Lafarge Pit 3 Extension
Caledon, ON
Transportation Impact Study

Paradigm Transportation Solutions Limited

March 2024

220397

Project Summary

Project Number
220397

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Lafarge Pit 3 Extension, Caledon, ON Transportation Impact Study

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Disclaimer

Executive Summary

Content

Lafarge Canada Inc. is applying for a license to extract aggregate material within the proposed Pit 3 Extension in Caledon, Ontario. The development is located east of Shaws Creek Road and south of the Elora Cataract Trailway.

Paradigm Transportation Solutions Limited (Paradigm) was retained to undertake this Transportation Impact Study as a requirement of the development application.

The report documents the additional traffic expected to occur as a result of the development and assesses the impact of the traffic on the surrounding road network.

The findings, conclusions and recommendations of this study are summarized below and outlined in detail in the body of the report.

Development Concept

Shaws Creek Road bounds the proposed site on the west, the Elora Cataract Trailway on the north, Pit No. 3 on the east and agricultural land on the south. The proposed project will include an annual extraction limit of 1 million tonnes, representing the maximum amount of material that can be removed from the site yearly. Build-out is assumed to occur by the year 2025 for this report.

The Greater Toronto Area (GTA) has also been identified as the primary market for this material. The most direct route to deliver material to the GTA is east along Charleston Sideroad. As a result, there are two potential Haul Route options to/from the site:

- Haul Route A – Existing access onto Shaws Creek Road; or
- Haul Route B – Existing access via Pit No. 3 onto Mississauga Road.

Lafarge's existing Pit 3 is permitted to ship an unlimited amount of aggregate per year, and the Pit 3 Extension is proposed to permit a maximum of 1 million tonnes per year and utilize a Haul Route either through Shaws Creek Road or the existing entrance/exit for Pit 3 on Mississauga Road. Based on the maximum number of shipping loaders that are permitted on Pit 3 and Pit 3 Extension (total of 3 shipping loaders), the maximum number of trucks that could be shipped during a peak hour is 45 trucks; however, this would require the addition of another scale at Pit 3 which is currently not contemplated. Based on the current scale configuration, the maximum number of trucks that could be shipped during a peak hour is 22.

For the purpose of this impact assessment, it has been assumed that a peak hour could hypothetically include up to 45 trucks per hour to assess a hypothetical worst-case condition; however, for the majority of the operation, there are less trucks per hour, including numerous hours where there is no shipping at all. The hypothetical worst case of 45 trucks per hour also accounts for trucks that will be required to bring in excess soils for rehabilitation to restore the Pit 3 Extension to agriculture.

Conclusions

Based on the investigations carried out, it is concluded that:

- Continued use of the existing Pit 3 haul route for the extension is recommended over establishing a new truck route on Shaws Creek Road;
- The Pit 3 Extension does not require parking and loading spaces as part of the operation. This operation is an extension of the existing Pit 3 and there is already a parking area established at the scale house located in proximity to the entrance/exit of Pit 3.
- Under existing conditions, all intersections in the study area are operating at acceptable levels of service during the weekday peak hours with no individual problem movements;
- Under 2025 and 2035 background conditions, Charleston Sideroad with Shaws Creek Road and Mississauga Road are forecast to operate at acceptable levels of service during the weekday peak hours with no individual problem movements;
- Under 2025 and 2035 background conditions, Charleston Sideroad at Hurontario Street is expected to operate with increased delays with the northbound and southbound movements projected to operate with a v/c ratio greater than 1.00.

  Constraints largely stem from the through volumes along Hurontario Street. Widening the roadway is likely not feasible due to the limited right-of-way on Hurontario Street (Highway 10) with buildings straddling the property lines. It is advisable for the Region to modify signal timing and intersection operation parameters on a regular basis to handle the expected rise in overall traffic.
- With full development and occupancy of the property, the subject site is forecast to generate a maximum of 45 truck trips during the weekday AM and PM peak hours.
- Under 2025 and 2035 total traffic conditions, all intersections in the study area are forecast to operate with similar operations as noted under then 2025 and 2035 Background conditions with no significant increases in delay or reduced capacity.
- No auxiliary turn lanes are forecast to be required at the site driveway;

- The proposed driveway location provides adequate departure and stopping sight distance along Mississauga Road.

Recommendations

Based on the preceding analyses, it is recommended from a traffic impact perspective that the planning application be approved as proposed with the following recommendations related to transportation system improvements:

- A westbound left turn lane with 15 metres is recommended to be installed and funded by the Region of Peel at the intersection of Charleston Sideroad and Mississauga Road to accommodate base-year traffic volumes.
    - An additional 10 metres of storage (25 metres total) is recommended to be provided and funded by the Applicant by the year 2035; and
- An eastbound left turn lane with 15 metres is recommended to be installed and funded by the Region of Peel at the intersection of Charleston Sideroad and Mississauga Road to accommodate base-year traffic volumes.
- Region continues to monitor operations at the intersection of Charleston Sideroad at Hurontario Street and adjust signal timings to improve operations in the future as traffic volumes increase and travel patterns change.

As a result of the turn lane requirements at Charleston Sideroad and Mississauga Road, it is recommended that the Aggregate Resources Act Site Plan include the following condition:

- When the Region of Peel upgrades the intersection of Charleston Sideroad and Mississauga Road, the licensee shall enter into an agreement with the Region of Peel to fund an additional 10 metres of storage to the westbound left turn lane.

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Appendices

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1 Introduction

1.1 Overview

Lafarge Canada Inc. is applying for a license to extract aggregate material within the proposed Pit 3 Extension in Caledon, Ontario. The development is located east of Shaws Creek Road and south of the Elora Cataract Trailway.

Paradigm Transportation Solutions Limited (Paradigm) was retained to undertake this Transportation Impact Study as a requirement of the development application.

Figure 1.1 depicts a vicinity map, including the study area.

1.2 Purpose & Scope

The scope of the study includes the determination of the current traffic and site conditions in the vicinity of the proposed development, additional traffic that the proposed development will generate, analyses of the impact that this traffic may have on the adjacent roadway network and recommendations concerning any necessary remedial measures required to mitigate the site generated traffic in a satisfactory manner.

More specifically, the purpose of this study is to:

- Address Section 5.11.2.4.14 and 5.11.2.5.2 of the Town of Caledon's Official Plan[1];
- Forecast traffic volumes from the proposed redevelopment;
- Assess potential haul routes to access Charleston Sideroad;
- Assign the projected traffic volumes to the surrounding road network based on the existing traffic patterns at the driveway connections;
- Assess total future traffic within the study area. The following horizons have been considered: Opening Day plus ten years from Opening Day; and
- Identify operational concerns and any mitigation measures required to improve operations.

The intersections evaluated within this study are:

- Charleston Sideroad and Shaws Creek Road (Unsignalized);
- Charleston Sideroad and Mississauga Road (Unsignalized); and
- Charleston Sideroad and Hurontario Street (Signalized).

[1] Town of Caledon Official Plan, April 2018

NSL

SOURCE: OPENSTREEMAP.ORG

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Study Area And Site Location

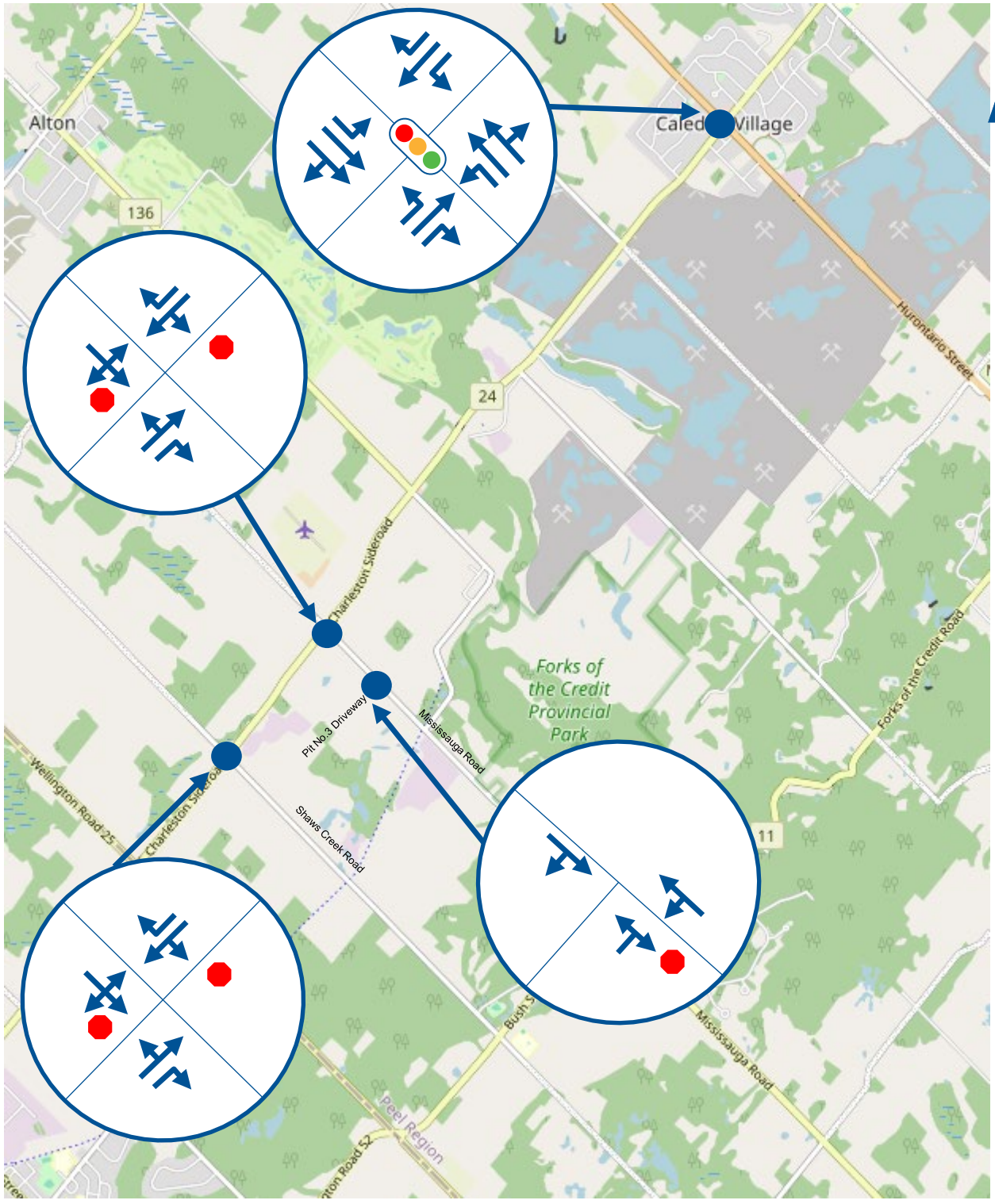
2 Existing Conditions

This section documents current traffic conditions, operational deficiencies, and constraints experienced by the public travelling at the intersections within the study area. The operational deficiencies and limitations identified at this stage will be fundamental to defining the required remedial measures.

2.1 Road Network

The existing lane configurations and traffic control provisions at the study area intersections are shown in **Figure 2.1**. The roadways that form the study area are generally described as follows:

- **Charleston Sideroad** is an arterial road running east-west within the study area and under the jurisdiction of the Region of Peel. The roadway has a rural cross-section with one travel lane in each direction. The posted speed limit is 80 kilometres per hour. Pedestrian sidewalks and on-street bicycle lanes are not provided along Charleston Sideroad.
- **Mississauga Road** is a collector road running north-south within the study area and under the jurisdiction of the Town of Caledon. The roadway has a rural cross-section with one-travel lane in each direction with a posted speed limit of 60 kilometres per hour. This roadway is subject to truck restrictions that prohibit through truck traffic without an origin/destination to Mississauga Road. Pedestrian sidewalks and on-street bicycle lanes are not provided along Mississauga Road.
- **Shaws Creek Road** is a collector road running north-south within the study area and under the jurisdiction of the Town of Caledon. The roadway has a rural cross-section with one-travel lane in each direction with a posted speed limit of 60 kilometres per hour. This roadway is subject to truck restrictions that prohibit truck traffic. Pedestrian sidewalks and on-street bicycle lanes are not provided along Shaws Creek Road.
- **Hurontario Street (Provincial Highway 10)** is a north-south high-capacity arterial road with four travel lanes (two lanes in each direction). The posted speed limit is 50 kilometres per hour.



Existing Lane Configuration And Traffic Control

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Figure 2.1

2.2 Transit Network

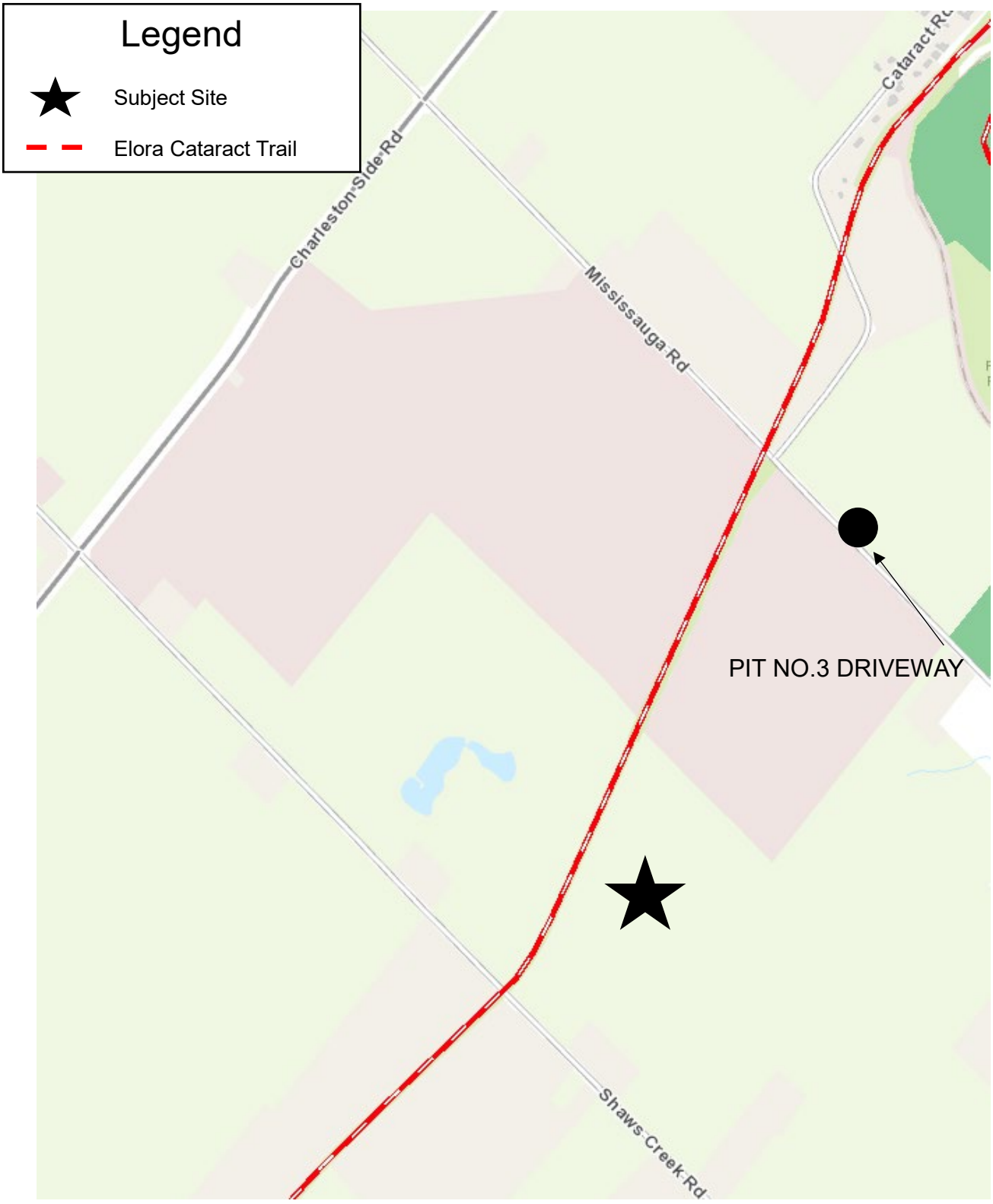
The Town currently does not operate a municipal public transit system. Transit services for the elderly and disabled are provided by Caledon Community Services Transportation and Transhelp (operated by Peel Region).

2.3 Active Transportation

A field visit conducted in August 2016 and review of aerial imagery indicates that pedestrian sidewalks and bicycle lanes are not provided along any study area roadways.

The Town of Caledon's Interactive Trail Guide identifies the Elora Cataract Trailway is located north of the proposed development. The trail is forty-seven kilometres long, linking the Credit Valley Watershed to the Grand River Watershed and communities along the way. The Elora Cataract Trailway is part of the Trans Canada Trail.

Figure 2.2 illustrates the existing trail environment.



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Existing Trail Network

2.4 Traffic Volumes

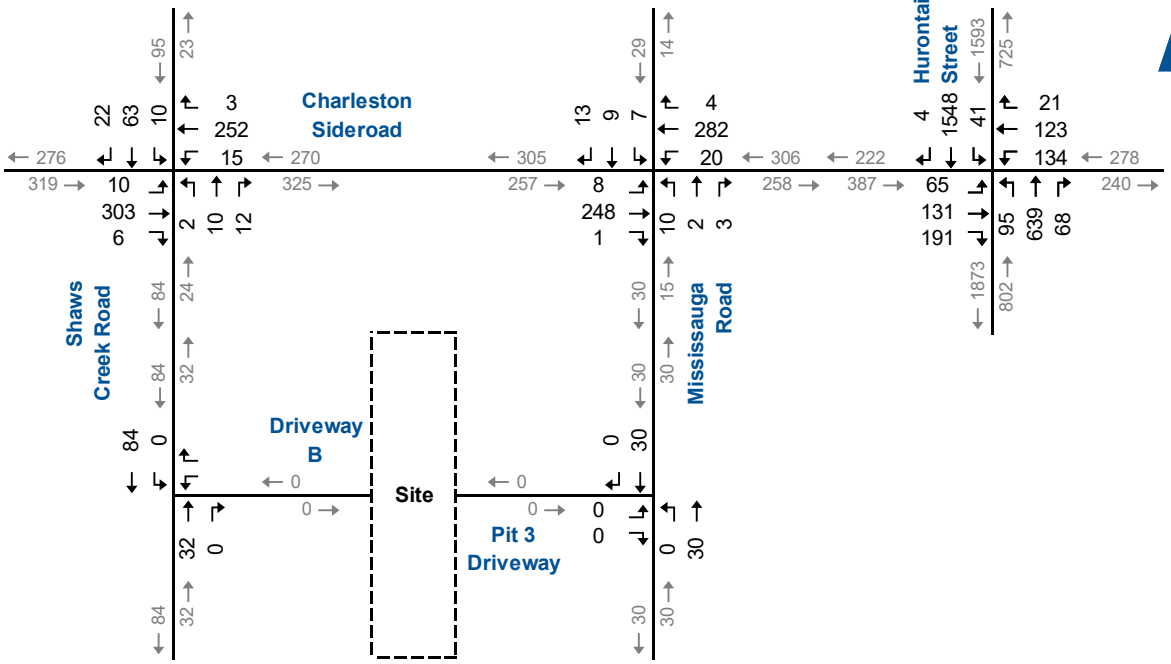
Turning movement counts are used to quantify the movement of vehicles through the area to assess intersection operation. Existing traffic data at an intersection or road section forms the foundation for analysis. The counts are usually taken during peak periods at an intersection to complete the level of service analysis. The traffic data utilized in this report can be found in **Appendix A.**

2.4.1 Collected Traffic Data

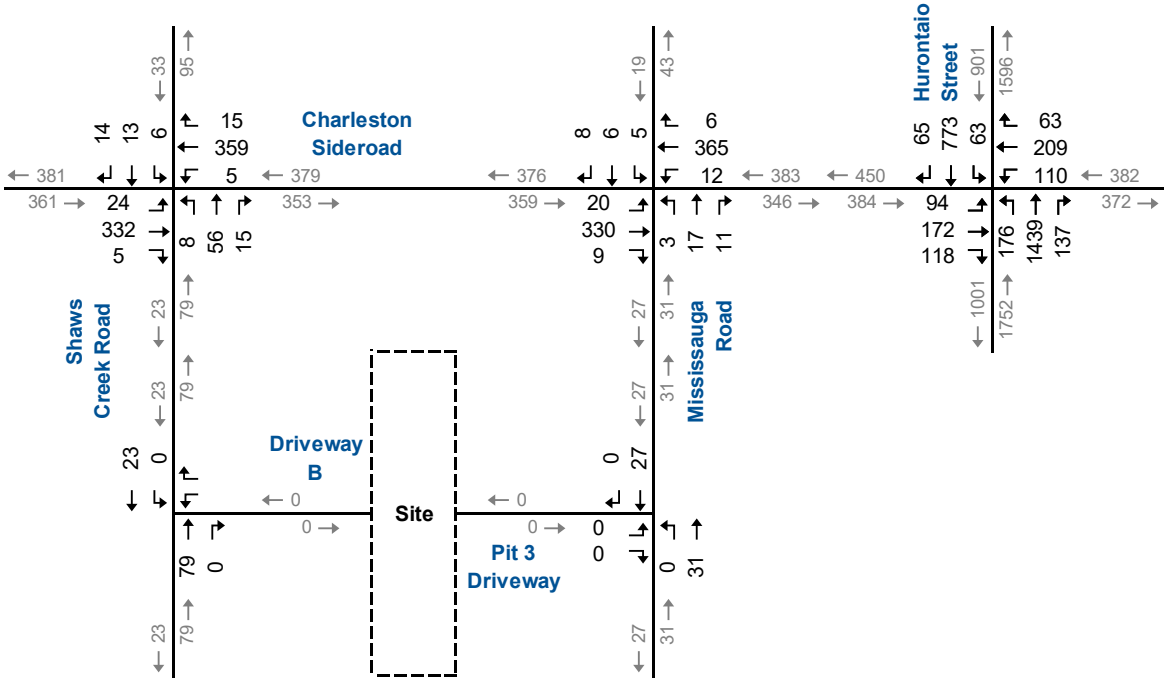
Current turning movement volumes for the peak hours were conducted for the study area intersections between 2019 and 2023; no adjustment factors have been applied. **Appendix B** contains the traffic data.

Figure 2.3 illustrate the base year traffic volumes during the weekday AM and PM peak hours.

Weekday AM Peak Hour



Weekday PM Peak Hour



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Base Year Peak Hour Traffic Volumes

2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the delay experienced by drivers at intersections. The term "level of Service" denotes how well (or poorly) a traffic movement operates under given traffic demands, lane arrangements, and controls. Control delay is the total delay associated with stopping for a signal or stop sign and includes four components; deceleration delay, stopped delay, queue move-up time and final acceleration delay. Each level is determined by the average amount of control delay per vehicle.

Table 2.1 contains the level of service criteria for signalized and stop-controlled intersections. LOS A indicates small, average control delays (less than 10 seconds per vehicle). In contrast, LOS F indicates intersection failure, which results in extensive vehicular queues and long delays (over 50 seconds per vehicle at an unsignalized intersection and over 80 seconds per vehicle at a signalized intersection). LOS D is typically considered acceptable peak-hour performance in an urban setting, and lower LOS values are tolerable for short-term periods during peak hours when heavier traffic volumes are expected.

TABLE 2.1: VEHICLE LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersections Average Total Delay (sec/veh)	Unsignalized Intersections Average Total Delay (sec/veh)
A	< = 10	< = 10
B	> 10 & < = 20	> 10 & < = 15
C	> 20 & < = 35	> 15 & < = 25
D	> 35 & < = 55	> 25 & < = 35
E	> 55 & < = 80	> 35 & < = 50
F	> 80	> 50

The operations of the intersections in the study area were evaluated with the existing turning movement volumes using Synchro 11 with HCM 2000 procedures. The intersection analysis considered the following measures of performance:

- The volume to capacity ratio for each intersection;
- The LOS for each turning movement. LOS is based on the average control delay per vehicle; and
- The estimated 95th percentile queue length.

Table 2.2 displays a summary of the existing traffic operations, and the following is noted:

- Charleston Sideroad and Shaws Creek Road operate with acceptable service levels during the weekday peak hours. Side street delays operate with a v/c ratio no greater than 0.27.
- Charleston Sideroad and Mississauga Road operate with acceptable service levels during the weekday peak hours. Side street delays operate with a v/c ratio no greater than 0.09.
- Charleston Sideroad and Hurontario Street operate with overall acceptable service levels during the weekday peak hours. The southbound left turn movement is noted to operate at level of service E during the weekday PM peak hour with a v/c ratio of 0.81.

Appendix B contains the detailed Synchro reports.

TABLE 2.2: BASE YEAR PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	
			Delay	0	0	0	0	1	1	0	0	13	13	13	13	17	17	17	17	3
			V/C	0.01	0.01	0.00		0.01	0.01	0.00		0.06	0.06	0.06		0.26	0.26	0.26		
			Queue	0	0	0		0	0	0		1	1	1		8	8	8		
	2 - Charleston Sideroad & Mississauga Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	B	B	B	B	
			Delay	0	0	0	0	1	1	0	0	15	15	15	15	13	13	13	13	2
			V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.04	0.04	0.04		0.07	0.07	0.07		
			Queue	0	0	0		0	0	0		1	1	1		2	2	2		
	3 - Charleston Sideroad & Hurontario Street	TCS	LOS	C	C	C	C	C	C	C	C	A	A	A	A	A	C	C	C	
			Delay	27	27	26	26	33	27	25	30	1	0	0	8	10	27	27	27	C
			V/C	0.30	0.40	0.22		0.62	0.38	0.01		0.45	0.35	0.35		0.13	0.93	0.93		0.81
			Queue	19	33	20		36	31	0		12	43	43		11	196	196		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
			Delay	1	1	0	1	0	0	0	0	20	20	20	20	17	17	17	17	3
			V/C	0.03	0.03	0.00		0.00	0.00	0.01		0.27	0.27	0.27		0.11	0.11	0.11		
			Queue	1	1	0		0	0	0		8	8	8		3	3	3		
	2 - Charleston Sideroad & Mississauga Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
			Delay	1	1	0	1	0	0	0	0	16	16	16	16	16	16	16	16	2
			V/C	0.02	0.02	0.00		0.01	0.01	0.00		0.09	0.09	0.09		0.06	0.06	0.06		
			Queue	1	1	0		0	0	0		2	2	2		1	1	1		
	3 - Charleston Sideroad & Hurontario Street	TCS	LOS	C	C	C	C	C	C	C	C	A	B	B	B	E	B	B	C	
			Delay	29	29	25	28	30	32	25	30	9	15	15	14	72	16	16	20	B
			V/C	0.50	0.53	0.09		0.53	0.65	0.04		0.51	0.80	0.80		0.81	0.57	0.57		0.8
			Queue	27	43	12		31	51	7		21	152	152		35	77	77		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS
RBT - Roundabout
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

3 Development Concept

3.1 Development Description

Lafarge Canada Inc. is applying for a license to extract aggregate material within the Pit 3 Extension located east of Shaws Creek Road and south of the Elora Cataract Trailway in Caledon, Ontario.

