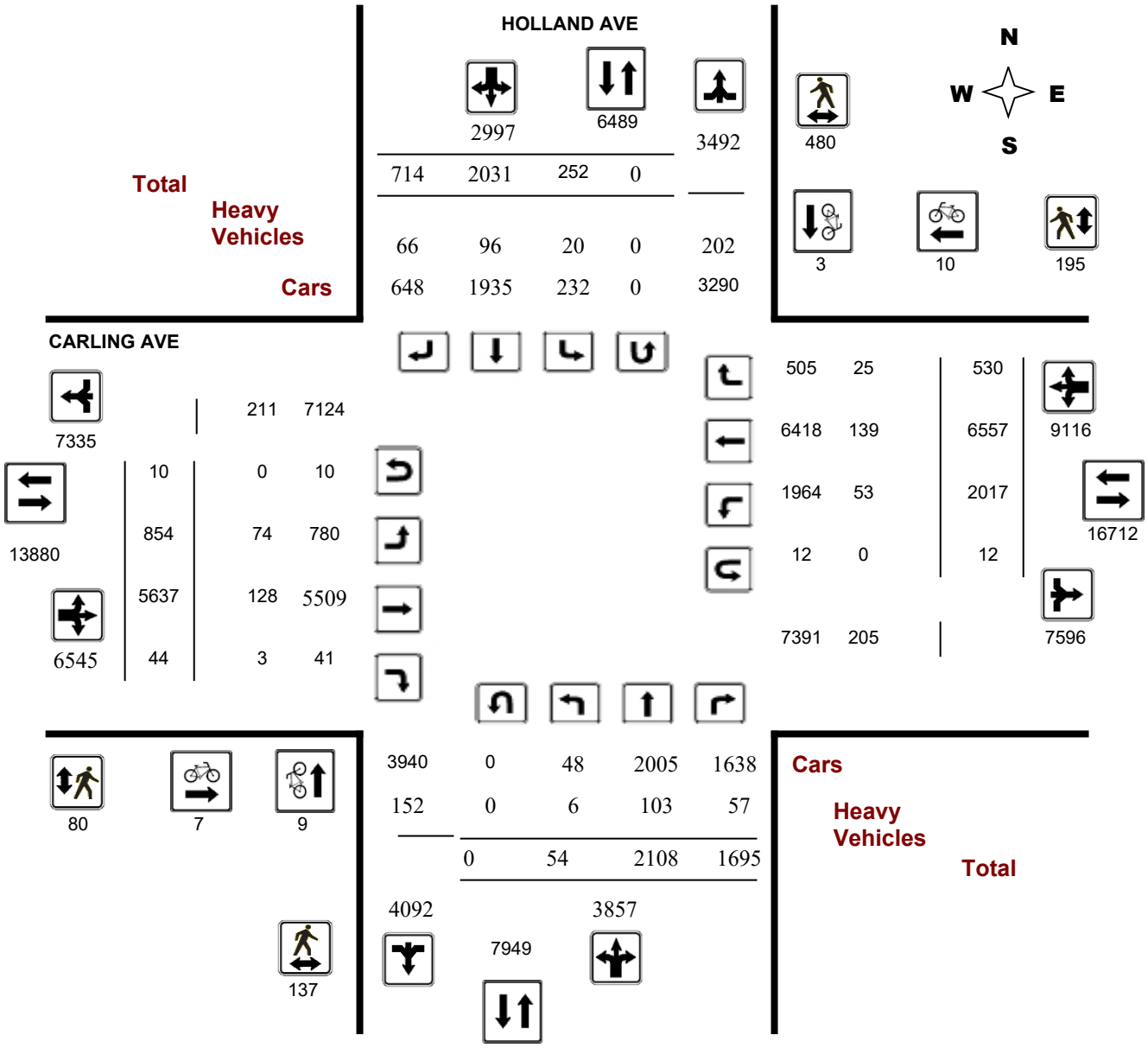
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020
Start Time: 07:00
WO No: 39356
Device: Miovision

Full Study Diagram



5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

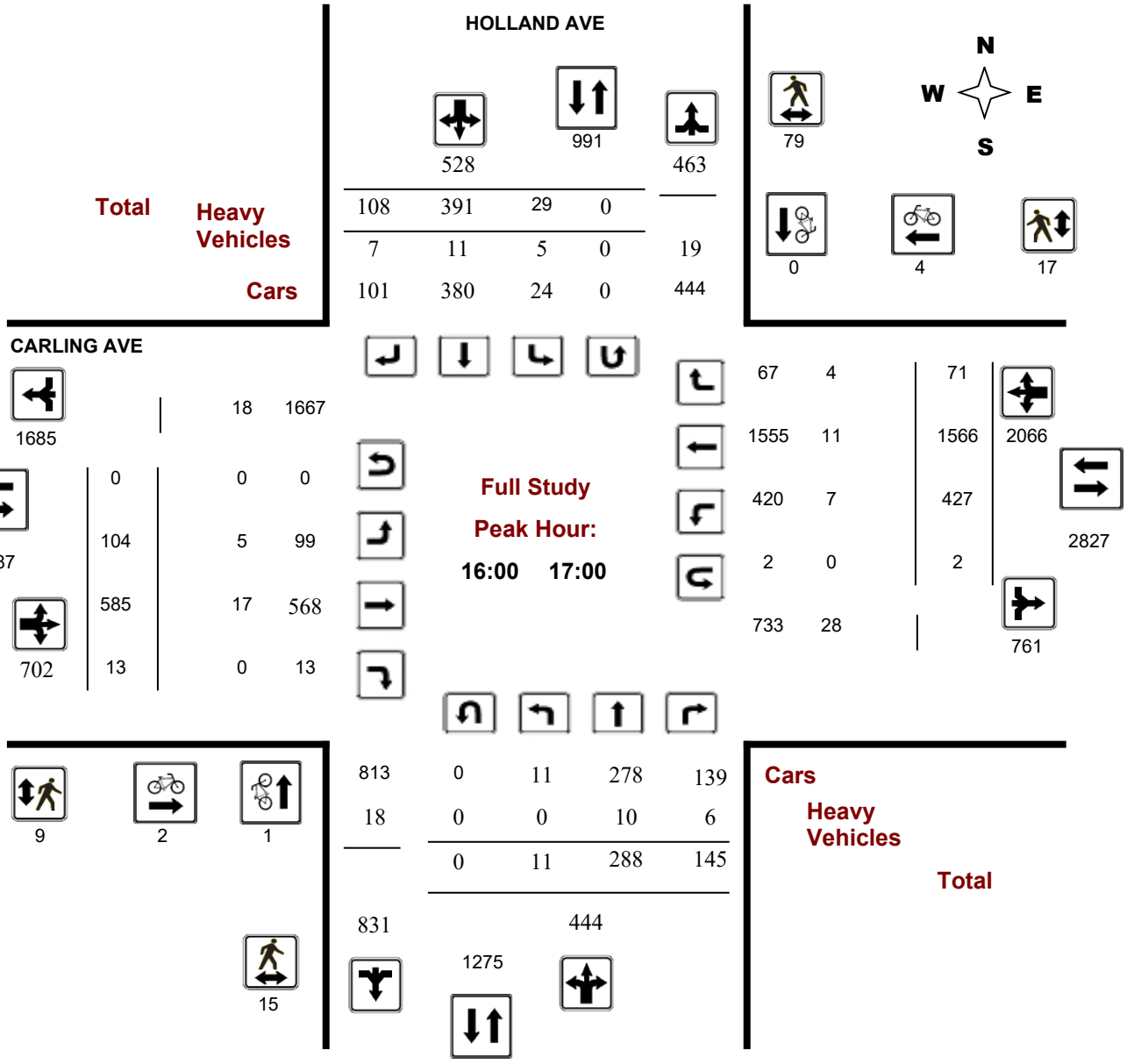
Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study Peak Hour Diagram



5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

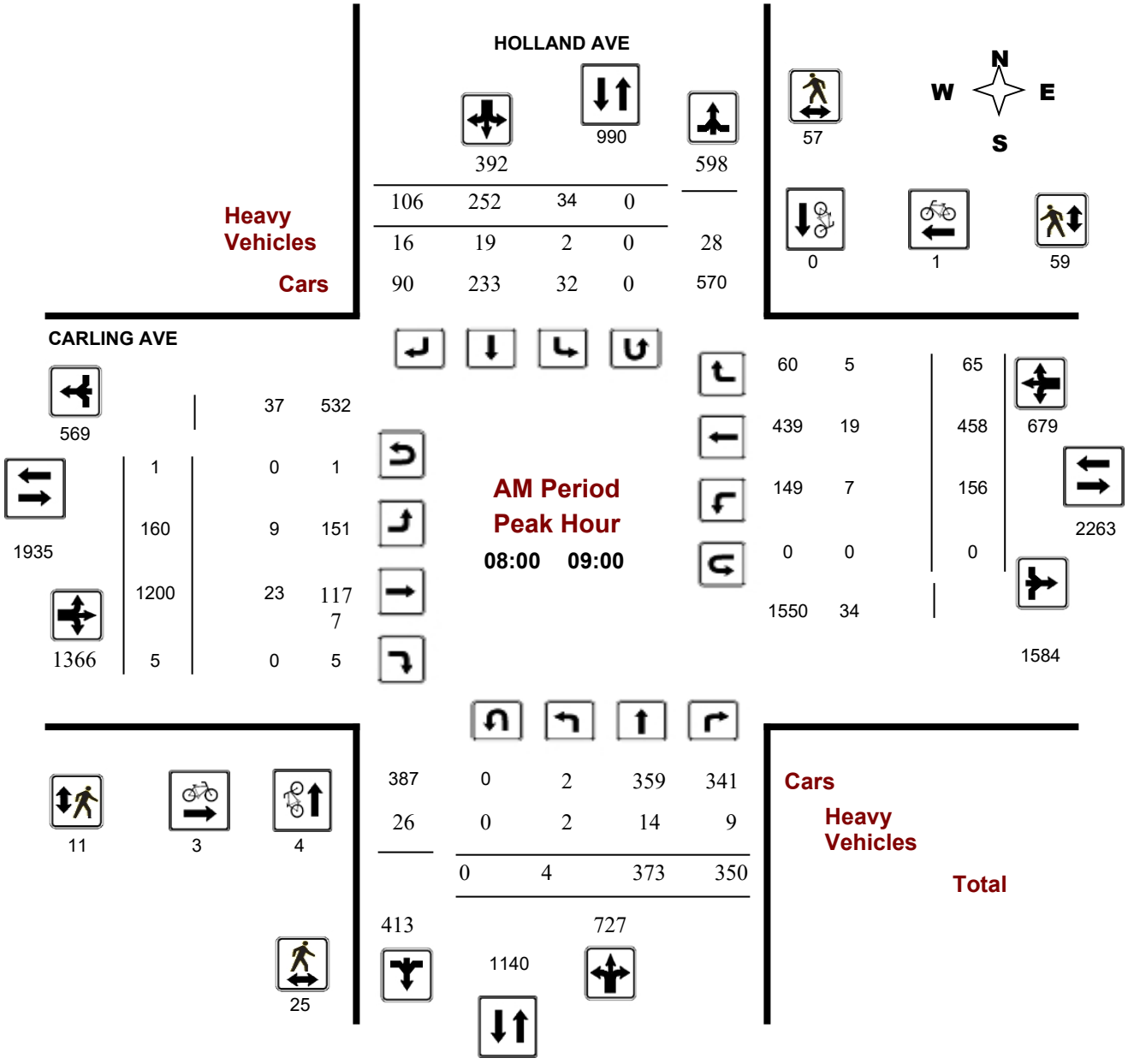
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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



Comments 5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

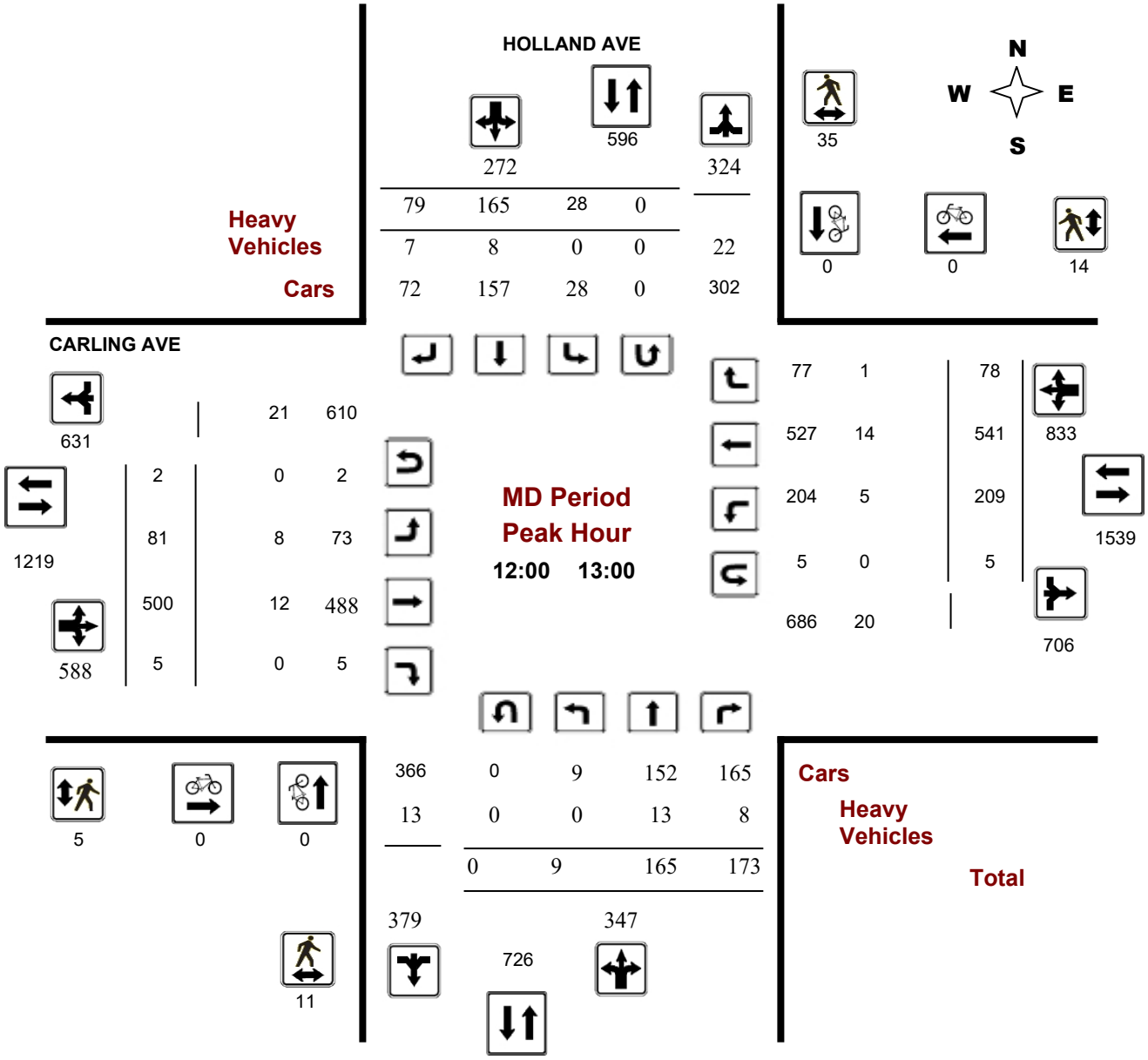
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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



Comments 5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

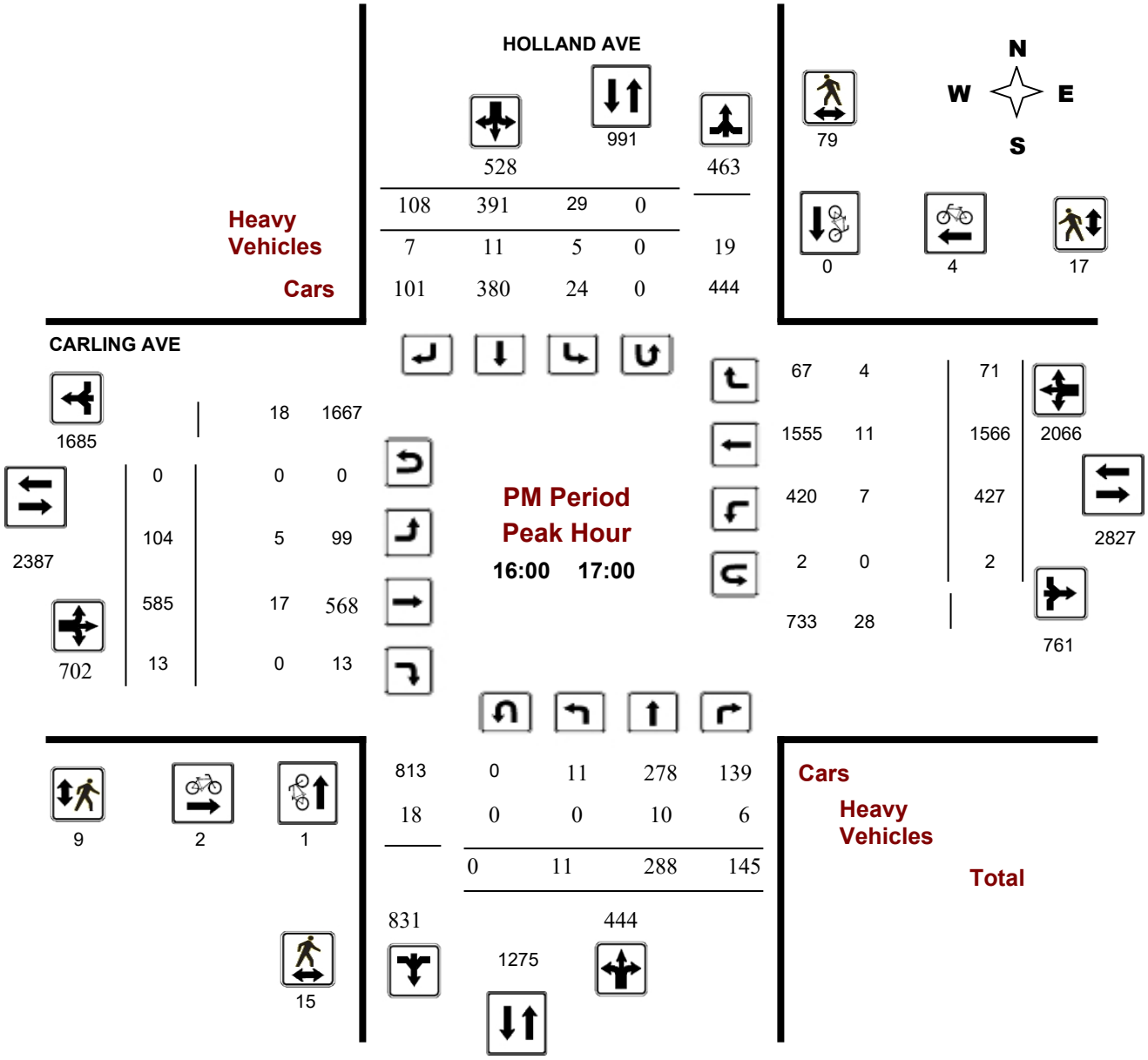
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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



Comments 5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, January 21, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 10 Westbound: 12

AADT Factor

1.10

	HOLLAND AVE								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	4	324	282	**610**	24	197	51	**272**	**882**	122	944	3	**1069**	120	321	39	**480**	**1549**	**2431**
08:00 09:00	4	373	350	**727**	34	252	106	**392**	**1119**	160	1200	5	**1365**	156	458	65	**679**	**2044**	**3163**
09:00 10:00	5	247	251	**503**	36	175	74	**285**	**788**	109	793	10	**912**	149	480	55	**684**	**1596**	**2384**
11:30 12:30	9	152	158	**319**	29	157	81	**267**	**586**	82	473	3	**558**	231	560	71	**862**	**1420**	**2006**
12:30 13:30	8	151	191	**350**	33	148	72	**253**	**603**	74	500	4	**578**	187	523	66	**776**	**1354**	**1957**
15:00 16:00	6	306	160	**472**	43	357	115	**515**	**987**	111	580	3	**694**	393	1341	99	**1833**	**2527**	**3514**
16:00 17:00	11	288	145	**444**	29	391	108	**528**	**972**	104	585	13	**702**	427	1566	71	**2064**	**2766**	**3738**
17:00 18:00	7	267	158	**432**	24	354	107	**485**	**917**	92	562	3	**657**	354	1308	64	**1726**	**2383**	**3300**
Sub Total	54	2108	1695	**3857**	252	2031	714	**2997**	**6854**	854	5637	44	**6535**	2017	6557	530	**9104**	**15639**	**22493**
U Turns				**0**				**0**	**0**				**10**				**12**	**22**	**22**
Total	54	2108	1695	**3857**	252	2031	714	**2997**	**6854**	854	5637	44	**6545**	2017	6557	530	**9116**	**15661**	**22515**
EQ 12Hr	75	2930	2356	**5361**	350	2823	992	**4166**	**9527**	1187	7835	61	**9098**	2804	9114	737	**12671**	**21769**	**31296**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	78	3038	2442	**5558**	363	2927	1029	**4319**	**10480**	1231	8123	63	**9431**	2906	9449	764	**13136**	**23946**	**34426**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.1**					
AVG 24Hr	102	3979	3200	**7281**	476	3834	1348	**5657**	**12938**	1612	10641	83	**12355**	3808	12378	1000	**17208**	**29563**	**42501**
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 @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study 15 Minute Increments

		HOLLAND AVE									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
09:15	09:30	0	63	64	127	11	45	17	73	376	29	214	4	248	25	122	10	157	376	605
09:30	09:45	2	41	47	90	10	45	26	81	344	22	177	2	201	50	107	13	171	344	543
09:45	10:00	2	56	48	106	5	37	11	53	339	28	161	2	193	39	121	18	178	339	530
11:30	11:45	2	45	54	101	8	41	24	73	349	20	117	0	137	58	129	11	198	349	509
11:45	12:00	4	34	32	70	6	32	11	49	287	23	110	0	133	63	155	16	236	287	488
12:00	12:15	2	34	29	65	5	49	28	82	331	19	133	3	156	50	121	29	201	331	504
12:15	12:30	1	39	43	83	10	35	18	63	315	20	113	0	133	60	155	15	232	315	511
12:30	12:45	4	53	54	111	5	45	16	66	364	27	115	0	142	51	129	11	191	364	510
12:45	13:00	2	39	47	88	8	36	17	61	312	15	139	2	157	48	136	23	209	312	515
13:00	13:15	1	33	45	79	12	35	19	66	275	16	134	2	152	32	109	12	153	275	450
13:15	13:30	1	26	45	72	8	32	20	60	282	16	112	0	129	56	149	20	226	282	487
15:00	15:15	3	79	36	118	14	94	23	131	572	27	137	0	165	97	269	26	392	572	806
15:15	15:30	2	71	35	108	11	80	27	118	530	29	144	0	173	95	317	29	441	530	840
15:30	15:45	0	75	43	118	10	90	37	137	569	29	165	1	195	95	366	24	485	569	935
15:45	16:00	1	81	46	128	8	93	28	129	585	26	134	2	162	106	389	20	515	585	934
16:00	16:15	2	73	35	110	7	89	31	127	554	24	129	6	159	106	387	19	513	554	909
16:15	16:30	4	66	35	105	7	107	16	130	559	28	151	5	184	98	387	20	505	559	924
16:30	16:45	3	73	45	121	7	104	25	136	596	24	146	1	171	117	394	20	531	596	959
16:45	17:00	2	76	30	108	8	91	36	135	557	28	159	1	188	106	398	12	517	557	948
17:00	17:15	2	65	33	100	6	94	33	133	534	25	139	1	165	95	365	21	481	534	879
17:15	17:30	2	71	41	114	6	94	20	120	530	28	143	1	173	87	356	15	458	530	865
17:30	17:45	2	81	45	128	6	87	25	118	544	19	138	0	157	98	312	13	423	544	826
17:45	18:00	1	50	39	90	6	79	29	114	443	20	142	1	163	74	275	15	364	443	731
07:00	07:15	0	73	41	114	4	37	6	47	330	28	166	0	194	25	57	6	89	330	444
07:15	07:30	1	83	82	166	4	38	15	57	408	21	233	2	256	30	69	11	110	408	589
07:30	07:45	2	72	78	152	8	67	14	89	451	29	257	0	286	31	71	11	113	451	640
07:45	08:00	1	96	81	178	8	55	16	79	498	44	288	1	333	34	124	11	169	498	759
08:00	08:15	0	89	106	195	6	63	19	88	522	43	318	3	364	31	109	10	150	522	797
08:15	08:30	2	79	74	155	10	56	29	95	480	26	318	1	345	49	124	19	192	480	787
08:30	08:45	1	106	84	191	8	80	30	118	586	43	276	0	319	36	114	12	162	586	790
08:45	09:00	1	99	86	186	10	53	28	91	542	48	288	1	338	40	111	24	175	542	790
09:00	09:15	1	87	92	180	10	48	20	78	474	30	241	2	274	35	130	14	179	474	711
Total:		54	2108	1695	3857	252	2031	714	2997	14438	854	5637	44	6545	2017	6557	530	9116	14438	22,515

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study Cyclist Volume

Time Period		HOLLAND AVE			CARLING AVE			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
09:15	09:30	0	0	0	0	1	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	1	1	0	0	0	1
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	1	1	1
16:00	16:15	0	0	0	0	1	1	1
16:15	16:30	0	0	0	0	2	2	2
16:30	16:45	0	0	0	1	0	1	1
16:45	17:00	1	0	1	1	1	2	3
17:00	17:15	0	1	1	0	0	0	1
17:15	17:30	0	1	1	0	1	1	2
17:30	17:45	0	0	0	0	1	1	1
17:45	18:00	0	0	0	0	0	0	0
07:00	07:15	2	0	2	1	0	1	3
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	1	0	1	0	0	0	1
07:45	08:00	1	0	1	1	0	1	2
08:00	08:15	2	0	2	0	0	0	2
08:15	08:30	0	0	0	1	0	1	1
08:30	08:45	1	0	1	1	1	2	3
08:45	09:00	1	0	1	1	0	1	2
09:00	09:15	0	0	0	0	1	1	1
Total		9	3	**12**	7	10	17	29

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study Pedestrian Volume

	HOLLAND AVE			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**
09:15 09:30	2	8	**10**	0	7	**7**	**17**
09:30 09:45	2	5	**7**	3	4	**7**	**14**
09:45 10:00	2	6	**8**	0	6	**6**	**14**
11:30 11:45	2	4	**6**	1	3	**4**	**10**
11:45 12:00	2	7	**9**	1	5	**6**	**15**
12:00 12:15	6	6	**12**	2	6	**8**	**20**
12:15 12:30	0	8	**8**	0	1	**1**	**9**
12:30 12:45	2	8	**10**	3	4	**7**	**17**
12:45 13:00	3	13	**16**	0	3	**3**	**19**
13:00 13:15	2	4	**6**	0	1	**1**	**7**
13:15 13:30	3	11	**14**	0	1	**1**	**15**
15:00 15:15	7	21	**28**	2	6	**8**	**36**
15:15 15:30	6	37	**43**	3	4	**7**	**50**
15:30 15:45	2	45	**47**	2	4	**6**	**53**
15:45 16:00	6	18	**24**	5	9	**14**	**38**
16:00 16:15	6	18	**24**	3	7	**10**	**34**
16:15 16:30	2	28	**30**	0	4	**4**	**34**
16:30 16:45	3	13	**16**	2	3	**5**	**21**
16:45 17:00	4	20	**24**	4	3	**7**	**31**
17:00 17:15	4	27	**31**	6	7	**13**	**44**
17:15 17:30	3	19	**22**	4	3	**7**	**29**
17:30 17:45	7	14	**21**	8	4	**12**	**33**
17:45 18:00	4	20	**24**	3	7	**10**	**34**
07:00 07:15	6	10	**16**	0	10	**10**	**26**
07:15 07:30	5	11	**16**	1	0	**1**	**17**
07:30 07:45	6	21	**27**	5	8	**13**	**40**
07:45 08:00	7	14	**21**	2	14	**16**	**37**
08:00 08:15	6	13	**19**	2	22	**24**	**43**
08:15 08:30	9	17	**26**	2	15	**17**	**43**
08:30 08:45	5	13	**18**	2	15	**17**	**35**
08:45 09:00	5	14	**19**	5	7	**12**	**31**
09:00 09:15	8	7	**15**	9	2	**11**	**26**
Total	137	480	**617**	80	195	**275**	**892**

5470808 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study Heavy Vehicles

		HOLLAND AVE									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
09:15	09:30	0	3	3	**12**	1	5	2	**15**	**27**	4	7	0	**18**	1	5	0	**17**	**35**	**31**
09:30	09:45	0	1	1	**12**	2	4	7	**19**	**31**	5	4	2	**22**	4	4	0	**15**	**37**	**34**
09:45	10:00	0	3	2	**9**	1	2	2	**18**	**27**	6	5	1	**20**	1	6	4	**19**	**39**	**33**
11:30	11:45	1	1	2	**8**	0	2	2	**6**	**14**	1	9	0	**20**	2	7	0	**20**	**40**	**27**
11:45	12:00	0	1	2	**8**	0	2	1	**8**	**16**	4	3	0	**11**	3	3	0	**11**	**22**	**19**
12:00	12:15	0	3	1	**6**	0	1	1	**6**	**12**	1	3	0	**9**	1	4	0	**9**	**18**	**15**
12:15	12:30	0	4	2	**11**	0	3	2	**10**	**21**	1	1	0	**8**	2	4	0	**9**	**17**	**19**
12:30	12:45	0	2	2	**8**	0	3	3	**12**	**20**	4	3	0	**13**	1	3	0	**9**	**22**	**21**
12:45	13:00	0	4	3	**9**	0	1	1	**9**	**18**	2	5	0	**11**	1	3	1	**13**	**24**	**21**
13:00	13:15	0	3	1	**7**	0	2	4	**10**	**17**	1	3	0	**14**	1	6	0	**11**	**25**	**21**
13:15	13:30	0	1	1	**6**	0	1	1	**5**	**11**	1	2	0	**10**	3	6	1	**13**	**23**	**17**
15:00	15:15	0	7	1	**11**	0	1	2	**14**	**25**	2	3	0	**10**	2	3	2	**11**	**21**	**23**
15:15	15:30	1	5	2	**15**	1	5	1	**17**	**32**	5	3	0	**17**	2	7	0	**15**	**32**	**32**
15:30	15:45	0	7	1	**12**	0	3	2	**15**	**27**	2	1	0	**12**	1	7	1	**11**	**23**	**25**
15:45	16:00	0	6	1	**12**	0	3	1	**14**	**26**	4	7	0	**18**	2	6	0	**16**	**34**	**30**
16:00	16:15	0	1	1	**8**	2	3	3	**13**	**21**	3	3	0	**10**	3	1	1	**11**	**21**	**21**
16:15	16:30	0	4	2	**10**	1	2	0	**8**	**18**	0	4	0	**10**	2	6	1	**16**	**26**	**22**
16:30	16:45	0	2	3	**9**	1	3	3	**12**	**21**	2	5	0	**11**	1	1	1	**12**	**23**	**22**
16:45	17:00	0	3	0	**7**	1	3	1	**9**	**16**	0	5	0	**9**	1	3	1	**11**	**20**	**18**
17:00	17:15	0	5	1	**9**	0	2	2	**12**	**21**	3	4	0	**12**	1	3	0	**9**	**21**	**21**
17:15	17:30	0	2	3	**10**	1	4	0	**8**	**18**	0	0	0	**5**	1	5	1	**11**	**16**	**17**
17:30	17:45	0	2	3	**8**	1	3	2	**9**	**17**	1	3	0	**11**	0	5	0	**12**	**23**	**20**
17:45	18:00	0	2	1	**7**	0	2	0	**7**	**14**	2	2	0	**13**	2	9	1	**15**	**28**	**21**
07:00	07:15	0	3	3	**9**	1	1	1	**9**	**18**	2	3	0	**9**	2	3	1	**13**	**22**	**20**
07:15	07:30	1	3	1	**8**	1	2	1	**8**	**16**	0	0	0	**4**	1	2	1	**6**	**10**	**13**
07:30	07:45	0	3	2	**12**	1	6	2	**18**	**30**	5	2	0	**11**	1	2	1	**9**	**20**	**25**
07:45	08:00	0	3	2	**13**	1	6	2	**14**	**27**	1	8	0	**14**	2	3	1	**17**	**31**	**29**
08:00	08:15	0	4	4	**11**	0	3	0	**12**	**23**	3	8	0	**16**	0	5	2	**19**	**35**	**29**
08:15	08:30	1	3	3	**15**	1	5	4	**16**	**31**	2	2	0	**11**	3	2	1	**12**	**23**	**27**
08:30	08:45	0	2	0	**8**	1	4	6	**16**	**24**	2	6	0	**22**	2	8	1	**18**	**40**	**32**
08:45	09:00	1	5	2	**17**	0	7	6	**21**	**38**	2	7	0	**20**	2	4	1	**16**	**36**	**37**
09:00	09:15	1	5	1	**11**	2	2	1	**14**	**25**	3	7	0	**15**	2	3	1	**16**	**31**	**28**
Total:	None	6	103	57	**318**	20	96	66	**384**	**702**	74	128	3	**416**	53	139	25	**422**	**838**	**770**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ HOLLAND AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39356

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

Full Study 15 Minute U-Turn Total

Time Period		HOLLAND AVE Northbound U-Turn Total	HOLLAND AVE Southbound U-Turn Total	CARLING AVE Eastbound U-Turn Total	CARLING AVE Westbound U-Turn Total	Total
09:15	09:30	0	0	1	0	1
09:30	09:45	0	0	0	1	1
09:45	10:00	0	0	2	0	2
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	2	2
12:00	12:15	0	0	1	1	2
12:15	12:30	0	0	0	2	2
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	1	2	3
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	1	1	2
15:00	15:15	0	0	1	0	1
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	1	1
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	1	1
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	1	0	1
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
07:00	07:15	0	0	0	1	1
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	1	0	1
09:00	09:15	0	0	1	0	1
Total		0	0	10	12	22