An annual extraction limit of 1,000,000 tonnes is proposed for the lands, representing the maximum amount of material that can be removed from the site yearly. The operational plan for the pit assumes that trucks will be loaded between 6:00 AM and 7:00 PM, Monday to Saturday, with no Sunday or Statutory Holiday operations.

Lafarge's existing Pit 3 is permitted to ship an unlimited amount of aggregate per year, and the Pit 3 Extension is proposed to permit a maximum of 1 million tonnes per year and utilize the existing entrance/exit for Pit 3 on Mississauga Road. Based on the maximum number of shipping loaders that are permitted on Pit 3 and Pit 3 Extension (total of 3 shipping loaders), the maximum number of trucks that could be shipped during a peak hour is 45 trucks; however, this would require the addition of another scale at Pit 3 which is currently not contemplated. Based on the current scale configuration, the maximum number of trucks that could be shipped during a peak hour is 22.

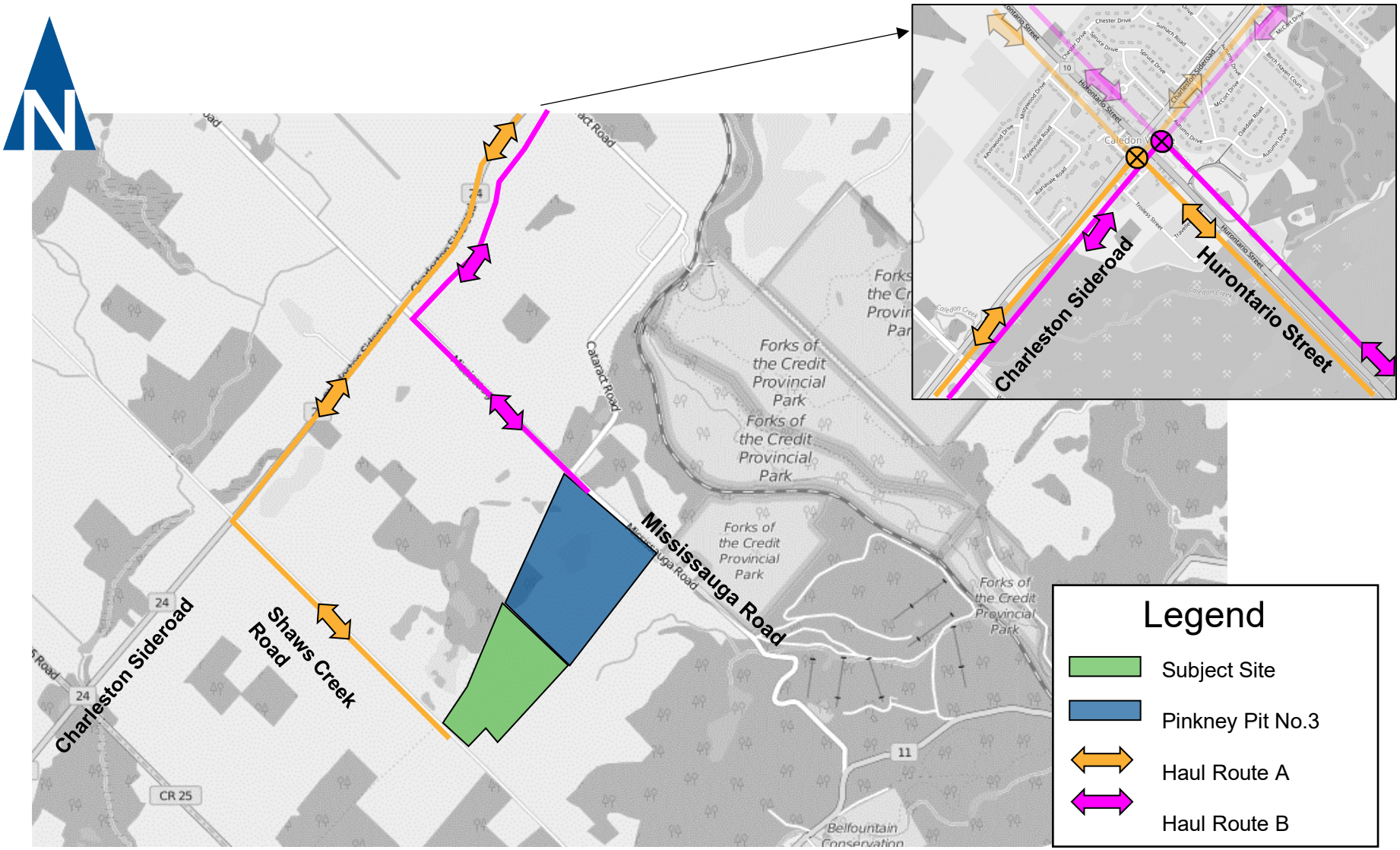
For the purpose of this impact assessment, it has been assumed that a peak hour could hypothetically include up to 45 trucks per hour to assess a hypothetical worst-case condition; however, for the majority of the operation, there are less trucks per hour, including numerous hours where there is no shipping at all. The hypothetical worst case of 45 trucks per hour also accounts for trucks that will be required to bring in excess soils for rehabilitation to restore the Pit 3 Extension to agriculture.

3.1.1 Potential Haul Route

Based on Section 5.11.2.5.2 of the Town Official Plan, Shaws Creek Road and Mississauga Road have to be assessed to determine the most appropriate haul route for the Pit 3 Extension. The existing Pit 3 haul route is Mississauga Road to Charleston Sideroad. Charleston Sideroad is an identified haul route in the Town of Caledon Official Plan. Section 5.11.2.5.2 of the Town of Caledon Official Plan requires consideration of Shaws Creek Road and Mississauga Road. As a result, there are two potential Haul Route options to/from the site:

- Haul Route A – Existing access onto Shaws Creek Road; or
- Haul Route B – Existing access via Pit No. 3 onto Mississauga Road.

Figure 3.1 illustrates the proposed haul routes for the extracted material.



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Proposed Haul Routes

3.2 Development Trip Generation

Trip generation information is used to forecast the anticipated traffic activity level due to the site's development.

Morning and afternoon peak-hour trip generation for each land use type were added to establish total site trip generation. Trips generated by the proposed aggregate operation have been estimated for the weekday AM and PM peak hours based on first principles approach. The following sub-sections provide the methodology used.

3.2.1 Daily Trip Generation

Daily trips generated by the proposed aggregate operation have been estimated based on a series of assumptions related to the facility's operation. The following assumptions have been included:

- **Licensed Extraction Rate**: 1,000,000 tonnes annually.
- **Pit Operations**: Trucks will be loaded over 13 hours between 6:00 AM and 7:00 PM daily. Considering market demand and weather conditions, experience has shown that this activity level can be sustained for approximately 200 days per year.
- **Truck Weight**: The number of trucks required to transport material is dependent on the capacity of the vehicles being loaded at the site. On average, tri-axle trailers can carry about 35 tonnes of material per trip.

Table 3.1 summarizes the daily trip generation estimates based on the above-noted assumptions. These estimates indicate that material extraction could result in approximately 143 new daily truck trips.

TABLE 3.1: DAILY TRIP GENERATION ESTIMATES

Measure	Units	Input	Calculation
Annual Rate of Extraction (ARE)	Tonnes/Year	1,000,000	
Operating Days Per Year (ODY)	Days/Year	200	
Average Extraction Per Day (EPD)	Tonnes/Day		ARE / ODY = 5,000
Average Load Per Truck (LPT)	Tonnes/Truck	35	
Average Number of Truck Per Day (TPD)	Trucks/Day		EPD / LPT = 143
Operating Hours Per Day (HPD)	Hours/Day	13	
Average Number of Trucks Per Hour (TPH)	Loads/Hour		TPD / HPD = 11

3.2.2 Peak Hour Trip Generation

Based on the maximum number of shipping loaders permitted on Pit 3 and Pit 3 Extension (total of 3), the maximum number of trucks that could be shipped during a peak hour is 22 with the current configuration. However, with the addition of another scale provided at Pit 3, which is not contemplated at this time, the number of trucks that could be shipped during a peak hour would be 45.

For this impact assessment, it has been assumed that a peak hour could hypothetically include up to 45 trucks per hour with a directional split of 20/80 for the weekday AM peak hour and 80/20 for the weekday PM peak hour to assess a hypothetical worst-case condition.

For the Synchro analysis, truck traffic volumes have been converted to passenger car equivalents (PCE) to account for the additional time required for a heavy vehicle loaded with aggregate material to travel through an intersection. Based on our experience, a PCE factor of 3 is typically applied for loaded trips, and a factor of 2 is applied for unloaded trips.

Table 3.2 summarizes the trip generation estimates based on the above-noted assumption of 45 truck trips per peak hour. This is equivalent to 99-126 passenger car trips during weekday peak hours.

TABLE 3.2: PEAK HOUR TRIP GENERATION ESTIMATES

Land Use Code	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Total Truck Volume	9	36	45	36	9	45
Directional Distribution	*20%*	*80%*	*100%*	*80%*	*20%*	*100%*
Passenger Car Units (PCU)	**18**	**108**	**126**	**72**	**27**	**99**

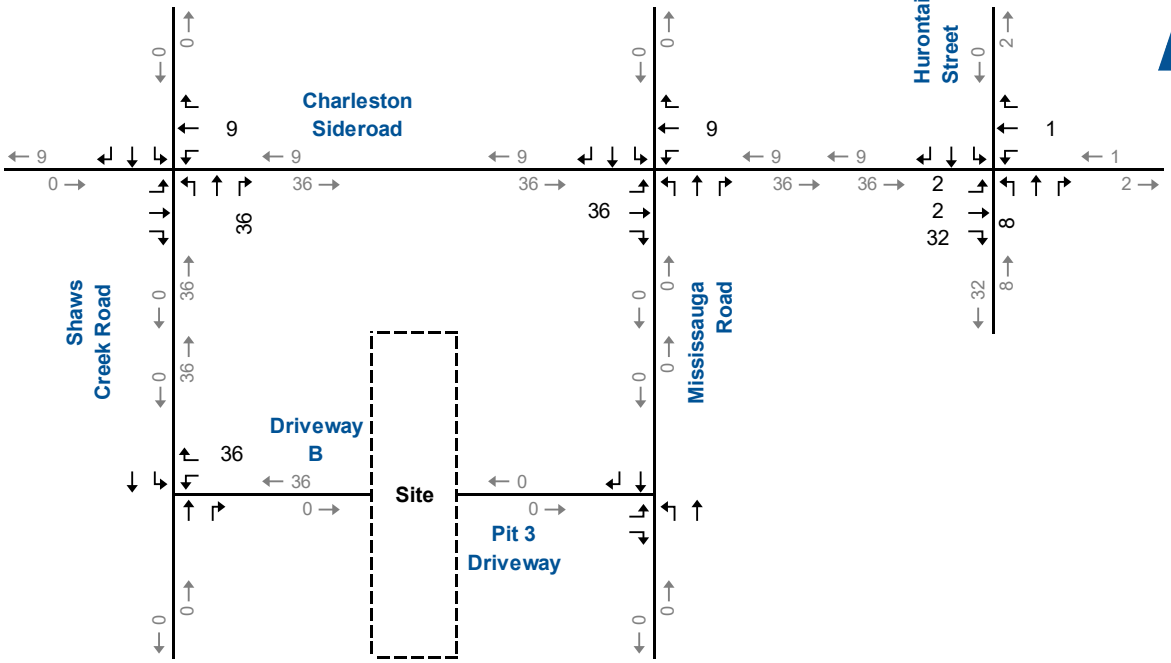
3.3 Development Trip Distribution and Assignment

Lafarge Canada Inc. has indicated that truck trips to and from the proposed facility will travel to the GTA along Charleston Sideroad, as illustrated in **Figure 3.1**.

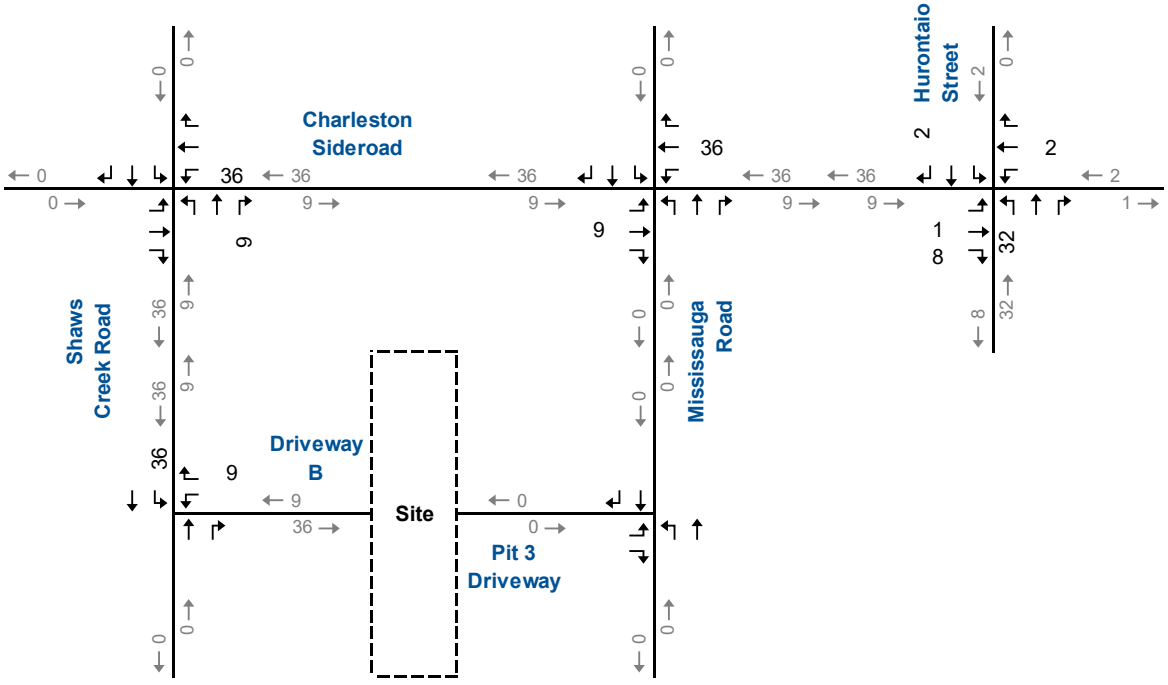
It is expected that trips will be distributed 90% travelling south on Hurontario Street while 5% could continue east on Charleston Side Road while the remaining 5% could travel north on Hurontario Street. The site traffic was assigned to the road network using trip generation and proposed haul routes.

Figures 3.2 and 3.3 illustrates the trip assignment. **Appendix C** contains the trip assignment with the converted passenger car equivalents (PCEs).

Weekday AM Peak Hour

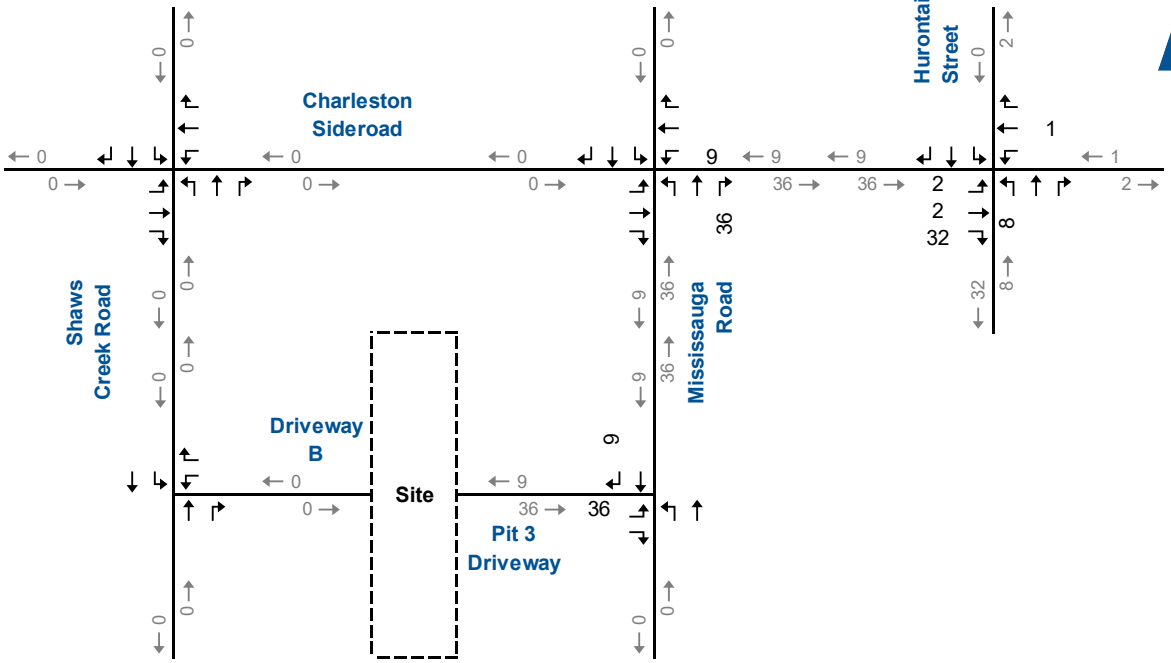


Weekday PM Peak Hour

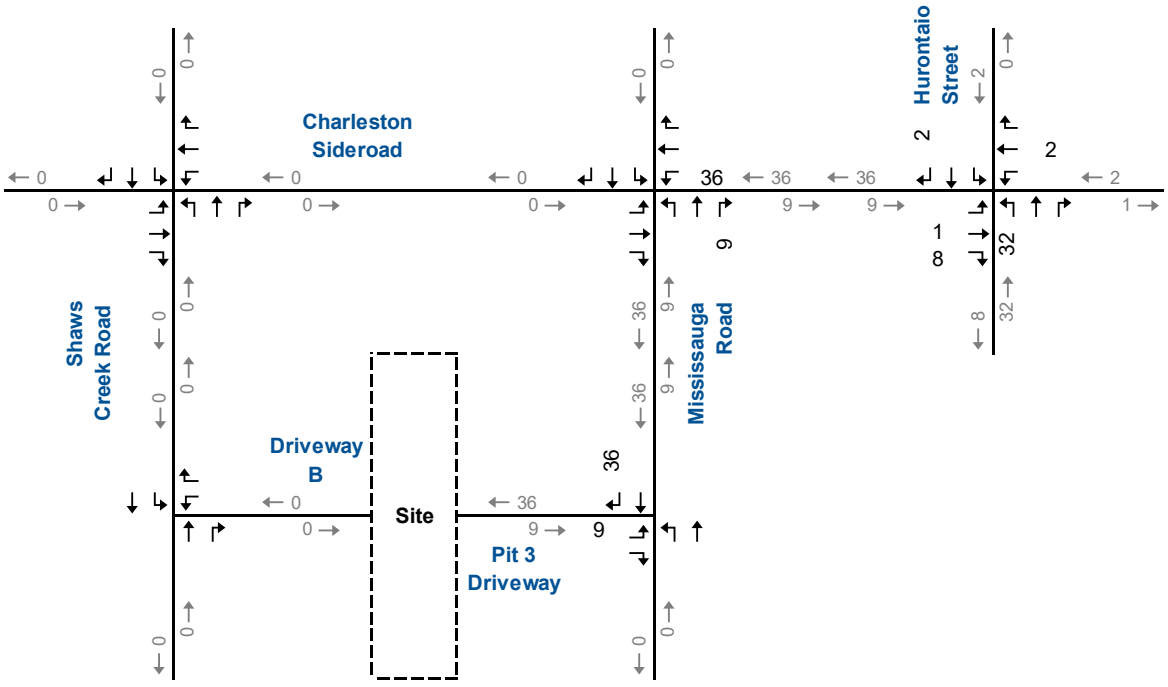


Site Generated Traffic Forecasts (Haul Route A)

Weekday AM Peak Hour



Weekday PM Peak Hour



Site Generated Traffic Forecasts (Haul Route B)

4 Evaluation of Future Traffic Conditions

To remain consistent with Region of Peel traffic impact study guidelines[2], the horizon year of 2025 (Opening Day) and 2035 (10 years beyond Opening Day) has been utilized for future traffic analysis.

The future traffic volumes in the vicinity of the development will likely consist of increased non-site traffic volumes (background traffic), traffic generated by other developments, and the traffic forecast to be generated by the proposed development.

4.1 Background Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. A frequently used procedure is to estimate an annual percentage increase and apply that increase to the study area traffic volumes. An alternative approach is to identify estimated traffic generated by specific planned significant developments that would be expected to affect the project study area roadways. For this assessment, both methods have been utilized.

4.1.1 General Growth

According to the Statistics Canada 2011 Community Profile[3], the Town of Caledon's population grew by 4.2 percent from 2006 to 2011, or an average annual growth rate of 1.72 percent. For this study, a conservative traffic growth rate of 2.00 percent per annum was applied to account for population and employment growth.

4.1.2 Site-Specific Growth

It is understood that the Town has received a proposed Official Plan Amendment and Zoning By-law Amendment application for a quarry (CBM Caledon Pit/Quarry) located east of Mississauga Road on both the north and south sides of Charleston Side Road. Traffic projection for the CBM Caledon Pit/Quarry have been taken from the respective transportation study completed for the application[4]. It is anticipated that if the CBM Caledon Pit/Quarry were to receive approval, the site would be operational for the 2035 horizon.

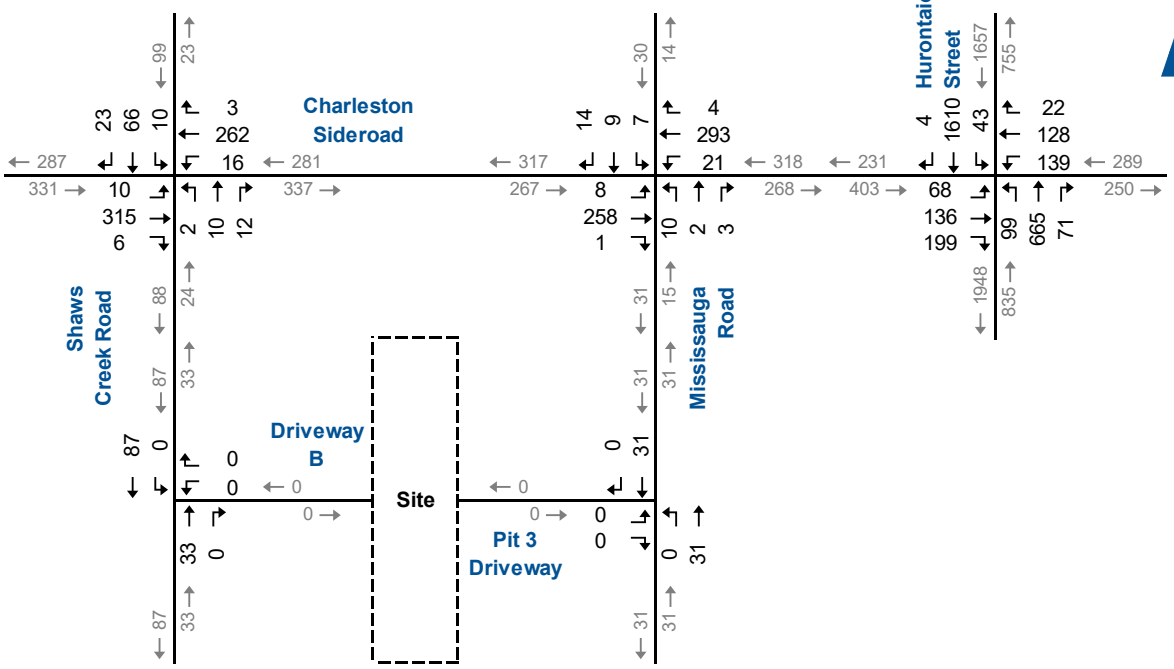
[2] https://www.peelregion.ca/pw/transportation/business/traffic-impact-study.asp
[3] Statistics Canada. 2012. Caledon, Ontario (Code 3521024) and Canada (Code 01) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012.
[4] Caledon Quarry, Transportation Impact Study and Haul Route Assessment, December 2022, TYLIN.

4.1.3 Background Projections

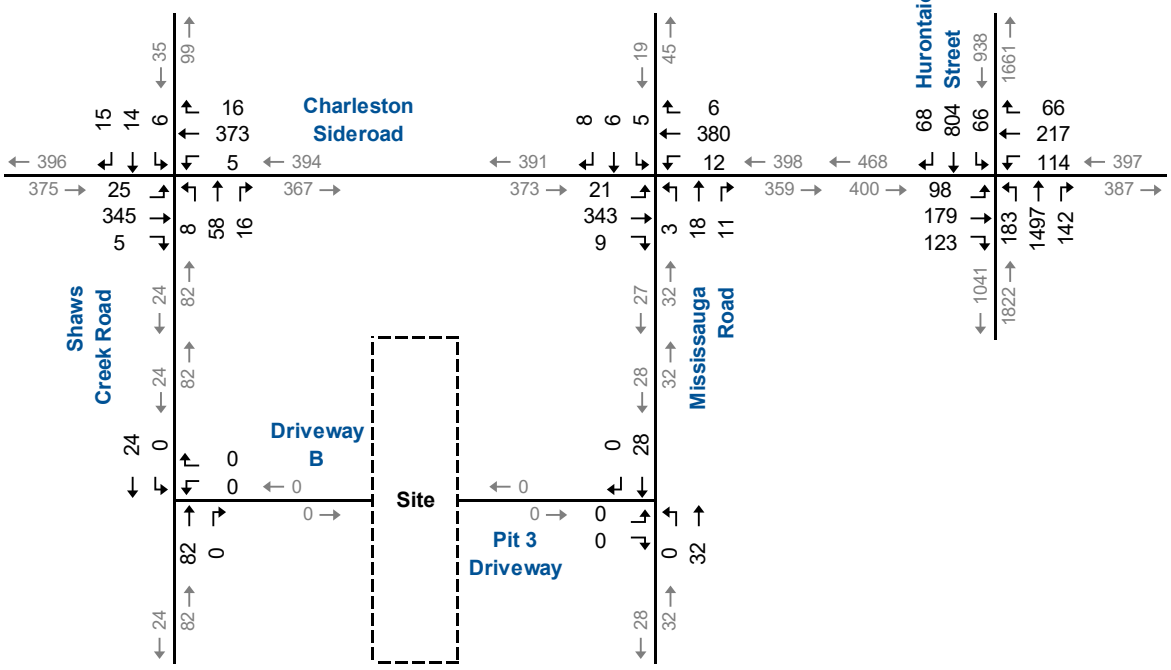
The forecast background traffic volumes within the study area are estimated to consist of generalized background traffic growth and other planned developments. However, as it understood the proposed CBM Caledon Pit/Quarry has not received approval from the Town, two future scenarios have been developed for the 2035 horizon assuming with and without traffic associated from the CBM Caledon Pit/Quarry.

Figure 4.1 and 4.2 illustrates the forecasted background traffic volumes.