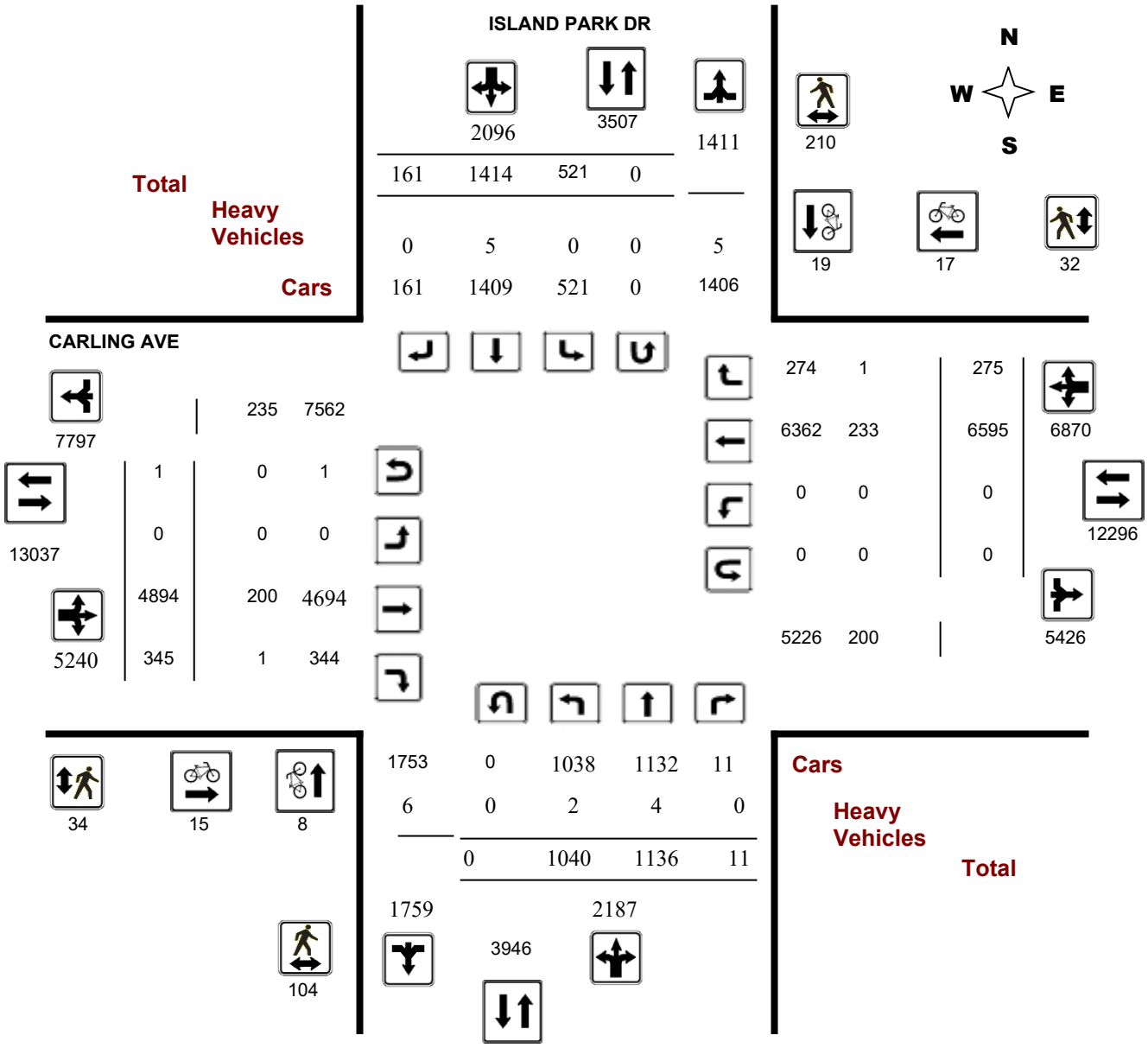
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018
Start Time: 07:00
WO No: 37623
Device: Miovision

Full Study Diagram



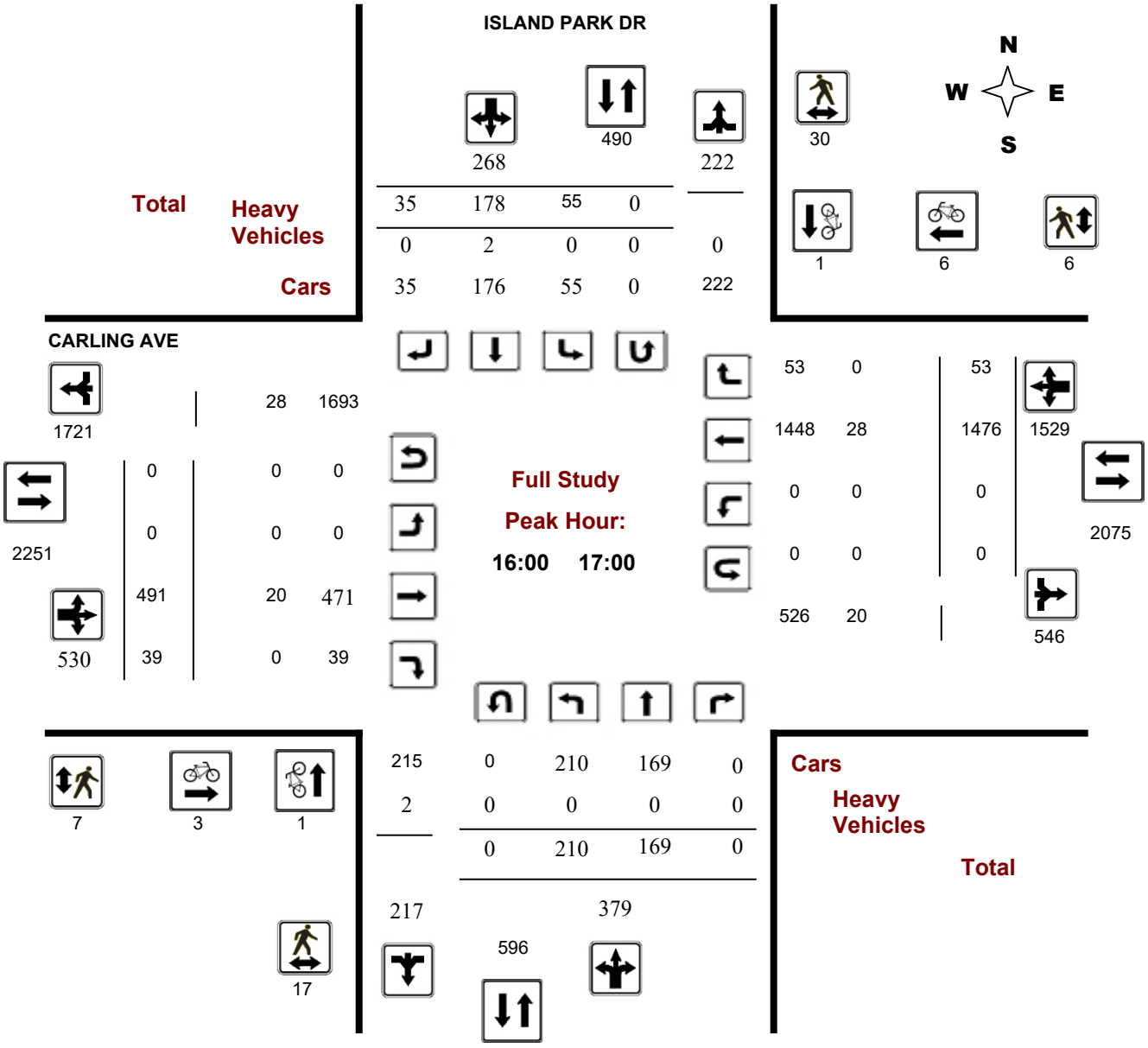
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018
Start Time: 07:00
WO No: 37623
Device: Miovision

Full Study Peak Hour Diagram



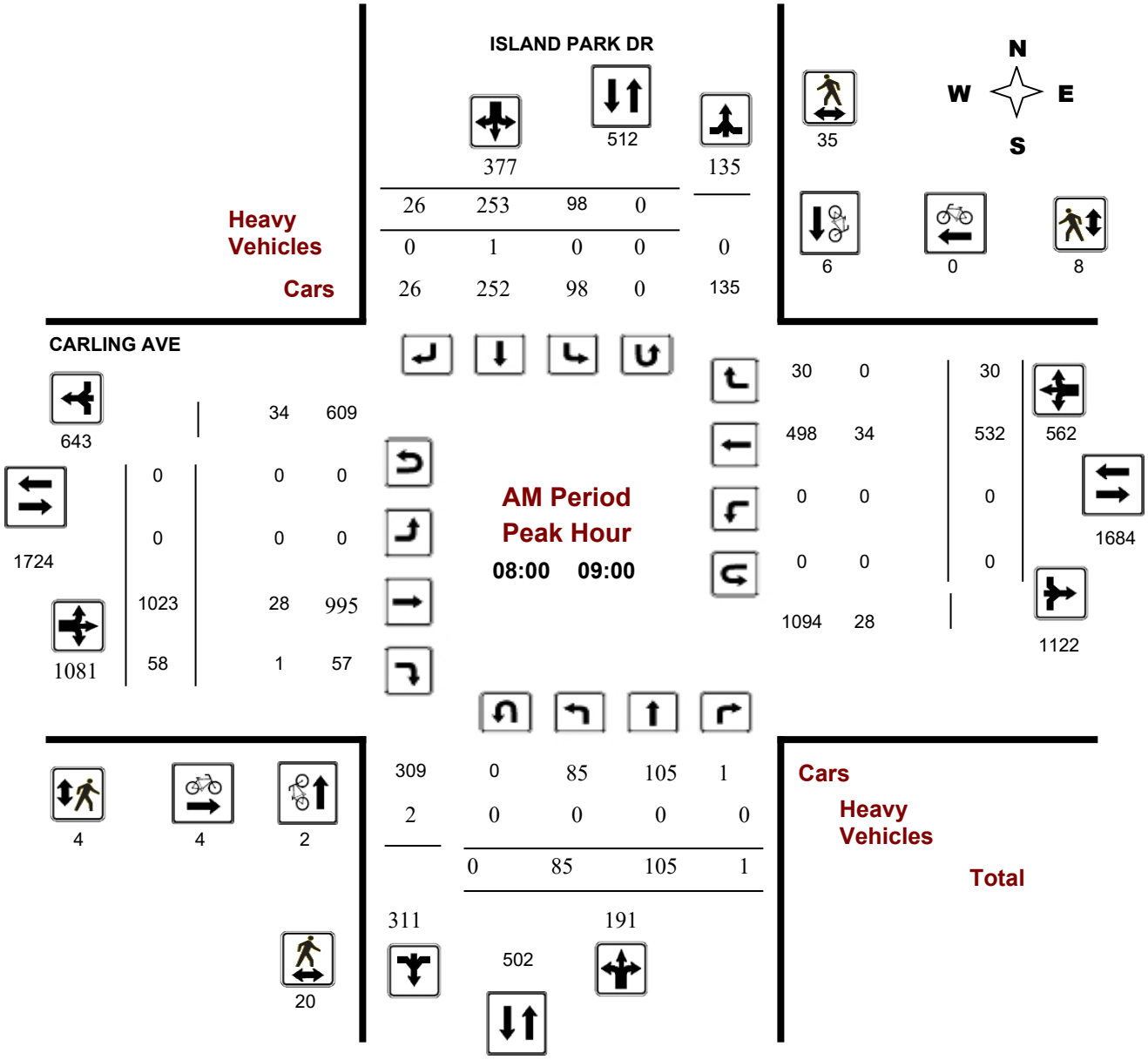
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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



Comments

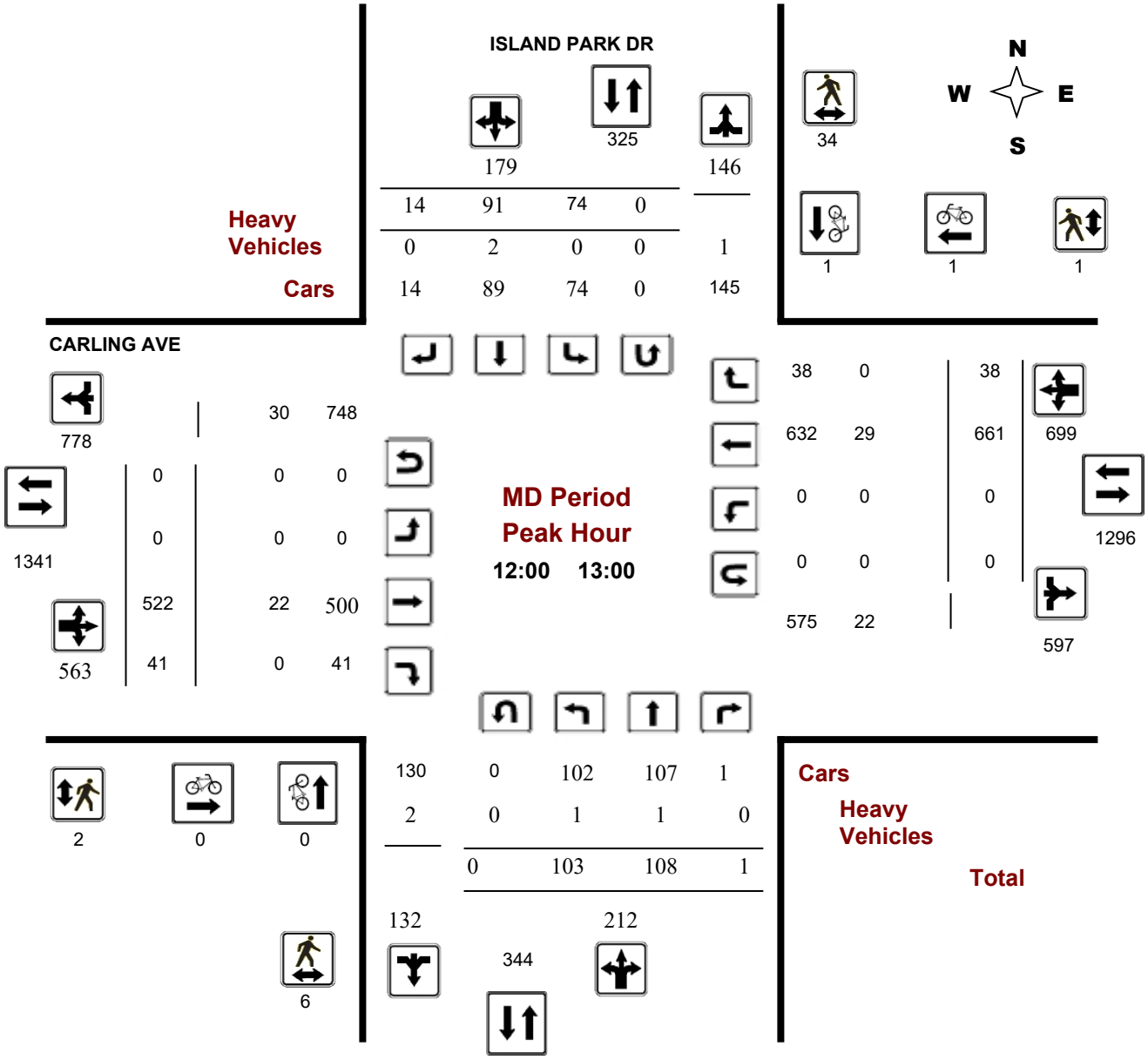
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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



Comments

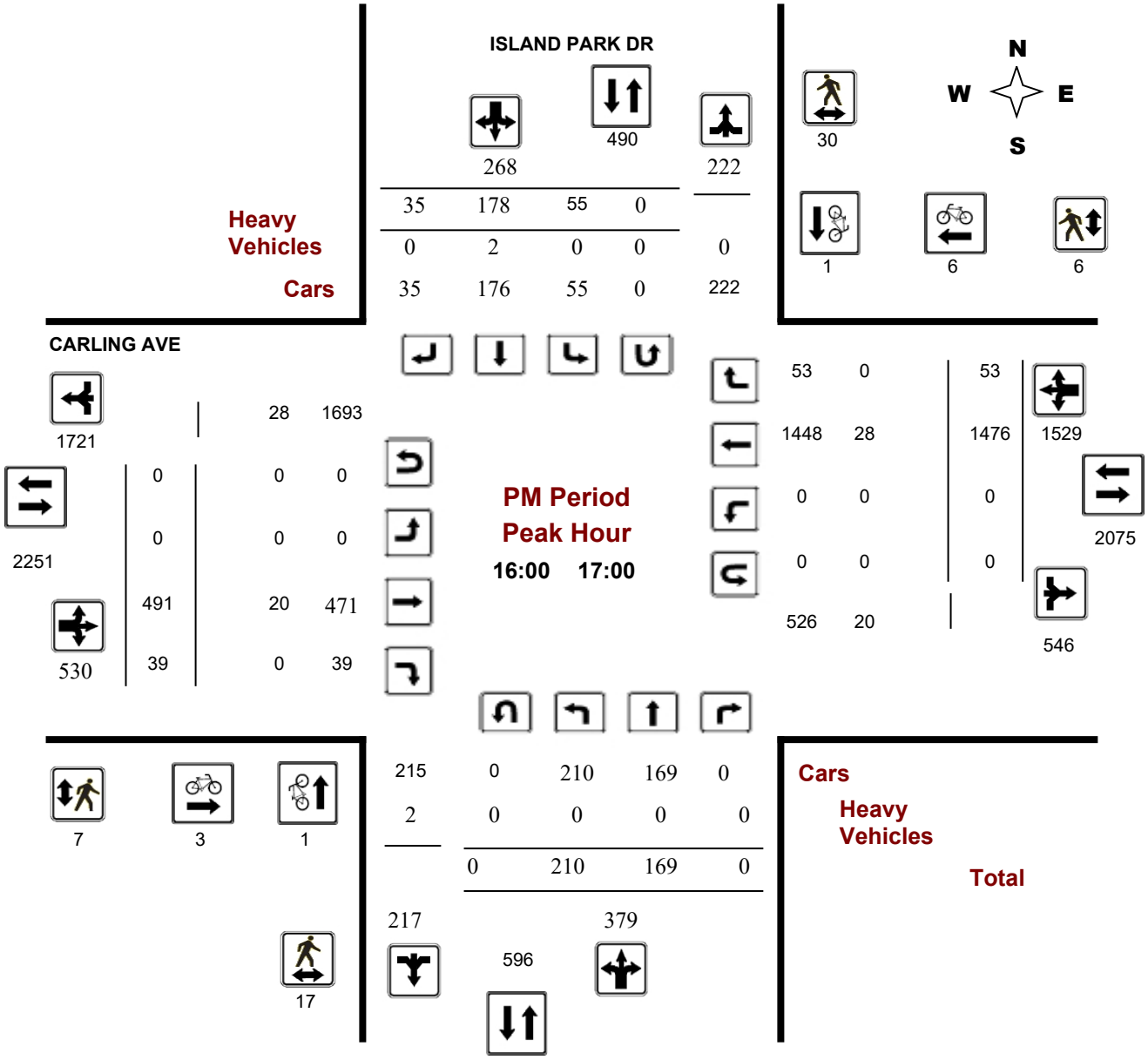
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, March 21, 2018

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 1 Westbound: 0

AADT Factor

1.00

	ISLAND PARK DR									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	90	106	1	**197**	71	280	7	**358**	**555**	0	813	62	**875**	0	331	21	**352**	**1227**	**1782**
08:00 09:00	85	105	1	**191**	98	253	26	**377**	**568**	0	1023	58	**1081**	0	532	30	**562**	**1643**	**2211**
09:00 10:00	117	129	6	**252**	67	180	13	**260**	**512**	0	615	40	**655**	0	536	25	**561**	**1216**	**1728**
11:30 12:30	104	108	1	**213**	60	100	11	**171**	**384**	0	478	31	**509**	0	636	32	**668**	**1177**	**1561**
12:30 13:30	77	105	1	**183**	59	104	13	**176**	**359**	0	502	38	**540**	0	639	36	**675**	**1215**	**1574**
15:00 16:00	165	223	1	**389**	41	149	37	**227**	**616**	0	503	35	**538**	0	1342	45	**1387**	**1925**	**2541**
16:00 17:00	210	169	0	**379**	55	178	35	**268**	**647**	0	491	39	**530**	0	1476	53	**1529**	**2059**	**2706**
17:00 18:00	192	191	0	**383**	70	170	19	**259**	**642**	0	469	42	**511**	0	1103	33	**1136**	**1647**	**2289**
Sub Total	1040	1136	11	**2187**	521	1414	161	**2096**	**4283**	0	4894	345	**5239**	0	6595	275	**6870**	**12109**	**16392**
U Turns				**0**				**0**	**0**				**1**				**0**	**1**	**1**
Total	1040	1136	11	**2187**	521	1414	161	**2096**	**4283**	0	4894	345	**5240**	0	6595	275	**6870**	**12110**	**16393**
EQ 12Hr	1446	1579	15	**3040**	724	1965	224	**2913**	**5953**	0	6803	480	**7284**	0	9167	382	**9549**	**16833**	**22786**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1362	1488	14	**2865**	683	1852	211	**2746**	**5953**	0	6411	452	**6864**	0	8639	360	**9000**	**16833**	**22786**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1**					
AVG 24Hr	1785	1949	19	**3753**	894	2427	276	**3597**	**7350**	0	8399	592	**8992**	0	11318	472	**11790**	**20782**	**28132**
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 @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study 15 Minute Increments

		ISLAND PARK DR									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	10	18	0	28	22	63	3	88	206	0	155	7	162	0	71	2	73	206	351
07:15	07:30	19	28	0	47	12	71	0	83	249	0	181	15	196	0	80	5	85	249	411
07:30	07:45	21	22	0	43	14	68	2	84	244	0	234	19	253	0	83	8	91	244	471
07:45	08:00	40	38	1	79	23	78	2	103	325	0	243	21	264	0	97	6	103	325	549
08:00	08:15	19	21	0	40	20	61	4	85	231	0	241	17	258	0	110	7	117	231	500
08:15	08:30	30	35	1	66	34	64	7	105	292	0	246	20	266	0	137	2	139	292	576
08:30	08:45	10	19	0	29	27	61	4	92	230	0	292	14	306	0	112	15	127	230	554
08:45	09:00	26	30	0	56	17	67	11	95	261	0	244	7	251	0	173	6	179	261	581
09:00	09:15	28	35	2	65	20	66	4	90	270	0	196	7	203	0	130	7	137	270	495
09:15	09:30	38	39	2	79	16	39	3	58	234	0	140	12	152	0	133	7	140	234	429
09:30	09:45	26	28	1	55	13	48	3	64	208	0	142	10	152	0	144	3	147	208	418
09:45	10:00	25	27	1	53	18	27	3	48	174	0	137	11	148	0	129	8	137	174	386
11:30	11:45	28	22	1	51	16	29	3	48	171	0	121	9	130	0	147	12	159	171	388
11:45	12:00	19	37	0	56	8	24	2	34	163	0	115	7	122	0	169	5	174	163	386
12:00	12:15	31	20	0	51	15	31	4	50	166	0	120	7	127	0	164	7	171	166	399
12:15	12:30	26	29	0	55	21	16	2	39	155	0	122	8	130	0	156	8	164	155	388
12:30	12:45	21	31	0	52	18	22	4	44	167	0	150	9	159	0	147	9	156	167	411
12:45	13:00	25	28	1	54	20	22	4	46	181	0	130	17	147	0	194	14	208	181	455
13:00	13:15	19	20	0	39	11	37	4	52	162	0	125	6	131	0	137	8	145	162	367
13:15	13:30	12	26	0	38	10	23	1	34	132	0	97	6	104	0	161	5	166	132	342
15:00	15:15	30	50	1	81	12	47	6	65	258	0	160	9	169	0	256	6	262	258	577
15:15	15:30	36	77	0	113	12	34	6	52	298	0	102	7	109	0	349	15	364	298	638
15:30	15:45	43	46	0	89	12	37	15	64	255	0	136	11	147	0	352	8	360	255	660
15:45	16:00	56	50	0	106	5	31	10	46	257	0	105	8	113	0	385	16	401	257	666
16:00	16:15	47	43	0	90	13	51	11	75	285	0	136	9	145	0	370	17	387	285	697
16:15	16:30	46	38	0	84	11	47	9	67	261	0	111	11	122	0	394	14	408	261	681
16:30	16:45	44	46	0	90	18	41	6	65	262	0	127	9	136	0	347	11	358	262	649
16:45	17:00	73	42	0	115	13	39	9	61	278	0	117	10	127	0	365	11	376	278	679
17:00	17:15	58	44	0	102	20	41	8	69	276	0	133	10	143	0	345	10	355	276	669
17:15	17:30	57	62	0	119	21	43	3	67	304	0	119	7	126	0	316	6	322	304	634
17:30	17:45	49	50	0	99	12	46	6	64	281	0	107	13	120	0	253	9	262	281	545
17:45	18:00	28	35	0	63	17	40	2	59	217	0	110	12	122	0	189	8	197	217	441
Total:		1040	1136	11	2187	521	1414	161	2096	7453	0	4894	345	5240	0	6595	275	6870	7453	16,393

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study Cyclist Volume

Time Period		ISLAND PARK DR			CARLING AVE			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	2	2	0	2	2	4
07:15	07:30	0	1	1	0	0	0	1
07:30	07:45	0	0	0	1	1	2	2
07:45	08:00	0	0	0	2	0	2	2
08:00	08:15	2	3	5	1	0	1	6
08:15	08:30	0	2	2	1	0	1	3
08:30	08:45	0	1	1	1	0	1	2
08:45	09:00	0	0	0	1	0	1	1
09:00	09:15	0	3	3	0	2	2	5
09:15	09:30	1	0	1	1	0	1	2
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	1	0	1	1
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	1	1	0	1	1	2
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	1	1	0	2	2	3
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	1	1	2	0	0	0	2
15:45	16:00	0	0	0	0	1	1	1
16:00	16:15	1	0	1	1	1	2	3
16:15	16:30	0	0	0	0	2	2	2
16:30	16:45	0	0	0	1	3	4	4
16:45	17:00	0	1	1	1	0	1	2
17:00	17:15	2	1	3	0	0	0	3
17:15	17:30	1	2	3	2	0	2	5
17:30	17:45	0	0	0	0	2	2	2
17:45	18:00	0	0	0	0	0	0	0
Total		8	19	**27**	15	17	32	59

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study Pedestrian Volume

		ISLAND PARK DR			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	3	**3**	1	1	**2**	**5**
07:15	07:30	1	3	**4**	2	0	**2**	**6**
07:30	07:45	4	4	**8**	1	1	**2**	**10**
07:45	08:00	1	9	**10**	1	1	**2**	**12**
08:00	08:15	7	9	**16**	0	2	**2**	**18**
08:15	08:30	6	9	**15**	2	1	**3**	**18**
08:30	08:45	5	9	**14**	2	1	**3**	**17**
08:45	09:00	2	8	**10**	0	4	**4**	**14**
09:00	09:15	1	7	**8**	0	0	**0**	**8**
09:15	09:30	2	6	**8**	0	1	**1**	**9**
09:30	09:45	4	8	**12**	2	1	**3**	**15**
09:45	10:00	1	5	**6**	1	2	**3**	**9**
11:30	11:45	1	4	**5**	1	0	**1**	**6**
11:45	12:00	1	7	**8**	1	0	**1**	**9**
12:00	12:15	3	4	**7**	1	0	**1**	**8**
12:15	12:30	0	7	**7**	1	0	**1**	**8**
12:30	12:45	2	10	**12**	0	0	**0**	**12**
12:45	13:00	1	13	**14**	0	1	**1**	**15**
13:00	13:15	4	4	**8**	2	0	**2**	**10**
13:15	13:30	2	7	**9**	0	1	**1**	**10**
15:00	15:15	4	8	**12**	1	2	**3**	**15**
15:15	15:30	4	5	**9**	1	1	**2**	**11**
15:30	15:45	2	8	**10**	0	0	**0**	**10**
15:45	16:00	3	6	**9**	1	1	**2**	**11**
16:00	16:15	4	5	**9**	0	1	**1**	**10**
16:15	16:30	6	11	**17**	2	3	**5**	**22**
16:30	16:45	5	6	**11**	2	0	**2**	**13**
16:45	17:00	2	8	**10**	3	2	**5**	**15**
17:00	17:15	1	3	**4**	0	1	**1**	**5**
17:15	17:30	4	5	**9**	1	0	**1**	**10**
17:30	17:45	12	7	**19**	5	1	**6**	**25**
17:45	18:00	9	2	**11**	0	3	**3**	**14**
Total	.....	104	210	**314**	34	32	**66**	**380**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study Heavy Vehicles

		ISLAND PARK DR									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	1	0	**1**	0	0	0	**1**	**2**	0	6	0	**11**	0	5	0	**11**	**22**	**12**
07:15	07:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**10**	0	6	0	**10**	**20**	**10**
07:30	07:45	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**18**	0	10	0	**18**	**36**	**18**
07:45	08:00	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**15**	0	10	0	**15**	**30**	**15**
08:00	08:15	0	0	0	**1**	0	0	0	**0**	**1**	0	7	1	**17**	0	9	0	**16**	**33**	**17**
08:15	08:30	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**17**	0	10	0	**17**	**34**	**17**
08:30	08:45	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**13**	0	5	0	**13**	**26**	**13**
08:45	09:00	0	0	0	**1**	0	1	0	**1**	**2**	0	6	0	**16**	0	10	0	**16**	**32**	**17**
09:00	09:15	0	0	0	**0**	0	0	0	**0**	**0**	0	10	0	**19**	0	9	0	**19**	**38**	**19**
09:15	09:30	0	1	0	**1**	0	0	0	**1**	**2**	0	6	0	**13**	0	7	0	**13**	**26**	**14**
09:30	09:45	1	1	0	**2**	0	0	0	**1**	**3**	0	8	0	**21**	0	12	0	**20**	**41**	**22**
09:45	10:00	0	0	0	**0**	0	0	0	**1**	**1**	0	11	0	**19**	0	8	1	**20**	**39**	**20**
11:30	11:45	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**13**	0	8	0	**13**	**26**	**13**
11:45	12:00	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**13**	0	5	0	**13**	**26**	**13**
12:00	12:15	1	1	0	**3**	0	1	0	**2**	**5**	0	5	0	**10**	0	4	0	**9**	**19**	**12**
12:15	12:30	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**15**	0	8	0	**15**	**30**	**15**
12:30	12:45	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**14**	0	7	0	**14**	**28**	**14**
12:45	13:00	0	0	0	**1**	0	1	0	**1**	**2**	0	3	0	**13**	0	10	0	**13**	**26**	**14**
13:00	13:15	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**14**	0	7	0	**14**	**28**	**14**
13:15	13:30	0	0	0	**0**	0	0	0	**0**	**0**	0	7	0	**13**	0	6	0	**13**	**26**	**13**
15:00	15:15	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**14**	0	8	0	**14**	**28**	**14**
15:15	15:30	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**14**	0	10	0	**14**	**28**	**14**
15:30	15:45	0	0	0	**0**	0	0	0	**0**	**0**	0	8	0	**18**	0	10	0	**18**	**36**	**18**
15:45	16:00	0	0	0	**0**	0	0	0	**0**	**0**	0	10	0	**13**	0	3	0	**13**	**26**	**13**
16:00	16:15	0	0	0	**1**	0	1	0	**1**	**2**	0	7	0	**14**	0	7	0	**14**	**28**	**15**
16:15	16:30	0	0	0	**0**	0	0	0	**0**	**0**	0	5	0	**14**	0	9	0	**14**	**28**	**14**
16:30	16:45	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**12**	0	6	0	**12**	**24**	**12**
16:45	17:00	0	0	0	**1**	0	1	0	**1**	**2**	0	2	0	**8**	0	6	0	**8**	**16**	**9**
17:00	17:15	0	0	0	**0**	0	0	0	**0**	**0**	0	6	0	**11**	0	5	0	**11**	**22**	**11**
17:15	17:30	0	0	0	**0**	0	0	0	**0**	**0**	0	3	0	**8**	0	5	0	**8**	**16**	**8**
17:30	17:45	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**7**	0	3	0	**7**	**14**	**7**
17:45	18:00	0	0	0	**0**	0	0	0	**0**	**0**	0	4	0	**9**	0	5	0	**9**	**18**	**9**
Total:	None	2	4	0	**12**	0	5	0	**10**	**22**	0	200	1	**436**	0	233	1	**434**	**870**	**446**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ ISLAND PARK DR

Survey Date: Wednesday, March 21, 2018 **WO No:** 37623

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

Full Study 15 Minute U-Turn Total

Time Period		ISLAND PARK DR		CARLING AVE		
		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	1	0	1
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	0	1	0	1

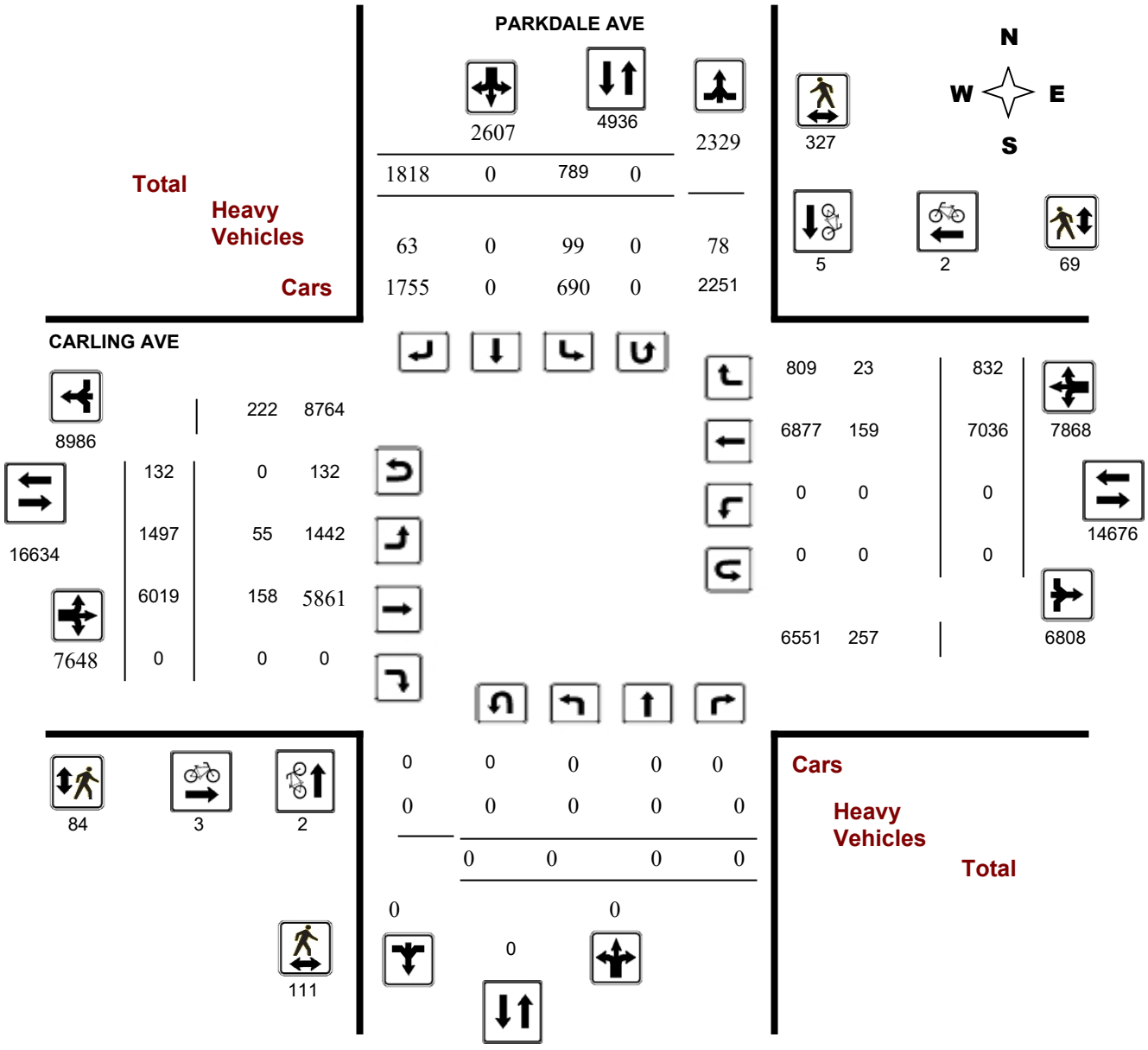
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020
Start Time: 07:00
WO No: 39354
Device: Miovision

Full Study Diagram



5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

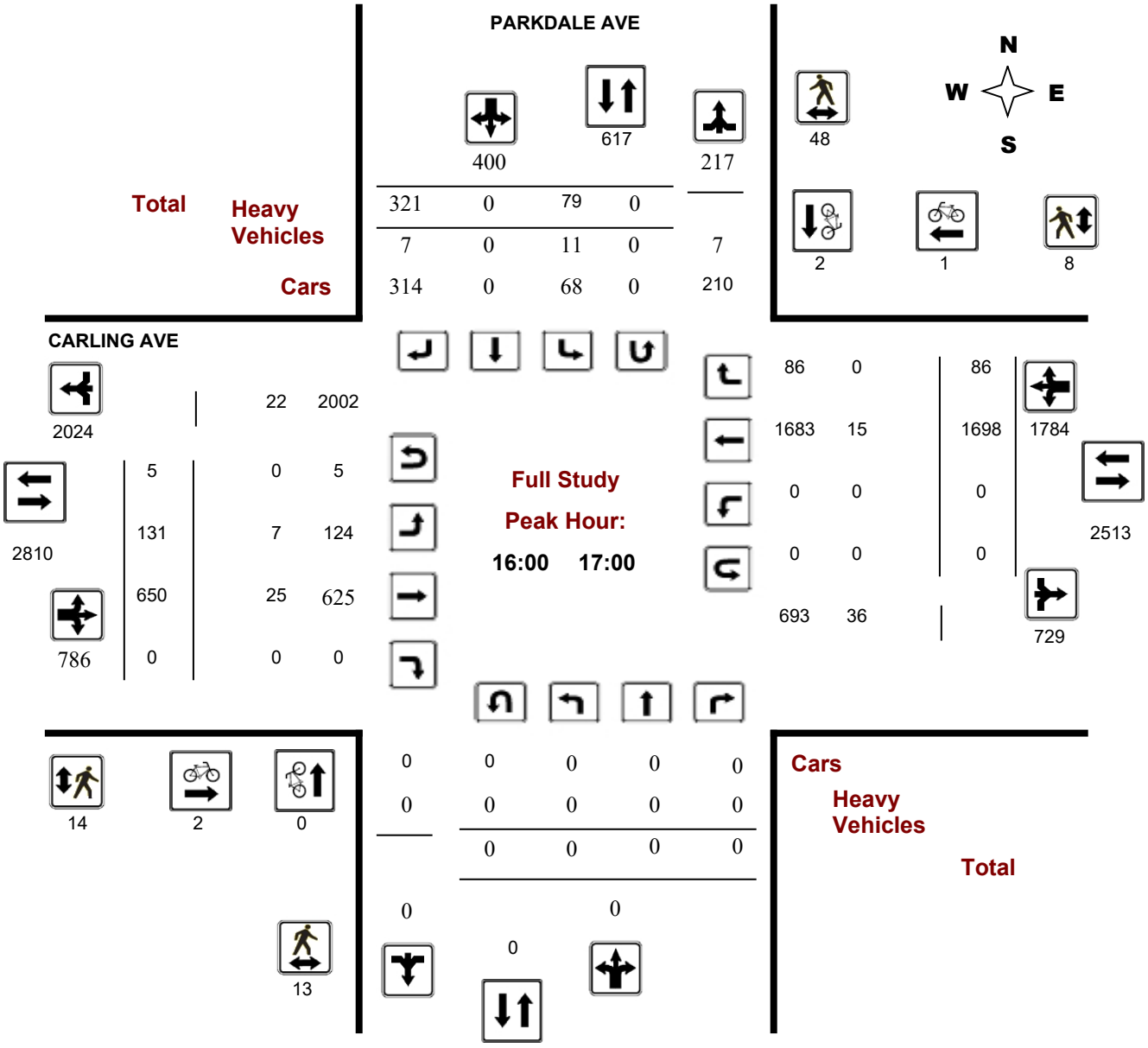
Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020
Start Time: 07:00
WO No: 39354
Device: Miovision

Full Study Peak Hour Diagram



5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

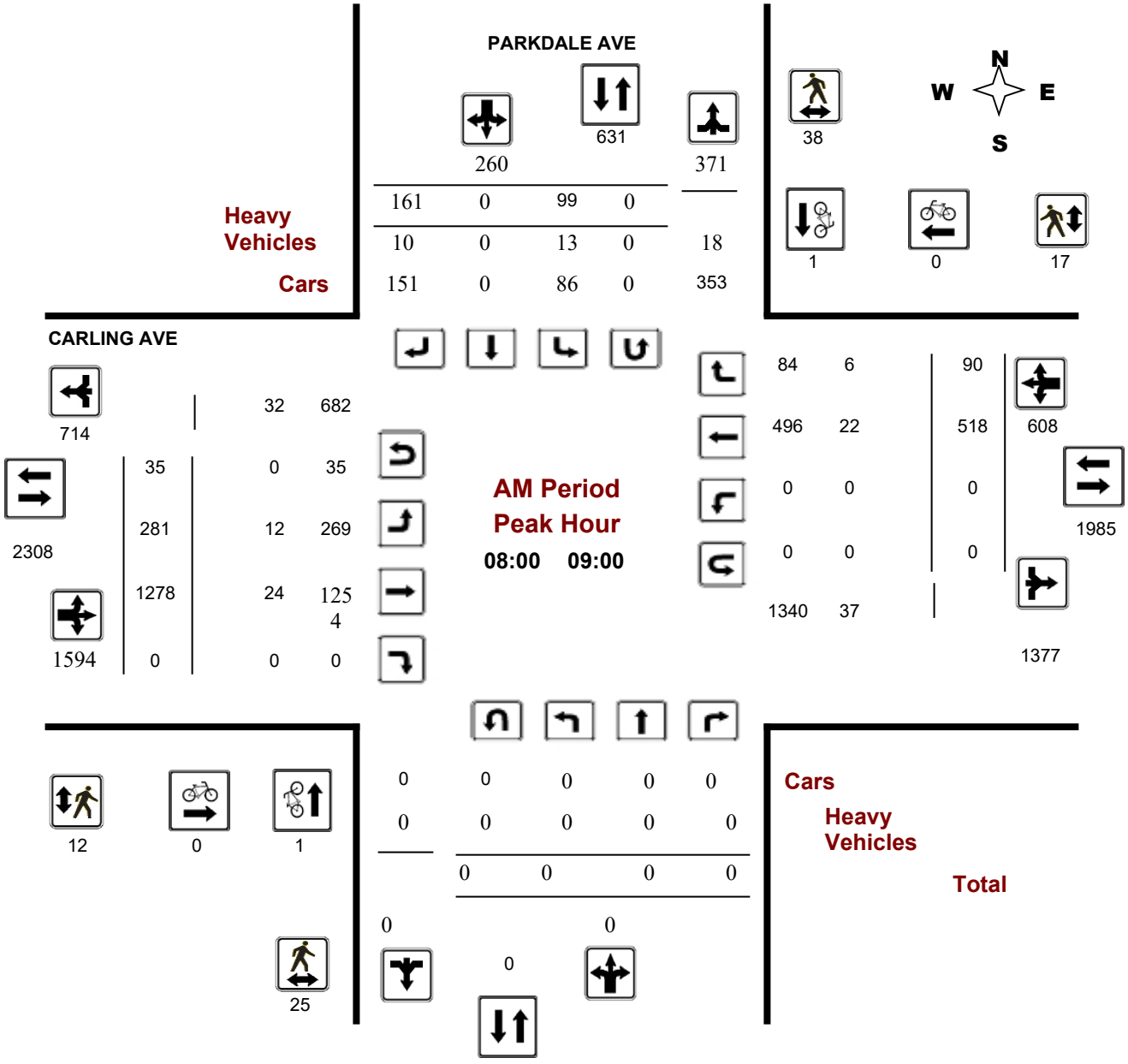
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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



Comments 5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

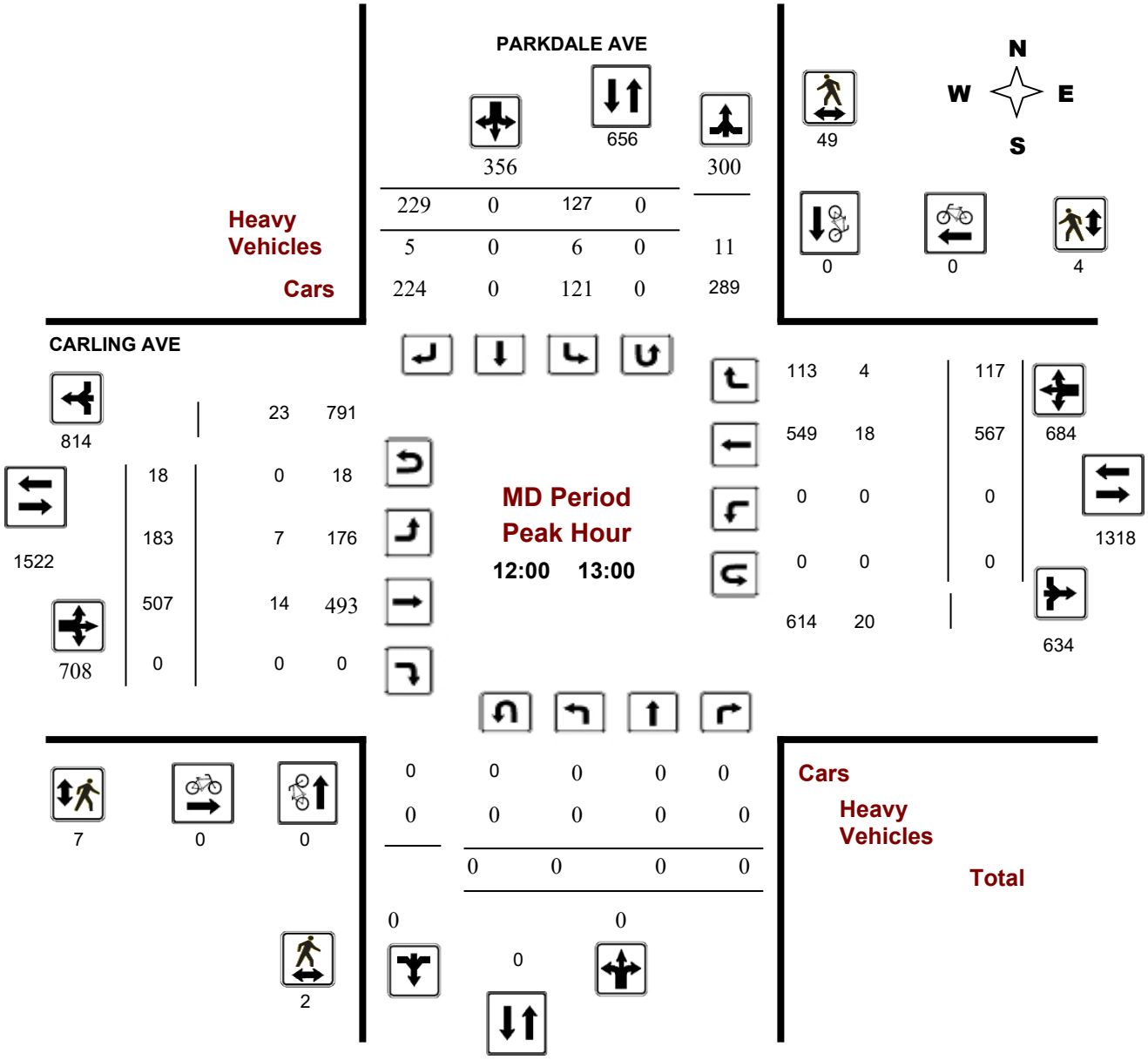
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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



Comments 5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

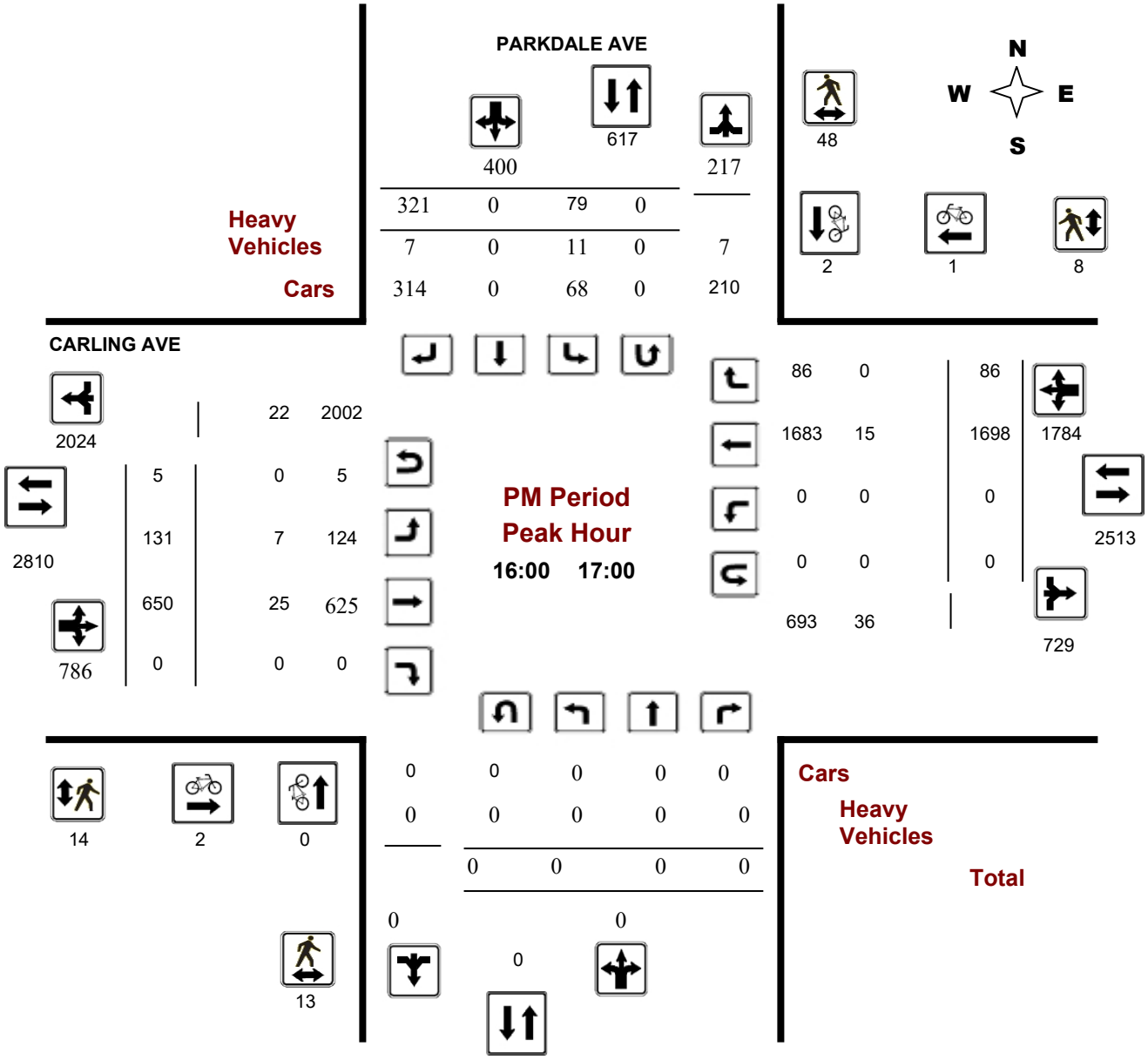
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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



Comments 5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, January 21, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 132 Westbound: 0

AADT Factor

1.10

	PARKDALE AVE									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**	104	0	132	**236**	**236**	261	980	0	**1241**	0	372	96	**468**	**1709**	**1945**
08:00 09:00	0	0	0	**0**	99	0	161	**260**	**260**	281	1278	0	**1559**	0	518	90	**608**	**2167**	**2427**
09:00 10:00	0	0	0	**0**	102	0	182	**284**	**284**	207	841	0	**1048**	0	490	123	**613**	**1661**	**1945**
11:30 12:30	0	0	0	**0**	127	0	226	**353**	**353**	164	486	0	**650**	0	585	121	**706**	**1356**	**1709**
12:30 13:30	0	0	0	**0**	109	0	213	**322**	**322**	186	542	0	**728**	0	542	119	**661**	**1389**	**1711**
15:00 16:00	0	0	0	**0**	94	0	275	**369**	**369**	132	644	0	**776**	0	1448	110	**1558**	**2334**	**2703**
16:00 17:00	0	0	0	**0**	79	0	321	**400**	**400**	131	650	0	**781**	0	1698	86	**1784**	**2565**	**2965**
17:00 18:00	0	0	0	**0**	75	0	308	**383**	**383**	135	598	0	**733**	0	1383	87	**1470**	**2203**	**2586**
Sub Total	0	0	0	**0**	789	0	1818	**2607**	**2607**	1497	6019	0	**7516**	0	7036	832	**7868**	**15384**	**17991**
U Turns				**0**				**0**	**0**				**132**				**0**	**132**	**132**
Total	0	0	0	**0**	789	0	1818	**2607**	**2607**	1497	6019	0	**7648**	0	7036	832	**7868**	**15516**	**18123**
EQ 12Hr	0	0	0	**0**	1097	0	2527	**3624**	**3624**	2081	8366	0	**10631**	0	9780	1156	**10937**	**21567**	**25191**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	0	0	0	**0**	1137	0	2620	**3757**	**3986**	2157	8673	0	**11021**	0	10139	1199	**11338**	**23724**	**27710**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.1**					
AVG 24Hr	0	0	0	**0**	1489	0	3432	**4921**	**4921**	2826	11362	0	**14437**	0	13282	1571	**14853**	**29290**	**34211**
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 @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study 15 Minute Increments

		PARKDALE AVE									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	28	0	33	61	131	47	156	0	208	0	59	23	82	131	351
07:15	07:30	0	0	0	0	19	0	23	42	136	70	261	0	333	0	88	24	112	136	487
07:30	07:45	0	0	0	0	28	0	37	65	160	68	258	0	333	0	92	27	119	160	517
07:45	08:00	0	0	0	0	29	0	39	68	166	76	305	0	385	0	133	22	155	166	608
08:00	08:15	0	0	0	0	29	0	43	72	161	77	334	0	418	0	110	12	122	161	612
08:15	08:30	0	0	0	0	18	0	34	52	139	67	345	0	419	0	150	20	170	139	641
08:30	08:45	0	0	0	0	28	0	40	68	160	65	279	0	353	0	115	27	142	160	563
08:45	09:00	0	0	0	0	24	0	44	68	171	72	320	0	404	0	143	31	174	171	646
09:00	09:15	0	0	0	0	28	0	45	73	180	73	253	0	331	0	118	34	152	180	556
09:15	09:30	0	0	0	0	20	0	41	61	136	50	235	0	291	0	132	25	157	136	509
09:30	09:45	0	0	0	0	27	0	53	80	153	44	175	0	227	0	115	29	144	153	451
09:45	10:00	0	0	0	0	27	0	43	70	145	40	178	0	226	0	125	35	160	145	456
11:30	11:45	0	0	0	0	35	0	47	82	161	42	129	0	180	0	142	37	179	161	441
11:45	12:00	0	0	0	0	25	0	62	87	151	37	116	0	158	0	146	27	173	151	418
12:00	12:15	0	0	0	0	39	0	66	105	166	41	115	0	160	0	129	20	149	166	414
12:15	12:30	0	0	0	0	28	0	51	79	160	44	126	0	175	0	168	37	205	160	459
12:30	12:45	0	0	0	0	35	0	54	89	161	49	121	0	173	0	129	23	152	161	414
12:45	13:00	0	0	0	0	25	0	58	83	169	49	145	0	200	0	141	37	178	169	461
13:00	13:15	0	0	0	0	27	0	54	81	147	42	145	0	190	0	115	24	139	147	410
13:15	13:30	0	0	0	0	22	0	47	69	150	46	131	0	180	0	157	35	192	150	441
15:00	15:15	0	0	0	0	24	0	65	89	162	37	155	0	193	0	275	36	311	162	593
15:15	15:30	0	0	0	0	20	0	60	80	134	28	152	0	183	0	372	26	398	134	661
15:30	15:45	0	0	0	0	28	0	73	101	156	32	171	0	204	0	398	23	421	156	726
15:45	16:00	0	0	0	0	22	0	77	99	159	35	166	0	202	0	403	25	428	159	729
16:00	16:15	0	0	0	0	16	0	77	93	148	29	151	0	180	0	431	26	457	148	730
16:15	16:30	0	0	0	0	24	0	84	108	162	39	164	0	205	0	403	15	418	162	731
16:30	16:45	0	0	0	0	21	0	85	106	161	31	164	0	196	0	446	24	470	161	772
16:45	17:00	0	0	0	0	18	0	75	93	146	32	171	0	205	0	418	21	439	146	737
17:00	17:15	0	0	0	0	22	0	79	101	162	33	137	0	171	0	386	28	414	162	686
17:15	17:30	0	0	0	0	15	0	85	100	151	29	156	0	185	0	379	22	401	151	686
17:30	17:45	0	0	0	0	24	0	75	99	160	39	153	0	192	0	323	22	345	160	636
17:45	18:00	0	0	0	0	14	0	69	83	132	34	152	0	188	0	295	15	310	132	581
Total:		0	0	0	0	789	0	1818	2607	4936	1497	6019	0	7648	0	7036	832	7868	4936	18,123

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study Cyclist Volume

Time Period		PARKDALE AVE			CARLING AVE			
		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	1	1	0	0	0	1
07:45	08:00	0	0	0	1	0	1	1
08:00	08:15	0	0	0	0	0	0	0
08:15	08:30	1	0	1	0	0	0	1
08:30	08:45	0	1	1	0	0	0	1
08:45	09:00	0	0	0	0	0	0	0
09:00	09:15	0	1	1	0	0	0	1
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	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	1	0	1	0	0	0	1
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	2	1	3	4
16:45	17:00	0	1	1	0	0	0	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	0	0	0	1	1	1
17:45	18:00	0	0	0	0	0	0	0
Total		2	5	**7**	3	2	5	12

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study Pedestrian Volume

	PARKDALE AVE			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	5	11	**16**	2	3	**5**	**21**
07:15 07:30	4	6	**10**	1	2	**3**	**13**
07:30 07:45	10	8	**18**	3	4	**7**	**25**
07:45 08:00	5	15	**20**	3	4	**7**	**27**
08:00 08:15	9	4	**13**	2	4	**6**	**19**
08:15 08:30	6	11	**17**	3	3	**6**	**23**
08:30 08:45	5	10	**15**	4	5	**9**	**24**
08:45 09:00	5	13	**18**	3	5	**8**	**26**
09:00 09:15	9	10	**19**	2	4	**6**	**25**
09:15 09:30	5	5	**10**	1	5	**6**	**16**
09:30 09:45	1	3	**4**	3	0	**3**	**7**
09:45 10:00	2	6	**8**	2	2	**4**	**12**
11:30 11:45	1	9	**10**	1	1	**2**	**12**
11:45 12:00	1	16	**17**	0	3	**3**	**20**
12:00 12:15	1	14	**15**	4	0	**4**	**19**
12:15 12:30	0	12	**12**	1	1	**2**	**14**
12:30 12:45	0	10	**10**	2	2	**4**	**14**
12:45 13:00	1	13	**14**	0	1	**1**	**15**
13:00 13:15	0	5	**5**	1	0	**1**	**6**
13:15 13:30	3	9	**12**	3	2	**5**	**17**
15:00 15:15	4	13	**17**	3	4	**7**	**24**
15:15 15:30	3	15	**18**	11	0	**11**	**29**
15:30 15:45	4	14	**18**	1	0	**1**	**19**
15:45 16:00	3	14	**17**	6	3	**9**	**26**
16:00 16:15	6	12	**18**	6	1	**7**	**25**
16:15 16:30	4	15	**19**	1	5	**6**	**25**
16:30 16:45	2	11	**13**	4	1	**5**	**18**
16:45 17:00	1	10	**11**	3	1	**4**	**15**
17:00 17:15	4	12	**16**	3	1	**4**	**20**
17:15 17:30	3	5	**8**	1	1	**2**	**10**
17:30 17:45	4	8	**12**	2	1	**3**	**15**
17:45 18:00	0	8	**8**	2	0	**2**	**10**
Total	111	327	**438**	84	69	**153**	**591**

5470806 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study Heavy Vehicles

		PARKDALE AVE									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**	4	0	1	**7**	**7**	1	6	0	**12**	0	4	1	**15**	**27**	**17**
07:15	07:30	0	0	0	**0**	3	0	1	**6**	**6**	2	1	0	**7**	0	3	0	**7**	**14**	**10**
07:30	07:45	0	0	0	**0**	3	0	1	**6**	**6**	2	2	0	**8**	0	3	0	**8**	**16**	**11**
07:45	08:00	0	0	0	**0**	4	0	2	**8**	**8**	1	9	0	**19**	0	7	1	**21**	**40**	**24**
08:00	08:15	0	0	0	**0**	4	0	0	**8**	**8**	4	10	0	**21**	0	7	0	**21**	**42**	**25**
08:15	08:30	0	0	0	**0**	2	0	3	**10**	**10**	3	4	0	**13**	0	3	2	**11**	**24**	**17**
08:30	08:45	0	0	0	**0**	3	0	5	**12**	**12**	1	5	0	**20**	0	9	3	**20**	**40**	**26**
08:45	09:00	0	0	0	**0**	4	0	2	**11**	**11**	4	5	0	**14**	0	3	1	**13**	**27**	**19**
09:00	09:15	0	0	0	**0**	5	0	1	**8**	**8**	2	8	0	**18**	0	7	0	**20**	**38**	**23**
09:15	09:30	0	0	0	**0**	3	0	2	**9**	**9**	2	6	0	**15**	0	5	2	**16**	**31**	**20**
09:30	09:45	0	0	0	**0**	3	0	5	**10**	**10**	1	5	0	**15**	0	4	1	**13**	**28**	**19**
09:45	10:00	0	0	0	**0**	3	0	2	**9**	**9**	2	7	0	**18**	0	7	2	**19**	**37**	**23**
11:30	11:45	0	0	0	**0**	4	0	3	**9**	**9**	2	9	0	**19**	0	5	0	**18**	**37**	**23**
11:45	12:00	0	0	0	**0**	3	0	3	**8**	**8**	2	3	0	**11**	0	3	0	**9**	**20**	**14**
12:00	12:15	0	0	0	**0**	3	0	1	**5**	**5**	1	3	0	**9**	0	4	0	**10**	**19**	**12**
12:15	12:30	0	0	0	**0**	1	0	3	**6**	**6**	1	1	0	**10**	0	5	1	**8**	**18**	**12**
12:30	12:45	0	0	0	**0**	2	0	0	**5**	**5**	1	6	0	**13**	0	6	2	**16**	**29**	**17**
12:45	13:00	0	0	0	**0**	0	0	1	**6**	**6**	4	4	0	**12**	0	3	1	**8**	**20**	**13**
13:00	13:15	0	0	0	**0**	3	0	2	**7**	**7**	2	3	0	**14**	0	7	0	**13**	**27**	**17**
13:15	13:30	0	0	0	**0**	3	0	3	**8**	**8**	1	3	0	**12**	0	5	1	**12**	**24**	**16**
15:00	15:15	0	0	0	**0**	5	0	3	**9**	**9**	1	3	0	**13**	0	6	0	**14**	**27**	**18**
15:15	15:30	0	0	0	**0**	4	0	2	**8**	**8**	1	3	0	**12**	0	6	1	**14**	**26**	**17**
15:30	15:45	0	0	0	**0**	3	0	1	**5**	**5**	1	4	0	**15**	0	9	0	**16**	**31**	**18**
15:45	16:00	0	0	0	**0**	3	0	2	**7**	**7**	1	7	0	**14**	0	4	1	**15**	**29**	**18**
16:00	16:15	0	0	0	**0**	3	0	3	**8**	**8**	2	6	0	**14**	0	3	0	**12**	**26**	**17**
16:15	16:30	0	0	0	**0**	3	0	1	**5**	**5**	1	6	0	**14**	0	6	0	**15**	**29**	**17**
16:30	16:45	0	0	0	**0**	3	0	1	**6**	**6**	2	7	0	**12**	0	2	0	**12**	**24**	**15**
16:45	17:00	0	0	0	**0**	2	0	2	**6**	**6**	2	6	0	**14**	0	4	0	**12**	**26**	**16**
17:00	17:15	0	0	0	**0**	3	0	2	**6**	**6**	1	4	0	**8**	0	1	0	**8**	**16**	**11**
17:15	17:30	0	0	0	**0**	4	0	1	**6**	**6**	1	3	0	**8**	0	3	0	**10**	**18**	**12**
17:30	17:45	0	0	0	**0**	4	0	1	**8**	**8**	1	7	0	**14**	0	5	2	**18**	**32**	**20**
17:45	18:00	0	0	0	**0**	2	0	3	**8**	**8**	2	2	0	**17**	0	10	1	**15**	**32**	**20**
Total:	None	0	0	0	**0**	99	0	63	**240**	**240**	55	158	0	**435**	0	159	23	**439**	**874**	**557**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ PARKDALE AVE

Survey Date: Tuesday, January 21, 2020 **WO No:** 39354

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

Full Study 15 Minute U-Turn Total

Time Period		PARKDALE AVE		CARLING AVE		
		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	5	0	5
07:15	07:30	0	0	2	0	2
07:30	07:45	0	0	7	0	7
07:45	08:00	0	0	4	0	4
08:00	08:15	0	0	7	0	7
08:15	08:30	0	0	7	0	7
08:30	08:45	0	0	9	0	9
08:45	09:00	0	0	12	0	12
09:00	09:15	0	0	5	0	5
09:15	09:30	0	0	6	0	6
09:30	09:45	0	0	8	0	8
09:45	10:00	0	0	8	0	8
11:30	11:45	0	0	9	0	9
11:45	12:00	0	0	5	0	5
12:00	12:15	0	0	4	0	4
12:15	12:30	0	0	5	0	5
12:30	12:45	0	0	3	0	3
12:45	13:00	0	0	6	0	6
13:00	13:15	0	0	3	0	3
13:15	13:30	0	0	3	0	3
15:00	15:15	0	0	1	0	1
15:15	15:30	0	0	3	0	3
15:30	15:45	0	0	1	0	1
15:45	16:00	0	0	1	0	1
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	2	0	2
16:30	16:45	0	0	1	0	1
16:45	17:00	0	0	2	0	2
17:00	17:15	0	0	1	0	1
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	2	0	2
Total		0	0	132	0	132