Weekday AM Peak Hour

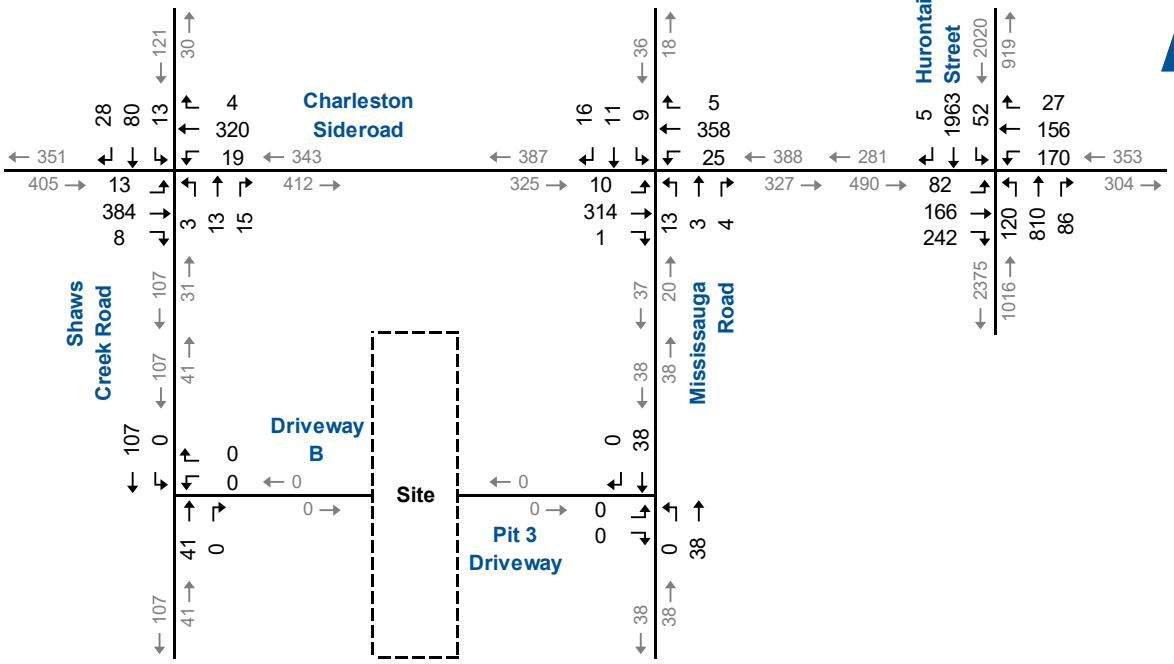


Weekday PM Peak Hour

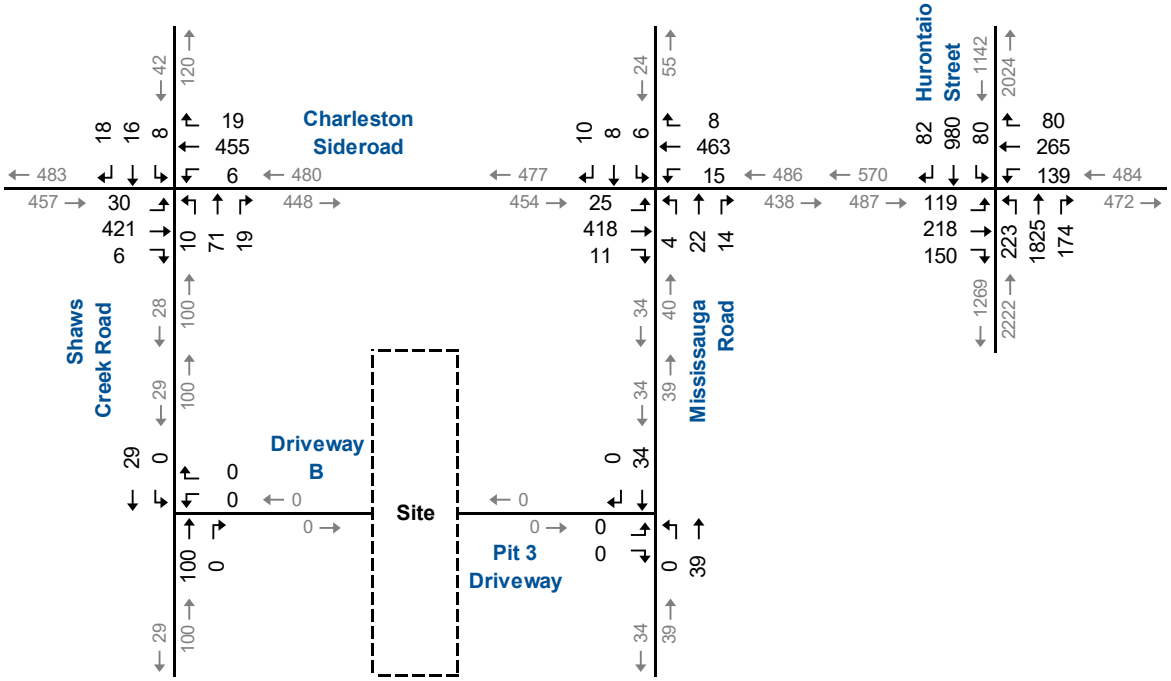


2025 Background Peak Hour Traffic Forecasts

Weekday AM Peak Hour

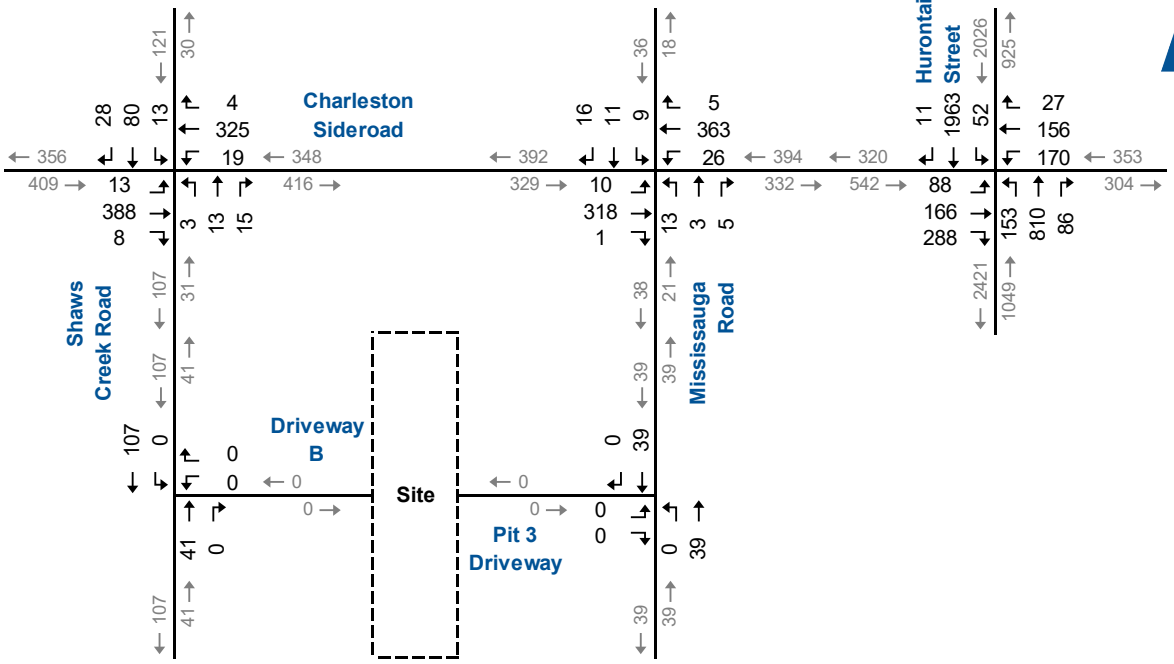


Weekday PM Peak Hour

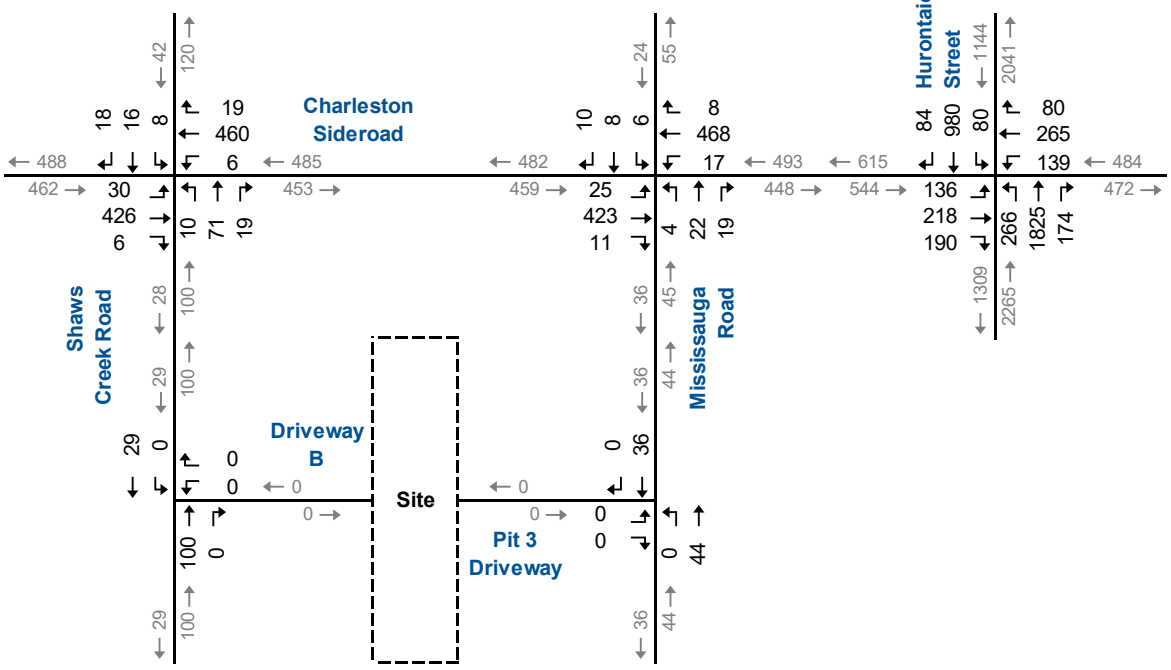


2035 Background Peak Hour Traffic Forecasts Without CBM Pit/Quarry

Weekday AM Peak Hour



Weekday PM Peak Hour



2035 Background Peak Hour Traffic Forecasts With CBM Pit/Quarry

4.2 Background Traffic Operations

Level of service analyses has been conducted using Synchro 9.1 with HCM 2000 procedures for the weekday AM and PM peak hour conditions at the study area intersections utilizing background traffic forecasts. The intersections within the study area were assessed based on the same parameters as in the analysis of existing conditions.

4.2.1 2025 Background

Table 4.1 displays a summary of the 2025 future background operations, and the following is noted:

- Charleston Sideroad and Shaws Creek Road is projected to operate with an acceptable level of service during the weekday peak hours. Side street delays are noted to operate with a v/c ratio no greater than 0.29;
- Charleston Sideroad and Mississauga Road is projected to operate with an acceptable level of service during the weekday peak hours. Side street delays are noted to operate with a v/c ratio no greater than 0.10;
- Charleston Sideroad and Hurontario Street is projected to operate with increased delay for the southbound shared through/right turn movement during the weekday AM Peak hour (LOS E with a v/c ratio exceeding 1.00). During the weekday PM peak hour, the southbound left turn movement is projected to operate at LOS F with a v/c ratio of 0.87.

Appendix D contains the detailed Synchro reports.

TABLE 4.1: 2025 BACKGROUND OPERATIONS SUMMARY

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	
			Delay	0	0	0	0	1	1	0	1	14	14	14	14	18	18	18	18	3
			V/C	0.01	0.01	0.00		0.01	0.01	0.00		0.06	0.06	0.06		0.28	0.28	0.28		
			Queue	0	0	0		0	0	0		1	1	1		9	9	9		
	2 - Charleston Sideroad & Mississauga Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	B	B	B	B	
			Delay	0	0	0	0	1	1	0	1	15	15	15	15	14	14	14	14	2
			V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.04	0.04	0.04		0.07	0.07	0.07		
			Queue	0	0	0		1	1	0		1	1	1		2	2	2		
	3 - Charleston Sideroad & Hurontario Street	TCS	LOS	C	C	C	C	C	C	C	C	B	A	A	A	B	E	E	E	D
			Delay	26	27	26	26	34	27	24	30	17	8	8	9	12	56	56	55	37
			V/C	0.30	0.43	0.27		0.65	0.40	0.02		0.50	0.37	0.37		0.17	1.05	1.05		0.89
			Queue	20	34	22		38	32	0		15	48	48		12	225	225		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
			Delay	1	1	0	1	0	0	0	0	22	22	22	22	18	18	18	18	3
			V/C	0.03	0.03	0.00		0.00	0.00	0.01		0.29	0.29	0.29		0.12	0.12	0.12		
			Queue	1	1	0		0	0	0		9	9	9		3	3	3		
	2 - Charleston Sideroad & Mississauga Road	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
			Delay	1	1	0	1	0	0	0	1	17	17	17	17	16	16	16	16	2
			V/C	0.02	0.02	0.01		0.01	0.01	0.00		0.10	0.10	0.10		0.06	0.06	0.06		
			Queue	1	1	0		0	0	0		3	3	3		2	2	2		
	3 - Charleston Sideroad & Hurontario Street	TCS	LOS	C	C	C	C	C	C	C	C	A	B	B	B	F	B	B	C	C
			Delay	30	29	25	28	31	33	25	31	10	16	16	16	85	16	16	21	20
			V/C	0.57	0.54	0.09		0.55	0.66	0.05		0.55	0.83	0.83		0.87	0.60	0.60		0.83
			Queue	29	44	12		32	53	8		23	188	188		37	82	82		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS
RBT - Roundabout
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

4.2.2 2035 Background

Table 4.2 displays a summary of the 2035 future background operations, and the following is noted:

- Charleston Sideroad and Shaws Creek Road is projected to operate with a satisfactory level of service during the weekday peak hours. Side street v/c ratios are projected to be no greater than 0.42.
- Charleston Sideroad and Mississauga Road is projected to operate with a satisfactory level of service during the weekday peak hours. Side street v/c ratios are projected to be no greater than 0.16.
- Charleston Sideroad and Hurontario Street is projected to operate with significant delay for the southbound shared through/right turn movement during the weekday AM Peak hour (LOS F with a v/c ratio exceeding 1.00). During the weekday PM peak hour, the southbound left turn movement is projected to operate at LOS F with a v/c ratio exceeding 1.00 and the northbound shared through/right turn movement operating at LOS E with a v/c ratio exceeding 1.00.

  Additionally, it is noted that under the CBM Pit/Quarry scenario, the northbound left turn movement is projected to operate at LOS F with a v/c ratio exceeding 1.00 during the weekday PM peak hour. All other movements between the two scenarios are expected to be similar.

Appendix D contains the detailed Synchro reports.

TABLE 4.2: 2035 BACKGROUND OPERATION SUMMARY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Overall
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	Without CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	1	1	0	1	16	16	16	16	25	25	25	25	4
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.09	0.09	0.09		0.42	0.42	0.42		
				Queue	0	0	0		1	1	0		2	2	2		15	15	15		
			With CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	A
				Delay	0	0	0	0	1	1	0	1	16	16	16	16	25	25	25	25	4
				V/C	0.01	0.01	0.01		0.02	0.02	0.00		0.09	0.09	0.09		0.43	0.43	0.43		
				Queue	0	0	0		1	1	0		2	2	2		16	16	16		
	2 - Charleston Sideroad & Mississauga Road	TWSC	Without CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
				Delay	0	0	0	0	1	1	0	1	18	18	18	18	16	16	16	16	2
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.07	0.07	0.07		0.10	0.10	0.10		
				Queue	0	0	0		1	1	0		2	2	2		3	3	3		
			With CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	A
				Delay	0	0	0	0	1	0	0	1	18	18	18	18	16	16	16	16	2
				V/C	0.01	0.01	0.00		0.03	0.00	0.00		0.07	0.07	0.07		0.11	0.11	0.11		
				Queue	0	0	0		1	0	0		2	2	2		3	3	3		
	3 - Charleston Sideroad & Hurontario Street	TCS	Without CBM	LOS	C	C	C	C	D	C	C	C	B	A	A	B	B	F	F	F	F
				Delay	26	27	27	27	37	27	24	32	19	10	10	11	16	192	192	187	107
				V/C	0.32	0.45	0.39		0.71	0.43	0.02		0.54	0.47	0.47		0.26	1.37	1.37		1.08
				Queue	23	40	32		46	38	38		23	70	70		16	317	317		
			With CBM	LOS	C	C	C	C	D	C	C	C	C	A	A	B	B	F	F	F	F
				Delay	27	27	29	28	37	27	24	32	24	10	10	12	16	194	194	190	107
				V/C	0.35	0.45	0.55		0.71	0.43	0.02		0.69	0.47	0.47		0.26	1.38	1.38		1.1
				Queue	25	40	43		46	38	38		41	70	70		16	323	323		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	TWSC	Without CBM	LOS	A	A	A	A	A	A	A	A	D	D	D	D	C	C	C	C	
				Delay	1	1	0	1	0	0	0	0	33	33	33	33	24	24	24	24	5
				V/C	0.04	0.04	0.00		0.01	0.01	0.01		0.47	0.47	0.47		0.20	0.20	0.20		
				Queue	1	1	0		0	0	0		17	17	17		5	5	5		
			With CBM	LOS	A	A	A	A	A	A	A	A	D	D	D	D	D	D	D	D	A
				Delay	1	1	0	1	0	0	0	0	34	34	34	34	25	25	25	25	5
				V/C	0.04	0.00	0.00		0.01	0.01	0.01		0.47	0.47	0.47		0.20	0.20	0.20		
				Queue	1	1	0		0	0	0		18	18	18		6	6	6		
	2 - Charleston Sideroad & Mississauga Road	TWSC	Without CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
				Delay	1	1	0	1	1	1	0	0	21	21	21	21	21	21	21	21	2
				V/C	0.03	0.03	0.01		0.02	0.02	0.01		0.16	0.16	0.16		0.11	0.11	0.11		
				Queue	1	1	0		0	0	0		4	4	4		3	3	3		
			With CBM	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	A
				Delay	1	1	0	1	1	0	0	1	20	20	20	20	21	21	21	21	2
				V/C	0.03	0.03	0.01		0.02	0.02	0.01		0.17	0.17	0.17		0.11	0.11	0.11		
				Queue	1	0	0		0	0	0		5	5	5		3	3	3		
	3 - Charleston Sideroad & Hurontario Street	TCS	Without CBM	LOS	D	C	C	C	D	C	C	C	D	E	E	D	F	C	C	C	D
				Delay	36	29	24	29	35	33	24	32	41	55	55	53	148	22	22	31	42
				V/C	0.66	0.57	0.11		0.67	0.70	0.07		0.89	1.06	1.06		1.09	0.76	0.76		1.00
				Queue	36	53	13		40	65	11		54	285	285		48	120	120		
			With CBM	LOS	D	C	C	C	C	C	C	C	F	E	E	E	F	C	C	C	D
				Delay	43	29	25	31	34	33	24	32	93	57	57	61	149	22	22	31	46
				V/C	0.75	0.56	0.18		0.66	0.69	0.07		1.08	1.06	1.06		1.09	0.76	0.76		1.02
				Queue	41	52	16		40	64	11		79	296	296		49	136	136		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS

RBT - Roundabout

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

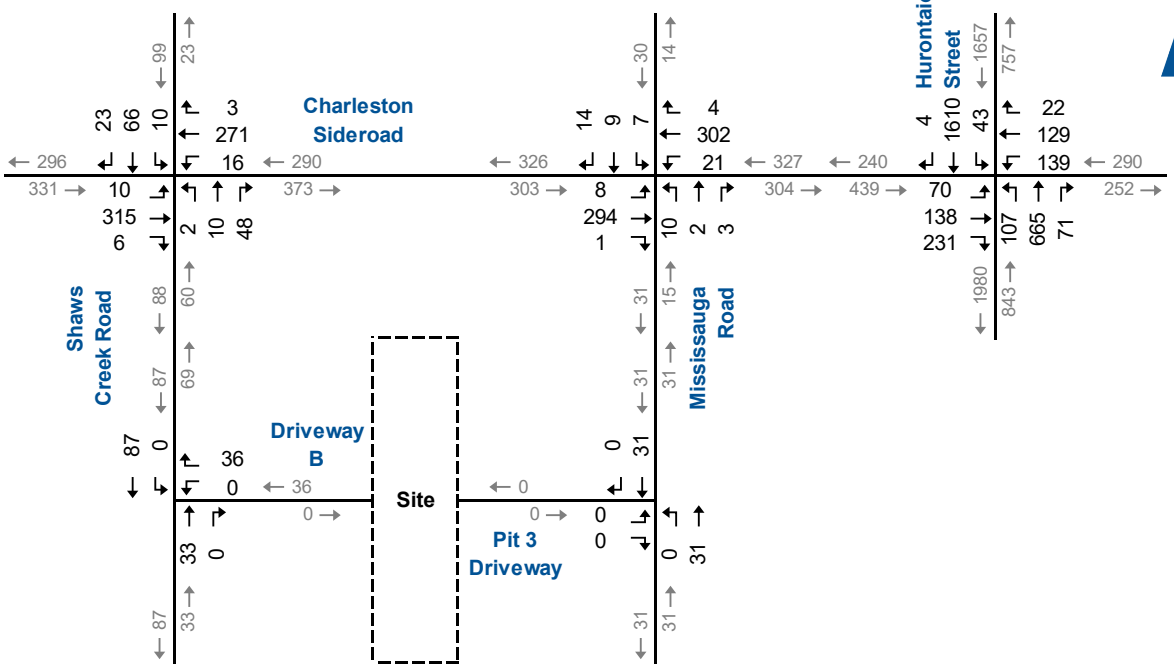
4.3 Total Traffic Projections

Future total traffic volumes along the study area roads were estimated for both haul route scenarios by adding the site-generated traffic to the future background forecasts.

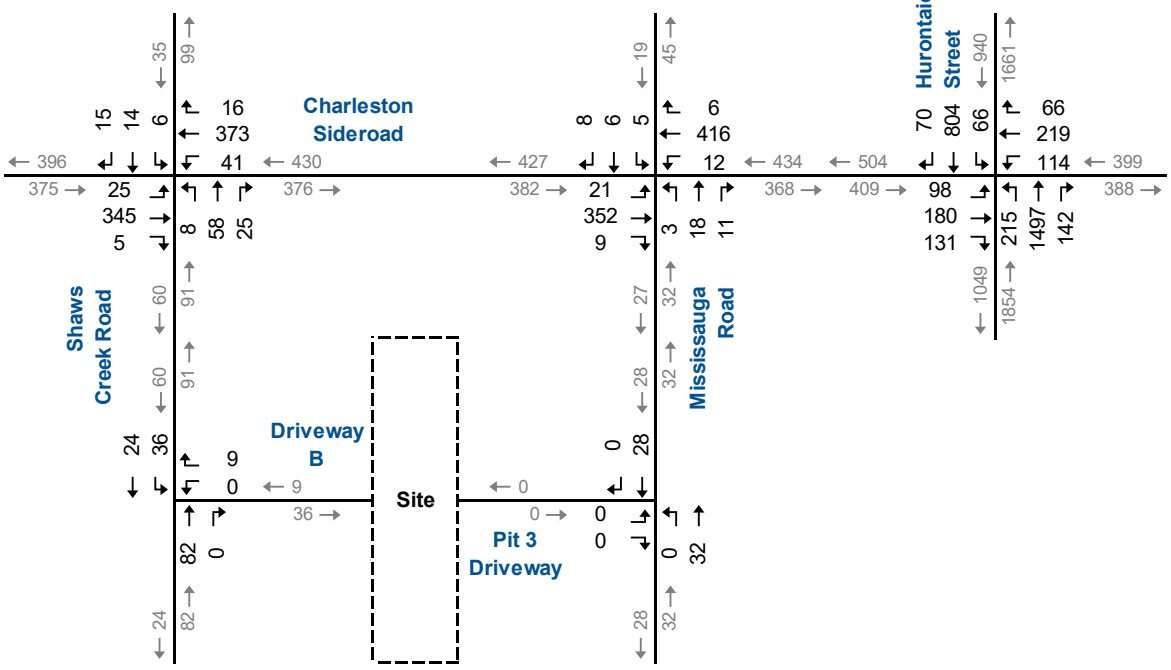
Figures 4.3 and 4.4 illustrate the total traffic for Haul Route A. **Figures 4.5 and 4.6** illustrate the total traffic for Haul Route B.

Appendix C contains the trip assignment with the converted passenger car equivalents (PCEs).