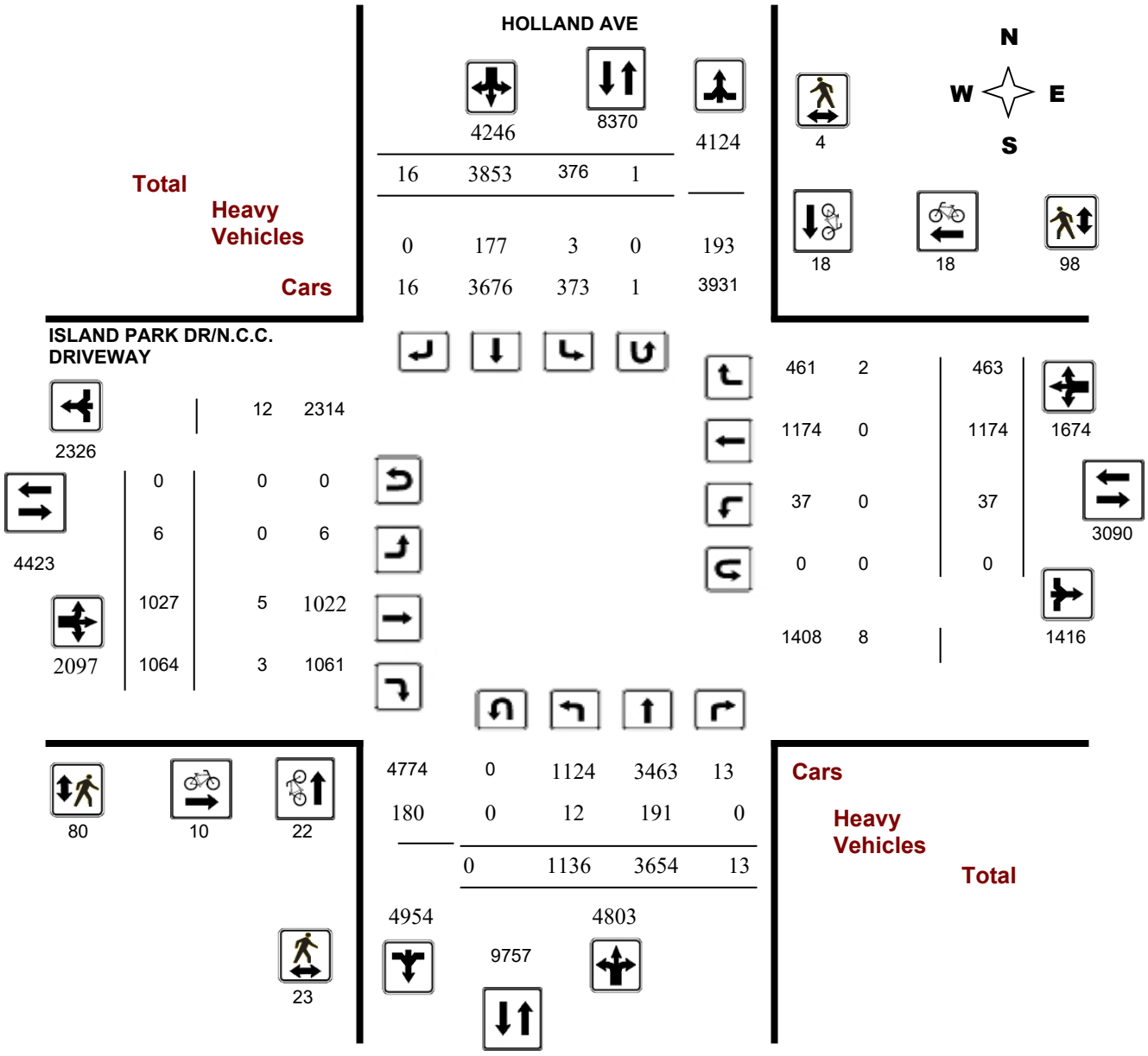
Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019
Start Time: 07:00
WO No: 39136
Device: Miovision

Full Study Diagram



Transportation Services - Traffic Services

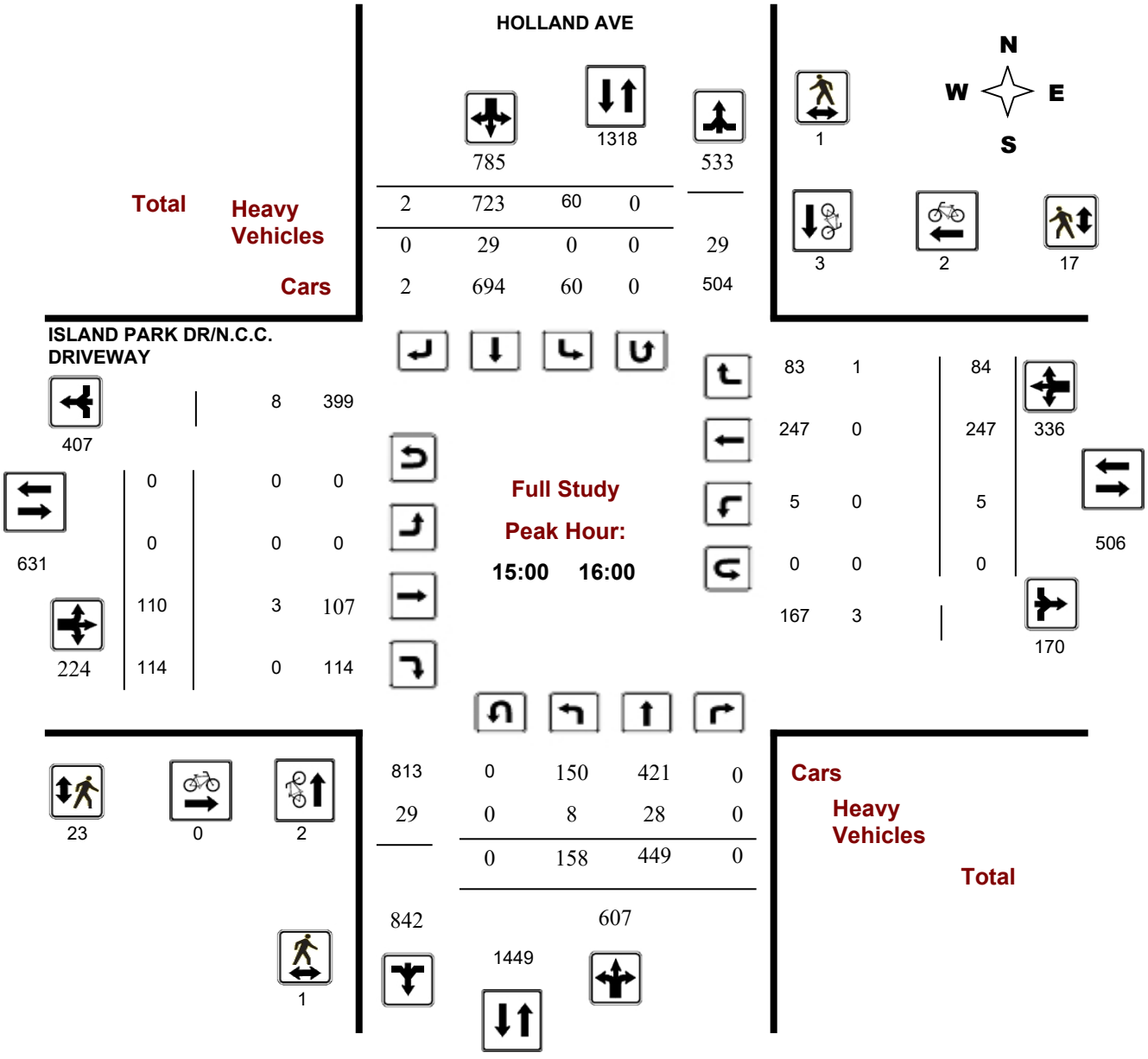
Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study Peak Hour Diagram



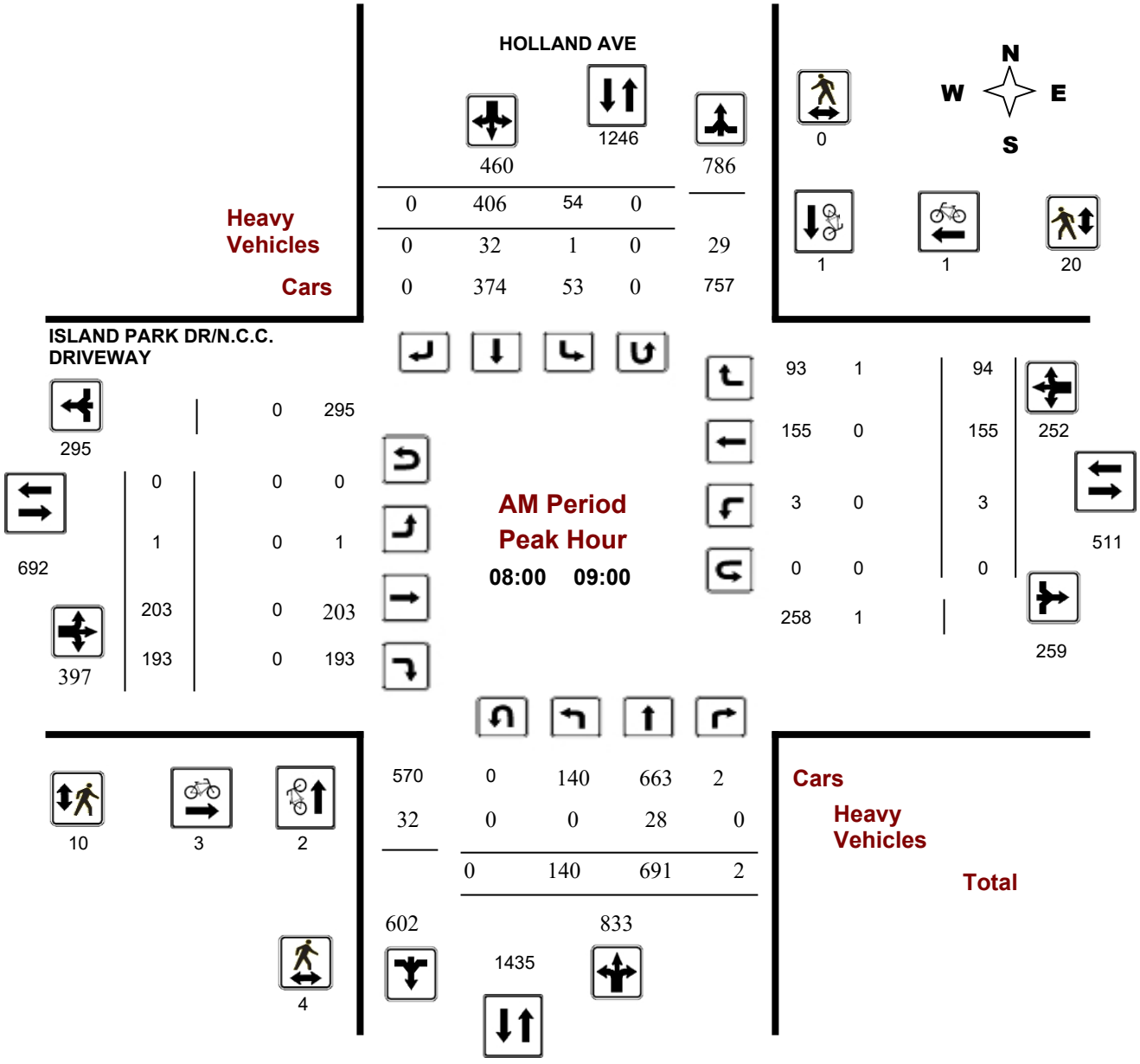
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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



Comments

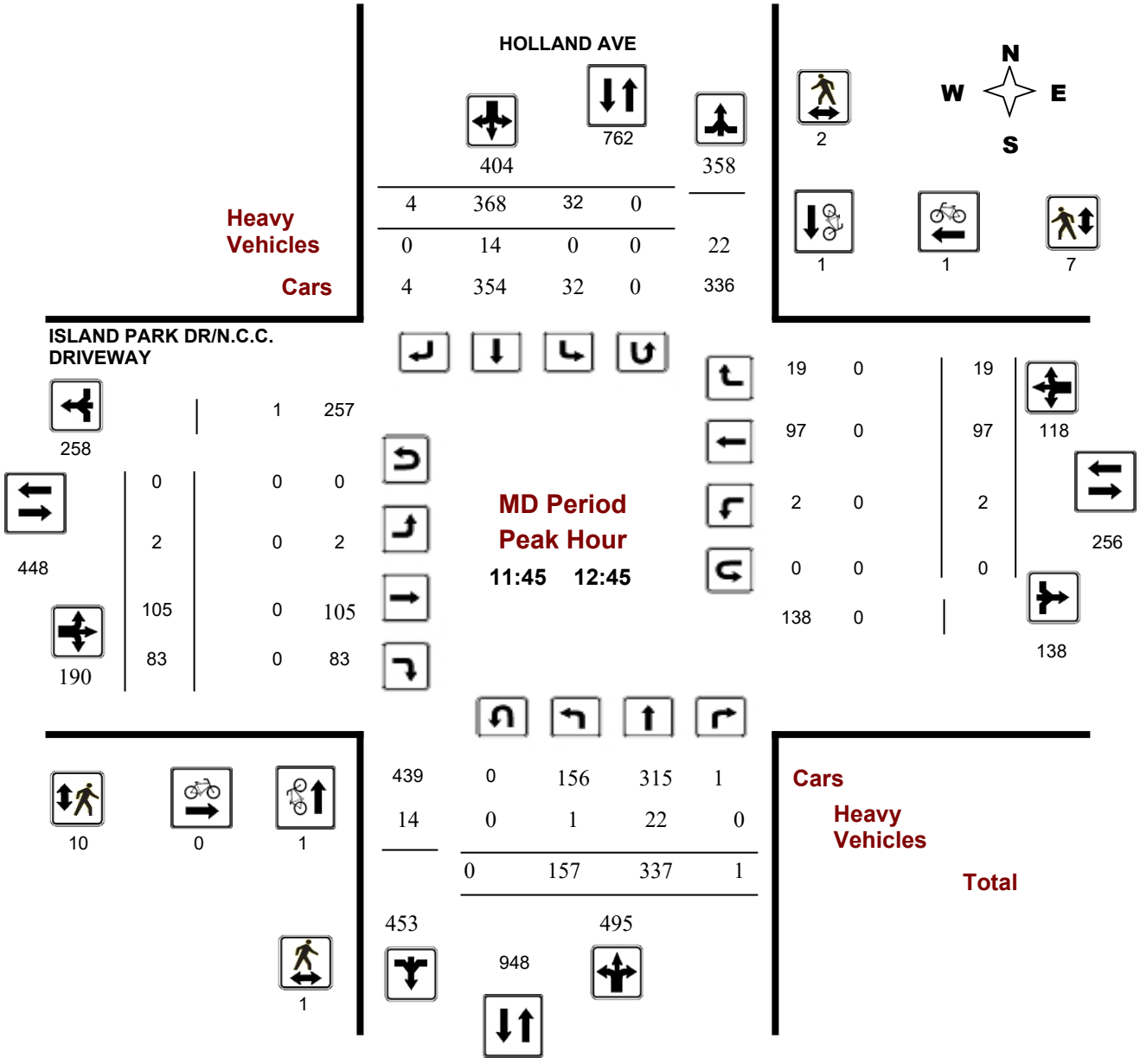
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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



Comments

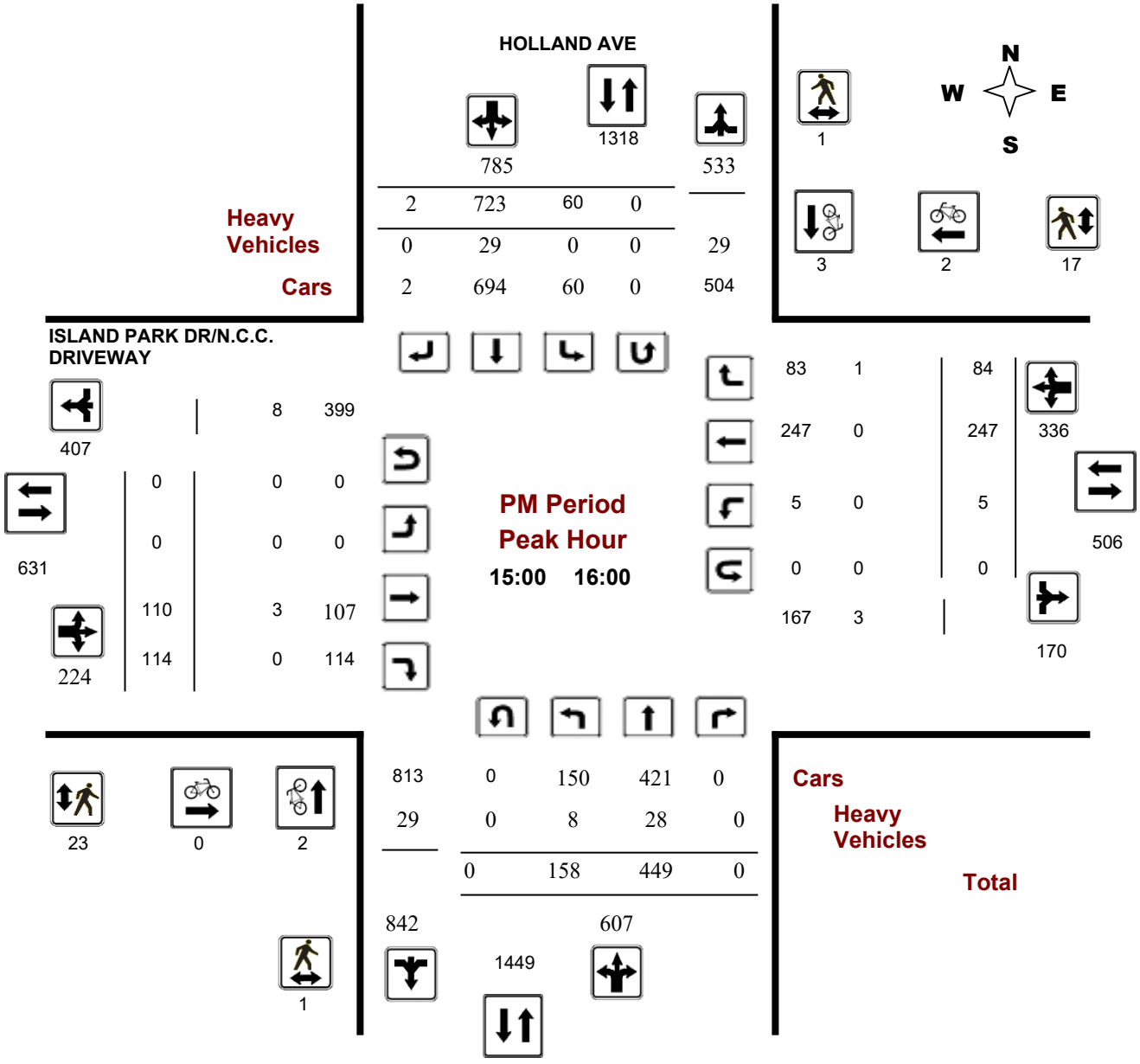
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019
Start Time: 07:00

WO No: 39136
Device: Miovision



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, November 19, 2019

Total Observed U-Turns

Northbound: 0 Southbound: 1

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	HOLLAND AVE									ISLAND PARK DR/N.C.C. DRIVEWAY									
	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	113	657	2	**772**	37	340	1	**378**	**1150**	0	148	186	**334**	0	98	81	**179**	**513**	**1663**
08:00 09:00	140	691	2	**833**	54	406	0	**460**	**1293**	1	203	193	**397**	3	155	94	**252**	**649**	**1942**
09:00 10:00	148	438	3	**589**	37	341	0	**378**	**967**	2	107	143	**252**	2	91	47	**140**	**392**	**1359**
11:30 12:30	142	320	2	**464**	27	356	4	**387**	**851**	0	106	94	**200**	2	95	18	**115**	**315**	**1166**
12:30 13:30	149	358	0	**507**	33	345	3	**381**	**888**	3	75	88	**166**	0	68	23	**91**	**257**	**1145**
15:00 16:00	158	449	0	**607**	60	723	2	**785**	**1392**	0	110	114	**224**	5	247	84	**336**	**560**	**1952**
16:00 17:00	159	383	2	**544**	73	685	3	**761**	**1305**	0	149	134	**283**	14	198	58	**270**	**553**	**1858**
17:00 18:00	127	358	2	**487**	55	657	3	**715**	**1202**	0	129	112	**241**	11	222	58	**291**	**532**	**1734**
Sub Total	1136	3654	13	**4803**	376	3853	16	**4245**	**9048**	6	1027	1064	**2097**	37	1174	463	**1674**	**3771**	**12819**
U Turns	0			**0**	1			**1**	**1**	**0**			**0**	0			**0**	**0**	**1**
Total	1136	3654	13	**4803**	377	3853	16	**4246**	**9049**	6	1027	1064	**2097**	37	1174	463	**1674**	**3771**	**12820**
EQ 12Hr	1579	5079	18	**6676**	524	5356	22	**5902**	**12578**	8	1428	1479	**2915**	51	1632	644	**2327**	**5242**	**17820**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1579	5079	18	**6676**	524	5356	22	**5902**	**12578**	8	1428	1479	**2915**	51	1632	644	**2327**	**5242**	**17820**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	2068	6653	24	**8745**	686	7016	29	**7731**	**16476**	10	1871	1937	**3818**	67	2138	844	**3049**	**6867**	**23343**
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

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study 15 Minute Increments

		HOLLAND AVE									ISLAND PARK DR/N.C.C. DRIVEWAY									
		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	18	129	2	149	7	65	0	72	**221**	0	44	46	90	0	13	18	31	**121**	**342**
07:15	07:30	31	178	0	209	12	96	0	108	**317**	0	48	50	98	0	20	13	33	**131**	**448**
07:30	07:45	35	180	0	215	9	80	0	89	**304**	0	30	43	73	0	30	21	51	**124**	**428**
07:45	08:00	29	170	0	199	9	99	1	109	**308**	0	26	47	73	0	35	29	64	**137**	**445**
08:00	08:15	24	174	1	199	17	104	0	121	**320**	0	66	53	119	1	42	29	72	**191**	**511**
08:15	08:30	36	186	0	222	17	104	0	121	**343**	1	47	55	103	0	34	20	54	**157**	**500**
08:30	08:45	25	166	0	191	9	89	0	98	**289**	0	48	33	81	1	46	23	70	**151**	**440**
08:45	09:00	55	165	1	221	11	109	0	120	**341**	0	42	52	94	1	33	22	56	**150**	**491**
09:00	09:15	32	134	2	168	18	81	0	99	**267**	0	27	36	63	0	34	13	47	**110**	**377**
09:15	09:30	48	112	0	160	9	98	0	107	**267**	1	25	36	62	1	19	13	33	**95**	**362**
09:30	09:45	33	92	1	126	4	71	0	75	**201**	1	23	40	64	0	22	14	36	**100**	**301**
09:45	10:00	35	100	0	135	6	91	0	97	**232**	0	32	31	63	1	16	7	24	**87**	**319**
11:30	11:45	24	83	1	108	4	70	0	74	**182**	0	19	25	44	0	23	5	28	**72**	**254**
11:45	12:00	32	79	0	111	7	88	3	98	**209**	0	25	21	46	0	24	4	28	**74**	**283**
12:00	12:15	37	83	1	121	10	91	1	102	**223**	0	24	29	53	2	21	6	29	**82**	**305**
12:15	12:30	49	75	0	124	6	107	0	113	**237**	0	38	19	57	0	27	3	30	**87**	**324**
12:30	12:45	39	100	0	139	9	82	0	91	**230**	2	18	14	34	0	25	6	31	**65**	**295**
12:45	13:00	36	89	0	125	7	75	0	82	**207**	0	23	20	43	0	16	5	21	**64**	**271**
13:00	13:15	40	74	0	114	10	86	1	97	**211**	0	19	24	43	0	12	5	17	**60**	**271**
13:15	13:30	34	95	0	129	7	102	2	111	**240**	1	15	30	46	0	15	7	22	**68**	**308**
15:00	15:15	35	106	0	141	14	171	1	186	**327**	0	26	28	54	1	58	25	84	**138**	**465**
15:15	15:30	45	128	0	173	19	189	1	209	**382**	0	32	40	72	0	57	20	77	**149**	**531**
15:30	15:45	34	91	0	125	11	187	0	198	**323**	0	30	27	57	1	62	15	78	**135**	**458**
15:45	16:00	44	124	0	168	16	176	0	192	**360**	0	22	19	41	3	70	24	97	**138**	**498**
16:00	16:15	41	86	1	128	14	169	1	184	**312**	0	36	30	66	2	69	15	86	**152**	**464**
16:15	16:30	41	116	0	157	12	180	1	193	**350**	0	31	35	66	4	54	14	72	**138**	**488**
16:30	16:45	42	83	0	125	26	167	0	193	**318**	0	43	40	83	2	39	14	55	**138**	**456**
16:45	17:00	35	98	1	134	21	169	1	191	**325**	0	39	29	68	6	36	15	57	**125**	**450**
17:00	17:15	31	99	1	131	11	172	0	183	**314**	0	38	29	67	3	58	15	76	**143**	**457**
17:15	17:30	28	85	0	113	17	103	1	121	**234**	0	39	29	68	0	55	10	65	**133**	**367**
17:30	17:45	37	90	0	127	15	184	2	201	**328**	0	21	28	49	7	57	14	78	**127**	**455**
17:45	18:00	31	84	1	116	13	198	0	211	**327**	0	31	26	57	1	52	19	72	**129**	**456**
Total:		1136	3654	13	4803	377	3853	16	4246	**9049**	6	1027	1064	2097	37	1174	463	1674	**9049**	**12,820**

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study Cyclist Volume

Time Period		HOLLAND AVE			ISLAND PARK DR/N.C.C. DRIVEWAY			
		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	1	**1**	0	1	**1**	**2**
07:15	07:30	2	0	**2**	0	1	**1**	**3**
07:30	07:45	4	1	**5**	1	1	**2**	**7**
07:45	08:00	5	0	**5**	3	0	**3**	**8**
08:00	08:15	0	1	**1**	2	0	**2**	**3**
08:15	08:30	0	0	**0**	1	1	**2**	**2**
08:30	08:45	1	0	**1**	0	0	**0**	**1**
08:45	09:00	1	0	**1**	0	0	**0**	**1**
09:00	09:15	0	0	**0**	0	1	**1**	**1**
09:15	09:30	1	1	**2**	0	0	**0**	**2**
09:30	09:45	0	0	**0**	1	1	**2**	**2**
09:45	10:00	1	0	**1**	1	0	**1**	**2**
11:30	11:45	0	1	**1**	0	0	**0**	**1**
11:45	12:00	0	1	**1**	0	0	**0**	**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	1	0	**1**	0	1	**1**	**2**
12:45	13:00	1	0	**1**	0	1	**1**	**2**
13:00	13:15	0	1	**1**	0	0	**0**	**1**
13:15	13:30	0	0	**0**	0	0	**0**	**0**
15:00	15:15	0	2	**2**	0	0	**0**	**2**
15:15	15:30	1	0	**1**	0	0	**0**	**1**
15:30	15:45	0	1	**1**	0	0	**0**	**1**
15:45	16:00	1	0	**1**	0	2	**2**	**3**
16:00	16:15	0	0	**0**	1	0	**1**	**1**
16:15	16:30	1	1	**2**	0	3	**3**	**5**
16:30	16:45	1	1	**2**	0	1	**1**	**3**
16:45	17:00	0	2	**2**	0	0	**0**	**2**
17:00	17:15	1	2	**3**	0	2	**2**	**5**
17:15	17:30	0	1	**1**	0	1	**1**	**2**
17:30	17:45	0	1	**1**	0	0	**0**	**1**
17:45	18:00	0	0	**0**	0	1	**1**	**1**
Total		22	18	**40**	10	18	**28**	**68**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study Pedestrian Volume

	HOLLAND AVE			ISLAND PARK DR/N.C.C. DRIVEWAY			
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	1	0	**1**	1	2	**3**	**4**
07:15 07:30	0	0	**0**	1	6	**7**	**7**
07:30 07:45	1	0	**1**	2	2	**4**	**5**
07:45 08:00	1	0	**1**	5	6	**11**	**12**
08:00 08:15	0	0	**0**	5	1	**6**	**6**
08:15 08:30	4	0	**4**	2	9	**11**	**15**
08:30 08:45	0	0	**0**	0	3	**3**	**3**
08:45 09:00	0	0	**0**	3	7	**10**	**10**
09:00 09:15	1	1	**2**	4	2	**6**	**8**
09:15 09:30	1	0	**1**	2	5	**7**	**8**
09:30 09:45	1	0	**1**	2	3	**5**	**6**
09:45 10:00	2	0	**2**	1	4	**5**	**7**
11:30 11:45	2	0	**2**	0	2	**2**	**4**
11:45 12:00	0	0	**0**	1	2	**3**	**3**
12:00 12:15	0	0	**0**	3	4	**7**	**7**
12:15 12:30	0	1	**1**	1	0	**1**	**2**
12:30 12:45	1	1	**2**	5	1	**6**	**8**
12:45 13:00	0	0	**0**	0	0	**0**	**0**
13:00 13:15	0	0	**0**	1	2	**3**	**3**
13:15 13:30	4	0	**4**	3	2	**5**	**9**
15:00 15:15	0	0	**0**	8	1	**9**	**9**
15:15 15:30	0	0	**0**	6	2	**8**	**8**
15:30 15:45	1	1	**2**	5	10	**15**	**17**
15:45 16:00	0	0	**0**	4	4	**8**	**8**
16:00 16:15	1	0	**1**	3	3	**6**	**7**
16:15 16:30	1	0	**1**	2	3	**5**	**6**
16:30 16:45	1	0	**1**	3	3	**6**	**7**
16:45 17:00	0	0	**0**	7	2	**9**	**9**
17:00 17:15	0	0	**0**	0	3	**3**	**3**
17:15 17:30	0	0	**0**	0	1	**1**	**1**
17:30 17:45	0	0	**0**	0	1	**1**	**1**
17:45 18:00	0	0	**0**	0	2	**2**	**2**
Total	23	4	**27**	80	98	**178**	**205**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study Heavy Vehicles

		HOLLAND AVE									ISLAND PARK DR/N.C.C. DRIVEWAY									
		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	5	0	**5**	0	3	0	**3**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
07:15	07:30	0	9	0	**9**	0	4	0	**4**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
07:30	07:45	0	7	0	**7**	0	3	0	**3**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
07:45	08:00	0	11	0	**11**	0	7	0	**7**	**18**	0	0	0	**0**	0	0	0	**0**	**0**	**18**
08:00	08:15	0	6	0	**6**	0	7	0	**7**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
08:15	08:30	0	5	0	**5**	0	9	0	**9**	**14**	0	0	0	**0**	0	0	0	**0**	**0**	**14**
08:30	08:45	0	10	0	**10**	0	7	0	**7**	**17**	0	0	0	**0**	0	0	1	**1**	**1**	**18**
08:45	09:00	0	7	0	**7**	1	9	0	**10**	**17**	0	0	0	**0**	0	0	0	**0**	**0**	**17**
09:00	09:15	0	6	0	**6**	0	8	0	**8**	**14**	0	0	1	**1**	0	0	0	**0**	**1**	**15**
09:15	09:30	0	9	0	**9**	0	12	0	**12**	**21**	0	1	0	**1**	0	0	0	**0**	**1**	**22**
09:30	09:45	0	7	0	**7**	0	5	0	**5**	**12**	0	0	1	**1**	0	0	0	**0**	**1**	**13**
09:45	10:00	0	5	0	**5**	0	7	0	**7**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
11:30	11:45	0	3	0	**3**	0	3	0	**3**	**6**	0	0	0	**0**	0	0	0	**0**	**0**	**6**
11:45	12:00	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
12:00	12:15	0	4	0	**4**	0	4	0	**4**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
12:15	12:30	0	5	0	**5**	0	3	0	**3**	**8**	0	0	0	**0**	0	0	0	**0**	**0**	**8**
12:30	12:45	1	9	0	**10**	0	3	0	**3**	**13**	0	0	0	**0**	0	0	0	**0**	**0**	**13**
12:45	13:00	2	5	0	**7**	0	2	0	**2**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
13:00	13:15	0	5	0	**5**	0	4	0	**4**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
13:15	13:30	0	5	0	**5**	0	5	0	**5**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
15:00	15:15	1	9	0	**10**	0	10	0	**10**	**20**	0	0	0	**0**	0	0	0	**0**	**0**	**20**
15:15	15:30	0	8	0	**8**	0	8	0	**8**	**16**	0	1	0	**1**	0	0	1	**1**	**2**	**18**
15:30	15:45	2	5	0	**7**	0	6	0	**6**	**13**	0	1	0	**1**	0	0	0	**0**	**1**	**14**
15:45	16:00	5	6	0	**11**	0	5	0	**5**	**16**	0	1	0	**1**	0	0	0	**0**	**1**	**17**
16:00	16:15	0	3	0	**3**	0	2	0	**2**	**5**	0	0	1	**1**	0	0	0	**0**	**1**	**6**
16:15	16:30	0	9	0	**9**	0	6	0	**6**	**15**	0	0	0	**0**	0	0	0	**0**	**0**	**15**
16:30	16:45	0	4	0	**4**	1	5	0	**6**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
16:45	17:00	0	4	0	**4**	0	4	0	**4**	**8**	0	1	0	**1**	0	0	0	**0**	**1**	**9**
17:00	17:15	0	3	0	**3**	1	6	0	**7**	**10**	0	0	0	**0**	0	0	0	**0**	**0**	**10**
17:15	17:30	0	6	0	**6**	0	3	0	**3**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
17:30	17:45	0	4	0	**4**	0	5	0	**5**	**9**	0	0	0	**0**	0	0	0	**0**	**0**	**9**
17:45	18:00	1	3	0	**4**	0	8	0	**8**	**12**	0	0	0	**0**	0	0	0	**0**	**0**	**12**
Total:	None	12	191	0	**203**	3	177	0	**180**	**383**	0	5	3	**8**	0	0	2	**2**	**10**	**393**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

HOLLAND AVE @ ISLAND PARK DR/N.C.C. DRIVEWAY

Survey Date: Tuesday, November 19, 2019 **WO No:** 39136

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

Full Study 15 Minute U-Turn Total

Time Period		HOLLAND AVE Northbound U-Turn Total	HOLLAND AVE Southbound U-Turn Total	ISLAND PARK DR/N.C.C. DRIVEWAY Eastbound U-Turn Total	ISLAND PARK DR/N.C.C. DRIVEWAY 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	1	0	0	**1**
17:30	17:45	0	0	0	0	**0**
17:45	18:00	0	0	0	0	**0**
Total		0	1	0	0	**1**

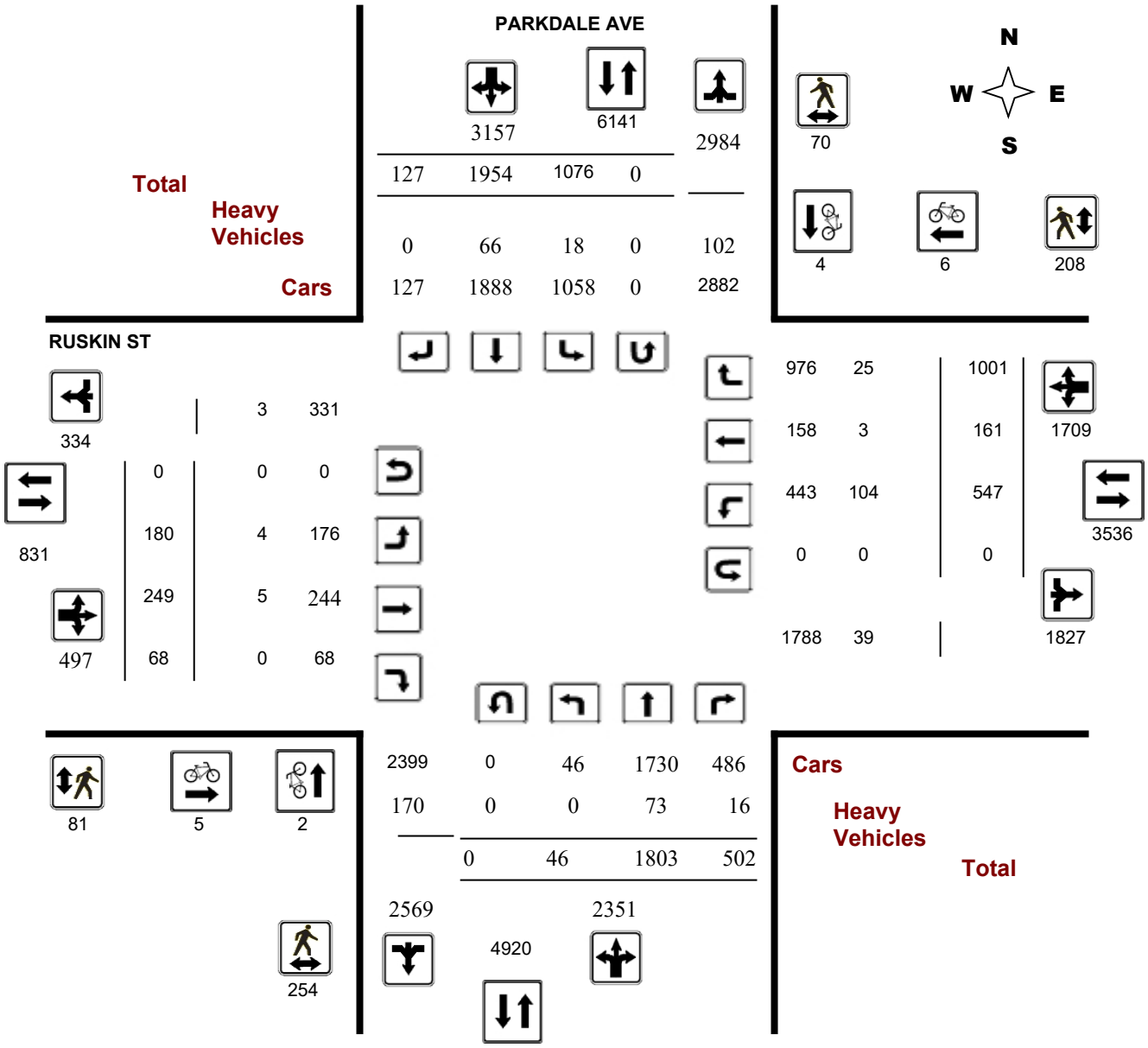
Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020
Start Time: 07:00
WO No: 39352
Device: Miovision

Full Study Diagram



5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

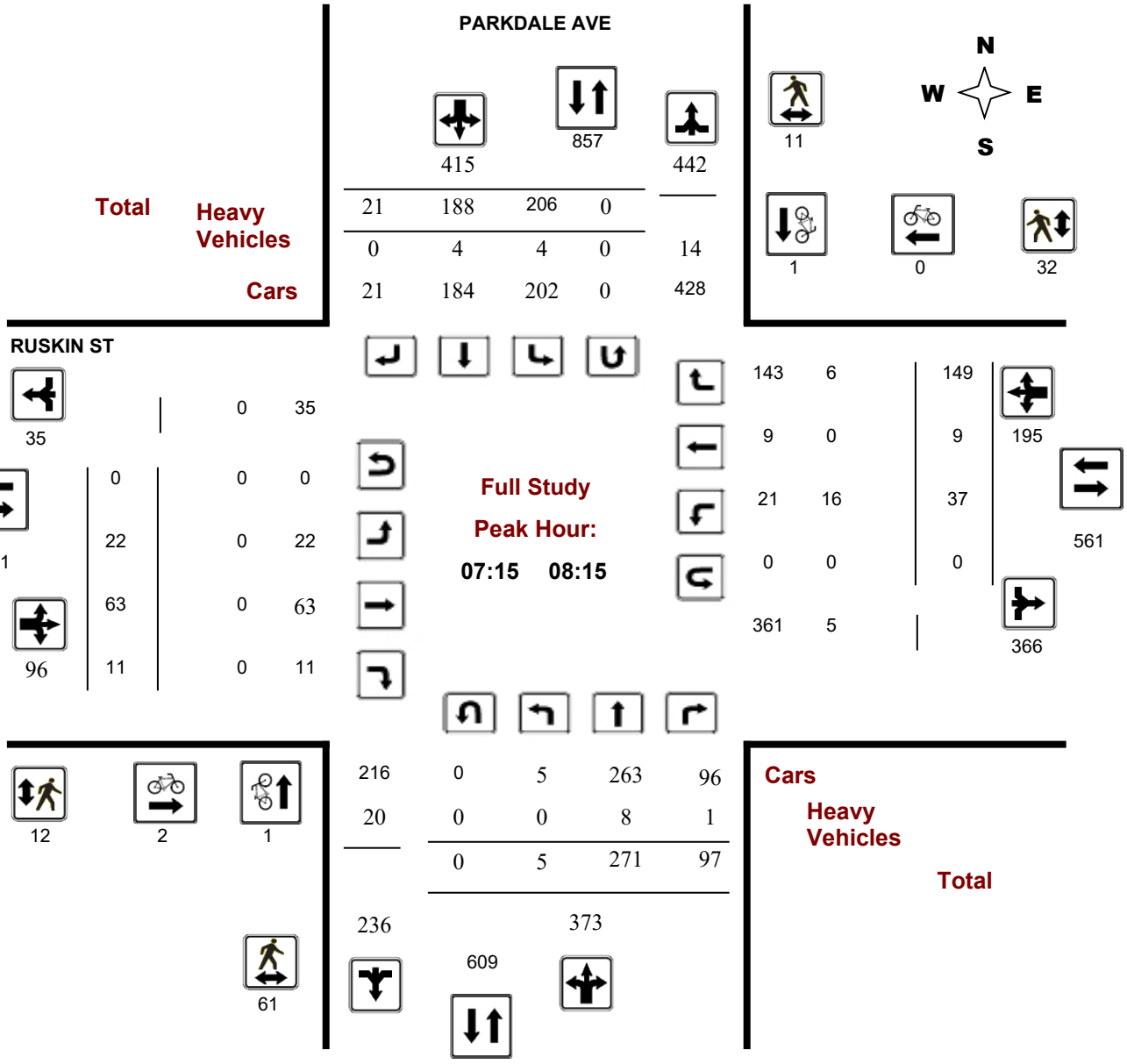
Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020
Start Time: 07:00
WO No: 39352
Device: Miovision

Full Study Peak Hour Diagram



5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

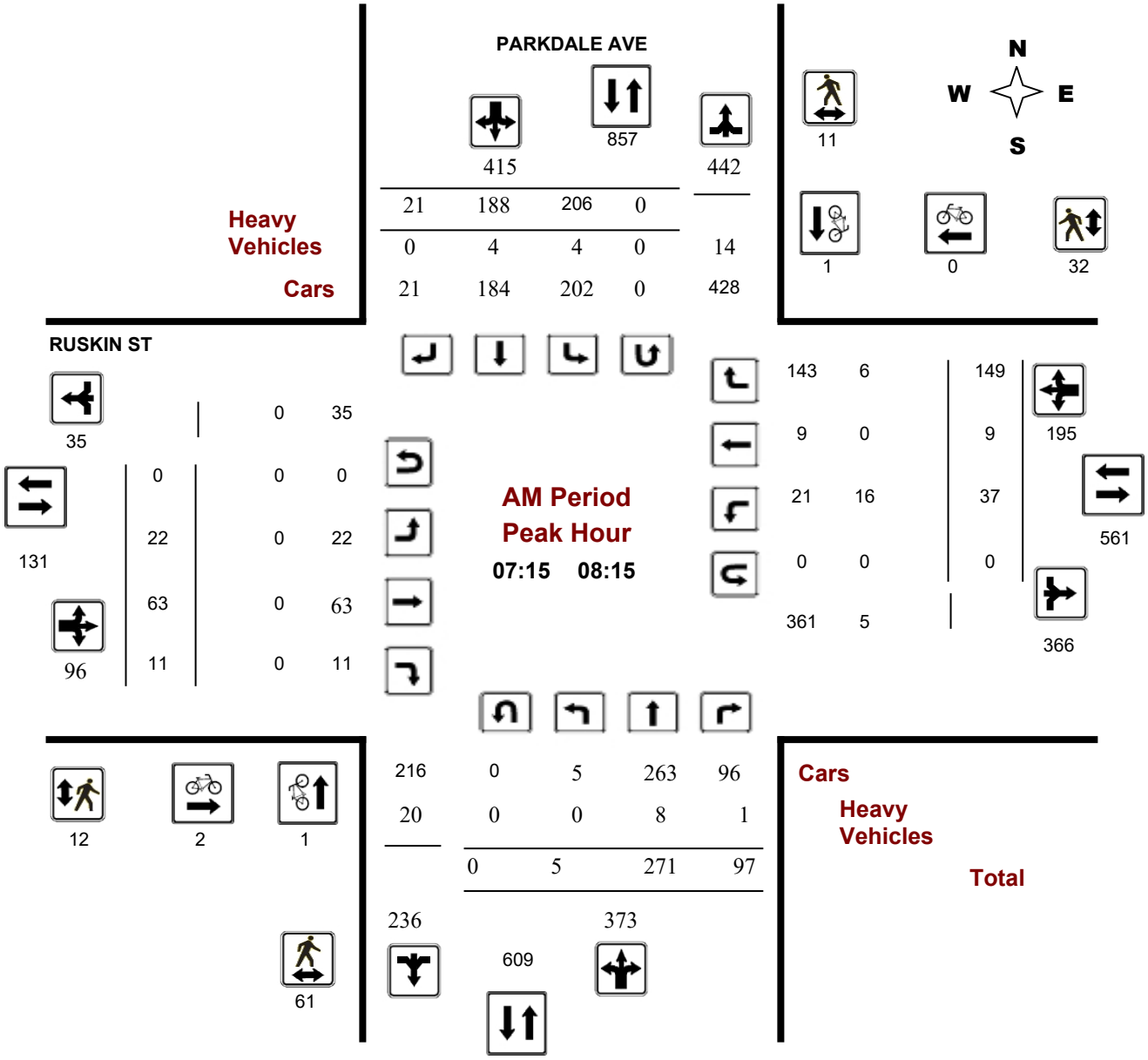
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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



Comments 5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

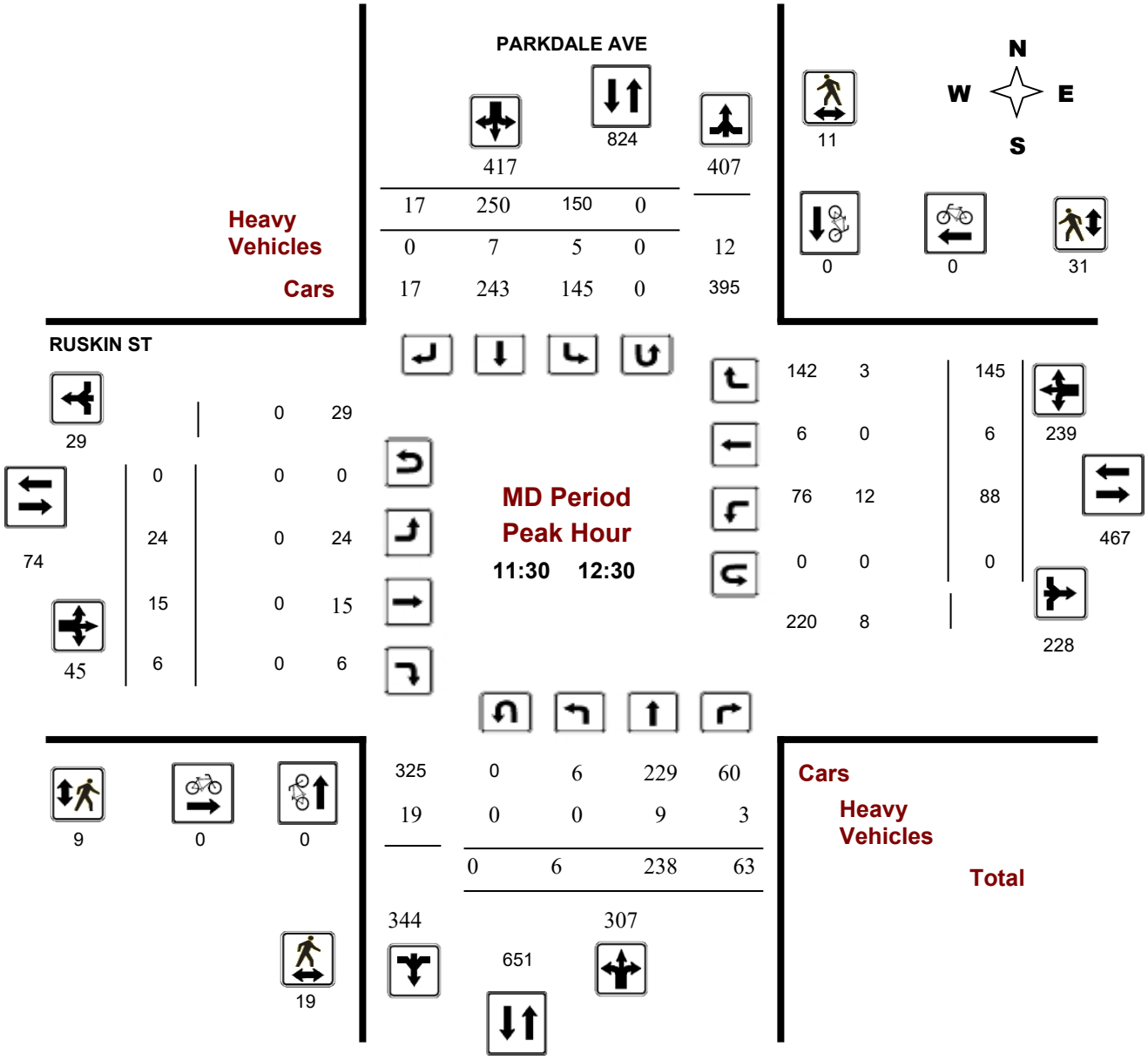
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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



Comments 5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

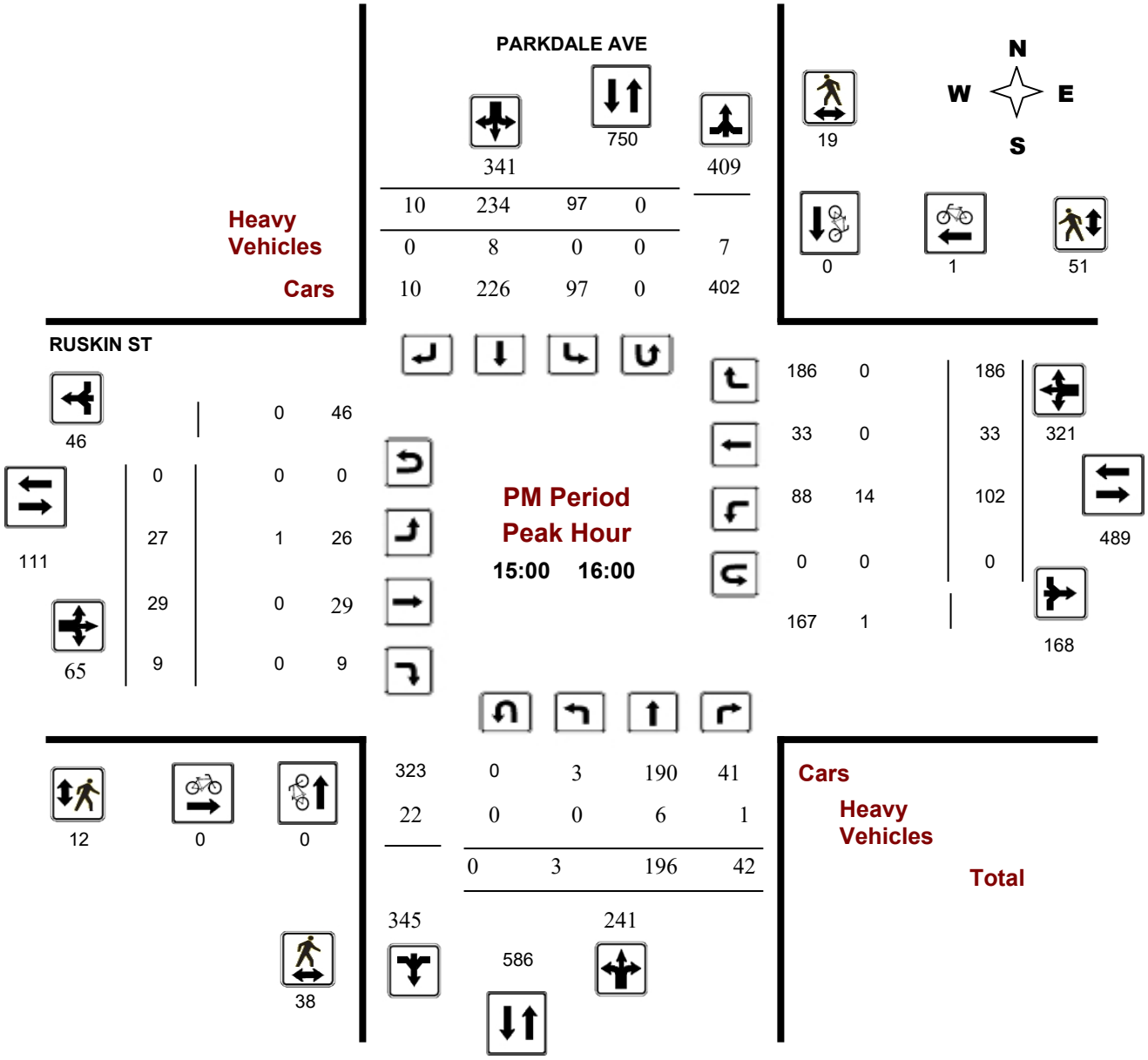
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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



Comments 5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, January 21, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

1.10

	PARKDALE AVE								RUSKIN ST									
	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	3	263	86	**352**	202	189	15	**406**	**758**	14	57	8	**79**	33	10	156	**199**	**278**	**1036**
08:00 09:00	5	263	80	**348**	201	202	17	**420**	**768**	42	42	10	**94**	41	14	75	**130**	**224**	**992**
09:00 10:00	6	246	90	**342**	165	215	12	**392**	**734**	25	32	12	**69**	64	13	89	**166**	**235**	**969**
11:30 12:30	6	238	63	**307**	150	250	17	**417**	**724**	24	15	6	**45**	88	6	145	**239**	**284**	**1008**
12:30 13:30	12	216	82	**310**	151	256	17	**424**	**734**	14	26	11	**51**	62	14	109	**185**	**236**	**970**
15:00 16:00	3	196	42	**241**	97	234	10	**341**	**582**	27	29	9	**65**	102	33	186	**321**	**386**	**968**
16:00 17:00	5	189	39	**233**	61	296	19	**376**	**609**	15	23	5	**43**	99	40	132	**271**	**314**	**923**
17:00 18:00	6	192	20	**218**	49	312	20	**381**	**599**	19	25	7	**51**	58	31	109	**198**	**249**	**848**
Sub Total	46	1803	502	**2351**	1076	1954	127	**3157**	**5508**	180	249	68	**497**	547	161	1001	**1709**	**2206**	**7714**
U Turns				**0**				**0**	**0**				**0**				**0**	**0**	**0**
Total	46	1803	502	**2351**	1076	1954	127	**3157**	**5508**	180	249	68	**497**	547	161	1001	**1709**	**2206**	**7714**
EQ 12Hr	64	2506	698	**3268**	1496	2716	177	**4388**	**7656**	250	346	95	**691**	760	224	1391	**2376**	**3066**	**10722**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	66	2598	723	**3388**	1551	2816	183	**4549**	**8422**	259	359	98	**716**	788	232	1442	**2463**	**3373**	**11794**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.1**					
AVG 24Hr	87	3404	948	**4438**	2031	3689	240	**5960**	**10398**	340	470	128	**938**	1033	304	1890	**3226**	**4164**	**14562**
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

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study 15 Minute Increments

		PARKDALE AVE									RUSKIN ST									
		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	51	16	67	50	52	1	103	309	5	5	0	10	7	4	24	35	309	215
07:15	07:30	0	67	30	97	50	37	3	90	354	1	19	1	21	10	4	51	65	354	273
07:30	07:45	2	71	21	94	53	49	3	105	364	2	14	2	18	5	2	36	43	364	260
07:45	08:00	1	74	19	94	49	51	8	108	394	6	19	5	30	11	0	45	56	394	288
08:00	08:15	2	59	27	88	54	51	7	112	354	13	11	3	27	11	3	17	31	354	258
08:15	08:30	2	58	20	80	44	47	4	95	315	12	10	3	25	9	3	11	23	315	223
08:30	08:45	0	67	15	82	49	49	2	100	335	9	9	2	20	9	6	17	32	335	234
08:45	09:00	1	79	18	98	54	55	4	113	397	8	12	2	22	12	2	30	44	397	277
09:00	09:15	0	82	26	108	32	49	5	86	373	10	8	4	22	18	4	16	38	373	254
09:15	09:30	2	56	22	80	36	56	2	94	321	7	5	2	14	9	4	17	30	321	218
09:30	09:45	2	55	24	81	54	57	4	115	355	3	9	5	17	20	3	19	42	355	255
09:45	10:00	2	53	18	73	43	53	1	97	336	5	10	1	16	17	2	37	56	336	242
11:30	11:45	0	72	18	90	26	56	6	88	378	8	5	1	14	24	3	39	66	378	258
11:45	12:00	1	57	14	72	48	67	3	118	375	5	4	1	10	19	0	36	55	375	255
12:00	12:15	4	53	14	71	28	61	2	91	349	9	2	3	14	25	2	36	63	349	239
12:15	12:30	1	56	17	74	48	66	6	120	373	2	4	1	7	20	1	34	55	373	256
12:30	12:45	2	56	19	77	36	68	4	108	363	3	6	5	14	13	3	33	49	363	248
12:45	13:00	3	51	22	76	35	74	4	113	366	7	8	3	18	17	4	25	46	366	253
13:00	13:15	2	57	19	78	40	60	3	103	336	3	9	2	14	11	2	22	35	336	230
13:15	13:30	5	52	22	79	40	54	6	100	337	1	3	1	5	21	5	29	55	337	239
15:00	15:15	1	65	12	78	28	54	3	85	370	6	8	3	17	24	9	55	88	370	268
15:15	15:30	0	43	11	54	20	51	2	73	302	8	4	3	15	20	6	50	76	302	218
15:30	15:45	1	43	9	53	25	65	4	94	342	8	10	2	20	34	6	43	83	342	250
15:45	16:00	1	45	10	56	24	64	1	89	322	5	7	1	13	24	12	38	74	322	232
16:00	16:15	3	47	8	58	14	70	4	88	334	4	4	0	8	29	14	38	81	334	235
16:15	16:30	0	47	14	61	18	69	9	96	341	3	6	3	12	24	8	38	70	341	239
16:30	16:45	2	50	6	58	14	90	2	106	371	4	8	1	13	32	8	30	70	371	247
16:45	17:00	0	45	11	56	15	67	4	86	299	4	5	1	10	14	10	26	50	299	202
17:00	17:15	1	52	4	57	10	85	2	97	336	3	8	0	11	19	13	23	55	336	220
17:15	17:30	2	42	5	49	14	82	6	102	318	6	9	5	20	14	5	18	37	318	208
17:30	17:45	1	46	8	55	10	71	7	88	315	6	3	2	11	19	11	28	58	315	212
17:45	18:00	2	52	3	57	15	74	5	94	327	4	5	0	9	6	2	40	48	327	208
Total:		46	1803	502	2351	1076	1954	127	3157	11061	180	249	68	497	547	161	1001	1709	11061	7,714

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study Cyclist Volume

Time Period		PARKDALE AVE			RUSKIN ST			
		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	1	0	1	1
07:30	07:45	0	1	1	0	0	0	1
07:45	08:00	1	0	1	0	0	0	1
08:00	08:15	0	0	0	1	0	1	1
08:15	08:30	0	0	0	1	0	1	1
08:30	08:45	0	0	0	1	0	1	1
08:45	09:00	1	0	1	0	0	0	1
09:00	09:15	0	1	1	1	0	1	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	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	1	1	1
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	1	1	1
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	1	1	0	0	0	1
17:00	17:15	0	0	0	0	2	2	2
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	0	0	0	2	2	2
Total		2	4	**6**	5	6	11	17

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study Pedestrian Volume

	PARKDALE AVE			RUSKIN ST			
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	7	1	**8**	4	7	**11**	**19**
07:15 07:30	14	2	**16**	3	7	**10**	**26**
07:30 07:45	13	2	**15**	3	10	**13**	**28**
07:45 08:00	18	4	**22**	5	9	**14**	**36**
08:00 08:15	16	3	**19**	1	6	**7**	**26**
08:15 08:30	10	1	**11**	3	5	**8**	**19**
08:30 08:45	11	0	**11**	3	2	**5**	**16**
08:45 09:00	9	3	**12**	3	4	**7**	**19**
09:00 09:15	1	0	**1**	0	4	**4**	**5**
09:15 09:30	9	0	**9**	2	1	**3**	**12**
09:30 09:45	13	1	**14**	11	4	**15**	**29**
09:45 10:00	8	1	**9**	3	4	**7**	**16**
11:30 11:45	5	2	**7**	2	6	**8**	**15**
11:45 12:00	2	4	**6**	2	9	**11**	**17**
12:00 12:15	7	2	**9**	4	8	**12**	**21**
12:15 12:30	5	3	**8**	1	8	**9**	**17**
12:30 12:45	5	1	**6**	2	3	**5**	**11**
12:45 13:00	4	1	**5**	0	6	**6**	**11**
13:00 13:15	3	1	**4**	1	6	**7**	**11**
13:15 13:30	6	3	**9**	2	6	**8**	**17**
15:00 15:15	11	7	**18**	4	12	**16**	**34**
15:15 15:30	9	1	**10**	3	7	**10**	**20**
15:30 15:45	12	7	**19**	4	19	**23**	**42**
15:45 16:00	6	4	**10**	1	13	**14**	**24**
16:00 16:15	12	0	**12**	1	6	**7**	**19**
16:15 16:30	7	3	**10**	1	10	**11**	**21**
16:30 16:45	5	4	**9**	1	3	**4**	**13**
16:45 17:00	7	3	**10**	4	5	**9**	**19**
17:00 17:15	5	0	**5**	2	4	**6**	**11**
17:15 17:30	6	3	**9**	1	5	**6**	**15**
17:30 17:45	5	1	**6**	2	7	**9**	**15**
17:45 18:00	3	2	**5**	2	2	**4**	**9**
Total	254	70	**324**	81	208	**289**	**613**

5470804 - TUE JAN 21, 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study Heavy Vehicles

		PARKDALE AVE									RUSKIN ST									
		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	3	2	**10**	0	2	0	**6**	**16**	0	0	0	**1**	3	1	1	**7**	**8**	**12**
07:15	07:30	0	2	0	**8**	1	1	0	**6**	**14**	0	0	0	**0**	5	0	2	**8**	**8**	**11**
07:30	07:45	0	2	0	**6**	1	2	0	**5**	**11**	0	0	0	**0**	2	0	0	**3**	**3**	**7**
07:45	08:00	0	1	0	**7**	1	1	0	**6**	**13**	0	0	0	**0**	5	0	3	**9**	**9**	**11**
08:00	08:15	0	3	1	**8**	1	0	0	**5**	**13**	0	0	0	**0**	4	0	1	**7**	**7**	**10**
08:15	08:30	0	3	1	**13**	0	5	0	**8**	**21**	0	1	0	**1**	4	0	0	**6**	**7**	**14**
08:30	08:45	0	2	2	**11**	1	2	0	**6**	**17**	0	0	0	**0**	5	0	1	**9**	**9**	**13**
08:45	09:00	0	4	2	**10**	1	2	0	**10**	**20**	1	0	0	**1**	2	0	2	**7**	**8**	**14**
09:00	09:15	0	3	0	**8**	0	2	0	**5**	**13**	0	0	0	**0**	3	0	0	**3**	**3**	**8**
09:15	09:30	0	4	0	**11**	0	4	0	**9**	**20**	0	0	0	**0**	3	0	1	**4**	**4**	**12**
09:30	09:45	0	1	0	**8**	1	2	0	**4**	**12**	0	0	0	**0**	5	0	0	**6**	**6**	**9**
09:45	10:00	0	5	0	**9**	0	1	0	**9**	**18**	0	1	0	**1**	3	0	3	**7**	**8**	**13**
11:30	11:45	0	4	2	**11**	0	4	0	**9**	**20**	0	0	0	**0**	1	0	1	**4**	**4**	**12**
11:45	12:00	0	2	1	**10**	1	2	0	**5**	**15**	0	0	0	**0**	5	0	0	**7**	**7**	**11**
12:00	12:15	0	1	0	**4**	2	0	0	**3**	**7**	0	0	0	**0**	3	0	0	**5**	**5**	**6**
12:15	12:30	0	2	0	**6**	2	1	0	**7**	**13**	0	0	0	**0**	3	0	2	**7**	**7**	**10**
12:30	12:45	0	1	0	**2**	1	0	0	**5**	**7**	1	0	0	**1**	1	0	2	**4**	**5**	**6**
12:45	13:00	0	7	2	**16**	2	4	0	**13**	**29**	0	0	0	**0**	3	0	0	**7**	**7**	**18**
13:00	13:15	0	1	2	**7**	3	2	0	**9**	**16**	0	0	0	**0**	2	0	3	**10**	**10**	**13**
13:15	13:30	0	3	0	**11**	0	3	0	**8**	**19**	0	0	0	**0**	5	0	2	**7**	**7**	**13**
15:00	15:15	0	3	0	**12**	0	4	0	**8**	**20**	1	0	0	**1**	5	0	0	**5**	**6**	**13**
15:15	15:30	0	1	0	**5**	0	1	0	**2**	**7**	0	0	0	**0**	3	0	0	**3**	**3**	**5**
15:30	15:45	0	1	1	**6**	0	1	0	**2**	**8**	0	0	0	**0**	3	0	0	**4**	**4**	**6**
15:45	16:00	0	1	0	**6**	0	2	0	**3**	**9**	0	0	0	**0**	3	0	0	**3**	**3**	**6**
16:00	16:15	0	2	0	**7**	0	2	0	**4**	**11**	0	1	0	**2**	3	1	0	**5**	**7**	**9**
16:15	16:30	0	1	0	**6**	0	2	0	**3**	**9**	0	0	0	**0**	3	0	0	**3**	**3**	**6**
16:30	16:45	0	1	0	**7**	0	3	0	**4**	**11**	0	0	0	**0**	3	0	0	**3**	**3**	**7**
16:45	17:00	0	1	0	**5**	0	1	0	**3**	**8**	0	0	0	**0**	3	0	1	**4**	**4**	**6**
17:00	17:15	0	1	0	**6**	0	3	0	**4**	**10**	0	1	0	**1**	2	0	0	**3**	**4**	**7**
17:15	17:30	0	1	0	**6**	0	1	0	**3**	**9**	1	1	0	**2**	4	0	0	**5**	**7**	**8**
17:30	17:45	0	3	0	**9**	0	2	0	**5**	**14**	0	0	0	**1**	4	1	0	**5**	**6**	**10**
17:45	18:00	0	3	0	**8**	0	4	0	**7**	**15**	0	0	0	**0**	1	0	0	**1**	**1**	**8**
Total:	None	0	73	16	**259**	18	66	0	**186**	**445**	4	5	0	**12**	104	3	25	**171**	**183**	**314**

Transportation Services - Traffic Services

Turning Movement Count - Study Results

PARKDALE AVE @ RUSKIN ST

Survey Date: Tuesday, January 21, 2020 **WO No:** 39352

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

Full Study 15 Minute U-Turn Total

Time Period		PARKDALE AVE Northbound U-Turn Total	PARKDALE AVE Southbound U-Turn Total	RUSKIN ST Eastbound U-Turn Total	RUSKIN ST 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

APPENDIX C

COLLISION DATA

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ HAMILTON AVE

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-19, Fri,16:53	Clear	Sideswipe	P.D. only	Wet	West	Overtaking	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2017-Sep-07, Thu,15:05	Rain	Angle	Non-fatal injury	Wet	South	Turning right	Unknown	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	

Location: CARLING AVE @ HINTON AVE

Traffic Control: Stop sign **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-20, Mon,18:32	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CARLING AVE @ HOLLAND AVE

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-24, Sat,17:32	Clear	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-28, Sat,20:00	Clear	Turning movement	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Municipal transit bus	Other motor vehicle	
2015-May-17, Sun,16:20	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-04, Thu,08:53	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Municipal transit bus	Other motor vehicle	
2015-Jun-28, Sun,23:17	Rain	SMV other	P.D. only	Wet	West	Turning left	Pick-up truck	Ran off road	0
2015-Jul-16, Thu,14:45	Clear	Rear end	P.D. only	Dry	North	Turning left	Passenger van	Other motor vehicle	0
					North	Turning left	Delivery van	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ HOLLAND AVE