Weekday AM Peak Hour

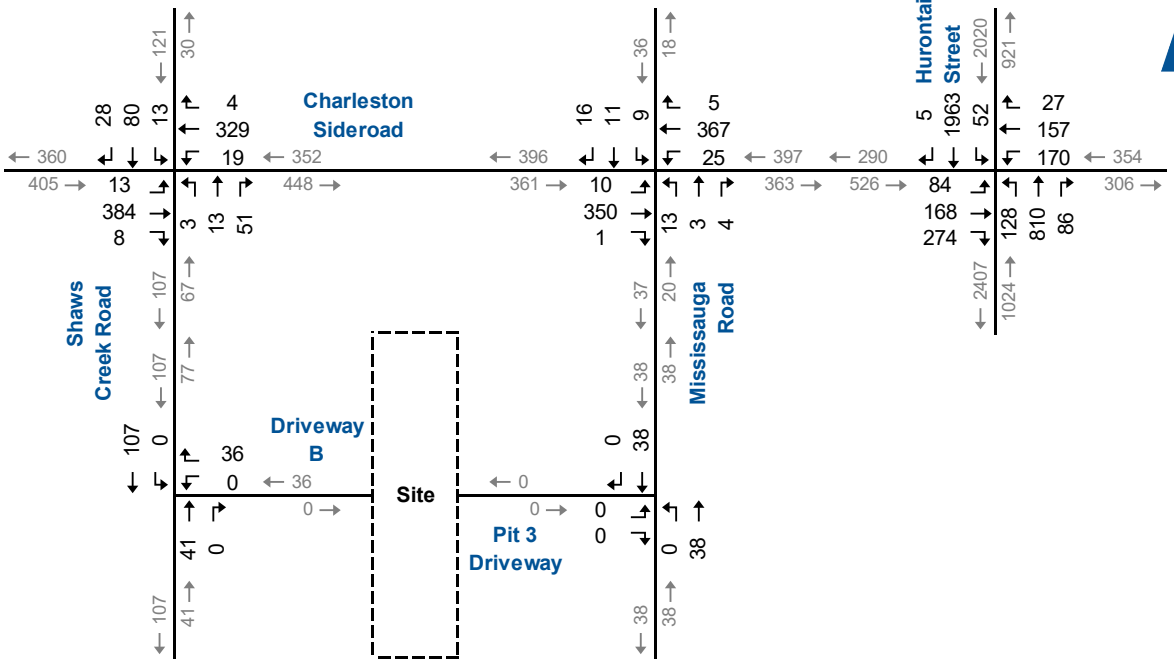


Weekday PM Peak Hour

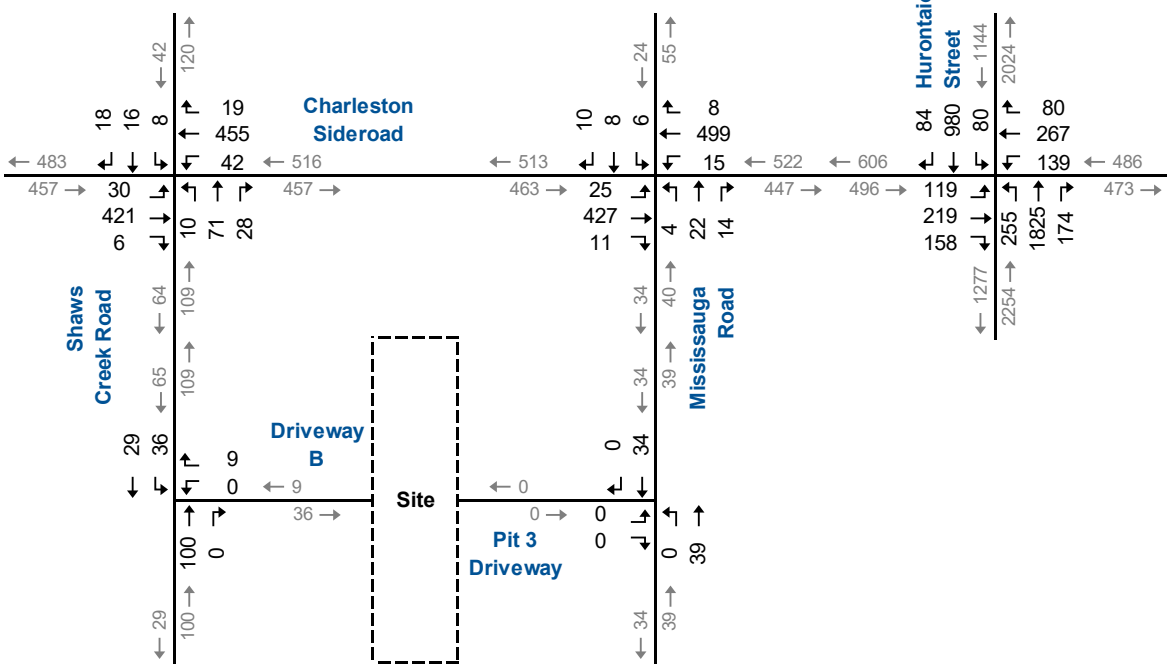


2025 Total Peak Hour Traffic Forecasts (Haul Route A)

Weekday AM Peak Hour

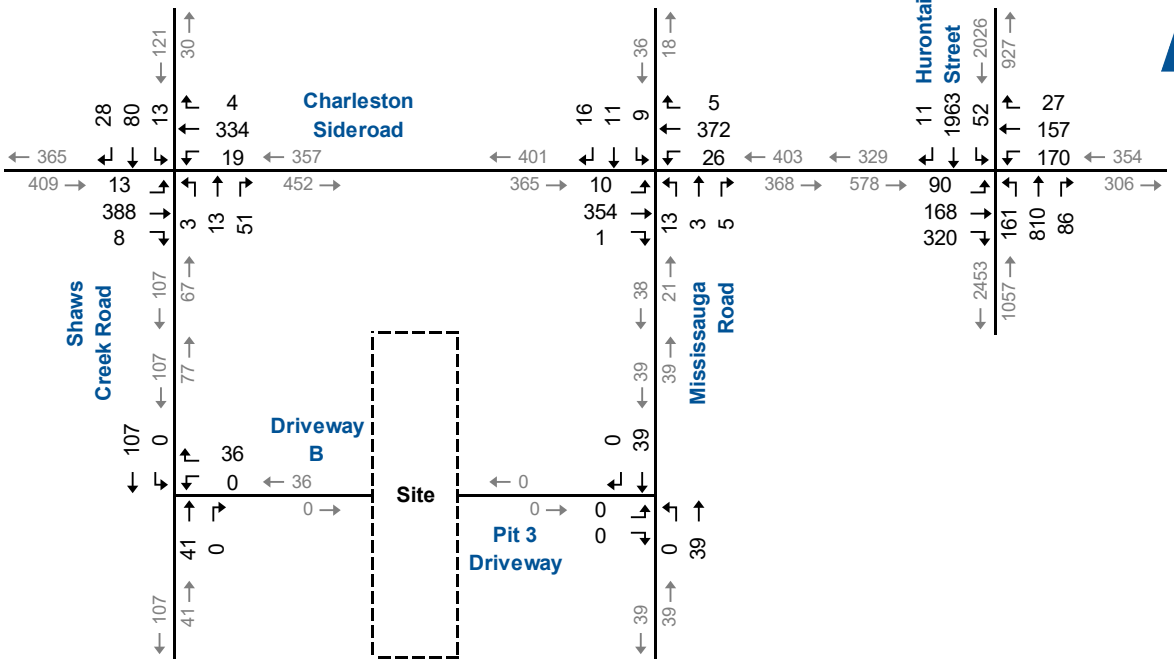


Weekday PM Peak Hour

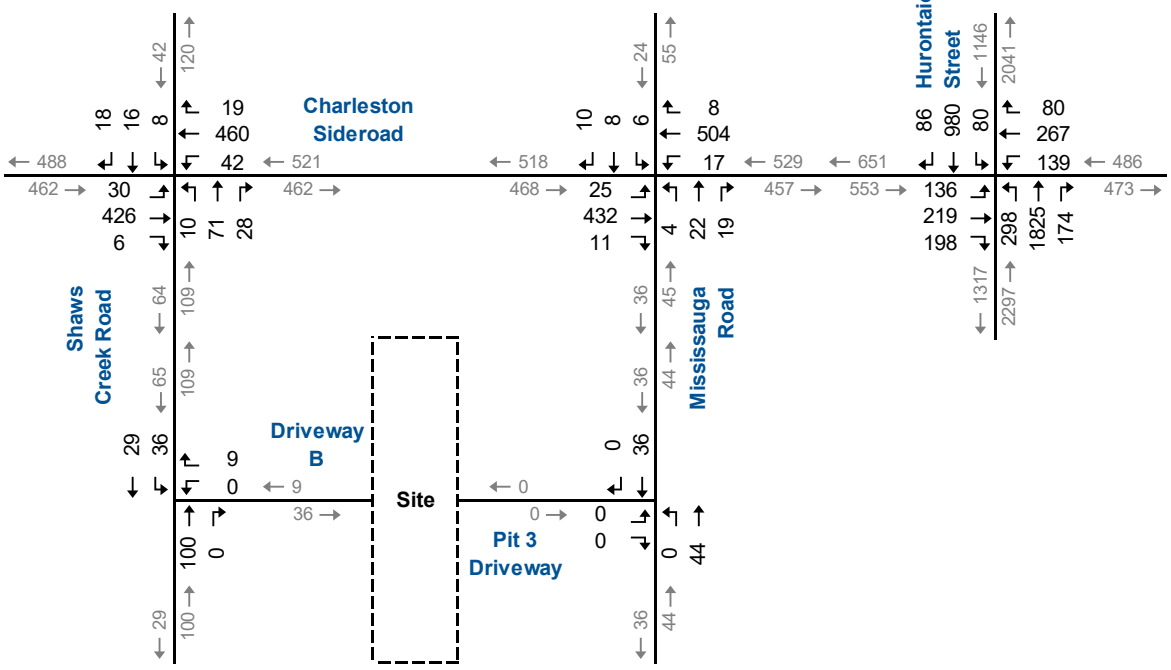


2035 Total Peak Hour Traffic Forecasts Without CBM Pit/Quarry (Haul Route A)

Weekday AM Peak Hour

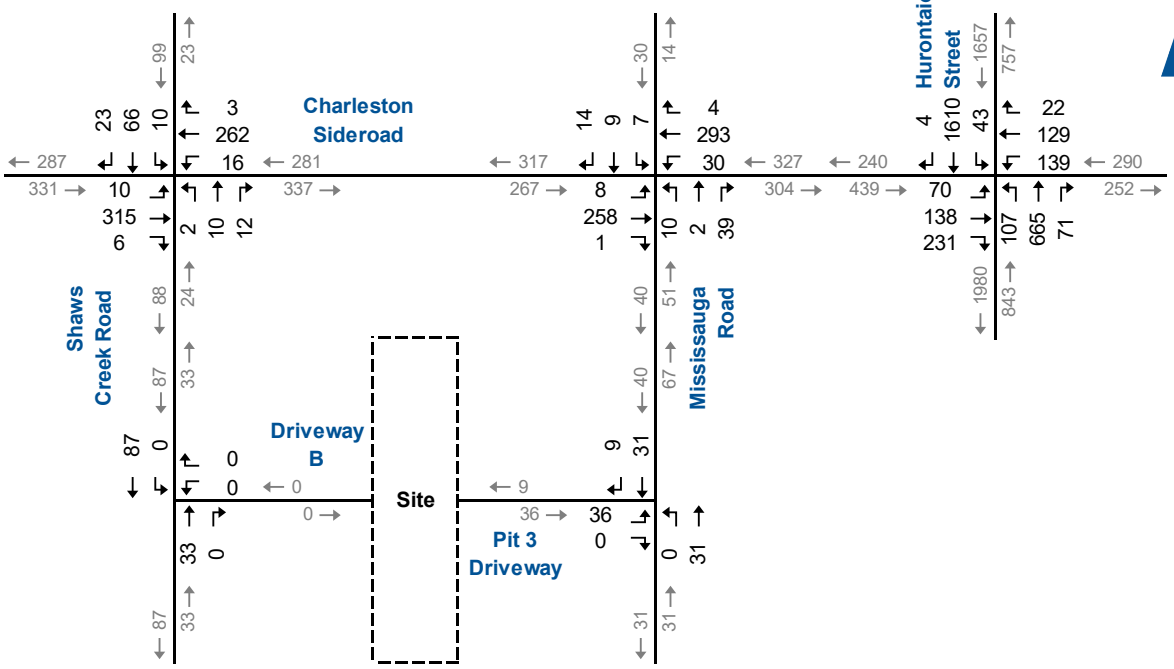


Weekday PM Peak Hour

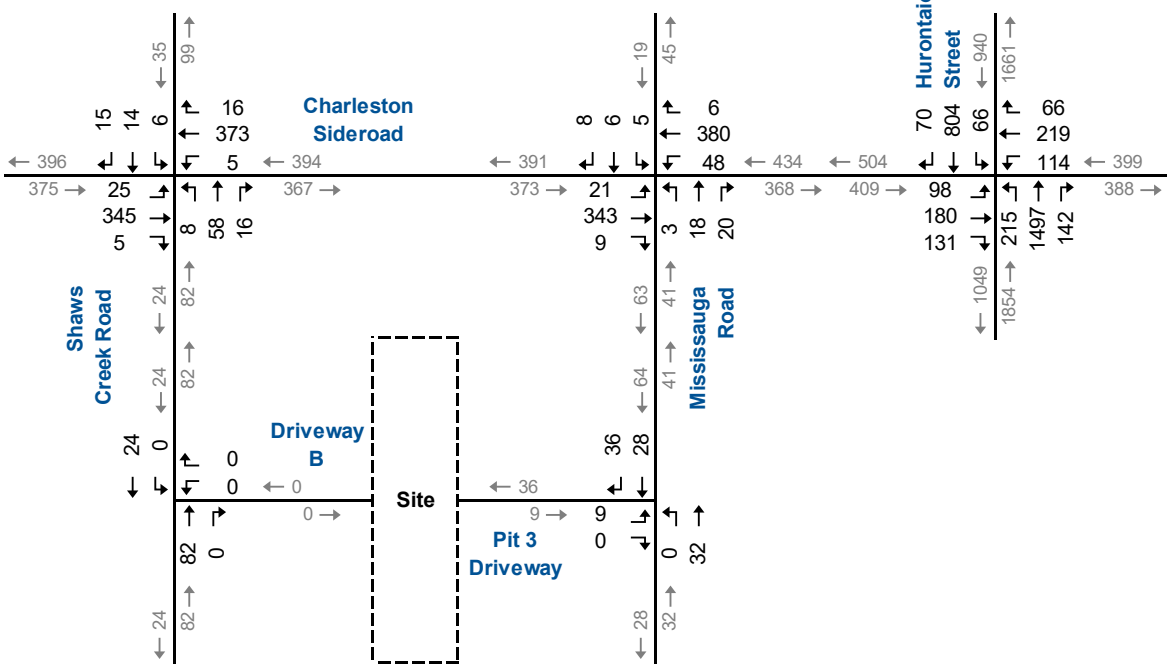


2035 Total Peak Hour Traffic Forecasts With CBM Pit/Quarry (Haul Route A)

Weekday AM Peak Hour

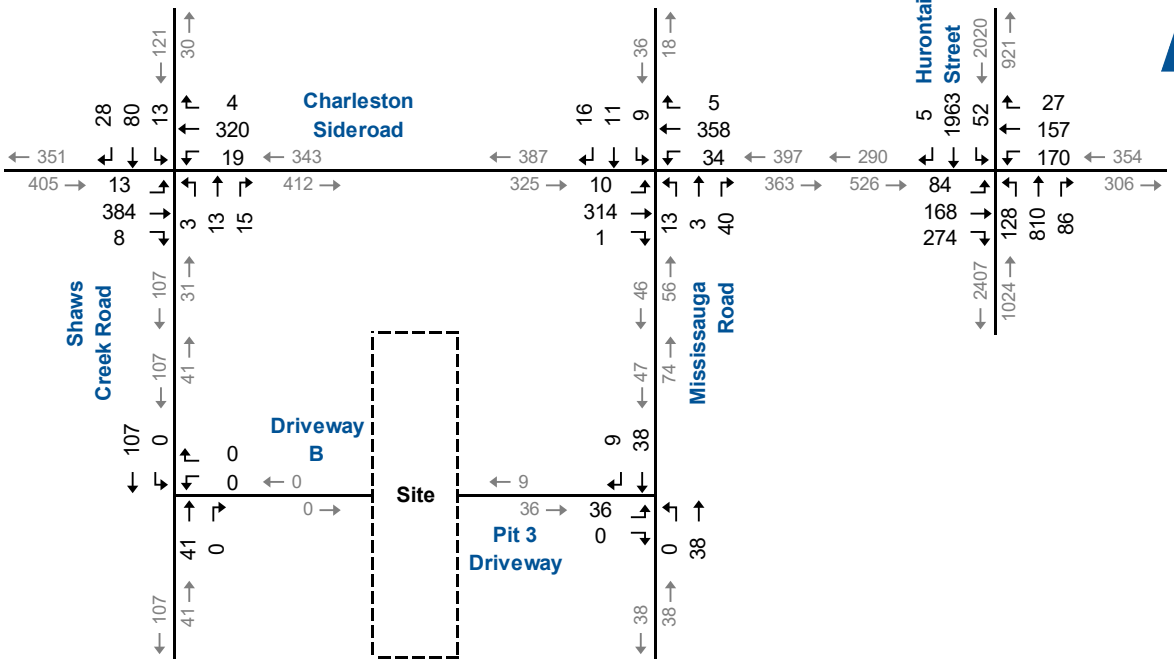


Weekday PM Peak Hour

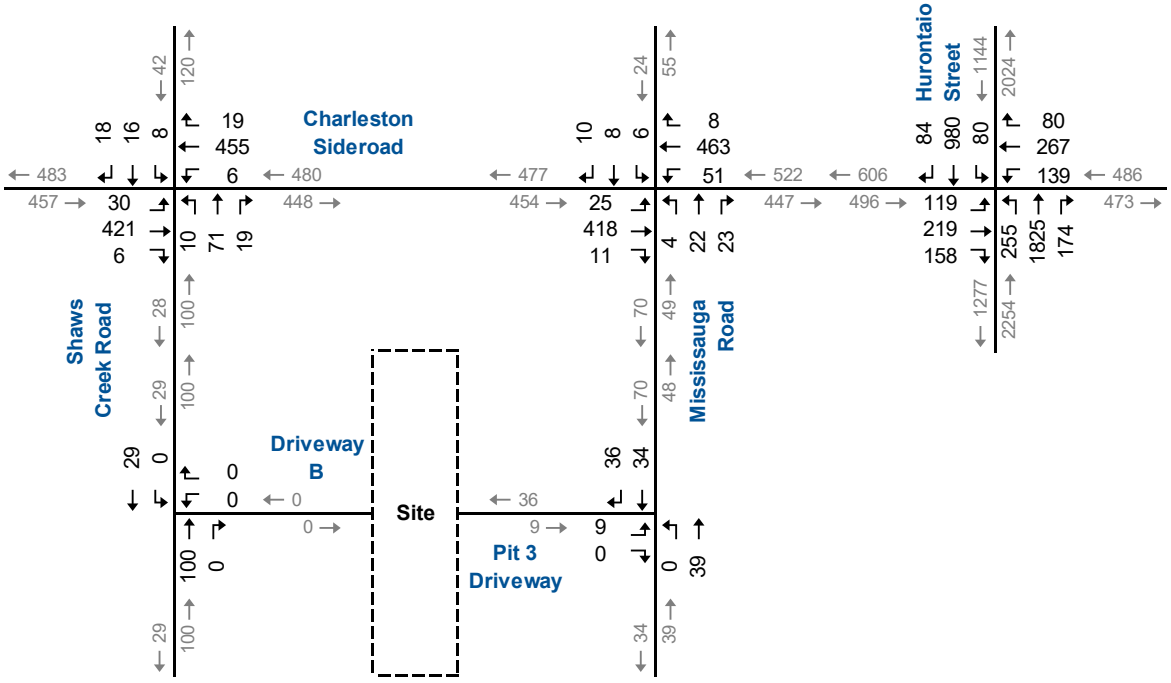


2025 Total Peak Hour Traffic Forecasts (Haul Route B)

Weekday AM Peak Hour

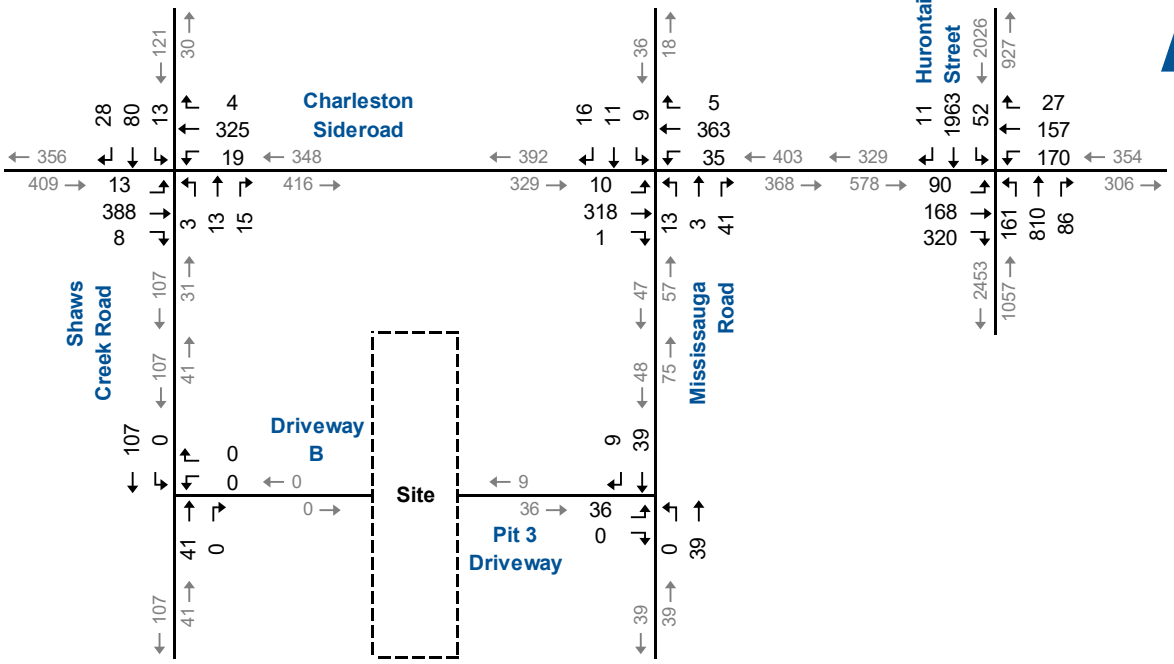


Weekday PM Peak Hour

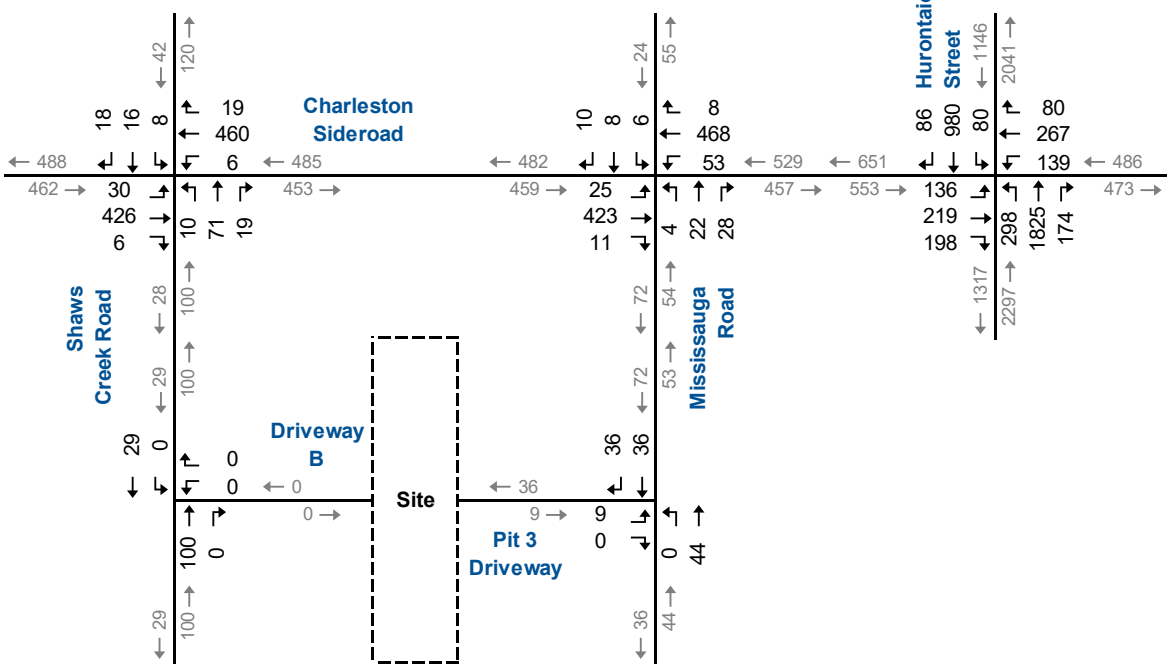


2035 Total Peak Hour Traffic Forecasts Without CBM Pit/Quarry (Haul Route B)

Weekday AM Peak Hour



Weekday PM Peak Hour



2035 Total Peak Hour Traffic Forecasts With CBM Pit/Quarry (Haul Route B)

4.4 Total Traffic Operations

Level of service analyses has been conducted using Synchro 10 with HCM 2000 procedures for the weekday AM and PM peak hour conditions at the study area intersections utilizing total traffic forecasts. The PCE volumes have been used in the analysis to determine the effect of the loaded trucks on local traffic operations. The intersections within the study area were assessed based on the same parameters as in the analysis of existing conditions

4.4.1 2025 Total

Table 4.3 displays a summary of the 2025 future total operations, and the following is noted:

- Charleston Sideroad and Shaws Creek Road is projected to operate with an acceptable level of service during the weekday peak hours. Side street v/c ratios are projected to be no greater than 0.43.
- Charleston Sideroad and Mississauga Road is projected to operate with an acceptable level of service during the weekday peak hours. Side street v/c ratios are projected to be no greater than 0.29.
- Charleston Sideroad and Hurontario Street is projected to operate with similar level of service as noted under the 2025 Background horizon. The southbound shared through/right turn movement during the weekday AM Peak hour is projected to operate at LOS E with a v/c ratio exceeding 1.00. During the weekday PM peak hour, the southbound left turn movement is projected to operate at LOS F with a v/c ratio of 0.87. Similar operations are noted for both Haul Routes.
- For both Haul Routes, the operations are noted to be similar for both driveway connections to either Shaws Creek Road or Mississauga Road.
- Based on the analysis, there is minimal difference in terms of traffic operations between the two Haul route scenarios. No capacity constraints are noted.

Appendix E contains the detailed Synchro reports.

TABLE 4.3: 2025 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Haul Route	Control Type	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	5
				Delay	0	0	0	0	1	1	0	1	13	13	13	13	21	21	21	21	
				V/C	0.01	0.01	0.00		0.03	0.03	0.00		0.24	0.24	0.24		0.32	0.32	0.32		
				Queue	0	0	0		1	1	0		7	7	7		10	10	10		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	3
				Delay	0	0	0	0	1	1	0	1	14	14	14	14	18	18	18	18	
				V/C	0.01	0.01	0.00		0.01	0.01	0.00		0.06	0.06	0.06		0.28	0.28	0.28		
				Queue	0	0	0		0	0	0		1	1	1		9	9	9		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	1
				Delay	0	0	0	0	1	1	0	1	18	18	18	18	15	15	15	15	
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.05	0.05	0.05		0.09	0.09	0.09		
				Queue	0	0	0		1	1	0		1	1	1		2	2	2		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	4
				Delay	2	2	2	2	1	1	0	0	10	10	10	10	13	13	13	13	
				V/C	0.01	0.01	0.00		0.03	0.03	0.00		0.15	0.15	0.15		0.07	0.07	0.07		
				Queue	0	0	0		0	0	0		4	4	4		2	2	2		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	C	C	C	C	C	C	C	C	B	A	A	A	B	E	E	E	D
				Delay	27	28	32	30	33	27	24	30	17	8	8	10	13	73	73	71	45
				V/C	0.31	0.43	0.62		0.63	0.39	0.02		0.51	0.37	0.37		0.17	1.09	1.09		0.90
				Queue	21	35	46		38	32	32		21	53	53		13	240	240		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	5
				Delay					9		9	9		0	0	0	1	1		1	
				V/C					0.11		0.11			0.02	0.02		0.01	0.01			
				Queue					3		3			0	0		0	0			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	5
				Delay	10		10	10					0	0		0		0	0	0	
				V/C	0.13		0.13						0.00	0.00				0.03	0.03		
				Queue	3		3						0	0				0	0		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	D	D	D	D	C	C	C	C	5
				Delay	1	1	0	1	2	2	0	2	27	27	27	27	23	23	23	23	
				V/C	0.03	0.03	0.00		0.08	0.08	0.01		0.43	0.43	0.43		0.16	0.16	0.16		
				Queue	1	1	0		2	2	0		16	16	16		4	4	4		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	3
				Delay	1	1	0	1	0	0	0	0	22	22	22	22	18	18	18	18	
				V/C	0.03	0.03	0.00		0.00	0.00	0.01		0.29	0.29	0.29		0.12	0.12	0.12		
				Queue	1	1	0		0	0	0		9	9	9		3	3	3		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	1
				Delay	0	0	0	0	1	1	0	1	18	18	18	18	15	15	15	15	
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.05	0.05	0.05		0.09	0.09	0.09		
				Queue	0	0	0		1	1	0		1	1	1		2	2	2		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	3
				Delay	1	1	0	1	2	2	0	2	17	17	17	17	20	20	20	20	
				V/C	0.02	0.02	0.00		0.08	0.08	0.00		0.17	0.17	0.17		0.08	0.08	0.08		
				Queue	1	1	0		2	2	0		5	5	5		2	2	2		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	C	C	C	C	C	C	C	C	B	B	B	B	F	B	B	C	C
				Delay	30	29	25	28	30	33	25	31	18	16	16	17	85	17	17	21	21
				V/C	0.54	0.54	0.11		0.55	0.66	0.05		0.76	0.84	0.84		0.87	0.60	0.60		0.83
				Queue	29	44	13		32	54	8		42	189	189		38	83	83		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	4
				Delay					9		9	9		0	0	0	6	6		6	
				V/C					0.03		0.03			0.05	0.05		0.05	0.05			
				Queue					1		1			0	0		1	1			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	2
				Delay	9		9	9					0	0		0		0	0	0	
				V/C	0.03		0.03						0.00	0.00				0.06	0.06		
				Queue	1		1						0	0				0	0		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS
RBT - Roundabout
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

4.4.2 2035 Total

Table 4.4 displays a summary of the 2035 future total operations, and the following is noted:

- Charleston Sideroad and Shaws Creek Road is projected to operate with increased delay under Haul Route A. Side street delay are projected to increase with the v/c ratio expected to be 0.67. However, under Haul Route B, the intersection is projected to continue to operate with an acceptable level of service during the weekday peak hours with side street v/c ratios projected to be no greater than 0.67.
- Charleston Sideroad and Mississauga Road is projected to operate with an acceptable level of service during the weekday peak hours. Side street v/c ratios are projected to be no greater than 0.47.
- Charleston Sideroad and Hurontario Street is projected to operate with similar level of service as noted under the 2035 Background horizon. The southbound shared through/right turn movement during the weekday AM Peak hour is projected to operate at LOS F with a v/c ratio exceeding 1.00. During the weekday PM peak hour, the southbound and northbound left turn movement is projected to operate at LOS F with a v/c ratio exceeding 1.00 and the northbound shared through/right turn movement operating at LOS E with a v/c ratio exceeding 1.00. All movements between the two scenarios (with and without the CBM Pit/Quarry) are noted to be similar.
- For both Haul Routes, the operations are noted to be similar for both driveway connections to either Shaws Creek Road or Mississauga Road.
- Based on the analysis, Haul Route B provides better operations to the overall study area intersections. No capacity constraints are noted.

Appendix E contains the detailed Synchro reports.

TABLE 4.4A: 2035 TOTAL TRAFFIC OPERATIONS WITHOUT CBM

Analysis Period	Intersection	Haul Route	Control Type	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	1	1	0	1	15	15	15	15	30	30	30	30	6
				V/C	0.01	0.01	0.00		0.04	0.04	0.00		0.29	0.29	0.29		0.48	0.48	0.48		
				Queue	0	0	0		1	1	0		9	9	9		19	19	19		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	1	1	0	1	16	16	16	16	25	25	25	25	4
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.09	0.09	0.09		0.42	0.42	0.42		
				Queue	0	0	0		1	1	0		2	2	2		15	15	15		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
				Delay	0	0	0	0	1	1	0	1	22	22	22	22	18	18	18	18	2
				V/C	0.01	0.01	0.01		0.03	0.03	0.00		0.09	0.09	0.09		0.12	0.12	0.12		
				Queue	0	0	0		0	0	0		2	2	2		3	3	3		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	
				Delay	0	0	0	0	1	1	0	0	14	14	14	14	19	19	19	19	3
				V/C	0.01	0.00	0.00		0.04	0.04	0.00		0.25	0.25	0.25		0.13	0.13	0.13		
				Queue	0	0	0		1	1	0		7	7	7		3	3	3		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	C	C	C	C	D	C	C	C	C	B	B	B	B	F	F	F	F
				Delay	26	27	33	31	35	27	24	30	22	11	11	12	17	206	206	201	112
				V/C	0.33	0.44	0.68		0.69	0.41	0.02		0.62	0.48	0.48		0.26	1.40	1.40		1.09
				Queue	24	41	57		46	38	38		37	79	79		18	342	342		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	
				Delay					9		9	0		0	0	0	1	1		1	4
				V/C					0.11		0.11			0.03	0.03		0.01	0.01			
				Queue					3		3			0	0		0	0			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	
				Delay	10		10	10					0	0		0		0	0	0	5
				V/C	0.13		0.13						0.00	0.00				0.04	0.04		
				Queue	3		3						0	0				0	0		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	F	F	F	F	E	E	E	E	
				Delay	1	1	0	1	2	2	0	2	52	52	52	52	36	36	36	36	8
				V/C	0.04	0.04	0.00		0.08	0.08	0.01		0.67	0.67	0.67		0.29	0.29	0.29		
				Queue	1	1	0		2	2	0		31	31	31		9	9	9		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	D	D	D	D	C	C	C	C	
				Delay	1	1	0	0	0	0	0	0	33	33	33	33	24	24	24	24	5
				V/C	0.04	0.04	0.00		0.01	0.01	0.10		0.47	0.47	0.47		0.20	0.20	0.20		
				Queue	1	1	0		0	0	0		17	17	17		5	5	5		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
				Delay	1	1	0	1	0	0	0	0	24	24	24	24	24	24	24	24	2
				V/C	0.03	0.03	0.00		0.02	0.02	0.01		0.18	0.18	0.18		0.12	0.12	0.12		
				Queue	1	1	0		0	0	0		5	5	5		3	3	3		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	2	2	0	2	22	22	22	22	28	28	28	28	4
				V/C	0.03	0.03	0.03		0.04	0.04	0.00		0.26	0.26	0.26		0.14	0.14	0.14		
				Queue	0	0	0		1	1	0		8	8	8		4	4	4		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	D	C	C	C	D	C	C	C	F	E	E	E	F	C	C	C	D
				Delay	37	29	24	29	35	34	24	32	122	56	56	64	149	22	22	31	48
				V/C	0.67	0.57	0.13		0.67	0.70	0.07		1.16	1.06	1.06		1.09	0.76	0.76		1.07
				Queue	36	53	14		40	65	11		85	286	286		48	122	122		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	
				Delay					9		9	9		0	0	0	6	6		6	4
				V/C					0.03		0.03			0.06	0.06		0.05	0.05			
				Queue					1		1			0	0		1	1			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	
				Delay	9		9	9					0	0		0		0	0	0	1
				V/C	0.03		0.03						0.00	0.00				0.07	0.07		
				Queue	1		1						0	0				0	0		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS
RBT - Roundabout
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

TABLE 4.4B: 2035 TOTAL TRAFFIC OPERATIONS WITH CBM

Analysis Period	Intersection	Haul Route	Control Type	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	1	1	0	1	15	15	15	15	31	31	31	31	6
				V/C	0.01	0.01	0.00		0.04	0.04	0.00		0.30	0.30	0.30		0.49	0.49	0.49		
				Queue	0	0	0		1	1	0		9	9	9		19	19	19		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	0	0	0	0	1	1	0	1	16	16	16	16	25	25	25	25	4
				V/C	0.01	0.01	0.00		0.02	0.02	0.00		0.09	0.09	0.09		0.43	0.43	0.43		
				Queue	0	0	0		1	1	0		2	2	2		16	16	16		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	
				Delay	0	0	0	0	1	1	0	1	22	22	22	22	18	18	18	18	2
				V/C	0.01	0.01	0.01		0.03	0.03	0.00		0.09	0.09	0.09		0.12	0.12	0.12		
				Queue	0	0	0		0	0	0		2	2	2		3	3	3		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	
				Delay	0	0	0	0	1	1	0	0	14	14	14	14	19	19	19	19	3
				V/C	0.01	0.00	0.00		0.04	0.04	0.00		0.25	0.25	0.25		0.13	0.13	0.13		
				Queue	0	0	0		1	1	0		8	8	8		3	3	3		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	C	C	D	C	C	C	C	C	D	B	B	B	B	F	F	F	F
				Delay	25	26	37	32	31	26	23	28	37	12	12	16	18	231	231	225	123
				V/C	0.31	0.40	0.76		0.62	0.37	0.02		0.80	0.49	0.49		0.27	1.45	1.45		1.15
				Queue	25	41	70		45	37	37		60	89	89		19	375	375		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	
				Delay					9		9	0		0	0	0	1	1		1	4
				V/C					0.11		0.11			0.03	0.03		0.01	0.01			
				Queue					3		3			0	0		0	0			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	
				Delay	10		10	10					0	0		0		0	0	0	5
				V/C	0.13		0.13						0.00	0.00				0.04	0.04		
				Queue	3		3						0	0				0	0		
PM Peak Hour	1 - Charleston Sideroad & Shaws Creek Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	F	F	F	F	E	E	E	E	
				Delay	1	1	0	1	2	2	0	2	53	53	53	53	37	37	37	37	8
				V/C	0.04	0.04	0.00		0.08	0.08	0.01		0.68	0.68	0.68		0.29	0.29	0.29		
				Queue	1	1	0		2	2	0		32	32	32		9	9	9		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	D	D	D	D	D	D	D	D	
				Delay	1	1	0	0	0	0	0	0	34	34	34	34	25	25	25	25	5
				V/C	0.04	0.04	0.00		0.01	0.01	0.10		0.47	0.47	0.47		0.20	0.20	0.20		
				Queue	1	1	0		0	0	0		17	17	17		6	6	6		
	2 - Charleston Sideroad & Mississauga Road	A	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	1	1	0	1	0	0	0	0	23	23	23	23	25	25	25	25	2
				V/C	0.03	0.03	0.00		0.02	0.02	0.01		0.20	0.20	0.20		0.13	0.13	0.13		
				Queue	1	1	0		0	0	0		5	5	5		3	3	3		
		B	TWSC	LOS	A	A	A	A	A	A	A	A	C	C	C	C	D	D	D	D	
				Delay	1	1	1	1	3	3	0	3	22	22	22	22	28	28	28	28	4
				V/C	0.03	0.03	0.03		0.10	0.01	0.01		0.27	0.27	0.27		0.15	0.15	0.15		
				Queue	1	1	1		2	2	0		8	8	8		4	4	4		
	3 - Charleston Sideroad & Hurontario Street	A + B	TCS	LOS	D	C	C	C	C	C	C	C	F	E	E	E	F	C	C	C	E
				Delay	44	29	25	31	34	33	24	32	197	58	58	78	154	22	22	33	55
				V/C	0.76	0.56	0.25		0.66	0.69	0.07		1.35	1.07	1.07		1.10	0.77	0.77		1.22
				Queue	42	53	21		40	65	10		114	299	299		49	138	138		
	4 - Shaws Creek Road at Site Driveway	A	TWSC	LOS					A		A	A		A	A	A	A	A		A	
				Delay					9		9	9		0	0	0	6	6		6	4
				V/C					0.03		0.03			0.06	0.06		0.05	0.05			
				Queue					1		1			0	0		1	1			
	5 - Mississauga Road at Site Driveway	B	TWSC	LOS	A		A	A					A	A		A		A	A	A	
				Delay	9		9	9					0	0		0		0	0	0	1
				V/C	0.03		0.03						0.00	0.00				0.07	0.07		
				Queue	1		1						0	0				0	0		

AWSC - All-Way Stop Control
TWSC - Two-Way Stop Control
TCS - Traffic Control TCS
RBT - Roundabout
MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Queue (m) - 95th Percentile Queue Length

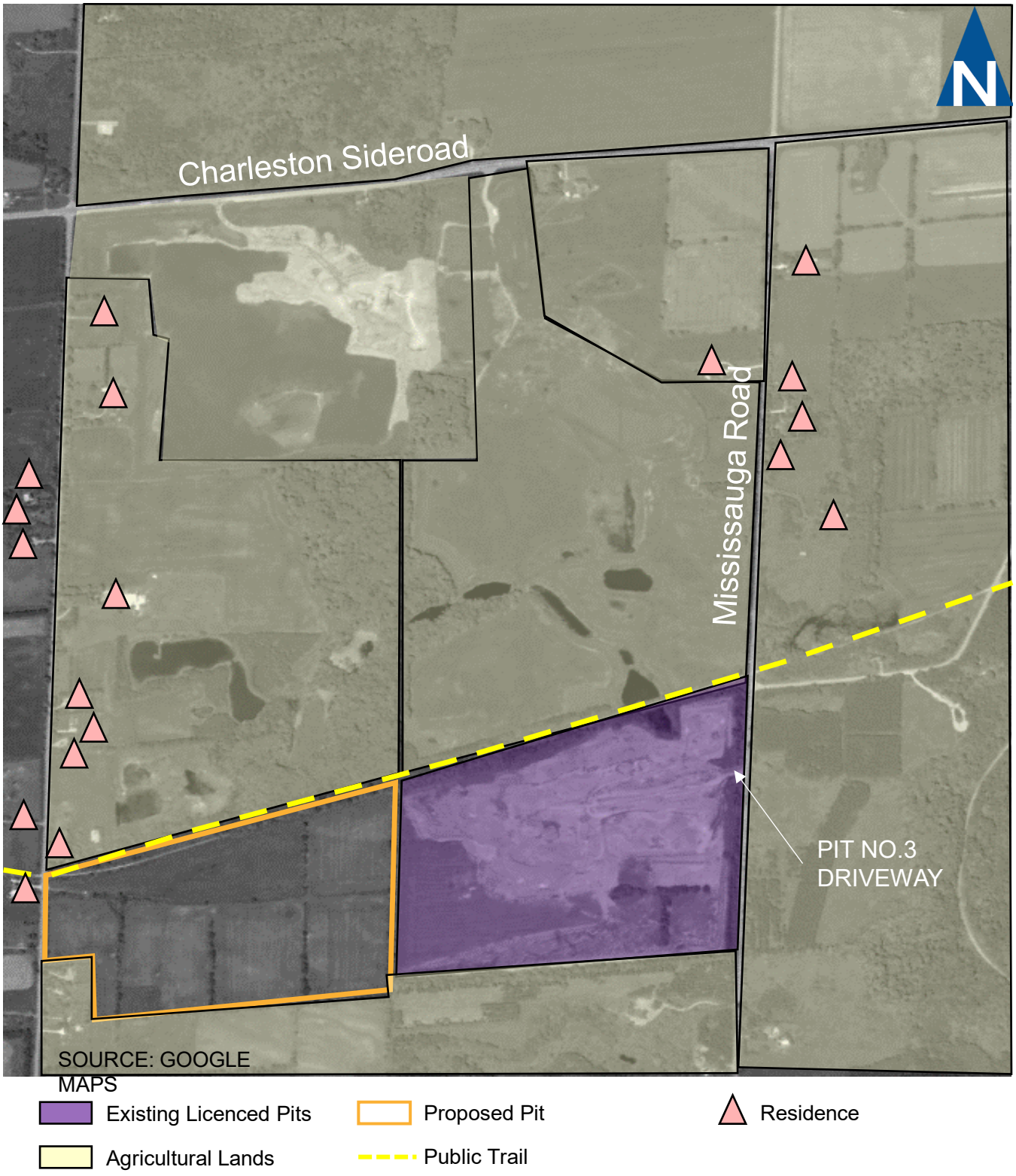
4.5 Preferred Haul Route

The most direct route to deliver material to the GTA is east of Charleston Sideroad, either through Shaws Creek Road (Haul Route A) or Pit No. 3 to Mississauga Road (Haul Route B). The technical analyses summarized that Haul Route B (Mississauga Road) is preferred from an operational assessment. In a further attempt to differentiate between the two options, Paradigm examined two additional metrics:

- **The number of Adjacent Properties Impacted** – The number of driveway connections between Charleston Sideroad and the potential site entrance locations was counted on both routes to assess the relative impact on adjacent property owners. This survey identified 12 driveways on Shaws Creek Road (Haul Route A) but only six on Mississauga Road (Haul Route B).
- **Distance Travelled** – Assuming most aggregate produced by the proposed development is destined for GTA markets to the east, the distance travelled to access the site via Haul Route B (Charleston Sideroad to Mississauga Road to the site) is shorter than Haul Route B (Charleston Sideroad to Shaws Creek Road to the site). This reduces the total vehicle kilometres of travel, which helps reduce fuel consumption, and decrease carbon emissions.
- **Roadway Upgrades** – Mississauga Road from Charleston Sideroad to the Pit No.3 Driveway has been recently upgraded to a standard better than Shaws Creek Road.

Based on these additional metrics, Haul Route B is preferred as it is the shorter Haul Route and will impact fewer adjacent property owners. **Figure 5.7** illustrates the surrounding land uses.

Haul Route B will utilize an existing all-directional connection (Pit No.3 Driveway) to Mississauga Road, approximately 220 metres south of the Elora Cataract Trailway. This connection will be accessed through an internal service road provided via Pit No. 3.



Surrounding Land Uses Adjacent to Haul Route

5 Remedial Measures

The following section reviews what, if any, measures should be implemented to mitigate the traffic impacts of the site.

5.1 Assessment of Impacts

Based on the analyses, congestion is forecasted to occur at the intersection of Charleston Side Road and Hurontario Street.

During peak hours, several movements are expected to exceed the capacity under the ***Background Horizon*** (without the proposed development).

Specifically, an anticipated increase in delay is projected for the southbound shared through/right turn movement during the weekday AM Peak hour in 2025 with a v/c ratio exceeding 1.00. Looking further ahead to 2035, delays can be expected during the weekday PM peak hour for the southbound and northbound left turn movement as well as the northbound shared through/right turn movement operating with a v/c ratio exceeding 1.00. Operations are similar under both scenarios (with and without CBM Pit/Quarry).

Widening the roadway is likely not feasible due to the limited right-of-way on Hurontario Street (Highway 10) with buildings straddling the property lines. To better handle the expected rise in overall traffic, it is advisable for the Region to modify the signal timing plan and intersection operation parameters on a regular basis.

5.2 Auxiliary Turn Lanes

The need for auxiliary turn lanes was reviewed for the proposed driveway connection.

5.2.1 Left-Turn Lane Warrants

The warrants for left-turn lanes at the unsignalized intersection of Charleston Sideroad at Mississauga Road follow the Ministry of Transportation's (MTO) Geometric Design Standards[5]. A design speed of 20 kilometres per hour over the posted speed limit has been utilized.

The percentage of left-turning vehicles in the approaching volume was rounded to the nearest five percent, as nomographs are only provided for five percent increments. **Table 5.1** summarizes the results of the left-turn lane warrant analyses. The following is noted:

- An eastbound left turn lane with 15 metres of storage is warranted at Charleston Sideroad and Mississauga Road under the base year traffic volumes. As this turn lane is a result of existing and general growth in traffic, the cost for this left turn lane should be funded by the Region of Peel. No additional storage is required under total forecasts.
- A westbound left turn lane with 15 metres of storage is warranted at Charleston Sideroad and Mississauga Road under the base year traffic volumes. As the 15-metre eastbound left turn is a result of existing traffic, the cost for this initial turn lane should be funded by the Region of Peel. An additional 10 metres of storage (25 metres total) is required for the 2035 total forecasts.

  Regarding development impacts, the proposed development triggers this additional 10 metres of storage for the westbound left turn lane (25 metres of total storage). The Applicant is recommended to fund the cost of the 10 metre extension by the year 2035, or once the Region has built out the initial 15 metres of storage, whichever comes later.
- Based on the low volumes along Mississauga Road at Pit No. 3 and the forecasts projecting zero (0) inbound left turns, a northbound left turn lane is not warranted.

[5] MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads - 2017

TABLE 5.1: LEFT-TURN LANE WARRANT ANALYSIS

Charleston Sideroad at Mississauga Road						
Approach Direction	Eastbound		Eastbound		Eastbound	
Design Speed	100 km/h		100 km/h		100 km/h	
Horizon	Base Year		2024 Background		2034 Background	
Peak Hour	AM	PM	AM	PM	AM	PM
Advancing Volume	257	359	267	373	325	454
Opposing Volumes	306	383	318	398	388	486
Left Turning Traffic	8	20	8	21	10	25
% of Left Turning Traffic	3.1%	5.6%	3.0%	5.6%	3.1%	5.5%
Figure Used*	9A-22	9A-22	9A-22	9A-22	9A-22	9A-22
Warranted	**No**	**Yes**	**No**	**Yes**	**Yes**	**Yes**
Storage Length Required		15		15	15	15
Horizon			2024 Total (B)		2034 Total (B)	
Peak Hour			AM	PM	AM	PM
Advancing Volume			267	373	325	454
Opposing Volumes			327	434	397	522
Left Turning Traffic			8	21	10	25
% of Left Turning Traffic			3.0%	5.6%	3.1%	5.5%
Figure Used*			9A-22	9A-22	9A-22	9A-22
Warranted			**No**	**Yes**	**Yes**	**Yes**
Storage Length Required				15	15	15
Approach Direction	Westbound		Westbound		Westbound	
Design Speed	100 km/h		100 km/h		100 km/h	
Horizon	Base Year		2024 Background		2034 Background	
Peak Hour	AM	PM	AM	PM	AM	PM
Advancing Volume	306	383	318	398	388	486
Opposing Volumes	257	359	267	373	325	454
Left Turning Traffic	20	12	21	12	25	15
% of Left Turning Traffic	6.5%	3.1%	6.6%	3.0%	6.4%	3.1%
Figure Used*	9A-22	9A-22	9A-22	9A-22	9A-22	9A-22
Warranted	**No**	**Yes**	**No**	**Yes**	**Yes**	**Yes**
Storage Length Required		15		15	15	15
Horizon			2024 Total (B)		2034 Total (B)	
Peak Hour			AM	PM	AM	PM
Advancing Volume			327	434	397	522
Opposing Volumes			267	373	325	477
Left Turning Traffic			30	48	34	51
% of Left Turning Traffic			9.2%	11.1%	8.6%	9.8%
Figure Used*			9A-22	9A-22	9A-22	9A-22
Warranted			**Yes**	**Yes**	**Yes**	**Yes**
Storage Length Required			15	15	15	25

Based on MTO Design Supplement for TAC Geometric Design Guide for Canadian Road - June 2017

5.2.2 Right-Turn Lane

Although right turns are generally made more efficiently than left turn movements, exclusive right turn lanes are often provided for many of the same reasons left turn lanes are. An exclusive right turn lane should be considered when the volume of right-turning vehicles is between 10 to 20 percent of the through volume, subject to a minimum of 60 vehicles per hour (vph) in the design hour.

The intersections of Charleston Sideroad with Mississauga Road currently operate with a separate right-turn lane for the eastbound and westbound approaches; thus, this intersection has not been assessed.

The 2035 total forecasted traffic volumes indicate the southbound right turn volume at the intersection of Mississauga Road and Pit No.3 Driveway is less than 60 vph. A separate right-turn lane is not recommended as the volume of right-turning traffic does not meet the specified criteria.

5.3 Truck Traffic

5.3.1 Pavement Condition

The Town of Caledon is completed work to Mississauga Road between Charleston Sideroad to just south of the entrance to Pit No. 3 Driveway in 2023. It is understood that work completed involved the reconstruction of the existing road to improve the asphalt overlay.

5.3.2 Classification

Municipal road classification systems designate streets into different categories according to the type of service that road is intended to provide. The service function of a road can range from primarily providing access to adjacent properties (e.g., cul-de-sacs and local roads) to principally serving through traffic at higher speeds for longer-distance trips (e.g., freeways and arterial roads).

A street network performs most efficiently and safely when its roads are designed and operated to serve their intended purpose and function. The Town of Caledon Official Plan designates the classification of the different roads within the municipality on Schedule J. It includes policies defining the various roadway categories' intended characteristics (purpose and function). The Town's Official Plan designates Mississauga Road as collectors. The proposed haul route assumes access will be provided to Mississauga. In the Trucking and Goods Movement Section (5.9.5.10) of the Plan, Policy 5.9.5.10.1b) states that:

> *"To provide for the safe efficient movement of trucks through and within the Town and minimize the impact of heavy trucks on residential areas, the Town … will permit truck use of medium capacity arterials and*

collector roadways only as connector to service high capacity arterial routes, pending structural suitability."

As the proposed development is not directly serviced by a high-capacity arterial road, using Mississauga Road to access the site from Charleston Sideroad is consistent with the Official Plan. As the Town undertook work in 2023 to improve the substructure underlay and pavement overlay along Mississauga Road, the pavement should be capable of accommodating the loads. These routes provide the shortest distance possible to the Regional Road network.

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads[6] (TAC Guide) provides typical volume thresholds for different road classifications. Table 1.3.4.1 of the TAC Guide shows that traffic volumes for rural collector roads are typically less than 5,000 vehicles per day (vpd). With the growth in background traffic and additional traffic created by the proposed development, the future (2035) traffic volumes on Mississauga Road are projected to be 1,600 vpd and well below the 5,000 vpd threshold.

5.3.3 Lane Widths

The current Town of Caledon design standard for residential collector roads is 8.90 metres of pavement width for a two-lane roadway. Within the immediate study area, Mississauga Road has an effective pavement width between 7.40 and 8.90 metres. However, a narrow shoulder of less than 1.00 metres is provided on either side. This effectively provides a travel lane width of 4.45 metres. No standards are provided for shoulder widths.

TAC advises that "Lane widths depend on design speed and the volume of traffic that the roadway is intended to carry, and the number and types of trucks on the roadway." This guide recommends lane widths of 3.00 metres to 3.70 metres for low-traffic local rural roads with a minimum of 1.00-metre shoulders on each side. Section 2.2.2.2 of the TAC Geometric Design Guide for Canadian Roads advises that:

"In general, it is concluded that a wider lane will provide a greater level of safety than a narrower lane; however, the weight of empirical evidence indicates that there is still safety benefit to be derived by widening lanes beyond 3.30 metres."

On this basis, it is concluded that the minimum desirable lane width for the proposed increased truck traffic would be 3.30 metres and; total pavement width of 6.60 metres. The current pavement width of Mississauga Road meets this requirement; thus, the lane widths are noted to be acceptable.

For low-traffic roads such as Mississauga Road, the shoulder width is less critical since a truck that pulls off and stops on a 1.00-metre shoulder still

[6] Transportation Association of Canada, Geometric Design Guide for Canadian Roads, Section 1.3, 1999.

obstructs the driving lane, and following vehicles still have to yield to opposing traffic to clear before passing the stopped truck.

The work undertaken by the Town in 2023 is understood to consist of reconstruction of the existing road. No alignment or radius or lane changes are proposed. Some re-establishments of the ditch occurred as apart from improvements to the road condition.

5.4 Sight Distance

The Transportation Association of Canada (TAC) recommends that safe stopping sight distance be measured from an approaching driver's eye height of 1.05 metres to an object height (e.g. taillights) of 0.38 metres at the proposed connection.

As for departure sight distance, the measurement should be taken from the height of the turning vehicle driver's eye of 1.05 metres to the top of the approaching vehicle, 1.30 metres above the pavement.