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-14, Mon,14:19	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-14, Wed,10:38	Clear	Rear end	Non-fatal injury	Dry	North	Stopped	Pick-up truck	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2015-Nov-30, Mon,09:45	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-02, Wed,12:04	Clear	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-05, Tue,09:18	Clear	Angle	Non-fatal injury	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2016-Jan-23, Sat,18:24	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-30, Wed,07:31	Clear	Rear end	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Apr-06, Wed,22:14	Snow	Angle	P.D. only	Packed snow	East	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Municipal transit bus	Other motor vehicle	
2016-Apr-25, Mon,14:14	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-May-05, Thu,15:34	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Sep-23, Fri,09:29	Clear	Turning movement	P.D. only	Wet	North	Turning right	Truck and trailer	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-06, Thu,13:05	Clear	SMV other	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Pedestrian	1

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ HOLLAND AVE

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-09, Sun,18:53	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-07, Wed,17:29	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Feb-07, Tue,17:22	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2017-May-15, Mon,18:30	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2017-Jun-07, Wed,17:06	Clear	Sideswipe	Non-fatal injury	Dry	East	Overtaking	Bicycle	Other motor vehicle	0
					East	Going ahead	Municipal transit bus	Cyclist	
2017-Jun-20, Tue,16:18	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-08, Sat,18:50	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-05, Thu,08:51	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Unknown	Passenger van	Other motor vehicle	
2017-Oct-11, Wed,09:53	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-12, Tue,20:02	Snow	SMV other	P.D. only	Loose snow	East	Changing lanes	Automobile, station wagon	Curb	0
2018-Jan-24, Wed,06:57	Clear	Rear end	Non-fatal injury	Ice	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ HOLLAND AVE

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-31, Wed,14:19	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Municipal transit bus	Other motor vehicle	
2018-Apr-04, Wed,09:23	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-05, Thu,17:55	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-18, Mon,16:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-19, Tue,07:51	Clear	Angle	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2018-Jul-25, Wed,08:21	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-08, Sat,14:34	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-22, Mon,20:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jan-16, Wed,14:14	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-11, Mon,10:59	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-20, Wed,12:08	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Municipal transit bus	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ HOLLAND AVE

Traffic Control: Traffic signal **Total Collisions:** 49

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Mar-13, Wed,15:08	Snow	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-26, Wed,15:58	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-24, Wed,07:26	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-07, Wed,02:32	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Aug-24, Sat,16:33	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-21, Mon,15:00	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-11, Wed,18:24	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-21, Sat,14:36	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-22, Sun,12:51	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	

Location: CARLING AVE @ ISLAND PARK DR

Traffic Control: Traffic signal **Total Collisions:** 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-08, Thu,07:42	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ ISLAND PARK DR

Traffic Control: Traffic signal **Total Collisions:** 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-01, Sun,18:07	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Feb-13, Fri,16:16	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Apr-17, Fri,21:18	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-10, Wed,17:50	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-11, Thu,08:44	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	
2015-Jun-24, Wed,00:24	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-21, Wed,14:13	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-28, Wed,23:25	Rain	Rear end	P.D. only	Wet	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-29, Fri,14:03	Clear	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Apr-26, Tue,18:19	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2016-May-11, Wed,05:43	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-May-14, Sat,21:01	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ ISLAND PARK DR

Traffic Control: Traffic signal **Total Collisions:** 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-07, Fri,18:03	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-16, Mon,17:36	Clear	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-09, Thu,11:46	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Oct-23, Mon,16:53	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-06, Wed,09:42	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-02, Tue,14:22	Clear	Rear end	Non-fatal injury	Slush	South	Turning left	Automobile, station wagon	Skidding/sliding	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jan-19, Fri,09:07	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-06, Fri,12:24	Clear	Other	P.D. only	Dry	West	Reversing	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-17, Fri,12:46	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2018-Dec-28, Fri,11:52	Rain	Angle	P.D. only	Slush	West	Going ahead	Delivery van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-07, Fri,17:22	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ PARKDALE AVE

Traffic Control: Traffic signal **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-26, Mon,08:50	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Passenger van	Other motor vehicle	
					East	Stopped	Unknown	Other motor vehicle	
2015-May-06, Wed,16:12	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-May-08, Fri,15:18	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Jun-30, Tue,19:28	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Cyclist	
2015-Jul-30, Thu,10:50	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-30, Mon,10:44	Clear	Rear end	P.D. only	Dry	East	Turning left	Truck - closed	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-11, Mon,15:18	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-16, Tue,11:00	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-18, Thu,15:54	Clear	Rear end	P.D. only	Packed snow	South	Turning right	Truck - dump	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Feb-23, Tue,18:35	Snow	Rear end	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ PARKDALE AVE

Traffic Control: Traffic signal **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-10, Thu,15:23	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jun-21, Tue,16:56	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-08, Mon,22:02	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Unknown	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2016-Aug-09, Tue,05:23	Clear	Sideswipe	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Aug-21, Sun,15:54	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Oct-04, Tue,21:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Oct-20, Thu,13:15	Rain	Rear end	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Passenger van	Other motor vehicle	
2016-Nov-17, Thu,15:28	Clear	Rear end	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Municipal transit bus	Other motor vehicle	
2016-Dec-20, Tue,17:44	Clear	Turning movement	P.D. only	Wet	East	Turning left	Municipal transit bus	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-23, Fri,14:46	Clear	Rear end	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Feb-16, Thu,17:43	Snow	SMV unattended vehicle	P.D. only	Slush	Unknown	Unknown	Unknown	Unattended vehicle	0
2017-Jul-16, Sun,13:45	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE @ PARKDALE AVE

Traffic Control: Traffic signal **Total Collisions:** 34

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-11, Thu,07:25	Clear	Rear end	P.D. only	Slush	North	Overtaking	Unknown	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Feb-23, Fri,19:39	Snow	SMV other	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Apr-06, Fri,13:10	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-10, Thu,14:16	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2018-May-16, Wed,23:09	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-13, Thu,08:39	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	
2018-Sep-13, Thu,13:42	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-13, Thu,17:41	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-13, Thu,22:38	Snow	Rear end	P.D. only	Loose snow	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-23, Tue,09:07	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-12, Sat,17:28	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-16, Wed,12:02	Rain	Rear end	P.D. only	Wet	East	Unknown	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE EB btwn HOLLAND AVE & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-24, Tue,10:04	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Dec-22, Fri,15:25	Snow	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-28, Fri,15:45	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CARLING AVE WB btwn HAMILTON AVE S & PARKDALE AVE

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Sep-23, Fri,12:07	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-07, Fri,13:21	Clear	Sideswipe	P.D. only	Dry	West	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-02, Wed,15:10	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2019-Nov-04, Mon,16:19	Clear	Rear end	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CARLING AVE WB btwn HINTON AVE S & HAMILTON AVE S

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Mar-25, Fri,09:40	Clear	Rear end	Non-fatal injury	Dry	West	Slowing or stopping	Snow plow	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: CARLING AVE WB btwn HOLLAND AVE & HINTON AVE S

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-29, Fri,07:45	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Location: HOLLAND AVE @ INGLEWOOD PL

Traffic Control: Stop sign **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Dec-23, Wed,15:11	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2018-Jan-22, Mon,10:51	Clear	Angle	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-19, Tue,17:58	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HOLLAND AVE btwn INGLEWOOD PL & CARLING AVE

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Mar-03, Tue,12:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-16, Thu,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2016-Jan-21, Thu,03:35	Clear	SMV unattended vehicle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Unattended vehicle	0
2016-Feb-04, Thu,09:42	Clear	Turning movement	Non-fatal injury	Wet	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: HOLLAND AVE btwn INGLEWOOD PL & CARLING AVE

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-20, Tue,17:09	Clear	Sideswipe	P.D. only	Dry	North	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-06, Thu,18:14	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,12:42	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: INGLEWOOD PL @ PARKDALE AVE

Traffic Control: Traffic signal **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-16, Wed,15:24	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-08, Mon,16:53	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE @ RUSKIN ST

Traffic Control: Traffic signal **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Oct-01, Thu,07:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Unknown	Other motor vehicle	
2016-Nov-18, Fri,11:06	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

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From: January 1, 2015 **To:** December 31, 2019

Location: PARKDALE AVE @ RUSKIN ST

Traffic Control: Traffic signal **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Dec-08, Thu,12:13	Clear	Sideswipe	P.D. only	Dry	West	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jun-02, Fri,08:17	Clear	Sideswipe	P.D. only	Dry	South	Overtaking	Ambulance	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-27, Wed,18:36	Clear	SMV unattended vehicle	P.D. only	Packed snow	Unknown	Going ahead	Unknown	Unattended vehicle	0
2018-May-09, Wed,09:21	Clear	Turning movement	P.D. only	Dry	West	Turning right	Delivery van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-13, Wed,18:53	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1
2019-Feb-26, Tue,08:37	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-07, Tue,08:29	Clear	Turning movement	Non-fatal injury	Dry	North	Turning right	Truck - closed	Cyclist	0
					North	Overtaking	Bicycle	Other motor vehicle	

Location: PARKDALE AVE btwn INGLEWOOD PL & CARLING AVE

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-02, Mon,13:15	Snow	Other	P.D. only	Packed snow	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Apr-12, Tue,08:20	Clear	Angle	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-23, Wed,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	North	Unknown	Unknown	Unattended vehicle	0

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From: January 1, 2015 **To:** December 31, 2019

Location: PARKDALE AVE btwn INGLEWOOD PL & CARLING AVE

Traffic Control: No control **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Aug-23, Wed,16:21	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: PARKDALE AVE btwn RUSKIN ST & INGLEWOOD PL

Traffic Control: No control **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-15, Fri,09:38	Clear	SMV unattended vehicle	P.D. only	Dry	North	Going ahead	Municipal transit bus	Unattended vehicle	0
2015-Dec-11, Fri,12:15	Clear	SMV unattended vehicle	P.D. only	Dry	West	Reversing	Passenger van	Unattended vehicle	0
2018-Mar-18, Sun,23:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2018-May-04, Fri,01:23	Clear	SMV unattended vehicle	P.D. only	Dry	North	Going ahead	Unknown	Unattended vehicle	0
2018-Nov-28, Wed,13:20	Clear	Other	P.D. only	Dry	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Other emergency vehicle	Other motor vehicle	
2019-Jan-17, Thu,09:00	Clear	SMV unattended vehicle	P.D. only	Packed snow	Unknown	Unknown	Unknown	Unattended vehicle	0
2019-Nov-25, Mon,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0

APPENDIX D

TDM CHECKLISTS

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

Legend

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

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

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☑ Targeting a 0.75:1 bike locker to unit ratio
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☑ Bike wash and bike repair station proposed
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

	TDM-supportive design & infrastructure measures: *Residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐ We are currently providing a parking ratio of 0.65:1
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

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

Legend

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

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

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

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

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

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

APPENDIX E

SYNCHRO ANALYSIS RESULTS

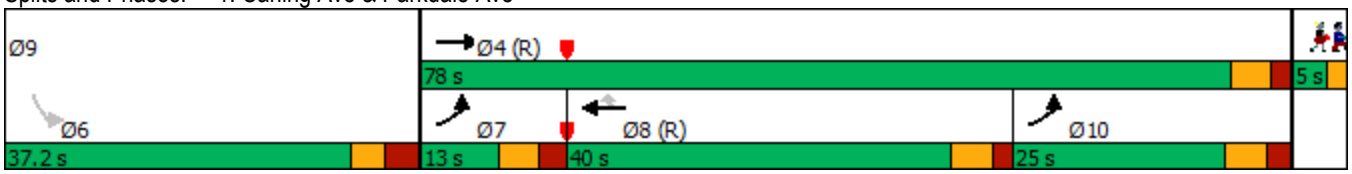
Existing Conditions

Lane Group	EBL	EBT	WBT	WBR	SBL	Ø7	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	316	1278	518	90	99			
Future Volume (vph)	316	1278	518	90	99			
Lane Group Flow (vph)	351	1420	576	100	289			
Turn Type	Prot	NA	NA	Perm	Perm			
Protected Phases	7 10	4	8			7	9	10
Permitted Phases				8	6			
Detector Phase	7 10	4	8	8	6			
Switch Phase								
Minimum Initial (s)		10.0	10.0	10.0	10.0	5.0	3.0	5.0
Minimum Split (s)		15.6	26.6	26.6	37.2	11.1	5.0	24.1
Total Split (s)		78.0	40.0	40.0	37.2	13.0	5.0	25.0
Total Split (%)		64.9%	33.3%	33.3%	30.9%	11%	4%	21%
Yellow Time (s)		3.7	3.7	3.7	3.0	3.7	2.0	3.7
All-Red Time (s)		1.9	1.9	1.9	3.2	2.4	0.0	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.6	5.6	5.6	6.2			
Lead/Lag			Lag	Lag		Lead		
Lead-Lag Optimize?			Yes	Yes		Yes		
Recall Mode		C-Max	C-Max	C-Max	Max	None	Ped	None
Act Effct Green (s)	25.8	72.4	34.4	34.4	31.0			
Actuated g/C Ratio	0.21	0.60	0.29	0.29	0.26			
v/c Ratio	0.97	0.48	0.41	0.22	0.64			
Control Delay	74.1	14.1	35.8	7.5	37.6			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay	74.1	14.1	35.8	7.5	37.6			
LOS	E	B	D	A	D			
Approach Delay		26.0	31.6		37.6			
Approach LOS		C	C		D			
Queue Length 50th (m)	55.3	64.8	40.3	0.0	47.0			
Queue Length 95th (m)	#113.2	75.8	51.5	12.6	77.1			
Internal Link Dist (m)		62.8	171.7		285.1			
Turn Bay Length (m)	160.0			100.0				
Base Capacity (vph)	363	2933	1394	450	452			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.97	0.48	0.41	0.22	0.64			

Intersection Summary	
Cycle Length: 120.2	
Actuated Cycle Length: 120.2	
Offset: 106 (88%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 28.6	Intersection LOS: C
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Carling Ave & Parkdale Ave

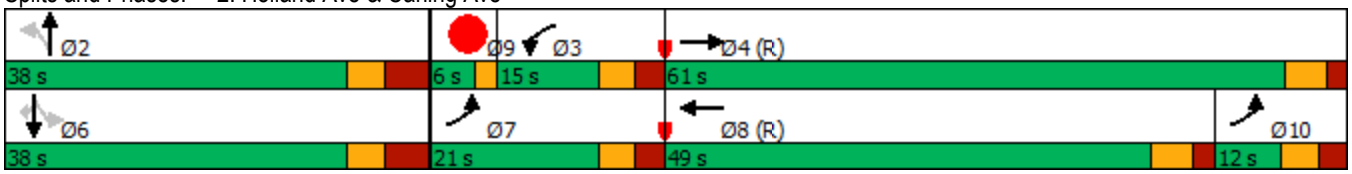


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø7	Ø9	Ø10
Lane Configurations												
Traffic Volume (vph)	161	1200	174	458	4	403	34	281	106			
Future Volume (vph)	161	1200	174	458	4	403	34	281	106			
Lane Group Flow (vph)	179	1340	193	581	0	872	0	350	118			
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm			
Protected Phases	7 10	4	3	8		2		6		7	9	10
Permitted Phases					2		6		6			
Detector Phase	7 10	4	3	8	2	2	6	6	6			
Switch Phase												
Minimum Initial (s)		10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	1.0	5.0
Minimum Split (s)		26.7	11.0	26.7	31.4	31.4	31.4	31.4	31.4	11.0	3.0	11.0
Total Split (s)		61.0	15.0	49.0	38.0	38.0	38.0	38.0	38.0	21.0	6.0	12.0
Total Split (%)		50.8%	12.5%	40.8%	31.7%	31.7%	31.7%	31.7%	31.7%	18%	5%	10%
Yellow Time (s)		3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	3.3	2.0	3.3
All-Red Time (s)		2.0	2.7	2.0	4.1	4.1	4.1	4.1	4.1	2.7	0.0	2.7
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0	0.0			
Total Lost Time (s)		5.7	6.0	5.7		7.4		7.4	7.4			
Lead/Lag			Lag	Lag						Lead	Lead	
Lead-Lag Optimize?			Yes	Yes						Yes	Yes	
Recall Mode		C-Max	None	C-Max	Max	Max	Max	Max	Max	None	None	None
Act Effct Green (s)	17.7	55.3	13.8	46.6		30.6		30.6	30.6			
Actuated g/C Ratio	0.15	0.46	0.12	0.39		0.26		0.26	0.26			
v/c Ratio	0.72	0.60	0.99	0.31		1.00		2.43	0.24			
Control Delay	62.9	7.1	116.5	25.5		72.3		686.4	3.6			
Queue Delay	0.0	0.2	0.0	0.0		2.2		0.0	0.0			
Total Delay	62.9	7.3	116.5	25.5		74.5		686.4	3.6			
LOS	E	A	F	C		E		F	A			
Approach Delay		13.9		48.2		74.5		514.3				
Approach LOS		B		D		E		F				
Queue Length 50th (m)	39.3	15.7	45.5	33.1		~72.3		~136.1	0.0			
Queue Length 95th (m)	62.4	17.6	#109.0	44.6		#116.2		#193.4	7.6			
Internal Link Dist (m)		54.2		141.1		106.0		155.7				
Turn Bay Length (m)			160.0						45.0			
Base Capacity (vph)	296	2242	194	1845		868		144	487			
Starvation Cap Reductn	0	280	0	0		7		0	0			
Spillback Cap Reductn	0	0	0	0		0		0	0			
Storage Cap Reductn	0	0	0	0		0		0	0			
Reduced v/c Ratio	0.60	0.68	0.99	0.31		1.01		2.43	0.24			

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.43	
Intersection Signal Delay: 100.2	Intersection LOS: F
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 2: Holland Ave & Carling Ave

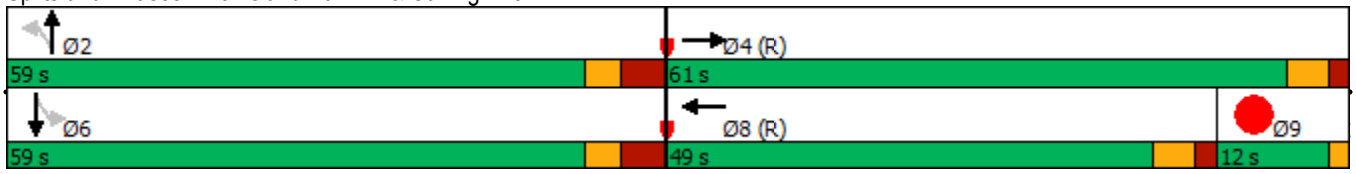


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	1245	532	131	162	119	323	
Future Volume (vph)	1245	532	131	162	119	323	
Lane Group Flow (vph)	1465	624	146	181	132	388	
Turn Type	NA	NA	Perm	NA	Perm	NA	
Protected Phases	4	8		2		6	9
Permitted Phases			2		6		
Minimum Split (s)	26.7	26.7	31.4	31.4	31.4	31.4	3.0
Total Split (s)	61.0	49.0	59.0	59.0	59.0	59.0	12.0
Total Split (%)	50.8%	40.8%	49.2%	49.2%	49.2%	49.2%	10%
Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	55.3	43.3	51.6	51.6	51.6	51.6	
Actuated g/C Ratio	0.46	0.36	0.43	0.43	0.43	0.43	
v/c Ratio	0.66	0.36	0.46	0.24	0.27	0.51	
Control Delay	26.6	9.2	27.1	20.0	24.0	27.7	
Queue Delay	0.2	0.2	0.0	0.0	0.0	0.5	
Total Delay	26.8	9.4	27.1	20.0	24.0	28.1	
LOS	C	A	C	B	C	C	
Approach Delay	26.8	9.4		23.1		27.1	
Approach LOS	C	A		C		C	
Queue Length 50th (m)	94.9	9.3	24.6	28.9	19.7	64.8	
Queue Length 95th (m)	111.1	12.4	41.1	44.5	34.4	93.5	
Internal Link Dist (m)	193.8	54.2		93.3		106.6	
Turn Bay Length (m)			20.0		15.0		
Base Capacity (vph)	2222	1737	317	766	486	759	
Starvation Cap Reductn	0	481	0	0	0	0	
Spillback Cap Reductn	177	0	0	0	0	108	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.72	0.50	0.46	0.24	0.27	0.60	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 22.8 — Intersection LOS: C
Intersection Capacity Utilization 72.7% — ICU Level of Service C
Analysis Period (min) 15

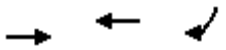
Splits and Phases: 3: Island Park Dr & Carling Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	63	37	9	5	271	206	188
Future Volume (vph)	22	63	37	9	5	271	206	188
Lane Group Flow (vph)	0	106	41	176	0	415	0	461
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	65.0	65.0	65.0	65.0
Total Split (%)	23.5%	23.5%	23.5%	23.5%	76.5%	76.5%	76.5%	76.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		59.2		59.2
Actuated g/C Ratio		0.17	0.17	0.17		0.70		0.70
v/c Ratio		0.40	0.22	0.45		0.35		0.58
Control Delay		34.2	33.9	10.5		5.4		10.0
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		34.2	33.9	10.5		5.4		10.0
LOS		C	C	B		A		A
Approach Delay		34.2		14.9		5.4		10.0
Approach LOS		C		B		A		A
Queue Length 50th (m)		14.4	5.8	1.4		19.6		31.7
Queue Length 95th (m)		29.0	14.8	17.8		32.1		56.2
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		267	184	387		1184		798
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.40	0.22	0.45		0.35		0.58

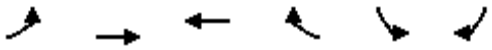
Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 45 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	SBR
Lane Configurations			
Traffic Volume (vph)	1594	620	10
Future Volume (vph)	1594	620	10
Lane Group Flow (vph)	1771	755	11
Sign Control	Free	Free	

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization 35.8%		ICU Level of Service A
Analysis Period (min) 15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1594	620	59	0	10
Future Volume (Veh/h)	0	1594	620	59	0	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1771	689	66	0	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.91				0.84	0.91
vC, conflicting volume	755				1312	263
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	385				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1065				861	987

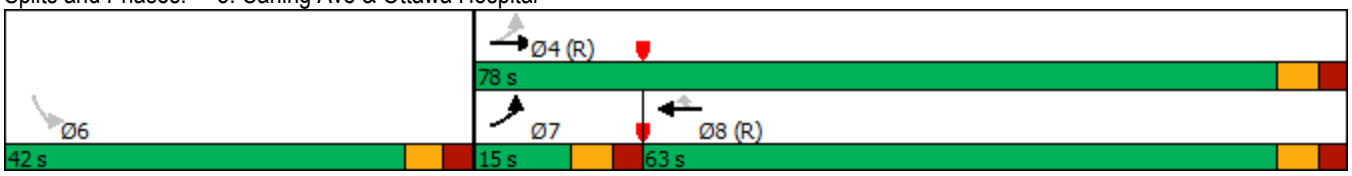
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	590	590	590	276	276	204	11
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	66	11
cSH	1700	1700	1700	1700	1700	1700	987
Volume to Capacity	0.35	0.35	0.35	0.16	0.16	0.12	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	8.7
Lane LOS							A
Approach Delay (s)	0.0			0.0			8.7
Approach LOS							A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	35.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	150	1227	597	114	34
Future Volume (vph)	150	1227	597	114	34
Lane Group Flow (vph)	167	1363	663	127	65
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	15.0	78.0	63.0	63.0	42.0
Total Split (%)	12.5%	65.0%	52.5%	52.5%	35.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	100.1	101.4	85.9	85.9	10.5
Actuated g/C Ratio	0.83	0.84	0.72	0.72	0.09
v/c Ratio	0.28	0.33	0.19	0.12	0.40
Control Delay	3.6	2.9	6.5	1.5	40.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	2.9	6.5	1.5	40.2
LOS	A	A	A	A	D
Approach Delay		3.0	5.7		40.2
Approach LOS		A	A		D
Queue Length 50th (m)	6.5	24.2	18.3	0.0	8.6
Queue Length 95th (m)	12.2	33.0	26.5	6.3	22.2
Internal Link Dist (m)		171.7	416.0		85.9
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	609	4116	3486	1056	494
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.33	0.19	0.12	0.13

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	203	3	155	94	140	691	54	406
Future Volume (vph)	1	203	3	155	94	140	691	54	406
Lane Group Flow (vph)	0	441	0	175	104	156	768	60	451
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	76.0	76.0	76.0	76.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		38.0		38.0	38.0	70.5	70.5	70.5	70.5
Actuated g/C Ratio		0.32		0.32	0.32	0.59	0.59	0.59	0.59
v/c Ratio		0.81		0.31	0.20	0.35	0.73	0.28	0.43
Control Delay		66.8		33.0	11.0	15.7	23.2	1.0	0.8
Queue Delay		41.6		0.0	0.0	0.0	0.0	0.0	2.9
Total Delay		108.4		33.0	11.0	15.7	23.2	1.0	3.7
LOS		F		C	B	B	C	A	A
Approach Delay		108.4		24.8			21.9		3.4
Approach LOS		F		C			C		A
Queue Length 50th (m)		94.3		31.2	4.3	18.1	124.0	0.1	1.2
Queue Length 95th (m)		#133.1		50.0	16.9	32.8	173.0	m0.1	m0.8
Internal Link Dist (m)		93.3		100.3			59.0		106.0
Turn Bay Length (m)					15.0	25.0		25.0	
Base Capacity (vph)		547		561	527	441	1048	216	1048
Starvation Cap Reductn		135		0	0	0	0	0	474
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		1.07		0.31	0.20	0.35	0.73	0.28	0.79

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 35.6	Intersection LOS: D
Intersection Capacity Utilization 85.7%	ICU Level of Service E
Analysis Period (min) 15	

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

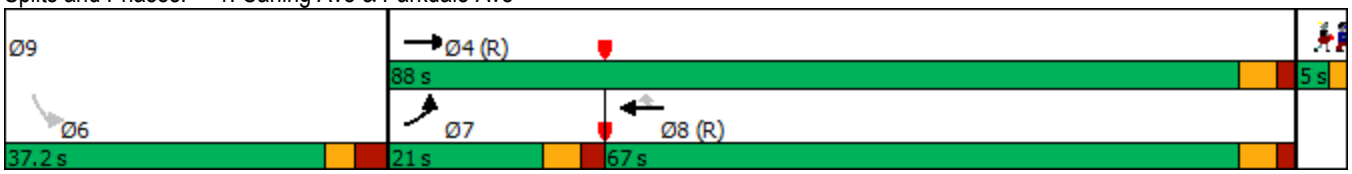
Splits and Phases: 9: Holland Dr & Island Park Dr

Lane Group	EBL	EBT	WBT	WBR	SBL	Ø9
Lane Configurations						
Traffic Volume (vph)	136	650	1919	97	79	
Future Volume (vph)	136	650	1919	97	79	
Lane Group Flow (vph)	151	722	2132	108	445	
Turn Type	Prot	NA	NA	Perm	Perm	
Protected Phases	7	4	8			9
Permitted Phases				8	6	
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	3.0
Minimum Split (s)	11.1	15.6	26.6	26.6	37.2	5.0
Total Split (s)	21.0	88.0	67.0	67.0	37.2	5.0
Total Split (%)	16.1%	67.6%	51.5%	51.5%	28.6%	4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	2.0
All-Red Time (s)	2.4	1.9	1.9	1.9	3.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	6.2	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Ped
Act Effct Green (s)	14.2	82.4	62.1	62.1	31.0	
Actuated g/C Ratio	0.11	0.63	0.48	0.48	0.24	
v/c Ratio	0.82	0.23	0.92	0.16	0.93	
Control Delay	88.8	10.5	39.4	4.7	60.2	
Queue Delay	0.0	0.0	17.6	0.0	0.0	
Total Delay	88.8	10.5	56.9	4.7	60.2	
LOS	F	B	E	A	E	
Approach Delay		24.1	54.4		60.2	
Approach LOS		C	D		E	
Queue Length 50th (m)	38.3	27.4	184.2	0.8	80.0	
Queue Length 95th (m)	#71.5	33.6	207.9	10.7	#143.5	
Internal Link Dist (m)		62.8	167.7		285.1	
Turn Bay Length (m)	160.0			100.0		
Base Capacity (vph)	193	3082	2323	655	477	
Starvation Cap Reductn	0	0	255	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.78	0.23	1.03	0.16	0.93	

Intersection Summary		
Cycle Length: 130.2		
Actuated Cycle Length: 130.2		
Offset: 66 (51%), Referenced to phase 4:EBT and 8:WBT, Start of Green		
Natural Cycle: 110		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.93		
Intersection Signal Delay: 47.7	Intersection LOS: D	
Intersection Capacity Utilization 88.7%	ICU Level of Service E	
Analysis Period (min) 15		

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

Splits and Phases: 1: Carling Ave & Parkdale Ave

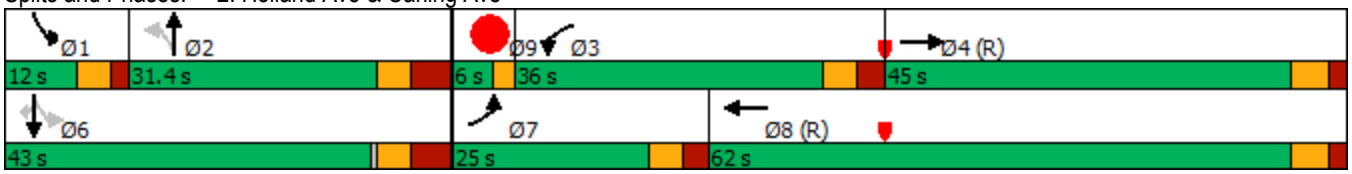


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø9
Lane Configurations										
Traffic Volume (vph)	104	585	467	1706	13	346	29	391	108	
Future Volume (vph)	104	585	467	1706	13	346	29	391	108	
Lane Group Flow (vph)	116	664	519	1982	0	591	0	466	120	
Turn Type	Prot	NA	Prot	NA	Perm	NA	pm+pt	NA	Perm	
Protected Phases	7	4	3	8		2	1	6		9
Permitted Phases					2		6		6	
Detector Phase	7	4	3	8	2	2	1	6	6	
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	26.7	11.0	26.7	31.4	31.4	10.0	31.4	31.4	3.0
Total Split (s)	25.0	45.0	36.0	62.0	31.4	31.4	12.0	43.0	43.0	6.0
Total Split (%)	19.2%	34.5%	27.6%	47.5%	24.1%	24.1%	9.2%	33.0%	33.0%	5%
Yellow Time (s)	3.3	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.7	2.0	2.7	2.0	4.1	4.1	1.7	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	5.7	6.0	5.7		7.4		7.4	7.4	
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max	Max	None
Act Effct Green (s)	14.0	39.3	34.8	61.3		24.0		36.0	36.0	
Actuated g/C Ratio	0.11	0.30	0.27	0.47		0.18		0.28	0.28	
v/c Ratio	0.64	0.45	1.15	0.88		1.16		1.65	0.24	
Control Delay	70.8	38.0	133.1	37.1		134.8		337.5	4.9	
Queue Delay	0.4	7.7	0.0	0.0		0.0		0.0	0.0	
Total Delay	71.3	45.7	133.1	37.1		134.8		337.5	4.9	
LOS	E	D	F	D		F		F	A	
Approach Delay		49.5		57.0		134.8		269.3		
Approach LOS		D		E		F		F		
Queue Length 50th (m)	29.0	50.5	~152.2	164.6		~88.2		~173.2	0.0	
Queue Length 95th (m)	47.1	62.6	#239.7	#213.1		#125.3		#238.4	10.5	
Internal Link Dist (m)		54.2		141.1		106.0		155.7		
Turn Bay Length (m)			160.0						45.0	
Base Capacity (vph)	246	1463	451	2260		509		283	508	
Starvation Cap Reductn	16	749	0	0		0		0	0	
Spillback Cap Reductn	0	0	0	0		0		0	0	
Storage Cap Reductn	0	0	0	0		0		0	0	
Reduced v/c Ratio	0.50	0.93	1.15	0.88		1.16		1.65	0.24	

Intersection Summary	
Cycle Length: 130.4	
Actuated Cycle Length: 130.4	
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.65	
Intersection Signal Delay: 93.9	Intersection LOS: F
Intersection Capacity Utilization 107.6%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Holland Ave & Carling Ave



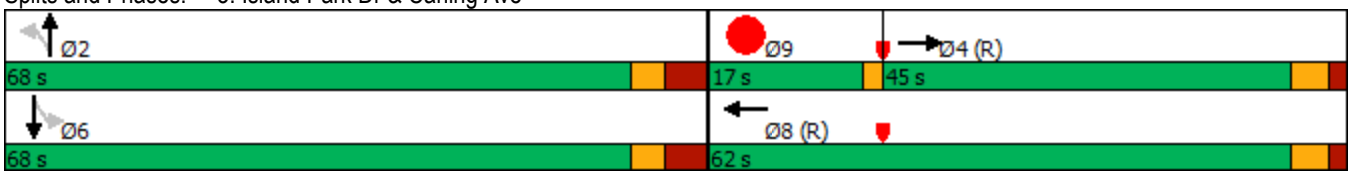
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	631	1762	226	181	71	184	
Future Volume (vph)	631	1762	226	181	71	184	
Lane Group Flow (vph)	745	2028	251	201	79	243	
Turn Type	NA	NA	Perm	NA	Perm	NA	
Protected Phases	4	8		2		6	9
Permitted Phases			2		6		
Minimum Split (s)	26.7	26.7	31.4	31.4	31.4	31.4	3.0
Total Split (s)	45.0	62.0	68.0	68.0	68.0	68.0	17.0
Total Split (%)	34.6%	47.7%	52.3%	52.3%	52.3%	52.3%	13%
Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	39.3	56.3	60.6	60.6	60.6	60.6	
Actuated g/C Ratio	0.30	0.43	0.47	0.47	0.47	0.47	
v/c Ratio	0.51	0.97	0.53	0.24	0.15	0.30	
Control Delay	38.5	49.7	32.4	24.0	21.0	22.6	
Queue Delay	0.0	43.6	2.3	0.0	0.0	0.0	
Total Delay	38.5	93.3	34.8	24.0	21.0	22.6	
LOS	D	F	C	C	C	C	
Approach Delay	38.5	93.3		30.0		22.3	
Approach LOS	D	F		C		C	
Queue Length 50th (m)	57.0	182.6	55.3	41.9	11.4	37.5	
Queue Length 95th (m)	70.2	#220.1	m70.8	m53.8	21.5	56.3	
Internal Link Dist (m)	193.8	54.2		93.3		106.6	
Turn Bay Length (m)			20.0		15.0		
Base Capacity (vph)	1458	2093	473	831	510	809	
Starvation Cap Reductn	0	842	119	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.51	1.62	0.71	0.24	0.15	0.30	