Table 5.2 summarizes the minimum sight distance requirements for an 80-kilometre per hour design speed. These standards are based on TAC design guidelines.

TABLE 5.2: SIGHT DISTANCE REQUIREMENTS

Sight Distance	Design Speed
	80 km/h
Minimum Stopping Sight Distance (m)	135
Minimum Decision Sight Distance (m)	240
*Minimum Departure (Turning) Sight Distance (m)	250

*Sight distance for passenger vehicle to turn left or right onto two-lane roadway and attain 85% of design speed without being overtaken by a vehicle approaching from the right and reducing speed from design speed to 85% of design speed. (TAC Figure 2.3.3.4)

Sight distance observations based on aerial imagery and a field visit in 2016 indicate that the stopping and departure sight distance at the existing driveway connection (Pit No.3 Driveway) is sufficient as the roadways are relatively flat and straight, with the field of view unobstructed for at least 250 metres in either direction.

6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- Continued use of the existing Pit 3 haul route for the extension is recommended over establishing a new truck route on Shaws Creek Road;
- The Pit 3 Extension does not require parking and loading spaces as part of the operation. This operation is an extension of the existing Pit 3 and there is already a parking area established at the scale house located in proximity to the entrance/exit of Pit 3.
- Under existing conditions, all intersections in the study area are operating at acceptable levels of service during the weekday peak hours with no individual problem movements;
- Under 2025 and 2035 background conditions, Charleston Sideroad with Shaws Creek Road and Mississauga Road are forecast to operate at acceptable levels of service during the weekday peak hours with no individual problem movements;
- Under 2025 and 2035 background conditions, Charleston Sideroad at Hurontario Street is expected to operate with increased delays with the northbound and southbound movements projected to operate with a v/c ratio greater than 1.00.

  Constraints largely stem from the through volumes along Hurontario Street. Widening the roadway is likely not feasible due to the limited right-of-way on Hurontario Street (Highway 10) with buildings straddling the property lines. It is advisable for the Region to modify signal timing and intersection operation parameters on a regular basis to handle the expected rise in overall traffic.
- With full development and occupancy of the property, the subject site is forecast to generate a maximum of 45 truck trips during the weekday AM and PM peak hours.
- Under 2025 and 2035 total traffic conditions, all intersections in the study area are forecast to operate with similar operations as noted under then 2025 and 2035 Background conditions with no significant increases in delay or reduced capacity.
- No auxiliary turn lanes are forecast to be required at the site driveway;
- The proposed driveway location provides adequate departure and stopping sight distance along Mississauga Road.

6.2 Recommendations

Based on the preceding analyses, it is recommended from a traffic impact Based on the preceding analyses, it is recommended from a traffic impact perspective that the planning application be approved as proposed with the following recommendations related to transportation system improvements:

- A westbound left turn lane with 15 metres is recommended to be installed and funded by the Region of Peel at the intersection of Charleston Sideroad and Mississauga Road to accommodate base-year traffic volumes.
    - An additional 10 metres of storage (25 metres total) is recommended to be provided and funded by the Applicant by the year 2035; and
- An eastbound left turn lane with 15 metres is recommended to be installed and funded by the Region of Peel at the intersection of Charleston Sideroad and Mississauga Road to accommodate base-year traffic volumes.
- Region continues to monitor operations at the intersection of Charleston Sideroad at Hurontario Street and adjust signal timings to improve operations in the future as traffic volumes increase and travel patterns change.

As a result of the turn lane requirements at Charleston Sideroad and Mississauga Road, it is recommended that the Aggregate Resources Act Site Plan include the following condition:

- When the Region of Peel upgrades the intersection of Charleston Sideroad and Mississauga Road, the licensee shall enter into an agreement with the Region of Peel to fund an additional 10 metres of storage to the westbound left turn lane.

Appendix A

Existing Turning Movement Count Data

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023

Turning Movement Data

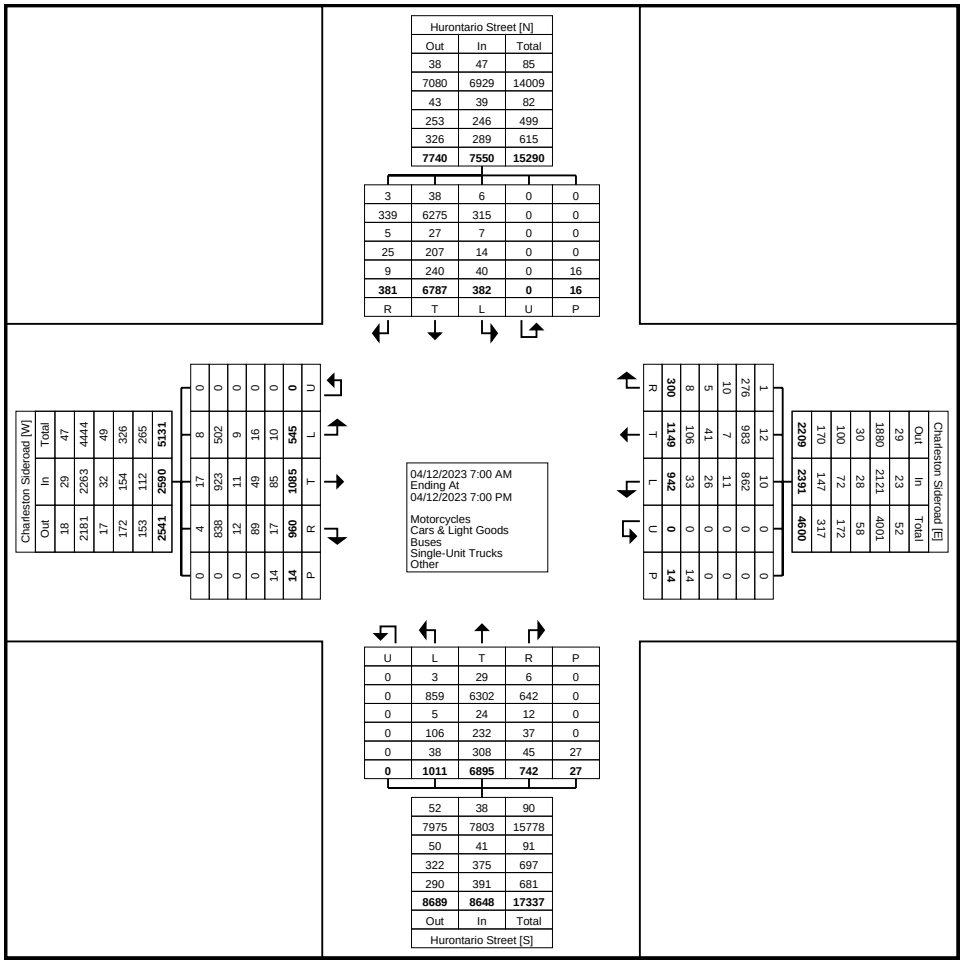
Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Hurontario Street Northbound						Hurontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	15	20	50	0	0	85	41	17	3	0	0	61	24	129	16	0	0	169	6	403	5	0	0	414	729
7:15 AM	15	29	63	0	0	107	39	27	4	0	0	70	24	145	11	0	0	180	10	408	8	0	0	426	783
7:30 AM	21	41	42	0	0	104	26	38	7	0	0	71	17	182	22	0	0	221	11	387	8	0	0	406	802
7:45 AM	14	41	36	0	0	91	28	41	7	0	0	76	30	183	19	0	3	232	14	350	14	0	0	378	777
Hourly Total	65	131	191	0	0	387	134	123	21	0	0	278	95	639	68	0	3	802	41	1548	35	0	0	1624	3091
8:00 AM	10	25	43	0	0	78	33	39	2	0	0	74	39	156	26	0	1	221	9	301	13	0	0	323	696
8:15 AM	23	35	48	0	1	106	37	29	7	0	0	73	25	165	15	0	0	205	9	282	7	0	2	298	682
8:30 AM	14	29	37	0	0	80	31	27	13	0	0	71	28	161	10	0	0	199	18	238	12	0	0	268	618
8:45 AM	19	43	32	0	1	94	42	39	6	0	0	87	30	165	15	0	1	210	20	222	14	0	0	256	647
Hourly Total	66	132	160	0	2	358	143	134	28	0	0	305	122	647	66	0	2	835	56	1043	46	0	2	1145	2643
9:00 AM	14	37	34	0	1	85	31	35	12	0	1	78	31	162	28	0	0	221	10	235	11	0	2	256	640
9:15 AM	18	29	24	0	0	71	39	34	16	0	0	89	32	154	23	0	0	209	11	228	12	0	0	251	620
9:30 AM	14	25	23	0	0	62	37	29	8	0	0	74	28	152	22	0	1	202	9	175	12	0	0	196	534
9:45 AM	23	24	27	0	0	74	18	31	6	0	0	55	32	146	18	0	1	196	8	180	10	0	0	198	523
Hourly Total	69	115	108	0	1	292	125	129	42	0	1	296	123	614	91	0	2	828	38	818	45	0	2	901	2317
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	14	31	22	0	0	67	30	30	8	0	0	68	30	181	25	0	0	236	12	139	15	0	1	166	537
11:45 AM	8	39	32	0	0	79	24	37	8	0	0	69	28	151	19	0	0	198	9	163	9	0	0	181	527
Hourly Total	22	70	54	0	0	146	54	67	16	0	0	137	58	332	44	0	0	434	21	302	24	0	1	347	1064
12:00 PM	15	36	22	0	0	73	30	54	5	0	0	89	23	140	13	0	0	176	11	138	12	0	0	161	499
12:15 PM	21	25	25	0	0	71	20	28	5	0	0	53	27	183	17	0	1	227	13	183	15	0	0	211	562
12:30 PM	16	35	26	0	1	77	28	30	5	0	1	63	30	175	21	0	3	226	8	147	7	0	0	162	528
12:45 PM	9	28	22	0	1	59	28	34	9	0	0	71	32	152	23	0	1	207	15	173	10	0	1	198	535
Hourly Total	61	124	95	0	2	280	106	146	24	0	1	276	112	650	74	0	5	836	47	641	44	0	1	732	2124
1:00 PM	10	31	22	0	2	63	21	32	3	0	1	56	31	170	12	0	2	213	11	168	5	0	3	184	516
1:15 PM	22	26	34	0	1	82	27	30	8	0	1	65	24	173	16	0	3	213	9	177	13	0	2	199	559
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	32	57	56	0	3	145	48	62	11	0	2	121	55	343	28	0	5	426	20	345	18	0	5	383	1075
4:00 PM	24	42	19	0	0	85	31	51	19	0	0	101	36	344	33	0	0	413	11	195	23	0	0	229	828
4:15 PM	21	49	31	0	0	101	30	54	15	0	0	99	47	349	33	0	0	429	14	197	15	0	0	226	855
4:30 PM	24	42	29	0	1	95	33	64	25	0	1	122	43	323	32	0	2	398	15	188	15	0	2	218	833
4:45 PM	23	46	31	0	0	100	26	46	10	0	3	82	33	382	35	0	1	450	19	202	15	0	3	236	868
Hourly Total	92	179	110	0	1	381	120	215	69	0	4	404	159	1398	133	0	3	1690	59	782	68	0	5	909	3384
5:00 PM	26	35	27	0	0	88	21	45	13	0	0	79	53	385	37	0	1	475	15	186	20	0	0	221	863
5:15 PM	12	49	34	0	0	95	32	42	10	0	0	84	52	335	45	0	0	432	17	184	11	0	0	212	823

5:30 PM	24	41	36	0	3	101	46	36	14	0	2	96	30	355	40	0	1	425	14	149	20	0	0	183	805
5:45 PM	20	44	19	0	1	83	27	32	21	0	4	80	39	297	31	0	1	367	16	192	16	0	0	224	754
Hourly Total	82	169	116	0	4	367	126	155	58	0	6	339	174	1372	153	0	3	1699	62	711	67	0	0	840	3245
6:00 PM	11	38	30	0	0	79	26	34	12	0	0	72	36	219	28	0	0	283	13	175	11	0	0	199	633
6:15 PM	15	23	18	0	1	56	22	30	8	0	0	60	27	247	22	0	3	296	8	155	7	0	0	170	582
6:30 PM	16	22	12	0	0	50	17	26	3	0	0	46	32	247	19	0	0	298	10	152	5	0	0	167	561
6:45 PM	14	25	10	0	0	49	21	28	8	0	0	57	18	187	16	0	1	221	7	115	11	0	0	133	460
Hourly Total	56	108	70	0	1	234	86	118	31	0	0	235	113	900	85	0	4	1098	38	597	34	0	0	669	2236
Grand Total	545	1085	960	0	14	2590	942	1149	300	0	14	2391	1011	6895	742	0	27	8648	382	6787	381	0	16	7550	21179
Approach %	21.0	41.9	37.1	0.0	-	-	39.4	48.1	12.5	0.0	-	-	11.7	79.7	8.6	0.0	-	-	5.1	89.9	5.0	0.0	-	-	-
Total %	2.6	5.1	4.5	0.0	-	12.2	4.4	5.4	1.4	0.0	-	11.3	4.8	32.6	3.5	0.0	-	40.8	1.8	32.0	1.8	0.0	-	35.6	-
Motorcycles	8	17	4	0	-	29	10	12	1	0	-	23	3	29	6	0	-	38	6	38	3	0	-	47	137
% Motorcycles	1.5	1.6	0.4	-	-	1.1	1.1	1.0	0.3	-	-	1.0	0.3	0.4	0.8	-	-	0.4	1.6	0.6	0.8	-	-	0.6	0.6
Cars & Light Goods	502	923	838	0	-	2263	862	983	276	0	-	2121	859	6302	642	0	-	7803	315	6275	339	0	-	6929	19116
% Cars & Light Goods	92.1	85.1	87.3	-	-	87.4	91.5	85.6	92.0	-	-	88.7	85.0	91.4	86.5	-	-	90.2	82.5	92.5	89.0	-	-	91.8	90.3
Buses	9	11	12	0	-	32	11	7	10	0	-	28	5	24	12	0	-	41	7	27	5	0	-	39	140
% Buses	1.7	1.0	1.3	-	-	1.2	1.2	0.6	3.3	-	-	1.2	0.5	0.3	1.6	-	-	0.5	1.8	0.4	1.3	-	-	0.5	0.7
Single-Unit Trucks	16	49	89	0	-	154	26	41	5	0	-	72	106	232	37	0	-	375	14	207	25	0	-	246	847
% Single-Unit Trucks	2.9	4.5	9.3	-	-	5.9	2.8	3.6	1.7	-	-	3.0	10.5	3.4	5.0	-	-	4.3	3.7	3.0	6.6	-	-	3.3	4.0
Articulated Trucks	10	85	17	0	-	112	33	105	8	0	-	146	38	308	45	0	-	391	40	240	9	0	-	289	938
% Articulated Trucks	1.8	7.8	1.8	-	-	4.3	3.5	9.1	2.7	-	-	6.1	3.8	4.5	6.1	-	-	4.5	10.5	3.5	2.4	-	-	3.8	4.4
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	3.7	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	14	-	-	-	-	-	14	-	-	-	-	-	26	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	96.3	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Hurontario Street Northbound						Hurontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	15	20	50	0	0	85	41	17	3	0	0	61	24	129	16	0	0	169	6	403	5	0	0	414	729
7:15 AM	15	29	63	0	0	107	39	27	4	0	0	70	24	145	11	0	0	180	10	408	8	0	0	426	783
7:30 AM	21	41	42	0	0	104	26	38	7	0	0	71	17	182	22	0	0	221	11	387	8	0	0	406	802
7:45 AM	14	41	36	0	0	91	28	41	7	0	0	76	30	183	19	0	3	232	14	350	14	0	0	378	777
Total	65	131	191	0	0	387	134	123	21	0	0	278	95	639	68	0	3	802	41	1548	35	0	0	1624	3091
Approach %	16.8	33.9	49.4	0.0	-	-	48.2	44.2	7.6	0.0	-	-	11.8	79.7	8.5	0.0	-	-	2.5	95.3	2.2	0.0	-	-	-
Total %	2.1	4.2	6.2	0.0	-	12.5	4.3	4.0	0.7	0.0	-	9.0	3.1	20.7	2.2	0.0	-	25.9	1.3	50.1	1.1	0.0	-	52.5	-
PHF	0.774	0.799	0.758	0.000	-	0.904	0.817	0.750	0.750	0.000	-	0.914	0.792	0.873	0.773	0.000	-	0.864	0.732	0.949	0.625	0.000	-	0.953	0.964
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	7	0	0	-	7	8
% Motorcycles	0.0	0.8	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.3
Cars & Light Goods	58	114	174	0	-	346	126	112	19	0	-	257	65	534	54	0	-	653	29	1497	31	0	-	1557	2813
% Cars & Light Goods	89.2	87.0	91.1	-	-	89.4	94.0	91.1	90.5	-	-	92.4	68.4	83.6	79.4	-	-	81.4	70.7	96.7	88.6	-	-	95.9	91.0
Buses	1	2	7	0	-	10	2	0	0	0	-	2	3	4	3	0	-	10	3	11	1	0	-	15	37
% Buses	1.5	1.5	3.7	-	-	2.6	1.5	0.0	0.0	-	-	0.7	3.2	0.6	4.4	-	-	1.2	7.3	0.7	2.9	-	-	0.9	1.2
Single-Unit Trucks	3	7	8	0	-	18	2	7	0	0	-	9	19	37	6	0	-	62	0	15	1	0	-	16	105
% Single-Unit Trucks	4.6	5.3	4.2	-	-	4.7	1.5	5.7	0.0	-	-	3.2	20.0	5.8	8.8	-	-	7.7	0.0	1.0	2.9	-	-	1.0	3.4
Articulated Trucks	3	7	2	0	-	12	4	4	2	0	-	10	8	64	5	0	-	77	9	18	2	0	-	29	128
% Articulated Trucks	4.6	5.3	1.0	-	-	3.1	3.0	3.3	9.5	-	-	3.6	8.4	10.0	7.4	-	-	9.6	22.0	1.2	5.7	-	-	1.8	4.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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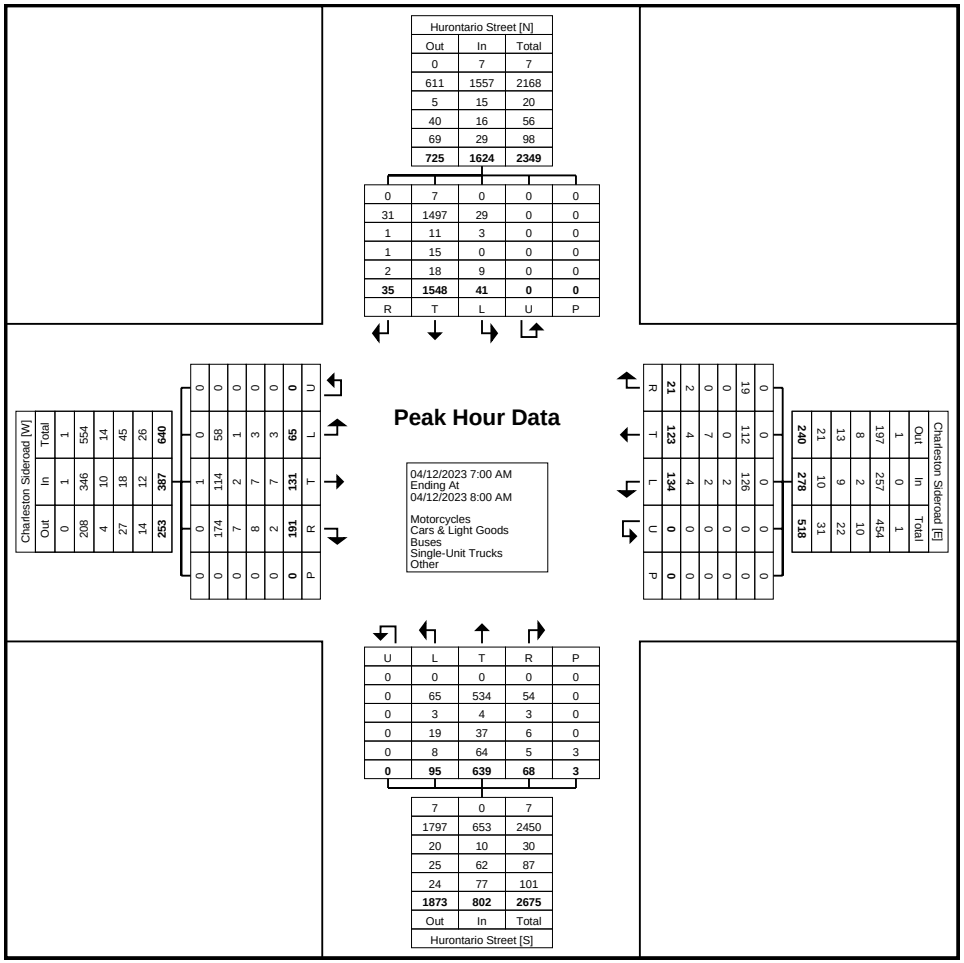
Site Code: 230048
Start Date: 04/12/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023

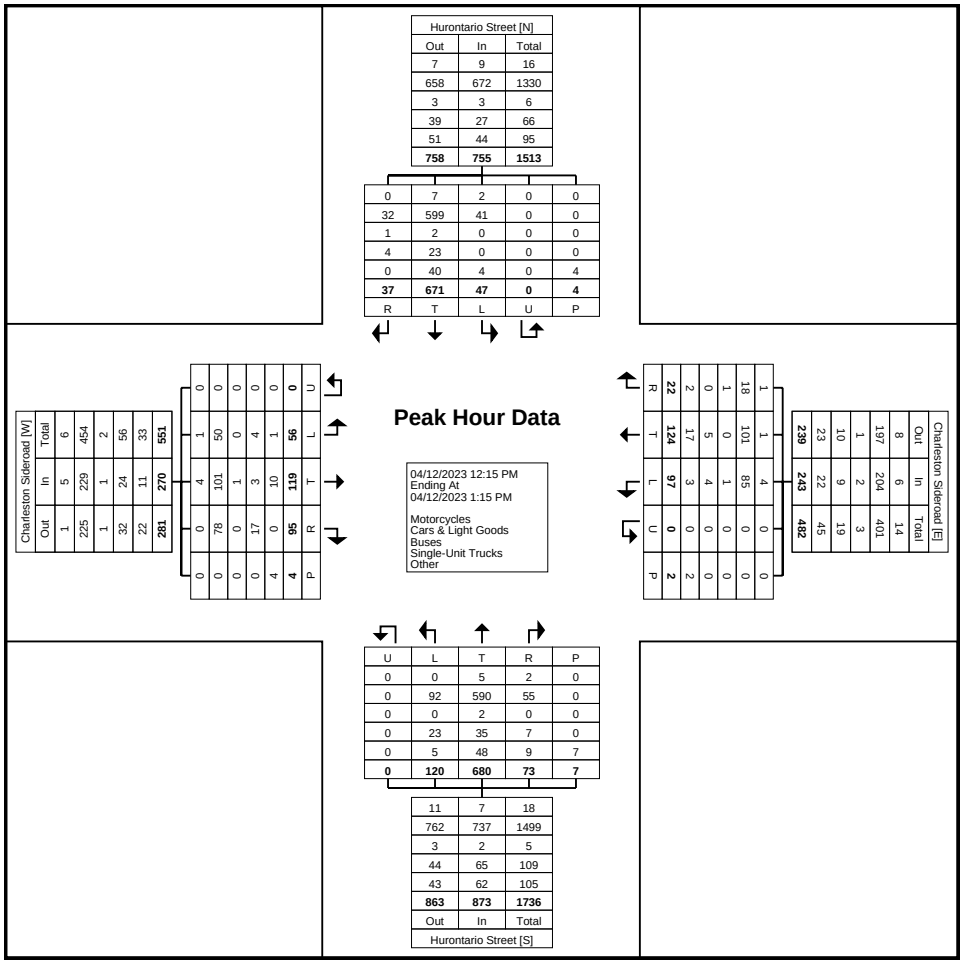
Turning Movement Peak Hour Data (12:15 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Hurontario Street Northbound						Hurontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:15 PM	21	25	25	0	0	71	20	28	5	0	0	53	27	183	17	0	1	227	13	183	15	0	0	211	562
12:30 PM	16	35	26	0	1	77	28	30	5	0	1	63	30	175	21	0	3	226	8	147	7	0	0	162	528
12:45 PM	9	28	22	0	1	59	28	34	9	0	0	71	32	152	23	0	1	207	15	173	10	0	1	198	535
1:00 PM	10	31	22	0	2	63	21	32	3	0	1	56	31	170	12	0	2	213	11	168	5	0	3	184	516
Total	56	119	95	0	4	270	97	124	22	0	2	243	120	680	73	0	7	873	47	671	37	0	4	755	2141
Approach %	20.7	44.1	35.2	0.0	-	-	39.9	51.0	9.1	0.0	-	-	13.7	77.9	8.4	0.0	-	-	6.2	88.9	4.9	0.0	-	-	-
Total %	2.6	5.6	4.4	0.0	-	12.6	4.5	5.8	1.0	0.0	-	11.3	5.6	31.8	3.4	0.0	-	40.8	2.2	31.3	1.7	0.0	-	35.3	-
PHF	0.667	0.850	0.913	0.000	-	0.877	0.866	0.912	0.611	0.000	-	0.856	0.938	0.929	0.793	0.000	-	0.961	0.783	0.917	0.617	0.000	-	0.895	0.952
Motorcycles	1	4	0	0	-	5	4	1	1	0	-	6	0	5	2	0	-	7	2	7	0	0	-	9	27
% Motorcycles	1.8	3.4	0.0	-	-	1.9	4.1	0.8	4.5	-	-	2.5	0.0	0.7	2.7	-	-	0.8	4.3	1.0	0.0	-	-	1.2	1.3
Cars & Light Goods	50	101	78	0	-	229	85	101	18	0	-	204	92	590	55	0	-	737	41	599	32	0	-	672	1842
% Cars & Light Goods	89.3	84.9	82.1	-	-	84.8	87.6	81.5	81.8	-	-	84.0	76.7	86.8	75.3	-	-	84.4	87.2	89.3	86.5	-	-	89.0	86.0
Buses	0	1	0	0	-	1	1	0	1	0	-	2	0	2	0	0	-	2	0	2	1	0	-	3	8
% Buses	0.0	0.8	0.0	-	-	0.4	1.0	0.0	4.5	-	-	0.8	0.0	0.3	0.0	-	-	0.2	0.0	0.3	2.7	-	-	0.4	0.4
Single-Unit Trucks	4	3	17	0	-	24	4	5	0	0	-	9	23	35	7	0	-	65	0	23	4	0	-	27	125
% Single-Unit Trucks	7.1	2.5	17.9	-	-	8.9	4.1	4.0	0.0	-	-	3.7	19.2	5.1	9.6	-	-	7.4	0.0	3.4	10.8	-	-	3.6	5.8
Articulated Trucks	1	10	0	0	-	11	3	17	2	0	-	22	5	48	9	0	-	62	4	40	0	0	-	44	139
% Articulated Trucks	1.8	8.4	0.0	-	-	4.1	3.1	13.7	9.1	-	-	9.1	4.2	7.1	12.3	-	-	7.1	8.5	6.0	0.0	-	-	5.8	6.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023