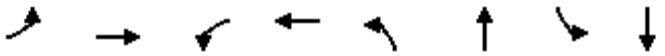
Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Pretimed	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 67.3	Intersection LOS: E
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

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

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

Splits and Phases: 3: Island Park Dr & Carling Ave



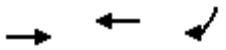


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	29	102	33	3	196	97	234
Future Volume (vph)	27	29	102	33	3	196	97	234
Lane Group Flow (vph)	0	72	113	244	0	268	0	379
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	75.0	75.0	75.0	75.0
Total Split (%)	21.1%	21.1%	21.1%	21.1%	78.9%	78.9%	78.9%	78.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		69.2		69.2
Actuated g/C Ratio		0.15	0.15	0.15		0.73		0.73
v/c Ratio		0.54	0.60	0.61		0.21		0.36
Control Delay		50.2	52.4	15.7		4.1		5.8
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		50.2	52.4	15.7		4.1		5.8
LOS		D	D	B		A		A
Approach Delay		50.2		27.4		4.1		5.8
Approach LOS		D		C		A		A
Queue Length 50th (m)		11.1	19.5	6.0		11.6		21.2
Queue Length 95th (m)		#27.9	#40.4	29.0		19.2		33.4
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		133	187	397		1247		1054
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.54	0.60	0.61		0.21		0.36

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

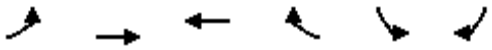
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	SBR
Lane Configurations			
Traffic Volume (vph)	786	2231	47
Future Volume (vph)	786	2231	47
Lane Group Flow (vph)	873	2489	52
Sign Control	Free	Free	

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization 55.7%		ICU Level of Service B
Analysis Period (min) 15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	786	2231	9	0	47
Future Volume (Veh/h)	0	786	2231	9	0	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	873	2479	10	0	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.59				0.64	0.59
vC, conflicting volume	2489				2775	831
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1093				736	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	92
cM capacity (veh/h)	374				227	640

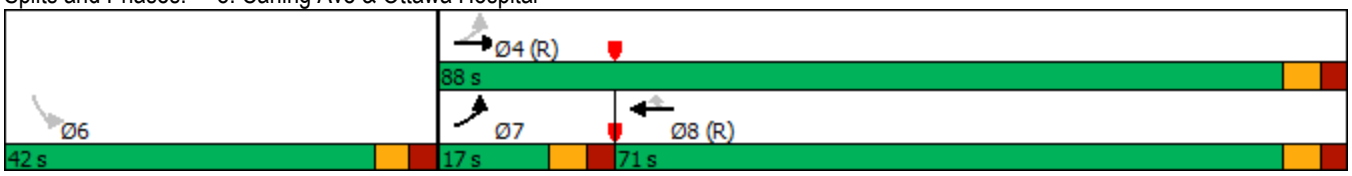
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	291	291	291	992	992	506	52
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	10	52
cSH	1700	1700	1700	1700	1700	1700	640
Volume to Capacity	0.17	0.17	0.17	0.58	0.58	0.30	0.08
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.1
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.1
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	53	685	1981	99	50
Future Volume (vph)	53	685	1981	99	50
Lane Group Flow (vph)	59	761	2201	110	95
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	17.0	88.0	71.0	71.0	42.0
Total Split (%)	13.1%	67.7%	54.6%	54.6%	32.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	105.3	105.3	94.8	94.8	12.1
Actuated g/C Ratio	0.81	0.81	0.73	0.73	0.09
v/c Ratio	0.37	0.19	0.62	0.10	0.55
Control Delay	12.3	3.0	10.6	1.5	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	3.0	10.6	1.5	51.6
LOS	B	A	B	A	D
Approach Delay		3.7	10.1		51.6
Approach LOS		A	B		D
Queue Length 50th (m)	2.3	12.1	93.8	0.0	17.0
Queue Length 95th (m)	9.5	19.6	131.4	5.9	33.4
Internal Link Dist (m)		167.7	428.2		82.3
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	208	3945	3550	1057	462
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.19	0.62	0.10	0.21

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 70 (54%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 9.7	Intersection LOS: A
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	5	247	84	158	449	67	802
Future Volume (vph)	110	5	247	84	158	449	67	802
Lane Group Flow (vph)	249	0	280	93	176	499	74	893
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	4		8			2		6
Permitted Phases		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	86.0	86.0	86.0	86.0
Total Split (%)	33.8%	33.8%	33.8%	33.8%	66.2%	66.2%	66.2%	66.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	38.0		38.0	38.0	80.5	80.5	80.5	80.5
Actuated g/C Ratio	0.29		0.29	0.29	0.62	0.62	0.62	0.62
v/c Ratio	0.49		0.54	0.20	1.04	0.45	0.17	0.81
Control Delay	55.4		43.3	21.9	106.2	14.7	11.8	26.2
Queue Delay	1.6		0.0	0.0	0.0	0.0	0.0	49.8
Total Delay	57.1		43.3	21.9	106.2	14.7	11.8	76.0
LOS	E		D	C	F	B	B	E
Approach Delay	57.1		38.0			38.6		71.1
Approach LOS	E		D			D		E
Queue Length 50th (m)	50.9		60.4	10.2	~48.4	63.7	7.6	164.5
Queue Length 95th (m)	72.9		88.7	23.6	#94.1	87.9	15.1	227.8
Internal Link Dist (m)	93.3		100.3			59.0		106.0
Turn Bay Length (m)				15.0	25.0		25.0	
Base Capacity (vph)	508		517	464	170	1104	436	1104
Starvation Cap Reductn	127		0	0	0	0	0	344
Spillback Cap Reductn	0		0	0	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65		0.54	0.20	1.04	0.45	0.17	1.18

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 54.4	Intersection LOS: D
Intersection Capacity Utilization 88.9%	ICU Level of Service E
Analysis Period (min) 15	

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

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

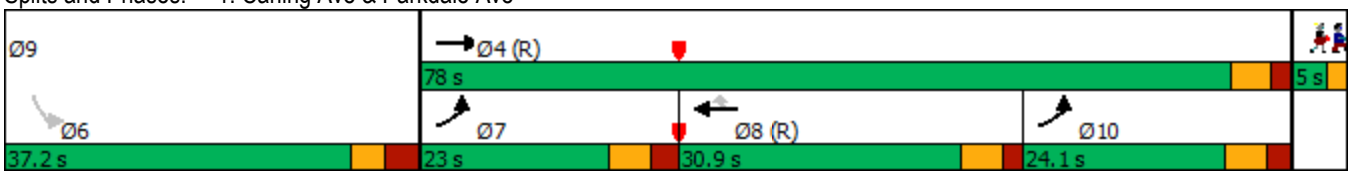
Splits and Phases: 9: Holland Dr & Island Park Dr

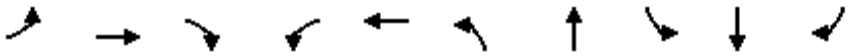
Total Projected 2028
No Change to Traffic Volumes

Lane Group	EBL	EBT	WBT	WBR	SBL	Ø7	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	304	1286	504	90	103			
Future Volume (vph)	304	1286	504	90	103			
Lane Group Flow (vph)	304	1286	504	90	256			
Turn Type	Prot	NA	NA	Perm	Perm			
Protected Phases	7 10	4	8			7	9	10
Permitted Phases				8	6			
Detector Phase	7 10	4	8	8	6			
Switch Phase								
Minimum Initial (s)		10.0	10.0	10.0	10.0	5.0	3.0	5.0
Minimum Split (s)		15.6	26.6	26.6	37.2	11.1	5.0	24.1
Total Split (s)		78.0	30.9	30.9	37.2	23.0	5.0	24.1
Total Split (%)		64.9%	25.7%	25.7%	30.9%	19%	4%	20%
Yellow Time (s)		3.7	3.7	3.7	3.0	3.7	2.0	3.7
All-Red Time (s)		1.9	1.9	1.9	3.2	2.4	0.0	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.6	5.6	5.6	6.2			
Lead/Lag			Lag	Lag		Lead		
Lead-Lag Optimize?			Yes	Yes		Yes		
Recall Mode		C-Max	C-Max	C-Max	Max	None	Ped	None
Act Effct Green (s)	33.0	72.4	27.2	27.2	31.0			
Actuated g/C Ratio	0.27	0.60	0.23	0.23	0.26			
v/c Ratio	0.65	0.63	0.66	0.24	0.57			
Control Delay	26.6	17.1	47.5	9.8	35.1			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay	26.6	17.1	47.5	9.8	35.1			
LOS	C	B	D	A	D			
Approach Delay		18.9	41.8		35.1			
Approach LOS		B	D		D			
Queue Length 50th (m)	33.1	96.2	57.9	0.0	40.3			
Queue Length 95th (m)	49.1	117.5	77.1	13.5	67.4			
Internal Link Dist (m)		62.8	171.7		285.1			
Turn Bay Length (m)	160.0			100.0				
Base Capacity (vph)	492	2041	766	369	449			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.62	0.63	0.66	0.24	0.57			

Intersection Summary	
Cycle Length: 120.2	
Actuated Cycle Length: 120.2	
Offset: 106 (88%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Carling Ave & Parkdale Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø7	Ø9
Lane Configurations												
Traffic Volume (vph)	161	1194	6	188	466	4	403	34	281	106		
Future Volume (vph)	161	1194	6	188	466	4	403	34	281	106		
Lane Group Flow (vph)	161	1194	6	188	549	0	779	0	315	106		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA	Perm		
Protected Phases	7 10	4		3	8		2		6		7	9
Permitted Phases			4			2		6		6		
Detector Phase	7 10	4	4	3	8	2	2	6	6	6		
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	4.0
Minimum Split (s)		26.7	26.7	11.0	26.7	31.4	31.4	31.4	31.4	31.4	11.0	6.0
Total Split (s)		51.0	51.0	19.0	44.0	44.0	44.0	44.0	44.0	44.0	21.0	6.0
Total Split (%)		42.5%	42.5%	15.8%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	18%	5%
Yellow Time (s)		3.7	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)		2.0	2.0	2.7	2.0	4.1	4.1	4.1	4.1	4.1	2.7	0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0		0.0	0.0		
Total Lost Time (s)		5.7	5.7	6.0	5.7		7.4		7.4	7.4		
Lead/Lag				Lag	Lag						Lead	Lead
Lead-Lag Optimize?				Yes	Yes						Yes	Yes
Recall Mode		C-Max	C-Max	None	C-Max	Max	Max	Max	Max	Max	None	None
Act Effct Green (s)	16.6	45.3	45.3	17.8	41.7		36.6		36.6	36.6		
Actuated g/C Ratio	0.14	0.38	0.38	0.15	0.35		0.30		0.30	0.30		
v/c Ratio	0.69	0.93	0.01	0.75	0.33		0.77		0.93	0.19		
Control Delay	53.7	31.5	0.0	68.4	28.3		47.6		75.9	2.2		
Queue Delay	0.0	13.3	0.0	0.0	0.0		0.5		0.0	0.0		
Total Delay	53.7	44.7	0.0	68.4	28.3		48.1		75.9	2.2		
LOS	D	D	A	E	C		D		E	A		
Approach Delay		45.6			38.5		48.1		57.3			
Approach LOS		D			D		D		E			
Queue Length 50th (m)	29.2	63.2	0.0	42.4	32.6		66.0		71.9	0.0		
Queue Length 95th (m)	m43.9	#178.3	m0.0	#92.7	44.6		87.7		#126.9	4.5		
Internal Link Dist (m)		54.2			141.1		106.0		155.7			
Turn Bay Length (m)				160.0						45.0		
Base Capacity (vph)	282	1279	589	251	1648		1008		338	553		
Starvation Cap Reductn	0	103	0	0	0		41		0	0		
Spillback Cap Reductn	0	0	0	0	35		0		0	1		
Storage Cap Reductn	0	0	0	0	0		0		0	0		
Reduced v/c Ratio	0.57	1.02	0.01	0.75	0.34		0.81		0.93	0.19		

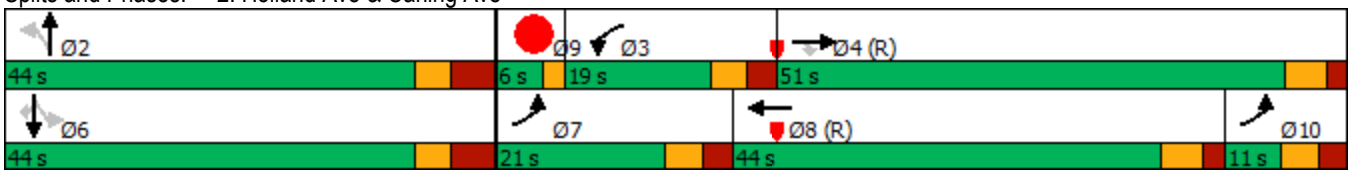
Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 46.1		Intersection LOS: D	
Intersection Capacity Utilization 107.4%		ICU Level of Service G	
Analysis Period (min) 15			

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	9%
Yellow Time (s)	3.3
All-Red Time (s)	2.7
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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: Holland Ave & Carling Ave

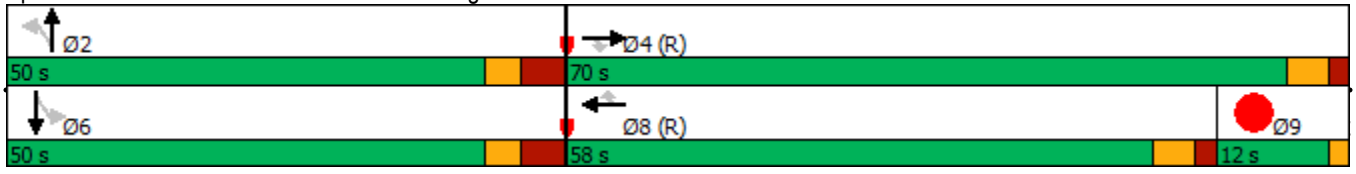


Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	1239	74	540	30	131	162	119	323	
Future Volume (vph)	1239	74	540	30	131	162	119	323	
Lane Group Flow (vph)	1239	74	540	30	131	163	119	349	
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	4		8			2		6	9
Permitted Phases		4		8	2		6		
Minimum Split (s)	26.7	26.7	26.7	26.7	31.4	31.4	31.4	31.4	12.0
Total Split (s)	70.0	70.0	58.0	58.0	50.0	50.0	50.0	50.0	12.0
Total Split (%)	58.3%	58.3%	48.3%	48.3%	41.7%	41.7%	41.7%	41.7%	10%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)	64.3	64.3	52.3	52.3	42.6	42.6	42.6	42.6	
Actuated g/C Ratio	0.54	0.54	0.44	0.44	0.36	0.36	0.36	0.36	
v/c Ratio	0.68	0.10	0.37	0.05	0.51	0.26	0.29	0.56	
Control Delay	22.8	4.3	9.0	0.2	36.6	26.2	30.4	34.8	
Queue Delay	0.2	0.0	0.5	0.0	0.0	0.0	0.0	0.6	
Total Delay	23.0	4.4	9.5	0.2	36.6	26.2	30.4	35.4	
LOS	C	A	A	A	D	C	C	D	
Approach Delay	21.9		9.0			30.9		34.1	
Approach LOS	C		A			C		C	
Queue Length 50th (m)	107.8	1.0	51.3	0.0	22.6	27.6	20.0	64.8	
Queue Length 95th (m)	131.6	8.0	12.1	0.1	49.8	42.6	35.4	94.4	
Internal Link Dist (m)	193.8		54.2			93.3		106.6	
Turn Bay Length (m)		60.0			20.0		15.0		
Base Capacity (vph)	1816	778	1477	635	256	632	407	628	
Starvation Cap Reductn	0	0	523	0	0	0	0	0	
Spillback Cap Reductn	105	160	0	0	0	0	8	74	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.72	0.12	0.57	0.05	0.51	0.26	0.30	0.63	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 22.3 — Intersection LOS: C
Intersection Capacity Utilization 81.6% — ICU Level of Service D
Analysis Period (min) 15

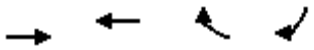
Splits and Phases: 3: Island Park Dr & Carling Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	63	37	9	5	273	206	180
Future Volume (vph)	24	63	37	9	5	273	206	180
Lane Group Flow (vph)	0	98	37	158	0	375	0	407
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	65.0	65.0	65.0	65.0
Total Split (%)	23.5%	23.5%	23.5%	23.5%	76.5%	76.5%	76.5%	76.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		59.2		59.2
Actuated g/C Ratio		0.17	0.17	0.17		0.70		0.70
v/c Ratio		0.37	0.20	0.42		0.32		0.50
Control Delay		33.8	33.3	10.4		5.1		8.4
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		33.8	33.3	10.4		5.1		8.4
LOS		C	C	B		A		A
Approach Delay		33.8		14.8		5.1		8.4
Approach LOS		C		B		A		A
Queue Length 50th (m)		13.3	5.2	1.2		16.9		25.5
Queue Length 95th (m)		27.4	13.7	17.0		27.9		44.4
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		266	189	373		1187		815
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.37	0.20	0.42		0.32		0.50

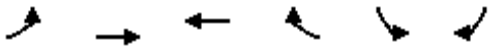
Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 45 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	1590	620	25	50
Future Volume (vph)	1590	620	25	50
Lane Group Flow (vph)	1590	620	25	50
Sign Control	Free	Free		

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization	49.7%	ICU Level of Service A
Analysis Period (min)	15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	1590	620	25	0	50
Future Volume (Veh/h)	0	1590	620	25	0	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1590	620	25	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.87				0.72	0.87
vC, conflicting volume	645				1415	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1099				737	944

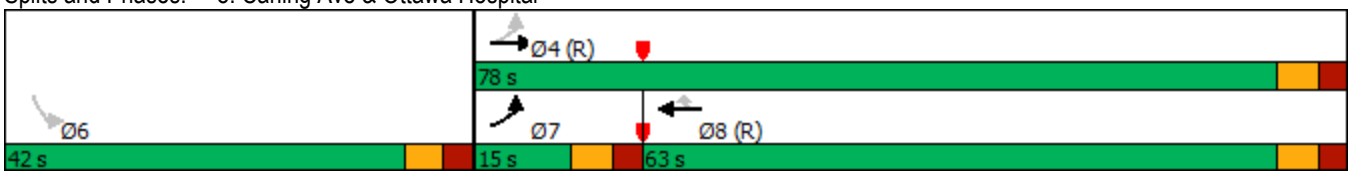
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	795	795	310	310	25	50
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	25	50
cSH	1700	1700	1700	1700	1700	944
Volume to Capacity	0.47	0.47	0.18	0.18	0.01	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.0
Approach LOS						A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	150	1239	583	114	34
Future Volume (vph)	150	1239	583	114	34
Lane Group Flow (vph)	150	1239	583	114	58
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	15.0	78.0	63.0	63.0	42.0
Total Split (%)	12.5%	65.0%	52.5%	52.5%	35.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	100.2	101.5	86.3	86.3	10.4
Actuated g/C Ratio	0.84	0.85	0.72	0.72	0.09
v/c Ratio	0.23	0.43	0.24	0.11	0.36
Control Delay	3.2	3.6	6.8	1.5	40.0
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	3.2	3.9	6.8	1.5	40.0
LOS	A	A	A	A	D
Approach Delay		3.8	5.9		40.0
Approach LOS		A	A		D
Queue Length 50th (m)	5.8	36.1	24.0	0.0	7.6
Queue Length 95th (m)	10.7	49.3	35.0	5.8	20.5
Internal Link Dist (m)		171.7	416.0		85.9
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	658	2868	2437	1057	492
Starvation Cap Reductn	0	863	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.62	0.24	0.11	0.12

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	203	3	155	94	140	685	54	412
Future Volume (vph)	1	203	3	155	94	140	685	54	412
Lane Group Flow (vph)	0	397	0	158	94	140	685	54	412
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	76.0	76.0	76.0	76.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		38.0		38.0	38.0	70.5	70.5	70.5	70.5
Actuated g/C Ratio		0.32		0.32	0.32	0.59	0.59	0.59	0.59
v/c Ratio		0.72		0.28	0.18	0.30	0.65	0.20	0.39
Control Delay		61.1		32.5	9.7	14.5	20.3	1.9	2.2
Queue Delay		15.3		0.0	0.0	0.0	0.0	0.0	1.4
Total Delay		76.4		32.5	9.7	14.5	20.3	1.9	3.6
LOS		E		C	A	B	C	A	A
Approach Delay		76.4		24.0			19.3		3.4
Approach LOS		E		C			B		A
Queue Length 50th (m)		90.6		27.8	2.6	15.6	102.2	0.7	7.9
Queue Length 95th (m)		122.6		45.4	14.5	28.2	142.2	m0.8	m9.2
Internal Link Dist (m)		93.3		100.3			59.0		106.0
Turn Bay Length (m)					15.0	25.0		25.0	
Base Capacity (vph)		548		561	527	471	1048	272	1048
Starvation Cap Reductn		138		0	0	0	0	0	434
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.97		0.28	0.18	0.30	0.65	0.20	0.67

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

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

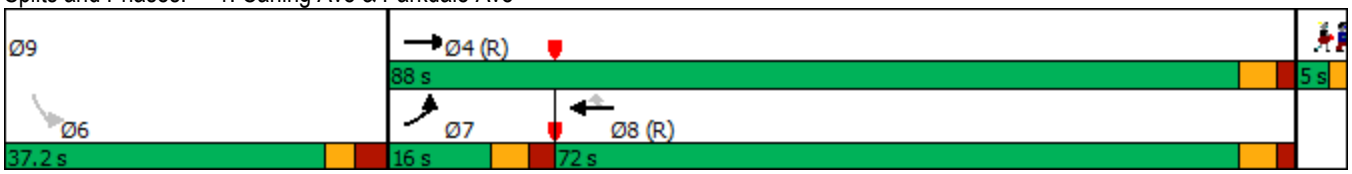
Splits and Phases: 9: Holland Dr & Island Park Dr

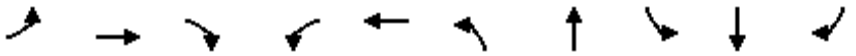
Lane Group	EBL	EBT	WBT	WBR	SBL	Ø9
Lane Configurations						
Traffic Volume (vph)	148	647	1933	97	77	
Future Volume (vph)	148	647	1933	97	77	
Lane Group Flow (vph)	148	647	1933	97	407	
Turn Type	Prot	NA	NA	Perm	Perm	
Protected Phases	7	4	8			9
Permitted Phases				8	6	
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	3.0
Minimum Split (s)	11.1	15.6	26.6	26.6	37.2	5.0
Total Split (s)	16.0	88.0	72.0	72.0	37.2	5.0
Total Split (%)	12.3%	67.6%	55.3%	55.3%	28.6%	4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	2.0
All-Red Time (s)	2.4	1.9	1.9	1.9	3.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	6.2	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Ped
Act Effct Green (s)	9.9	82.4	66.4	66.4	31.0	
Actuated g/C Ratio	0.08	0.63	0.51	0.51	0.24	
v/c Ratio	1.16	0.30	1.12	0.14	0.84	
Control Delay	179.3	11.3	93.0	5.8	45.5	
Queue Delay	0.0	0.0	0.4	0.0	0.0	
Total Delay	179.3	11.3	93.4	5.8	45.5	
LOS	F	B	F	A	D	
Approach Delay		42.6	89.2		45.5	
Approach LOS		D	F		D	
Queue Length 50th (m)	~44.5	37.1	~299.7	2.6	64.6	
Queue Length 95th (m)	#87.2	47.0	#341.6	11.5	#118.0	
Internal Link Dist (m)		62.8	167.7		285.1	
Turn Bay Length (m)	160.0			100.0		
Base Capacity (vph)	128	2145	1728	681	483	
Starvation Cap Reductn	0	0	205	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	1.16	0.30	1.27	0.14	0.84	

Intersection Summary	
Cycle Length: 130.2	
Actuated Cycle Length: 130.2	
Offset: 66 (51%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 72.3	Intersection LOS: E
Intersection Capacity Utilization 107.1%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Carling Ave & Parkdale Ave



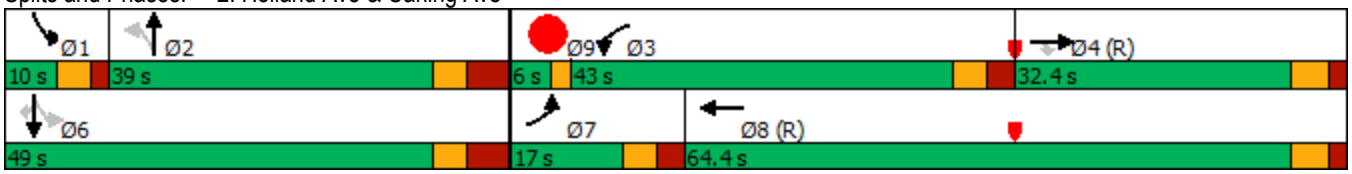


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø9
Lane Configurations											
Traffic Volume (vph)	104	592	13	462	1703	13	346	29	391	108	
Future Volume (vph)	104	592	13	462	1703	13	346	29	391	108	
Lane Group Flow (vph)	104	592	13	462	1773	0	539	0	420	108	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	pm+pt	NA	Perm	
Protected Phases	7	4		3	8		2	1	6		9
Permitted Phases			4			2		6		6	
Detector Phase	7	4	4	3	8	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	4.0
Minimum Split (s)	11.0	26.7	26.7	11.0	26.7	31.4	31.4	10.0	31.4	31.4	6.0
Total Split (s)	17.0	32.4	32.4	43.0	64.4	39.0	39.0	10.0	49.0	49.0	6.0
Total Split (%)	13.0%	24.8%	24.8%	33.0%	49.4%	29.9%	29.9%	7.7%	37.6%	37.6%	5%
Yellow Time (s)	3.3	3.7	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.7	2.0	2.0	2.7	2.0	4.1	4.1	1.7	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	5.7	5.7	6.0	5.7		7.4		7.4	7.4	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max	Max	None
Act Effct Green (s)	10.5	28.6	28.6	39.9	59.2		31.6		41.6	41.6	
Actuated g/C Ratio	0.08	0.22	0.22	0.31	0.45		0.24		0.32	0.32	
v/c Ratio	0.76	0.80	0.03	0.89	0.81		0.70		0.94	0.19	
Control Delay	91.5	57.6	0.1	63.8	34.5		45.2		72.7	2.9	
Queue Delay	0.0	52.1	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	91.5	109.6	0.1	63.8	34.5		45.3		72.7	2.9	
LOS	F	F	A	E	C		D		E	A	
Approach Delay		105.0			40.6		45.3		58.4		
Approach LOS		F			D		D		E		
Queue Length 50th (m)	26.5	77.8	0.0	109.2	142.1		59.4		96.2	0.0	
Queue Length 95th (m)	#54.2	#105.3	0.0	#182.9	162.2		79.5		#166.9	6.8	
Internal Link Dist (m)		54.2			141.1		106.0		155.7		
Turn Bay Length (m)				160.0						45.0	
Base Capacity (vph)	142	744	462	522	2186		769		448	566	
Starvation Cap Reductn	0	248	0	0	0		4		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	0.73	1.19	0.03	0.89	0.81		0.70		0.94	0.19	

Intersection Summary		
Cycle Length: 130.4		
Actuated Cycle Length: 130.4		
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green		
Natural Cycle: 110		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.94		
Intersection Signal Delay: 54.9	Intersection LOS: D	
Intersection Capacity Utilization 107.4%	ICU Level of Service G	
Analysis Period (min) 15		

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

Splits and Phases: 2: Holland Ave & Carling Ave



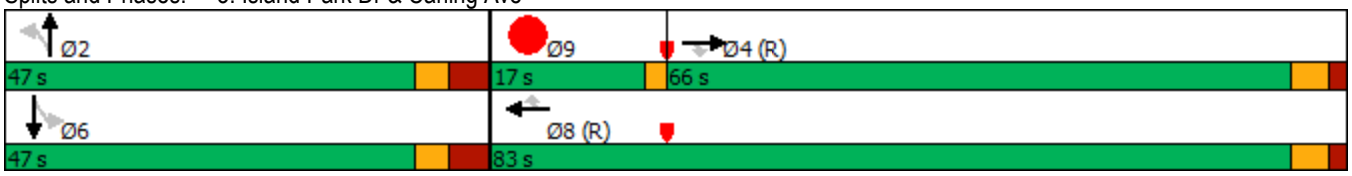
Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	638	40	1759	63	226	181	71	184	
Future Volume (vph)	638	40	1759	63	226	181	71	184	
Lane Group Flow (vph)	638	40	1759	63	226	181	71	219	
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	4		8			2		6	9
Permitted Phases		4		8	2		6		
Minimum Split (s)	26.7	26.7	26.7	26.7	31.4	31.4	31.4	31.4	17.0
Total Split (s)	66.0	66.0	83.0	83.0	47.0	47.0	47.0	47.0	17.0
Total Split (%)	50.8%	50.8%	63.8%	63.8%	36.2%	36.2%	36.2%	36.2%	13%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)	60.3	60.3	77.3	77.3	39.6	39.6	39.6	39.6	
Actuated g/C Ratio	0.46	0.46	0.59	0.59	0.30	0.30	0.30	0.30	
v/c Ratio	0.41	0.06	0.87	0.08	0.78	0.33	0.22	0.41	
Control Delay	24.0	3.2	28.4	4.1	62.0	40.2	36.0	37.4	
Queue Delay	0.0	0.0	47.5	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.0	3.2	75.8	4.1	62.0	40.2	36.0	37.4	
LOS	C	A	E	A	E	D	D	D	
Approach Delay	22.8		73.4			52.3		37.0	
Approach LOS	C		E			D		D	
Queue Length 50th (m)	55.6	0.0	189.8	1.2	57.1	39.6	13.6	42.9	
Queue Length 95th (m)	70.7	4.4	227.2	7.1	#94.4	m62.3	26.4	66.0	
Internal Link Dist (m)	193.8		54.2			93.3		106.6	
Turn Bay Length (m)		60.0			20.0		15.0		
Base Capacity (vph)	1572	680	2015	819	291	543	323	534	
Starvation Cap Reductn	0	0	737	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	0.41	0.06	1.38	0.08	0.78	0.33	0.22	0.41	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 56.7	Intersection LOS: E
Intersection Capacity Utilization 101.6%	ICU Level of Service G
Analysis Period (min) 15	

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

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

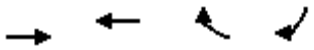
Splits and Phases: 3: Island Park Dr & Carling Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	29	102	33	3	196	97	243
Future Volume (vph)	27	29	102	33	3	196	97	243
Lane Group Flow (vph)	0	65	102	219	0	241	0	350
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	75.0	75.0	75.0	75.0
Total Split (%)	21.1%	21.1%	21.1%	21.1%	78.9%	78.9%	78.9%	78.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		69.2		69.2
Actuated g/C Ratio		0.15	0.15	0.15		0.73		0.73
v/c Ratio		0.41	0.53	0.58		0.19		0.33
Control Delay		41.5	48.2	15.3		4.0		5.5
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		41.5	48.2	15.3		4.0		5.5
LOS		D	D	B		A		A
Approach Delay		41.5		25.8		4.0		5.5
Approach LOS		D		C		A		A
Queue Length 50th (m)		9.7	17.5	5.3		10.2		19.0
Queue Length 95th (m)		22.5	33.9	26.7		17.1		29.9
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		160	192	379		1247		1074
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.41	0.53	0.58		0.19		0.33

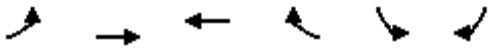
Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	795	2231	44	33
Future Volume (vph)	795	2231	44	33
Lane Group Flow (vph)	795	2231	44	33
Sign Control	Free	Free		

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization	75.1%	ICU Level of Service D
Analysis Period (min)	15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	795	2231	44	0	33
Future Volume (Veh/h)	0	795	2231	44	0	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	795	2231	44	0	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.50				0.58	0.50
vC, conflicting volume	2275				2628	1116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1536				1087	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	94
cM capacity (veh/h)	212				121	537

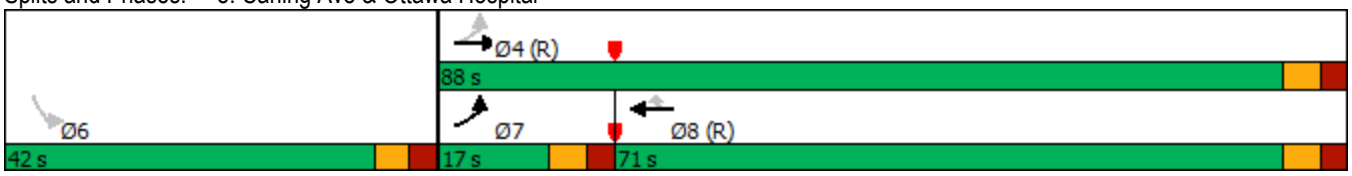
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	398	398	1116	1116	44	33
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	44	33
cSH	1700	1700	1700	1700	1700	537
Volume to Capacity	0.23	0.23	0.66	0.66	0.03	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	1.5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	12.1
Lane LOS						B
Approach Delay (s)	0.0		0.0			12.1
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	53	681	1995	99	50
Future Volume (vph)	53	681	1995	99	50
Lane Group Flow (vph)	53	681	1995	99	85
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	17.0	88.0	71.0	71.0	42.0
Total Split (%)	13.1%	67.7%	54.6%	54.6%	32.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	105.9	105.9	95.6	95.6	11.5
Actuated g/C Ratio	0.81	0.81	0.74	0.74	0.09
v/c Ratio	0.34	0.25	0.80	0.09	0.51
Control Delay	10.0	3.1	15.6	1.6	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	3.1	15.6	1.6	49.5
LOS	A	A	B	A	D
Approach Delay		3.6	15.0		49.5
Approach LOS		A	B		D
Queue Length 50th (m)	1.9	15.8	157.9	0.3	14.5
Queue Length 95th (m)	7.0	26.0	230.7	5.8	30.5
Internal Link Dist (m)		167.7	428.2		82.3
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	207	2761	2491	1060	462
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.25	0.80	0.09	0.18

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 70 (54%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	5	247	84	158	455	67	800
Future Volume (vph)	110	5	247	84	158	455	67	800
Lane Group Flow (vph)	224	0	252	84	158	455	67	802
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	4		8			2		6
Permitted Phases		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	86.0	86.0	86.0	86.0
Total Split (%)	33.8%	33.8%	33.8%	33.8%	66.2%	66.2%	66.2%	66.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	38.0		38.0	38.0	80.5	80.5	80.5	80.5
Actuated g/C Ratio	0.29		0.29	0.29	0.62	0.62	0.62	0.62
v/c Ratio	0.44		0.49	0.18	0.70	0.41	0.14	0.73
Control Delay	47.0		41.8	20.7	35.9	14.1	11.3	22.0
Queue Delay	1.4		0.0	0.0	0.0	0.0	0.0	50.8
Total Delay	48.4		41.8	20.7	35.9	14.1	11.3	72.8
LOS	D		D	C	D	B	B	E
Approach Delay	48.4		36.5			19.7		68.1
Approach LOS	D		D			B		E
Queue Length 50th (m)	50.7		53.3	8.4	25.4	56.2	6.8	134.0
Queue Length 95th (m)	77.1		79.2	21.2	#67.1	78.3	13.6	183.5
Internal Link Dist (m)	93.3		100.3			59.0		106.0
Turn Bay Length (m)				15.0	25.0		25.0	
Base Capacity (vph)	508		518	464	227	1104	469	1104
Starvation Cap Reductn	138		0	0	0	0	0	384
Spillback Cap Reductn	0		0	0	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0
Reduced v/c Ratio	0.61		0.49	0.18	0.70	0.41	0.14	1.11

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 46.2	Intersection LOS: D
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

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

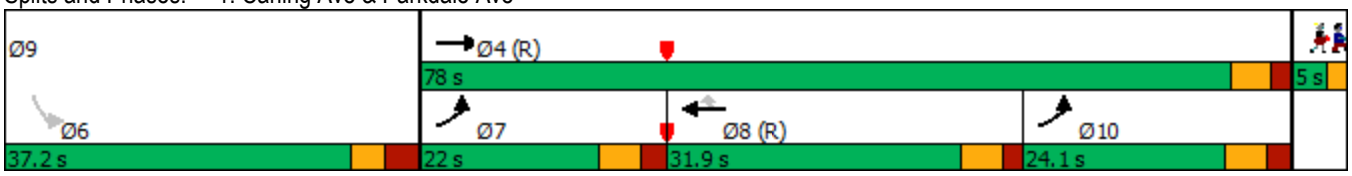
Splits and Phases: 9: Holland Dr & Island Park Dr

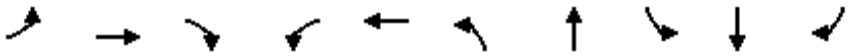
Total Projected 2028
Adjusted Traffic Volumes on Carling Ave

Lane Group	EBL	EBT	WBT	WBR	SBL	Ø7	Ø9	Ø10
Lane Configurations								
Traffic Volume (vph)	304	1094	556	90	103			
Future Volume (vph)	304	1094	556	90	103			
Lane Group Flow (vph)	304	1094	556	90	256			
Turn Type	Prot	NA	NA	Perm	Perm			
Protected Phases	7 10	4	8			7	9	10
Permitted Phases				8	6			
Detector Phase	7 10	4	8	8	6			
Switch Phase								
Minimum Initial (s)		10.0	10.0	10.0	10.0	5.0	3.0	5.0
Minimum Split (s)		15.6	26.6	26.6	37.2	11.1	5.0	24.1
Total Split (s)		78.0	31.9	31.9	37.2	22.0	5.0	24.1
Total Split (%)		64.9%	26.5%	26.5%	30.9%	18%	4%	20%
Yellow Time (s)		3.7	3.7	3.7	3.0	3.7	2.0	3.7
All-Red Time (s)		1.9	1.9	1.9	3.2	2.4	0.0	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.6	5.6	5.6	6.2			
Lead/Lag			Lag	Lag		Lead		
Lead-Lag Optimize?			Yes	Yes		Yes		
Recall Mode		C-Max	C-Max	C-Max	Max	None	Ped	None
Act Effct Green (s)	32.6	72.4	27.6	27.6	31.0			
Actuated g/C Ratio	0.27	0.60	0.23	0.23	0.26			
v/c Ratio	0.66	0.54	0.71	0.24	0.57			
Control Delay	27.3	15.2	49.0	9.5	35.1			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay	27.3	15.2	49.0	9.5	35.1			
LOS	C	B	D	A	D			
Approach Delay		17.9	43.5		35.1			
Approach LOS		B	D		D			
Queue Length 50th (m)	33.1	75.0	64.9	0.0	40.3			
Queue Length 95th (m)	49.1	92.3	84.7	13.3	67.4			
Internal Link Dist (m)		62.8	171.7		285.1			
Turn Bay Length (m)	160.0			100.0				
Base Capacity (vph)	478	2041	778	373	449			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.64	0.54	0.71	0.24	0.57			

Intersection Summary	
Cycle Length: 120.2	
Actuated Cycle Length: 120.2	
Offset: 106 (88%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Carling Ave & Parkdale Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø7	Ø9
Lane Configurations												
Traffic Volume (vph)	161	1014	6	188	512	4	403	34	281	106		
Future Volume (vph)	161	1014	6	188	512	4	403	34	281	106		
Lane Group Flow (vph)	161	1014	6	188	595	0	779	0	315	106		
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA	Perm		
Protected Phases	7 10	4		3	8		2		6		7	9
Permitted Phases			4			2		6		6		
Detector Phase	7 10	4	4	3	8	2	2	6	6	6		
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	4.0
Minimum Split (s)		26.7	26.7	11.0	26.7	31.4	31.4	31.4	31.4	31.4	11.0	6.0
Total Split (s)		48.0	48.0	21.0	43.0	45.0	45.0	45.0	45.0	45.0	21.0	6.0
Total Split (%)		40.0%	40.0%	17.5%	35.8%	37.5%	37.5%	37.5%	37.5%	37.5%	18%	5%
Yellow Time (s)		3.7	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)		2.0	2.0	2.7	2.0	4.1	4.1	4.1	4.1	4.1	2.7	0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0		0.0	0.0		
Total Lost Time (s)		5.7	5.7	6.0	5.7		7.4		7.4	7.4		
Lead/Lag				Lag	Lag						Lead	Lead
Lead-Lag Optimize?				Yes	Yes						Yes	Yes
Recall Mode		C-Max	C-Max	None	C-Max	Max	Max	Max	Max	Max	None	None
Act Effct Green (s)	16.6	44.4	44.4	17.7	40.7		37.6		37.6	37.6		
Actuated g/C Ratio	0.14	0.37	0.37	0.15	0.34		0.31		0.31	0.31		
v/c Ratio	0.69	0.81	0.01	0.75	0.37		0.75		0.88	0.19		
Control Delay	54.4	23.4	0.0	68.2	29.8		48.8		64.9	2.2		
Queue Delay	0.0	1.6	0.0	0.0	0.1		0.5		0.0	0.0		
Total Delay	54.4	25.1	0.0	68.2	29.9		49.3		64.9	2.2		
LOS	D	C	A	E	C		D		E	A		
Approach Delay		28.9			39.1		49.3		49.1			
Approach LOS		C			D		D		D			
Queue Length 50th (m)	28.8	38.3	0.0	41.8	36.7		69.6		70.1	0.0		
Queue Length 95th (m)	46.5	62.5	m0.0	#85.8	49.5		91.0		#121.6	4.5		
Internal Link Dist (m)		54.2			141.1		106.0		155.7			
Turn Bay Length (m)				160.0						45.0		
Base Capacity (vph)	282	1253	580	252	1611		1033		359	564		
Starvation Cap Reductn	0	108	0	0	0		50		0	0		
Spillback Cap Reductn	0	0	0	0	211		0		0	6		
Storage Cap Reductn	0	0	0	0	0		0		0	0		
Reduced v/c Ratio	0.57	0.89	0.01	0.75	0.42		0.79		0.88	0.19		

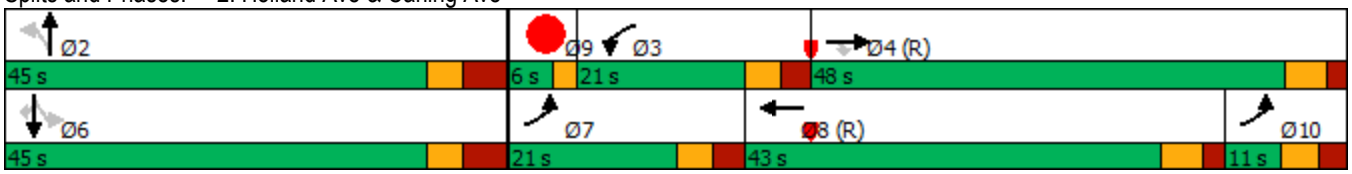
Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 102.2%		ICU Level of Service G	
Analysis Period (min) 15			

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	9%
Yellow Time (s)	3.3
All-Red Time (s)	2.7
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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: Holland Ave & Carling Ave

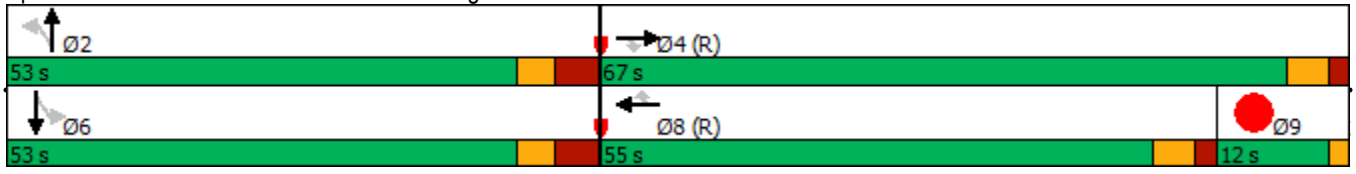


Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	1052	74	593	30	131	162	119	323	
Future Volume (vph)	1052	74	593	30	131	162	119	323	
Lane Group Flow (vph)	1052	74	593	30	131	163	119	349	
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	4		8			2		6	9
Permitted Phases		4		8	2		6		
Minimum Split (s)	26.7	26.7	26.7	26.7	31.4	31.4	31.4	31.4	12.0
Total Split (s)	67.0	67.0	55.0	55.0	53.0	53.0	53.0	53.0	12.0
Total Split (%)	55.8%	55.8%	45.8%	45.8%	44.2%	44.2%	44.2%	44.2%	10%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)	61.3	61.3	49.3	49.3	45.6	45.6	45.6	45.6	
Actuated g/C Ratio	0.51	0.51	0.41	0.41	0.38	0.38	0.38	0.38	
v/c Ratio	0.61	0.10	0.43	0.05	0.46	0.24	0.27	0.52	
Control Delay	22.7	3.8	11.0	0.3	31.6	24.0	27.8	31.8	
Queue Delay	0.1	0.1	0.6	0.0	0.0	0.0	0.0	0.5	
Total Delay	22.8	3.9	11.6	0.3	31.6	24.0	27.8	32.3	
LOS	C	A	B	A	C	C	C	C	
Approach Delay	21.5		11.1			27.4		31.2	
Approach LOS	C		B			C		C	
Queue Length 50th (m)	89.3	0.1	60.0	0.0	22.4	27.0	19.2	62.1	
Queue Length 95th (m)	110.1	7.5	78.8	0.0	43.1	42.5	33.9	90.4	
Internal Link Dist (m)	193.8		54.2			93.3		106.6	
Turn Bay Length (m)		60.0			20.0		15.0		
Base Capacity (vph)	1731	749	1392	603	287	677	439	672	
Starvation Cap Reductn	0	0	439	0	0	0	0	0	
Spillback Cap Reductn	74	157	0	0	0	0	0	87	
Storage Cap Reductn	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.63	0.13	0.62	0.05	0.46	0.24	0.27	0.60	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 21.4 — Intersection LOS: C
Intersection Capacity Utilization 76.1% — ICU Level of Service D
Analysis Period (min) 15

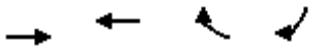
Splits and Phases: 3: Island Park Dr & Carling Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	63	37	9	5	273	206	180
Future Volume (vph)	24	63	37	9	5	273	206	180
Lane Group Flow (vph)	0	98	37	158	0	375	0	407
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	65.0	65.0	65.0	65.0
Total Split (%)	23.5%	23.5%	23.5%	23.5%	76.5%	76.5%	76.5%	76.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		59.2		59.2
Actuated g/C Ratio		0.17	0.17	0.17		0.70		0.70
v/c Ratio		0.37	0.20	0.42		0.32		0.50
Control Delay		33.8	33.3	10.4		5.1		8.4
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		33.8	33.3	10.4		5.1		8.4
LOS		C	C	B		A		A
Approach Delay		33.8		14.8		5.1		8.4
Approach LOS		C		B		A		A
Queue Length 50th (m)		13.3	5.2	1.2		16.9		25.5
Queue Length 95th (m)		27.4	13.7	17.0		27.9		44.4
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		266	189	373		1187		815
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.37	0.20	0.42		0.32		0.50

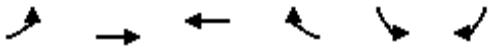
Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 45 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 87.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	1398	672	25	50
Future Volume (vph)	1398	672	25	50
Lane Group Flow (vph)	1398	672	25	50
Sign Control	Free	Free		

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization	44.1%	ICU Level of Service A
Analysis Period (min)	15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	1398	672	25	0	50
Future Volume (Veh/h)	0	1398	672	25	0	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1398	672	25	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.85				0.80	0.85
vC, conflicting volume	697				1371	336
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305				145	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1071				666	927

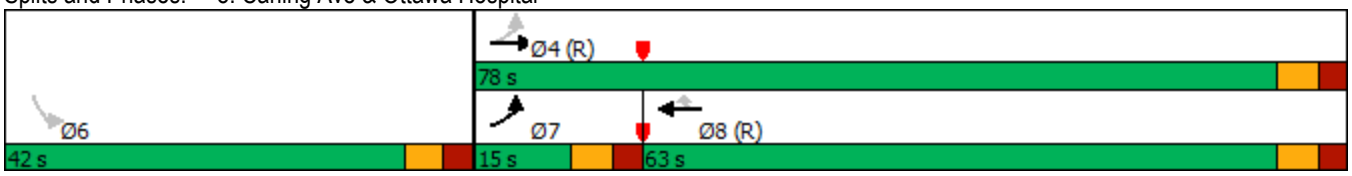
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	699	699	336	336	25	50
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	25	50
cSH	1700	1700	1700	1700	1700	927
Volume to Capacity	0.41	0.41	0.20	0.20	0.01	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.1
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.1
Approach LOS						A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	150	1055	643	114	34
Future Volume (vph)	150	1055	643	114	34
Lane Group Flow (vph)	150	1055	643	114	58
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	15.0	78.0	63.0	63.0	42.0
Total Split (%)	12.5%	65.0%	52.5%	52.5%	35.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	100.2	101.5	86.3	86.3	10.4
Actuated g/C Ratio	0.84	0.85	0.72	0.72	0.09
v/c Ratio	0.25	0.37	0.26	0.11	0.36
Control Delay	3.3	3.2	6.9	1.5	40.0
Queue Delay	0.0	0.2	0.0	0.0	0.0
Total Delay	3.3	3.4	6.9	1.5	40.0
LOS	A	A	A	A	D
Approach Delay		3.4	6.1		40.0
Approach LOS		A	A		D
Queue Length 50th (m)	5.8	28.3	27.0	0.0	7.6
Queue Length 95th (m)	10.7	39.1	39.0	5.8	20.5
Internal Link Dist (m)		171.7	416.0		85.9
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	622	2868	2437	1057	492
Starvation Cap Reductn	0	943	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.55	0.26	0.11	0.12

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 108 (90%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	203	3	155	94	140	685	54	412
Future Volume (vph)	1	203	3	155	94	140	685	54	412
Lane Group Flow (vph)	0	397	0	158	94	140	685	54	412
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	44.0	76.0	76.0	76.0	76.0
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)		38.0		38.0	38.0	70.5	70.5	70.5	70.5
Actuated g/C Ratio		0.32		0.32	0.32	0.59	0.59	0.59	0.59
v/c Ratio		0.72		0.28	0.18	0.30	0.65	0.20	0.39
Control Delay		63.2		32.5	9.7	14.5	20.3	2.7	3.2
Queue Delay		14.9		0.0	0.0	0.0	0.0	0.0	1.4
Total Delay		78.1		32.5	9.7	14.5	20.3	2.7	4.6
LOS		E		C	A	B	C	A	A
Approach Delay		78.1		24.0			19.3		4.4
Approach LOS		E		C			B		A
Queue Length 50th (m)		90.5		27.8	2.6	15.6	102.2	1.7	19.8
Queue Length 95th (m)		122.6		45.4	14.5	28.2	142.2	m1.9	m22.2
Internal Link Dist (m)		93.3		100.3			59.0		106.0
Turn Bay Length (m)					15.0	25.0		25.0	
Base Capacity (vph)		548		561	527	471	1048	272	1048
Starvation Cap Reductn		137		0	0	0	0	0	428
Spillback Cap Reductn		0		0	0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0	0
Reduced v/c Ratio		0.97		0.28	0.18	0.30	0.65	0.20	0.66

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

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

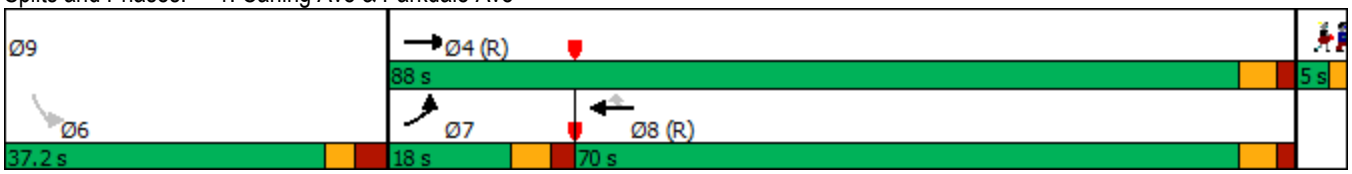
Splits and Phases: 9: Holland Dr & Island Park Dr

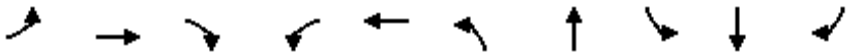
Lane Group	EBL	EBT	WBT	WBR	SBL	Ø9
Lane Configurations						
Traffic Volume (vph)	148	712	1645	97	77	
Future Volume (vph)	148	712	1645	97	77	
Lane Group Flow (vph)	148	712	1645	97	407	
Turn Type	Prot	NA	NA	Perm	Perm	
Protected Phases	7	4	8			9
Permitted Phases				8	6	
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	3.0
Minimum Split (s)	11.1	15.6	26.6	26.6	37.2	5.0
Total Split (s)	18.0	88.0	70.0	70.0	37.2	5.0
Total Split (%)	13.8%	67.6%	53.8%	53.8%	28.6%	4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.0	2.0
All-Red Time (s)	2.4	1.9	1.9	1.9	3.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	6.2	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Ped
Act Effct Green (s)	11.9	82.4	64.4	64.4	31.0	
Actuated g/C Ratio	0.09	0.63	0.49	0.49	0.24	
v/c Ratio	0.96	0.33	0.98	0.14	0.84	
Control Delay	121.5	11.6	50.5	4.9	45.5	
Queue Delay	0.0	0.0	40.3	0.0	0.0	
Total Delay	121.5	11.6	90.8	4.9	45.5	
LOS	F	B	F	A	D	
Approach Delay		30.5	86.1		45.5	
Approach LOS		C	F		D	
Queue Length 50th (m)	38.5	41.8	212.4	1.3	64.6	
Queue Length 95th (m)	#80.3	52.5	#268.6	10.4	#118.0	
Internal Link Dist (m)		62.8	167.7		285.1	
Turn Bay Length (m)	160.0			100.0		
Base Capacity (vph)	154	2145	1676	669	483	
Starvation Cap Reductn	0	0	224	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.96	0.33	1.13	0.14	0.84	

Intersection Summary	
Cycle Length: 130.2	
Actuated Cycle Length: 130.2	
Offset: 66 (51%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 64.7	Intersection LOS: E
Intersection Capacity Utilization 98.7%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Carling Ave & Parkdale Ave



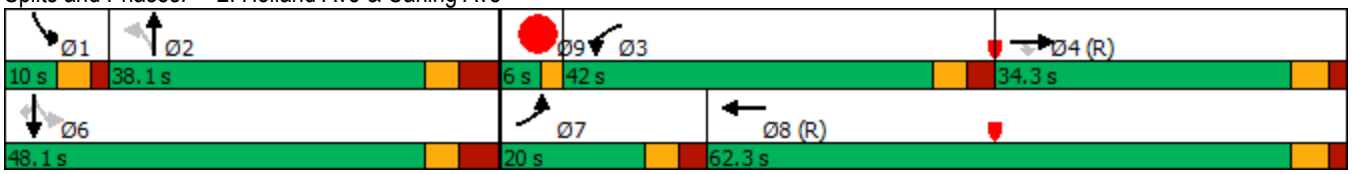


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø9
Lane Configurations											
Traffic Volume (vph)	104	651	13	462	1447	13	346	29	391	108	
Future Volume (vph)	104	651	13	462	1447	13	346	29	391	108	
Lane Group Flow (vph)	104	651	13	462	1517	0	539	0	420	108	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	pm+pt	NA	Perm	
Protected Phases	7	4		3	8		2	1	6		9
Permitted Phases			4			2		6		6	
Detector Phase	7	4	4	3	8	2	2	1	6	6	
Switch Phase											
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	4.0
Minimum Split (s)	11.0	26.7	26.7	11.0	26.7	31.4	31.4	10.0	31.4	31.4	6.0
Total Split (s)	20.0	34.3	34.3	42.0	62.3	38.1	38.1	10.0	48.1	48.1	6.0
Total Split (%)	15.3%	26.3%	26.3%	32.2%	47.8%	29.2%	29.2%	7.7%	36.9%	36.9%	5%
Yellow Time (s)	3.3	3.7	3.7	3.3	3.7	3.3	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.7	2.0	2.0	2.7	2.0	4.1	4.1	1.7	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0	5.7	5.7	6.0	5.7		7.4		7.4	7.4	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max	Max	None
Act Effct Green (s)	12.1	29.3	29.3	40.1	58.5		30.7		40.7	40.7	
Actuated g/C Ratio	0.09	0.22	0.22	0.31	0.45		0.24		0.31	0.31	
v/c Ratio	0.66	0.86	0.03	0.89	0.70		0.72		0.98	0.19	
Control Delay	77.0	60.9	0.1	63.0	31.3		46.7		82.8	3.0	
Queue Delay	0.0	51.1	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	77.0	112.1	0.1	63.0	31.3		46.7		82.8	3.0	
LOS	E	F	A	E	C		D		F	A	
Approach Delay		105.4			38.7		46.7		66.5		
Approach LOS		F			D		D		E		
Queue Length 50th (m)	26.0	85.7	0.0	110.6	114.6		60.1		97.2	0.0	
Queue Length 95th (m)	44.9	#116.1	0.0	#186.4	133.5		80.4		#171.9	6.9	
Internal Link Dist (m)		54.2			141.1		106.0		155.7		
Turn Bay Length (m)				160.0						45.0	
Base Capacity (vph)	181	760	468	521	2157		748		429	556	
Starvation Cap Reductn	0	282	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	0.57	1.36	0.03	0.89	0.70		0.72		0.98	0.19	

Intersection Summary	
Cycle Length: 130.4	
Actuated Cycle Length: 130.4	
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 108.9%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 2: Holland Ave & Carling Ave

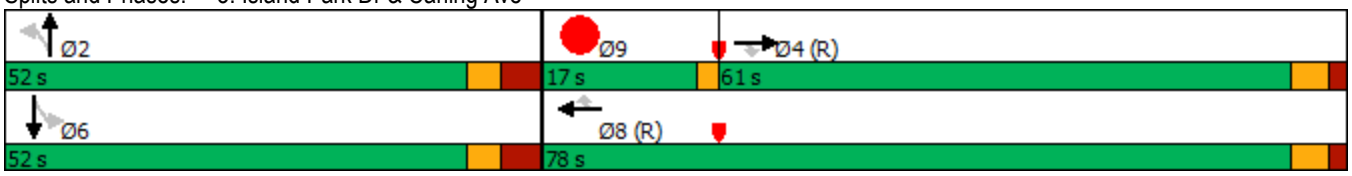


Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	Ø9
Lane Configurations									
Traffic Volume (vph)	701	40	1495	63	226	181	71	184	
Future Volume (vph)	701	40	1495	63	226	181	71	184	
Lane Group Flow (vph)	701	40	1495	63	226	181	71	219	
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	4		8			2		6	9
Permitted Phases		4		8	2		6		
Minimum Split (s)	26.7	26.7	26.7	26.7	31.4	31.4	31.4	31.4	17.0
Total Split (s)	61.0	61.0	78.0	78.0	52.0	52.0	52.0	52.0	17.0
Total Split (%)	46.9%	46.9%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	13%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	4.1	4.1	4.1	4.1	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	7.4	7.4	7.4	7.4	
Lead/Lag									
Lead-Lag Optimize?									
Act Effct Green (s)	55.3	55.3	72.3	72.3	44.6	44.6	44.6	44.6	
Actuated g/C Ratio	0.43	0.43	0.56	0.56	0.34	0.34	0.34	0.34	
v/c Ratio	0.49	0.06	0.79	0.08	0.66	0.30	0.19	0.36	
Control Delay	28.5	3.6	26.9	4.4	49.8	35.5	31.8	33.0	
Queue Delay	0.0	0.0	48.8	0.0	0.3	0.0	0.0	0.0	
Total Delay	28.5	3.6	75.7	4.4	50.1	35.5	31.8	33.0	
LOS	C	A	E	A	D	D	C	C	
Approach Delay	27.1		72.8			43.6		32.7	
Approach LOS	C		E			D		C	
Queue Length 50th (m)	67.4	0.0	153.7	0.9	53.8	37.7	12.7	40.3	
Queue Length 95th (m)	84.8	4.8	184.2	7.3	83.5	m60.4	24.8	62.0	
Internal Link Dist (m)	193.8		54.2			93.3		106.6	
Turn Bay Length (m)		60.0			20.0		15.0		
Base Capacity (vph)	1442	628	1885	771	340	612	371	600	
Starvation Cap Reductn	0	0	797	0	7	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	0.49	0.06	1.37	0.08	0.68	0.30	0.19	0.36	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 100 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 53.7	Intersection LOS: D
Intersection Capacity Utilization 93.9%	ICU Level of Service F
Analysis Period (min) 15	

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

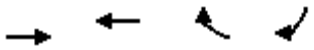
Splits and Phases: 3: Island Park Dr & Carling Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	29	102	33	3	196	97	243
Future Volume (vph)	27	29	102	33	3	196	97	243
Lane Group Flow (vph)	0	65	102	219	0	241	0	350
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Minimum Split (s)	19.4	19.4	19.4	19.4	31.8	31.8	31.8	31.8
Total Split (s)	20.0	20.0	20.0	20.0	75.0	75.0	75.0	75.0
Total Split (%)	21.1%	21.1%	21.1%	21.1%	78.9%	78.9%	78.9%	78.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
Lost Time Adjust (s)		0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)		5.4	5.4	5.4		5.8		5.8
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)		14.6	14.6	14.6		69.2		69.2
Actuated g/C Ratio		0.15	0.15	0.15		0.73		0.73
v/c Ratio		0.41	0.53	0.58		0.19		0.33
Control Delay		41.5	48.2	15.3		4.0		5.5
Queue Delay		0.0	0.0	0.0		0.0		0.0
Total Delay		41.5	48.2	15.3		4.0		5.5
LOS		D	D	B		A		A
Approach Delay		41.5		25.8		4.0		5.5
Approach LOS		D		C		A		A
Queue Length 50th (m)		9.7	17.5	5.3		10.2		19.0
Queue Length 95th (m)		22.5	33.9	26.7		17.1		29.9
Internal Link Dist (m)		131.2		126.1		285.1		76.0
Turn Bay Length (m)			40.0					
Base Capacity (vph)		160	192	379		1247		1074
Starvation Cap Reductn		0	0	0		0		0
Spillback Cap Reductn		0	0	0		0		0
Storage Cap Reductn		0	0	0		0		0
Reduced v/c Ratio		0.41	0.53	0.58		0.19		0.33

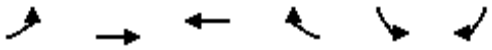
Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Pretimed	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Parkdale Ave & Ruskin St



Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	860	1943	44	33
Future Volume (vph)	860	1943	44	33
Lane Group Flow (vph)	860	1943	44	33
Sign Control	Free	Free		

Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization	66.7%	ICU Level of Service C
Analysis Period (min)	15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Volume (veh/h)	0	860	1943	44	0	33
Future Volume (Veh/h)	0	860	1943	44	0	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	860	1943	44	0	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		165	87			
pX, platoon unblocked	0.52				0.61	0.52
vC, conflicting volume	1987				2373	972
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1043				620	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	94
cM capacity (veh/h)	343				256	561

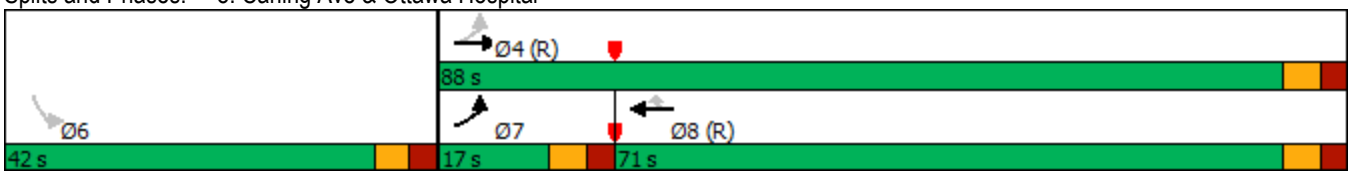
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	430	430	972	972	44	33
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	44	33
cSH	1700	1700	1700	1700	1700	561
Volume to Capacity	0.25	0.25	0.57	0.57	0.03	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s)	0.0		0.0			11.8
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	53	750	1698	99	50
Future Volume (vph)	53	750	1698	99	50
Lane Group Flow (vph)	53	750	1698	99	85
Turn Type	pm+pt	NA	NA	Perm	Perm
Protected Phases	7	4	8		
Permitted Phases	4			8	6
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.4	32.4	32.4	32.4	42.2
Total Split (s)	17.0	88.0	71.0	71.0	42.0
Total Split (%)	13.1%	67.7%	54.6%	54.6%	32.3%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3
All-Red Time (s)	2.7	2.7	2.7	2.7	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	6.2
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	105.9	105.9	95.6	95.6	11.5
Actuated g/C Ratio	0.81	0.81	0.74	0.74	0.09
v/c Ratio	0.25	0.27	0.68	0.09	0.51
Control Delay	5.5	3.3	11.9	1.4	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	3.3	11.9	1.4	49.5
LOS	A	A	B	A	D
Approach Delay		3.4	11.3		49.5
Approach LOS		A	B		D
Queue Length 50th (m)	1.9	17.8	110.8	0.0	14.5
Queue Length 95th (m)	5.1	29.1	161.2	5.4	30.5
Internal Link Dist (m)		167.7	428.2		82.3
Turn Bay Length (m)	85.0			130.0	
Base Capacity (vph)	258	2761	2491	1062	462
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.27	0.68	0.09	0.18

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 70 (54%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Carling Ave & Ottawa Hospital



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	5	247	84	158	455	67	800
Future Volume (vph)	110	5	247	84	158	455	67	800
Lane Group Flow (vph)	224	0	252	84	158	455	67	802
Turn Type	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	4		8			2		6
Permitted Phases		8		8	2		6	
Minimum Split (s)	31.0	31.0	31.0	31.0	43.5	43.5	43.5	43.5
Total Split (s)	44.0	44.0	44.0	44.0	86.0	86.0	86.0	86.0
Total Split (%)	33.8%	33.8%	33.8%	33.8%	66.2%	66.2%	66.2%	66.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3
All-Red Time (s)	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	38.0		38.0	38.0	80.5	80.5	80.5	80.5
Actuated g/C Ratio	0.29		0.29	0.29	0.62	0.62	0.62	0.62
v/c Ratio	0.44		0.49	0.18	0.70	0.41	0.14	0.73
Control Delay	50.0		41.8	20.7	35.9	14.1	11.3	22.0
Queue Delay	1.4		0.0	0.0	0.0	0.0	0.0	50.8
Total Delay	51.4		41.8	20.7	35.9	14.1	11.3	72.8
LOS	D		D	C	D	B	B	E
Approach Delay	51.4		36.5			19.7		68.1
Approach LOS	D		D			B		E
Queue Length 50th (m)	50.9		53.3	8.4	25.4	56.2	6.8	134.0
Queue Length 95th (m)	77.0		79.2	21.2	#67.1	78.3	13.6	183.5
Internal Link Dist (m)	93.3		100.3			59.0		106.0
Turn Bay Length (m)				15.0	25.0		25.0	
Base Capacity (vph)	508		518	464	227	1104	469	1104
Starvation Cap Reductn	137		0	0	0	0	0	384
Spillback Cap Reductn	0		0	0	0	0	0	0
Storage Cap Reductn	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60		0.49	0.18	0.70	0.41	0.14	1.11

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 18 (14%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 46.5	Intersection LOS: D
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 9: Holland Dr & Island Park Dr