Turning Movement Peak Hour Data Plot (12:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023

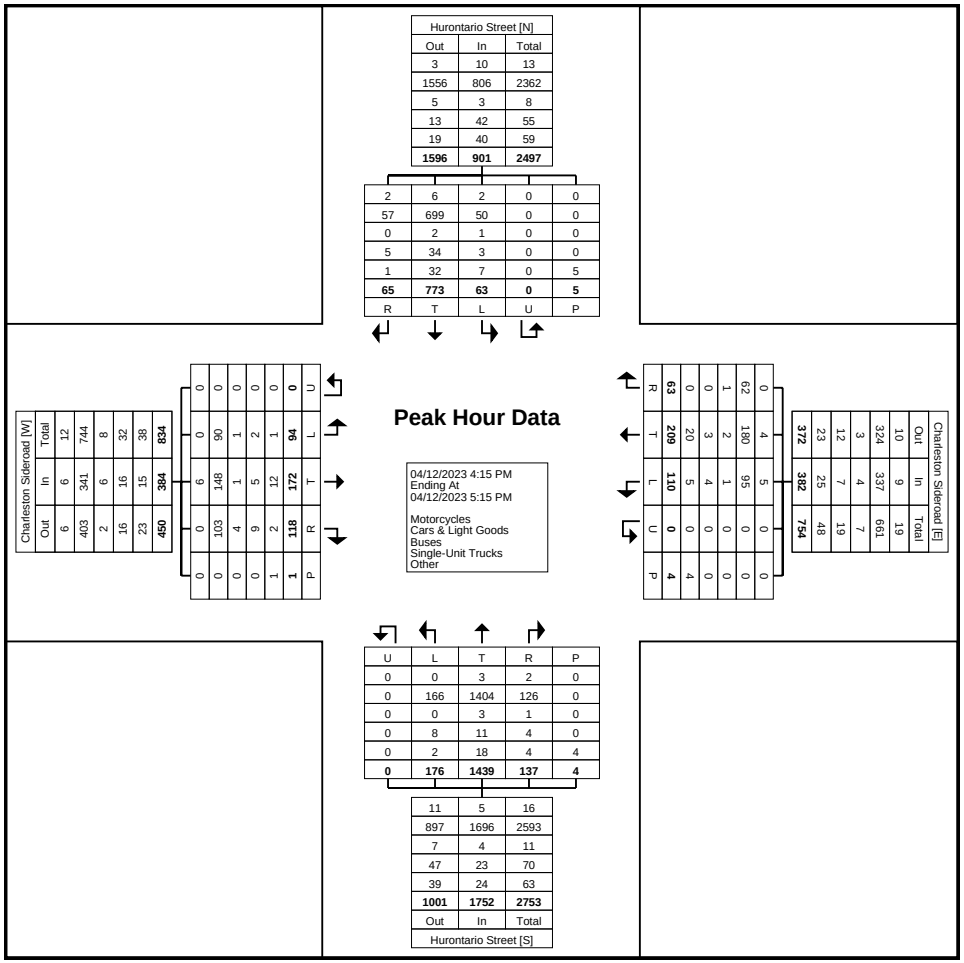
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Hurontario Street Northbound						Hurontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:15 PM	21	49	31	0	0	101	30	54	15	0	0	99	47	349	33	0	0	429	14	197	15	0	0	226	855
4:30 PM	24	42	29	0	1	95	33	64	25	0	1	122	43	323	32	0	2	398	15	188	15	0	2	218	833
4:45 PM	23	46	31	0	0	100	26	46	10	0	3	82	33	382	35	0	1	450	19	202	15	0	3	236	868
5:00 PM	26	35	27	0	0	88	21	45	13	0	0	79	53	385	37	0	1	475	15	186	20	0	0	221	863
Total	94	172	118	0	1	384	110	209	63	0	4	382	176	1439	137	0	4	1752	63	773	65	0	5	901	3419
Approach %	24.5	44.8	30.7	0.0	-	-	28.8	54.7	16.5	0.0	-	-	10.0	82.1	7.8	0.0	-	-	7.0	85.8	7.2	0.0	-	-	-
Total %	2.7	5.0	3.5	0.0	-	11.2	3.2	6.1	1.8	0.0	-	11.2	5.1	42.1	4.0	0.0	-	51.2	1.8	22.6	1.9	0.0	-	26.4	-
PHF	0.904	0.878	0.952	0.000	-	0.950	0.833	0.816	0.630	0.000	-	0.783	0.830	0.934	0.926	0.000	-	0.922	0.829	0.957	0.813	0.000	-	0.954	0.985
Motorcycles	0	6	0	0	-	6	5	4	0	0	-	9	0	3	2	0	-	5	2	6	2	0	-	10	30
% Motorcycles	0.0	3.5	0.0	-	-	1.6	4.5	1.9	0.0	-	-	2.4	0.0	0.2	1.5	-	-	0.3	3.2	0.8	3.1	-	-	1.1	0.9
Cars & Light Goods	90	148	103	0	-	341	95	180	62	0	-	337	166	1404	126	0	-	1696	50	699	57	0	-	806	3180
% Cars & Light Goods	95.7	86.0	87.3	-	-	88.8	86.4	86.1	98.4	-	-	88.2	94.3	97.6	92.0	-	-	96.8	79.4	90.4	87.7	-	-	89.5	93.0
Buses	1	1	4	0	-	6	1	2	1	0	-	4	0	3	1	0	-	4	1	2	0	0	-	3	17
% Buses	1.1	0.6	3.4	-	-	1.6	0.9	1.0	1.6	-	-	1.0	0.0	0.2	0.7	-	-	0.2	1.6	0.3	0.0	-	-	0.3	0.5
Single-Unit Trucks	2	5	9	0	-	16	4	3	0	0	-	7	8	11	4	0	-	23	3	34	5	0	-	42	88
% Single-Unit Trucks	2.1	2.9	7.6	-	-	4.2	3.6	1.4	0.0	-	-	1.8	4.5	0.8	2.9	-	-	1.3	4.8	4.4	7.7	-	-	4.7	2.6
Articulated Trucks	1	12	2	0	-	15	5	20	0	0	-	25	2	18	4	0	-	24	7	32	1	0	-	40	104
% Articulated Trucks	1.1	7.0	1.7	-	-	3.9	4.5	9.6	0.0	-	-	6.5	1.1	1.3	2.9	-	-	1.4	11.1	4.1	1.5	-	-	4.4	3.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Charleston Sideroad & Hurontario Street
Site Code: 230048
Start Date: 04/12/2023



Turning Movement Peak Hour Data Plot (4:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Data

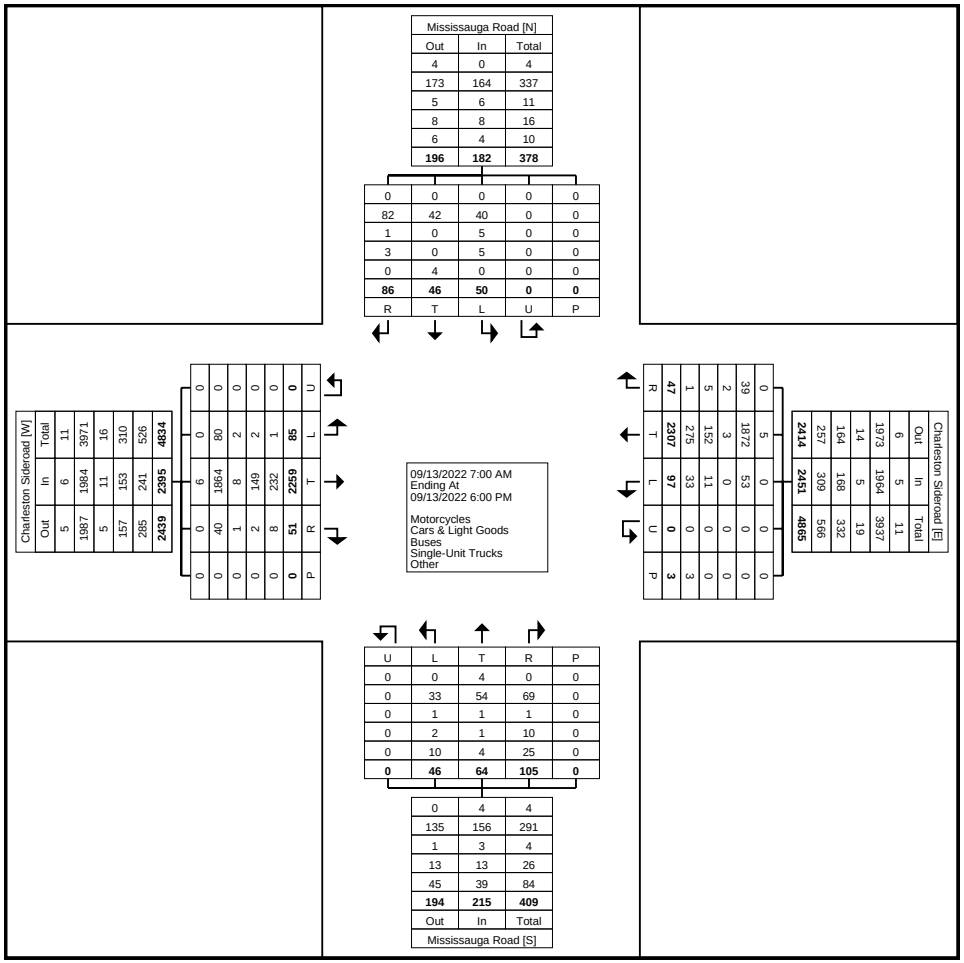
Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Mississauga Road Northbound						Mississauga Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	72	1	0	0	74	2	57	0	0	0	59	2	0	0	0	0	2	1	3	4	0	0	8	143
7:15 AM	0	79	1	0	0	80	4	51	1	0	0	56	0	0	4	0	0	4	3	6	4	0	0	13	153
7:30 AM	2	74	0	0	0	76	5	73	2	0	0	80	1	0	2	0	0	3	0	3	5	0	0	8	167
7:45 AM	3	99	0	0	0	102	3	67	1	0	0	71	1	0	3	0	0	4	0	3	4	0	0	7	184
Hourly Total	6	324	2	0	0	332	14	248	4	0	0	266	4	0	9	0	0	13	4	15	17	0	0	36	647
8:00 AM	1	66	1	0	0	68	5	70	0	0	0	75	0	1	2	0	0	3	2	3	3	0	0	8	154
8:15 AM	2	78	3	0	0	83	6	68	0	0	0	74	4	0	4	0	0	8	3	3	4	0	0	10	175
8:30 AM	4	70	0	0	0	74	6	77	3	0	0	86	5	1	4	0	0	10	2	0	2	0	0	4	174
8:45 AM	0	65	4	0	0	69	7	57	3	0	0	67	3	1	3	0	0	7	0	0	1	0	0	1	144
Hourly Total	7	279	8	0	0	294	24	272	6	0	0	302	12	3	13	0	0	28	7	6	10	0	0	23	647
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	71	3	0	0	76	2	59	1	0	1	62	0	1	2	0	0	3	2	1	2	0	0	5	146
11:15 AM	0	60	2	0	0	62	7	76	2	0	0	85	1	3	2	0	0	6	2	1	2	0	0	5	158
11:30 AM	3	62	3	0	0	68	1	54	0	0	1	55	2	0	6	0	0	8	4	3	1	0	0	8	139
11:45 AM	2	53	2	0	0	57	5	58	3	0	0	66	2	1	6	0	0	9	6	0	0	0	0	6	138
Hourly Total	7	246	10	0	0	263	15	247	6	0	2	268	5	5	16	0	0	26	14	5	5	0	0	24	581
12:00 PM	3	60	2	0	0	65	2	57	1	0	0	60	0	1	6	0	0	7	0	0	5	0	0	5	137
12:15 PM	5	68	0	0	0	73	2	59	0	0	1	61	4	4	4	0	0	12	0	1	2	0	0	3	149
12:30 PM	1	51	1	0	0	53	4	82	1	0	0	87	0	0	2	0	0	2	2	1	1	0	0	4	146
12:45 PM	1	50	4	0	0	55	1	68	0	0	0	69	0	2	5	0	0	7	0	1	4	0	0	5	136
Hourly Total	10	229	7	0	0	246	9	266	2	0	1	277	4	7	17	0	0	28	2	3	12	0	0	17	568
1:00 PM	0	53	0	0	0	53	1	48	0	0	0	49	0	0	5	0	0	5	0	1	1	0	0	2	109
1:15 PM	2	72	3	0	0	77	2	61	2	0	0	65	1	1	2	0	0	4	5	1	2	0	0	8	154
1:30 PM	1	67	1	0	0	69	7	61	4	0	0	72	3	2	0	0	0	5	2	2	2	0	0	6	152
1:45 PM	3	57	0	0	0	60	0	89	2	0	0	91	0	3	4	0	0	7	0	1	4	0	0	5	163
Hourly Total	6	249	4	0	0	259	10	259	8	0	0	277	4	6	11	0	0	21	7	5	9	0	0	21	578
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	62	1	0	0	64	1	73	2	0	0	76	2	3	6	0	0	11	1	0	2	0	0	3	154
3:15 PM	3	86	0	0	0	89	1	75	1	0	0	77	0	4	0	0	0	4	2	0	6	0	0	8	178
3:30 PM	5	63	3	0	0	71	3	93	1	0	0	97	0	3	3	0	0	6	1	0	1	0	0	2	176
3:45 PM	5	80	2	0	0	87	2	88	1	0	0	91	1	6	5	0	0	12	4	1	5	0	0	10	200
Hourly Total	14	291	6	0	0	311	7	329	5	0	0	341	3	16	14	0	0	33	8	1	14	0	0	23	708
4:00 PM	4	84	2	0	0	90	4	83	5	0	0	92	4	4	4	0	0	12	1	0	6	0	0	7	201
4:15 PM	3	76	0	0	0	79	1	85	2	0	0	88	5	1	4	0	0	10	1	2	1	0	0	4	181
4:30 PM	7	87	3	0	0	97	3	91	0	0	0	94	1	7	2	0	0	10	2	2	1	0	0	5	206

4:45 PM	3	87	2	0	0	92	2	94	2	0	0	98	0	3	3	0	0	6	1	0	2	0	0	3	199
Hourly Total	17	334	7	0	0	358	10	353	9	0	0	372	10	15	13	0	0	38	5	4	10	0	0	19	787
5:00 PM	6	85	1	0	0	92	2	72	0	0	0	74	0	2	3	0	0	5	0	2	5	0	0	7	178
5:15 PM	4	71	3	0	0	78	5	108	4	0	0	117	2	5	3	0	0	10	2	2	0	0	0	4	209
5:30 PM	5	83	1	0	0	89	0	92	2	0	0	94	2	3	3	0	0	8	0	0	1	0	0	1	192
5:45 PM	3	68	2	0	0	73	1	61	1	0	0	63	0	2	3	0	0	5	1	3	3	0	0	7	148
Hourly Total	18	307	7	0	0	332	8	333	7	0	0	348	4	12	12	0	0	28	3	7	9	0	0	19	727
Grand Total	85	2259	51	0	0	2395	97	2307	47	0	3	2451	46	64	105	0	0	215	50	46	86	0	0	182	5243
Approach %	3.5	94.3	2.1	0.0	-	-	4.0	94.1	1.9	0.0	-	-	21.4	29.8	48.8	0.0	-	-	27.5	25.3	47.3	0.0	-	-	-
Total %	1.6	43.1	1.0	0.0	-	45.7	1.9	44.0	0.9	0.0	-	46.7	0.9	1.2	2.0	0.0	-	4.1	1.0	0.9	1.6	0.0	-	3.5	-
Motorcycles	0	6	0	0	-	6	0	5	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	15
% Motorcycles	0.0	0.3	0.0	-	-	0.3	0.0	0.2	0.0	-	-	0.2	0.0	6.3	0.0	-	-	1.9	0.0	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	80	1864	40	0	-	1984	53	1872	39	0	-	1964	33	54	69	0	-	156	40	42	82	0	-	164	4268
% Cars & Light Goods	94.1	82.5	78.4	-	-	82.8	54.6	81.1	83.0	-	-	80.1	71.7	84.4	65.7	-	-	72.6	80.0	91.3	95.3	-	-	90.1	81.4
Buses	2	8	1	0	-	11	0	3	2	0	-	5	1	1	1	0	-	3	5	0	1	0	-	6	25
% Buses	2.4	0.4	2.0	-	-	0.5	0.0	0.1	4.3	-	-	0.2	2.2	1.6	1.0	-	-	1.4	10.0	0.0	1.2	-	-	3.3	0.5
Single-Unit Trucks	2	149	2	0	-	153	11	152	5	0	-	168	2	1	10	0	-	13	5	0	3	0	-	8	342
% Single-Unit Trucks	2.4	6.6	3.9	-	-	6.4	11.3	6.6	10.6	-	-	6.9	4.3	1.6	9.5	-	-	6.0	10.0	0.0	3.5	-	-	4.4	6.5
Articulated Trucks	1	232	8	0	-	241	33	275	1	0	-	309	10	0	24	0	-	34	0	3	0	0	-	3	587
% Articulated Trucks	1.2	10.3	15.7	-	-	10.1	34.0	11.9	2.1	-	-	12.6	21.7	0.0	22.9	-	-	15.8	0.0	6.5	0.0	-	-	1.6	11.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	4	1	0	-	5	0	1	0	0	-	1	6
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	6.3	1.0	-	-	2.3	0.0	2.2	0.0	-	-	0.5	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	66.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Mississauga Road Northbound						Mississauga Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 AM	3	99	0	0	0	102	3	67	1	0	0	71	1	0	3	0	0	4	0	3	4	0	0	7	184
8:00 AM	1	66	1	0	0	68	5	70	0	0	0	75	0	1	2	0	0	3	2	3	3	0	0	8	154
8:15 AM	2	78	3	0	0	83	6	68	0	0	0	74	4	0	4	0	0	8	3	3	4	0	0	10	175
8:30 AM	4	70	0	0	0	74	6	77	3	0	0	86	5	1	4	0	0	10	2	0	2	0	0	4	174
Total	10	313	4	0	0	327	20	282	4	0	0	306	10	2	13	0	0	25	7	9	13	0	0	29	687
Approach %	3.1	95.7	1.2	0.0	-	-	6.5	92.2	1.3	0.0	-	-	40.0	8.0	52.0	0.0	-	-	24.1	31.0	44.8	0.0	-	-	-
Total %	1.5	45.6	0.6	0.0	-	47.6	2.9	41.0	0.6	0.0	-	44.5	1.5	0.3	1.9	0.0	-	3.6	1.0	1.3	1.9	0.0	-	4.2	-
PHF	0.625	0.790	0.333	0.000	-	0.801	0.833	0.916	0.333	0.000	-	0.890	0.500	0.500	0.813	0.000	-	0.625	0.583	0.750	0.813	0.000	-	0.725	0.933
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	8	248	1	0	-	257	9	237	4	0	-	250	5	2	9	0	-	16	5	9	12	0	-	26	549
% Cars & Light Goods	80.0	79.2	25.0	-	-	78.6	45.0	84.0	100.0	-	-	81.7	50.0	100.0	69.2	-	-	64.0	71.4	100.0	92.3	-	-	89.7	79.9
Buses	1	3	1	0	-	5	0	1	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	7
% Buses	10.0	1.0	25.0	-	-	1.5	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	14.3	0.0	0.0	-	-	3.4	1.0
Single-Unit Trucks	1	26	1	0	-	28	2	12	0	0	-	14	2	0	1	0	-	3	1	0	1	0	-	2	47
% Single-Unit Trucks	10.0	8.3	25.0	-	-	8.6	10.0	4.3	0.0	-	-	4.6	20.0	0.0	7.7	-	-	12.0	14.3	0.0	7.7	-	-	6.9	6.8
Articulated Trucks	0	36	1	0	-	37	9	32	0	0	-	41	3	0	3	0	-	6	0	0	0	0	-	0	84
% Articulated Trucks	0.0	11.5	25.0	-	-	11.3	45.0	11.3	0.0	-	-	13.4	30.0	0.0	23.1	-	-	24.0	0.0	0.0	0.0	-	-	0.0	12.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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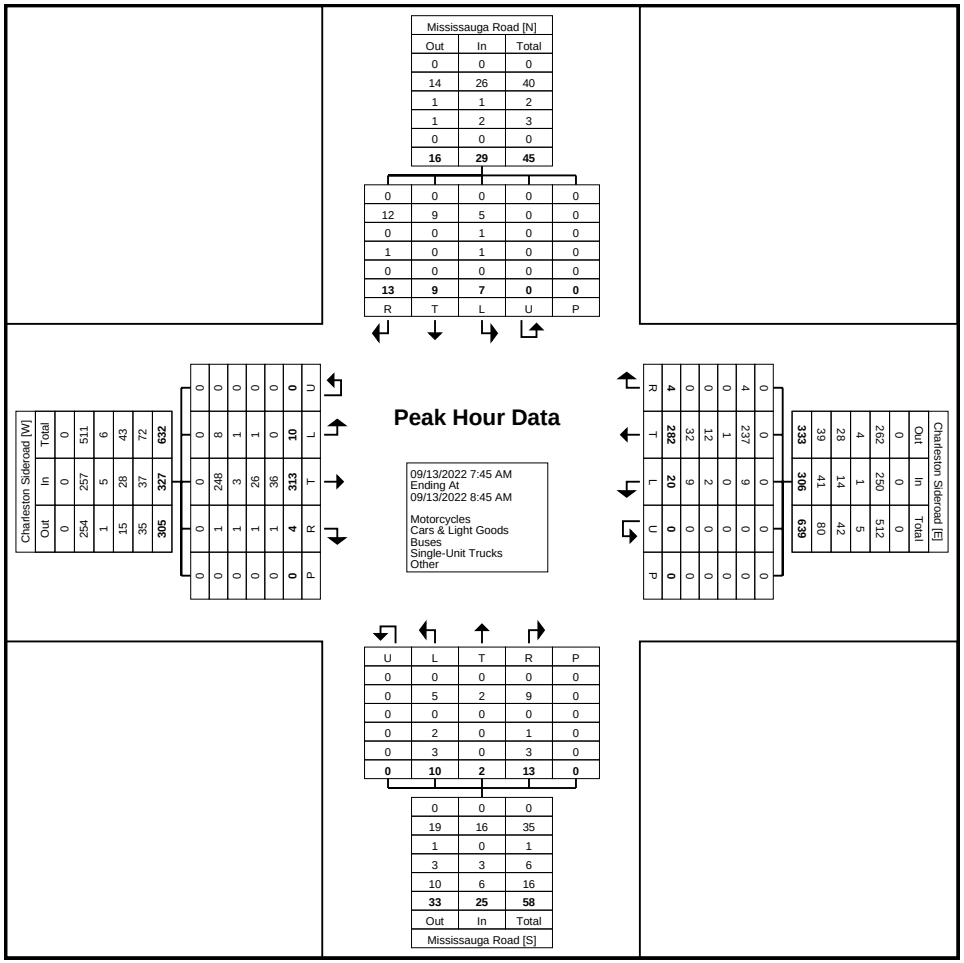
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Mississauga Road Northbound						Mississauga Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	2	71	3	0	0	76	2	59	1	0	1	62	0	1	2	0	0	3	2	1	2	0	0	5	146
11:15 AM	0	60	2	0	0	62	7	76	2	0	0	85	1	3	2	0	0	6	2	1	2	0	0	5	158
11:30 AM	3	62	3	0	0	68	1	54	0	0	1	55	2	0	6	0	0	8	4	3	1	0	0	8	139
11:45 AM	2	53	2	0	0	57	5	58	3	0	0	66	2	1	6	0	0	9	6	0	0	0	0	6	138
Total	7	246	10	0	0	263	15	247	6	0	2	268	5	5	16	0	0	26	14	5	5	0	0	24	581
Approach %	2.7	93.5	3.8	0.0	-	-	5.6	92.2	2.2	0.0	-	-	19.2	19.2	61.5	0.0	-	-	58.3	20.8	20.8	0.0	-	-	-
Total %	1.2	42.3	1.7	0.0	-	45.3	2.6	42.5	1.0	0.0	-	46.1	0.9	0.9	2.8	0.0	-	4.5	2.4	0.9	0.9	0.0	-	4.1	-
PHF	0.583	0.866	0.833	0.000	-	0.865	0.536	0.813	0.500	0.000	-	0.788	0.625	0.417	0.667	0.000	-	0.722	0.583	0.417	0.625	0.000	-	0.750	0.919
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	0.0	20.0	0.0	-	-	3.8	0.0	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	6	193	8	0	-	207	5	188	6	0	-	199	3	3	9	0	-	15	12	2	5	0	-	19	440
% Cars & Light Goods	85.7	78.5	80.0	-	-	78.7	33.3	76.1	100.0	-	-	74.3	60.0	60.0	56.3	-	-	57.7	85.7	40.0	100.0	-	-	79.2	75.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	19	0	0	-	20	3	23	0	0	-	26	0	0	2	0	-	2	2	0	0	0	-	2	50
% Single-Unit Trucks	14.3	7.7	0.0	-	-	7.6	20.0	9.3	0.0	-	-	9.7	0.0	0.0	12.5	-	-	7.7	14.3	0.0	0.0	-	-	8.3	8.6
Articulated Trucks	0	34	2	0	-	36	7	35	0	0	-	42	2	0	5	0	-	7	0	3	0	0	-	3	88
% Articulated Trucks	0.0	13.8	20.0	-	-	13.7	46.7	14.2	0.0	-	-	15.7	40.0	0.0	31.3	-	-	26.9	0.0	60.0	0.0	-	-	12.5	15.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	20.0	0.0	-	-	3.8	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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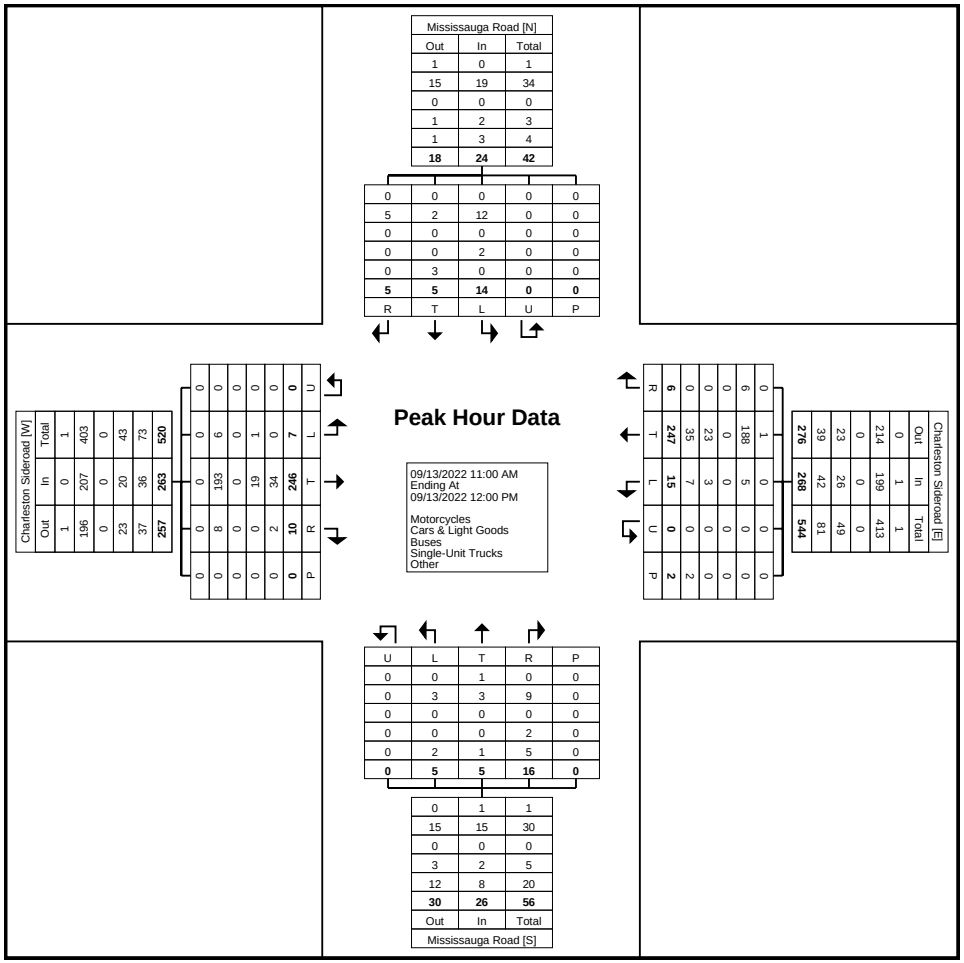


Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022

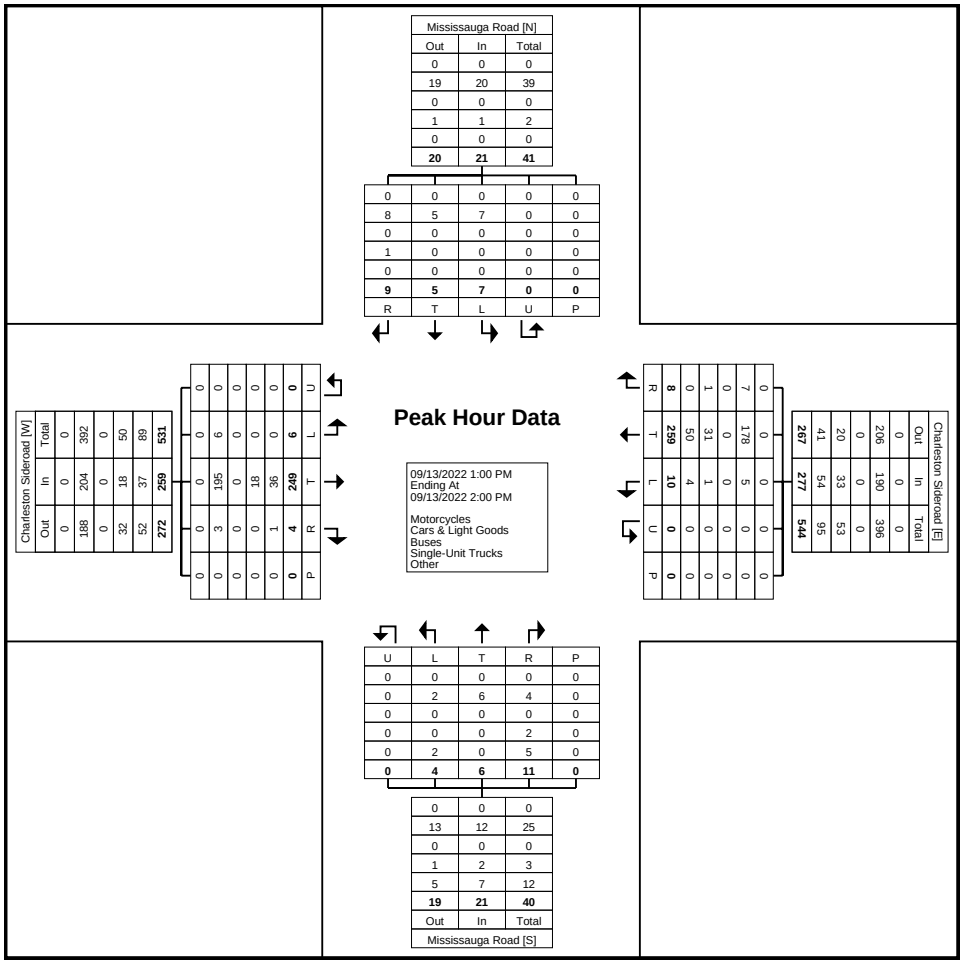
Turning Movement Peak Hour Data (1:00 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Mississauga Road Northbound						Mississauga Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
1:00 PM	0	53	0	0	0	53	1	48	0	0	0	49	0	0	5	0	0	5	0	1	1	0	0	2	109
1:15 PM	2	72	3	0	0	77	2	61	2	0	0	65	1	1	2	0	0	4	5	1	2	0	0	8	154
1:30 PM	1	67	1	0	0	69	7	61	4	0	0	72	3	2	0	0	0	5	2	2	2	0	0	6	152
1:45 PM	3	57	0	0	0	60	0	89	2	0	0	91	0	3	4	0	0	7	0	1	4	0	0	5	163
Total	6	249	4	0	0	259	10	259	8	0	0	277	4	6	11	0	0	21	7	5	9	0	0	21	578
Approach %	2.3	96.1	1.5	0.0	-	-	3.6	93.5	2.9	0.0	-	-	19.0	28.6	52.4	0.0	-	-	33.3	23.8	42.9	0.0	-	-	-
Total %	1.0	43.1	0.7	0.0	-	44.8	1.7	44.8	1.4	0.0	-	47.9	0.7	1.0	1.9	0.0	-	3.6	1.2	0.9	1.6	0.0	-	3.6	-
PHF	0.500	0.865	0.333	0.000	-	0.841	0.357	0.728	0.500	0.000	-	0.761	0.333	0.500	0.550	0.000	-	0.750	0.350	0.625	0.563	0.000	-	0.656	0.887
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	6	195	3	0	-	204	5	178	7	0	-	190	2	6	4	0	-	12	7	5	8	0	-	20	426
% Cars & Light Goods	100.0	78.3	75.0	-	-	78.8	50.0	68.7	87.5	-	-	68.6	50.0	100.0	36.4	-	-	57.1	100.0	100.0	88.9	-	-	95.2	73.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	18	0	0	-	18	1	31	1	0	-	33	0	0	2	0	-	2	0	0	1	0	-	1	54
% Single-Unit Trucks	0.0	7.2	0.0	-	-	6.9	10.0	12.0	12.5	-	-	11.9	0.0	0.0	18.2	-	-	9.5	0.0	0.0	11.1	-	-	4.8	9.3
Articulated Trucks	0	36	1	0	-	37	4	50	0	0	-	54	2	0	5	0	-	7	0	0	0	0	-	0	98
% Articulated Trucks	0.0	14.5	25.0	-	-	14.3	40.0	19.3	0.0	-	-	19.5	50.0	0.0	45.5	-	-	33.3	0.0	0.0	0.0	-	-	0.0	17.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (1:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Mississauga Road Northbound						Mississauga Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:30 PM	7	87	3	0	0	97	3	91	0	0	0	94	1	7	2	0	0	10	2	2	1	0	0	5	206
4:45 PM	3	87	2	0	0	92	2	94	2	0	0	98	0	3	3	0	0	6	1	0	2	0	0	3	199
5:00 PM	6	85	1	0	0	92	2	72	0	0	0	74	0	2	3	0	0	5	0	2	5	0	0	7	178
5:15 PM	4	71	3	0	0	78	5	108	4	0	0	117	2	5	3	0	0	10	2	2	0	0	0	4	209
Total	20	330	9	0	0	359	12	365	6	0	0	383	3	17	11	0	0	31	5	6	8	0	0	19	792
Approach %	5.6	91.9	2.5	0.0	-	-	3.1	95.3	1.6	0.0	-	-	9.7	54.8	35.5	0.0	-	-	26.3	31.6	42.1	0.0	-	-	-
Total %	2.5	41.7	1.1	0.0	-	45.3	1.5	46.1	0.8	0.0	-	48.4	0.4	2.1	1.4	0.0	-	3.9	0.6	0.8	1.0	0.0	-	2.4	-
PHF	0.714	0.948	0.750	0.000	-	0.925	0.600	0.845	0.375	0.000	-	0.818	0.375	0.607	0.917	0.000	-	0.775	0.625	0.750	0.400	0.000	-	0.679	0.947
Motorcycles	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Motorcycles	0.0	0.6	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	19	288	8	0	-	315	11	348	4	0	-	363	2	17	10	0	-	29	4	6	8	0	-	18	725
% Cars & Light Goods	95.0	87.3	88.9	-	-	87.7	91.7	95.3	66.7	-	-	94.8	66.7	100.0	90.9	-	-	93.5	80.0	100.0	100.0	-	-	94.7	91.5
Buses	1	2	0	0	-	3	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	4
% Buses	5.0	0.6	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	33.3	0.0	0.0	-	-	3.2	0.0	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	20	0	0	-	20	1	2	1	0	-	4	0	0	0	0	-	0	1	0	0	0	-	1	25
% Single-Unit Trucks	0.0	6.1	0.0	-	-	5.6	8.3	0.5	16.7	-	-	1.0	0.0	0.0	0.0	-	-	0.0	20.0	0.0	0.0	-	-	5.3	3.2
Articulated Trucks	0	18	1	0	-	19	0	15	1	0	-	16	0	0	1	0	-	1	0	0	0	0	-	0	36
% Articulated Trucks	0.0	5.5	11.1	-	-	5.3	0.0	4.1	16.7	-	-	4.2	0.0	0.0	9.1	-	-	3.2	0.0	0.0	0.0	-	-	0.0	4.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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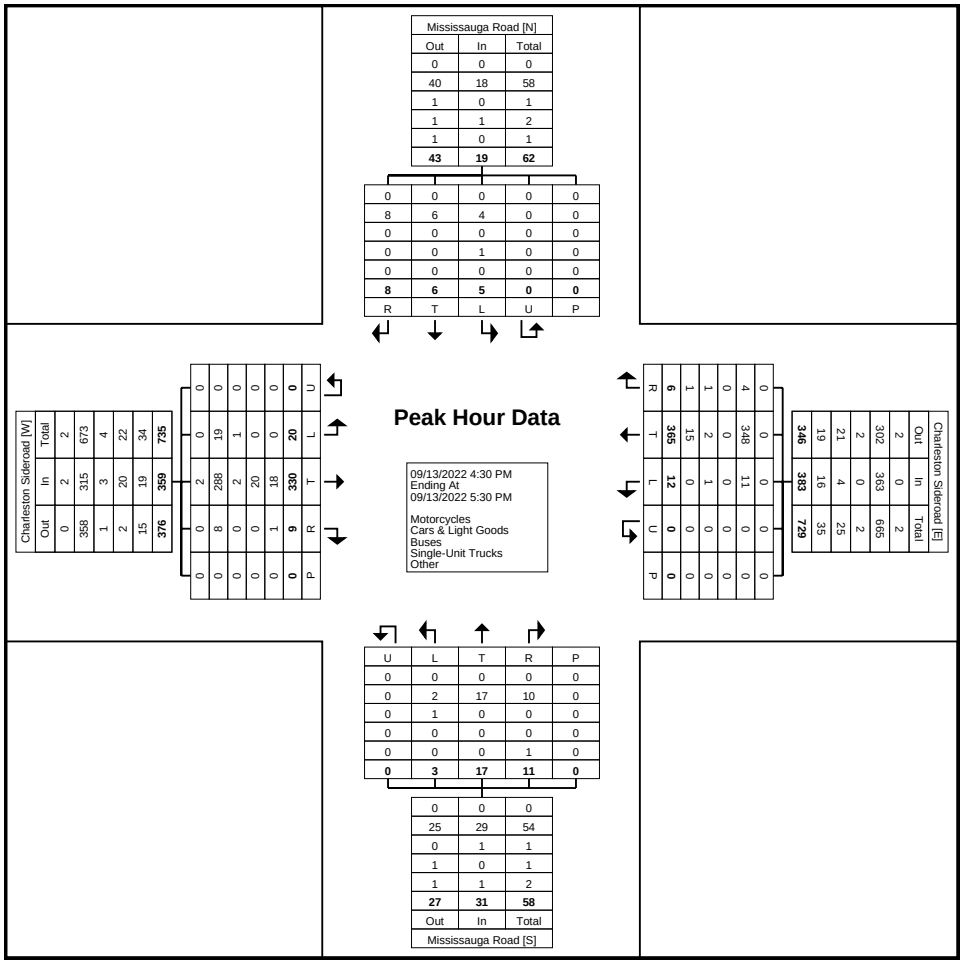
Count Name: Charleston Sideroad & Mississauga Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (4:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Data

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Shaws Creek Road Northbound						Shaws Creek Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	3	63	1	0	0	67	1	58	0	0	0	59	1	2	1	0	0	4	4	8	3	0	0	15	145
7:15 AM	3	76	1	0	0	80	2	53	1	0	0	56	1	3	4	0	0	8	3	20	6	0	0	29	173
7:30 AM	3	71	1	1	0	76	6	68	0	0	0	74	0	3	0	0	0	3	5	15	5	0	0	25	178
7:45 AM	3	92	4	0	0	99	3	66	0	0	0	69	0	2	5	0	0	7	2	16	6	0	0	24	199
Hourly Total	12	302	7	1	0	322	12	245	1	0	0	258	2	10	10	0	0	22	14	59	20	0	0	93	695
8:00 AM	1	64	0	0	0	65	4	65	2	0	0	71	1	2	3	0	0	6	0	12	5	0	0	17	159
8:15 AM	3	78	1	0	0	82	4	67	1	0	0	72	0	3	1	0	0	4	2	11	1	0	0	14	172
8:30 AM	2	62	0	0	0	64	4	76	1	0	0	81	4	2	6	0	0	12	1	3	3	0	0	7	164
8:45 AM	2	68	1	0	0	71	2	68	0	0	0	70	0	2	4	0	0	6	4	4	3	0	0	11	158
Hourly Total	8	272	2	0	0	282	14	276	4	0	0	294	5	9	14	0	0	28	7	30	12	0	0	49	653
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	73	1	0	0	74	3	55	1	0	0	59	0	2	4	0	0	6	2	5	1	0	0	8	147
11:15 AM	4	60	3	0	0	67	3	75	0	0	0	78	1	6	1	0	0	8	3	4	0	0	0	7	160
11:30 AM	1	59	1	0	0	61	0	56	3	0	0	59	1	3	1	0	0	5	0	4	5	0	0	9	134
11:45 AM	2	63	0	0	0	65	0	61	0	0	0	61	1	1	2	0	0	4	1	0	1	0	0	2	132
Hourly Total	7	255	5	0	0	267	6	247	4	0	0	257	3	12	8	0	0	23	6	13	7	0	0	26	573
12:00 PM	2	58	3	0	0	63	0	65	1	0	0	66	0	3	0	0	0	3	1	0	4	0	0	5	137
12:15 PM	5	71	1	0	0	77	2	53	4	0	0	59	0	3	4	0	0	7	2	2	2	0	0	6	149
12:30 PM	5	45	1	0	0	51	1	77	0	0	0	78	0	3	0	0	0	3	0	3	5	0	0	8	140
12:45 PM	1	52	0	0	0	53	1	69	3	0	0	73	0	0	3	0	0	3	2	2	1	0	0	5	134
Hourly Total	13	226	5	0	0	244	4	264	8	0	0	276	0	9	7	0	0	16	5	7	12	0	0	24	560
1:00 PM	5	52	2	0	0	59	2	58	1	0	0	61	0	3	4	0	0	7	1	3	1	0	0	5	132
1:15 PM	2	72	1	0	0	75	1	56	2	0	0	59	0	2	6	0	0	8	1	1	1	0	0	3	145
1:30 PM	2	62	0	0	0	64	0	67	3	0	0	70	0	2	1	0	0	3	3	1	2	0	0	6	143
1:45 PM	1	51	3	0	0	55	3	89	0	0	0	92	1	7	3	0	0	11	2	0	0	0	0	2	160
Hourly Total	10	237	6	0	0	253	6	270	6	0	0	282	1	14	14	0	0	29	7	5	4	0	0	16	580
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	65	0	0	0	69	2	68	2	0	0	72	2	8	1	0	0	11	0	0	3	0	0	3	155
3:15 PM	9	76	2	0	0	87	1	82	2	0	0	85	4	11	3	0	0	18	3	7	2	0	0	12	202
3:30 PM	4	75	3	0	0	82	0	85	1	0	0	86	1	14	2	0	0	17	2	3	3	0	0	8	193
3:45 PM	3	75	0	0	0	78	2	88	3	0	0	93	3	10	2	0	0	15	1	6	4	0	0	11	197
Hourly Total	20	291	5	0	0	316	5	323	8	0	0	336	10	43	8	0	0	61	6	16	12	0	0	34	747
4:00 PM	5	87	2	0	0	94	7	81	1	0	0	89	2	10	4	0	0	16	0	4	2	0	0	6	205
4:15 PM	7	82	1	0	0	90	5	88	3	0	0	96	1	13	2	0	0	16	0	8	5	0	0	13	215
4:30 PM	5	87	2	0	0	94	2	85	5	0	0	92	0	17	3	0	0	20	3	2	4	0	0	9	215

4:45 PM	5	86	0	0	0	91	0	94	3	0	0	97	0	11	2	0	0	13	2	6	4	0	0	12	213
Hourly Total	22	342	5	0	0	369	14	348	12	0	0	374	3	51	11	0	0	65	5	20	15	0	0	40	848
5:00 PM	11	84	0	0	0	95	1	79	2	0	0	82	3	17	5	0	0	25	0	0	3	0	0	3	205
5:15 PM	3	75	3	0	0	81	2	101	5	0	0	108	5	11	5	0	0	21	1	5	3	0	0	9	219
5:30 PM	6	83	1	0	0	90	2	82	4	0	0	88	3	11	3	0	0	17	3	4	8	0	0	15	210
5:45 PM	4	71	2	0	0	77	1	69	2	0	0	72	2	17	5	0	0	24	1	3	3	0	0	7	180
Hourly Total	24	313	6	0	0	343	6	331	13	0	0	350	13	56	18	0	0	87	5	12	17	0	0	34	814
Grand Total	116	2238	41	1	0	2396	67	2304	56	0	0	2427	37	204	90	0	0	331	55	162	99	0	0	316	5470
Approach %	4.8	93.4	1.7	0.0	-	-	2.8	94.9	2.3	0.0	-	-	11.2	61.6	27.2	0.0	-	-	17.4	51.3	31.3	0.0	-	-	-
Total %	2.1	40.9	0.7	0.0	-	43.8	1.2	42.1	1.0	0.0	-	44.4	0.7	3.7	1.6	0.0	-	6.1	1.0	3.0	1.8	0.0	-	5.8	-
Motorcycles	5	6	1	0	-	12	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	15
% Motorcycles	4.3	0.3	2.4	0.0	-	0.5	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	103	1844	37	1	-	1985	61	1869	49	0	-	1979	34	199	82	0	-	315	50	151	96	0	-	297	4576
% Cars & Light Goods	88.8	82.4	90.2	100.0	-	82.8	91.0	81.1	87.5	-	-	81.5	91.9	97.5	91.1	-	-	95.2	90.9	93.2	97.0	-	-	94.0	83.7
Buses	4	2	0	0	-	6	2	1	2	0	-	5	0	4	6	0	-	10	3	2	2	0	-	7	28
% Buses	3.4	0.1	0.0	0.0	-	0.3	3.0	0.0	3.6	-	-	0.2	0.0	2.0	6.7	-	-	3.0	5.5	1.2	2.0	-	-	2.2	0.5
Single-Unit Trucks	4	150	3	0	-	157	4	147	5	0	-	156	3	1	2	0	-	6	2	9	1	0	-	12	331
% Single-Unit Trucks	3.4	6.7	7.3	0.0	-	6.6	6.0	6.4	8.9	-	-	6.4	8.1	0.5	2.2	-	-	1.8	3.6	5.6	1.0	-	-	3.8	6.1
Articulated Trucks	0	236	0	0	-	236	0	284	0	0	-	284	0	0	0	0	-	0	0	0	0	0	-	0	520
% Articulated Trucks	0.0	10.5	0.0	0.0	-	9.8	0.0	12.3	0.0	-	-	11.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	9.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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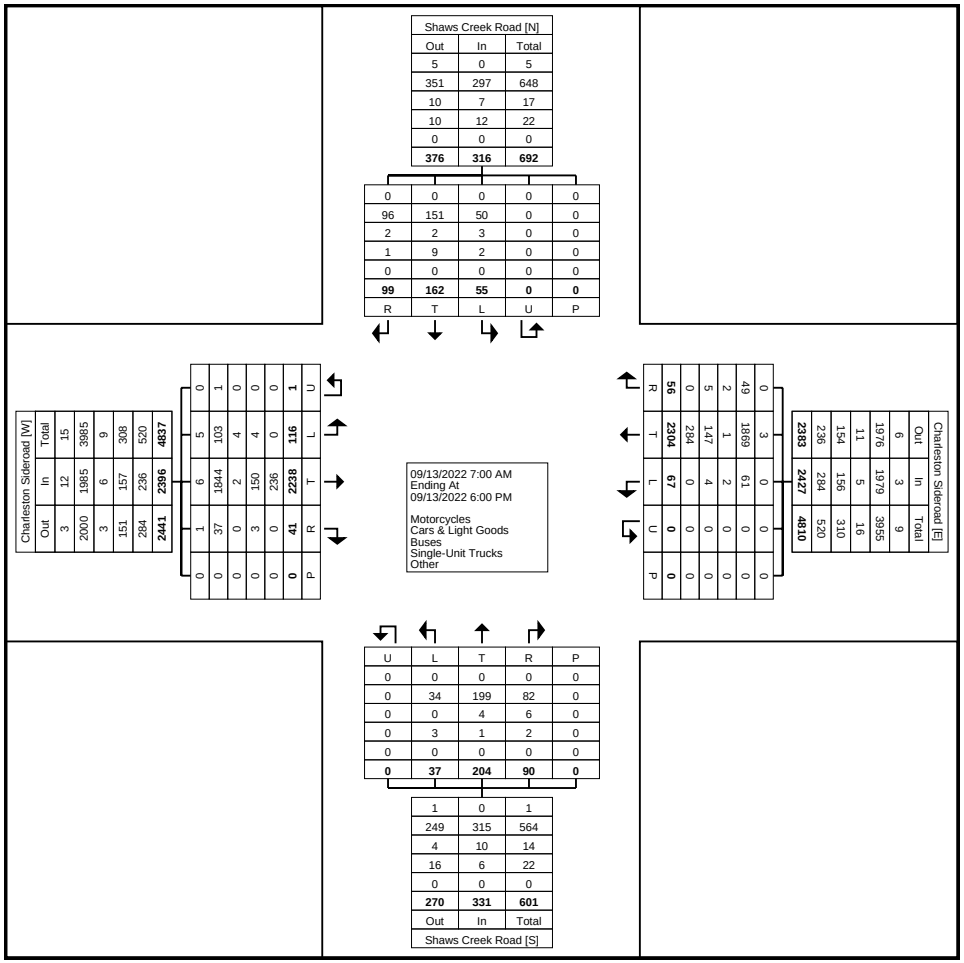
Start Date: 09/13/2022



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022

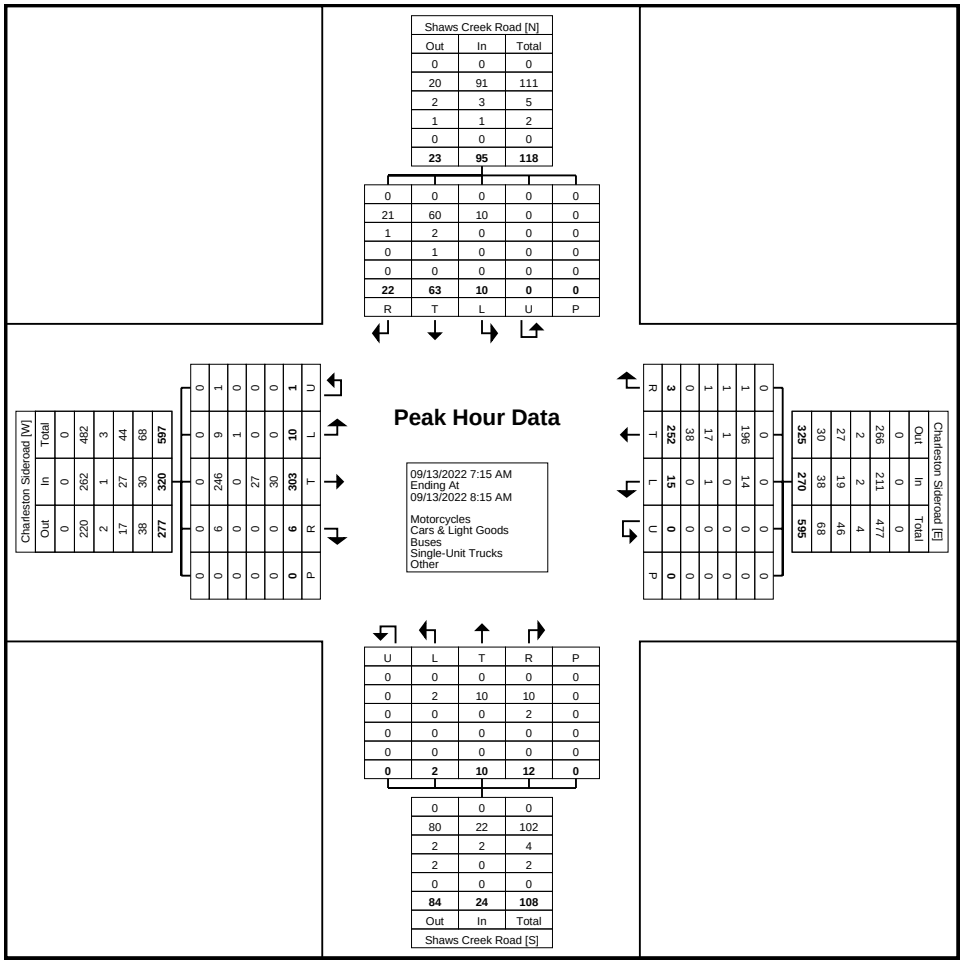
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Shaws Creek Road Northbound						Shaws Creek Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:15 AM	3	76	1	0	0	80	2	53	1	0	0	56	1	3	4	0	0	8	3	20	6	0	0	29	173
7:30 AM	3	71	1	1	0	76	6	68	0	0	0	74	0	3	0	0	0	3	5	15	5	0	0	25	178
7:45 AM	3	92	4	0	0	99	3	66	0	0	0	69	0	2	5	0	0	7	2	16	6	0	0	24	199
8:00 AM	1	64	0	0	0	65	4	65	2	0	0	71	1	2	3	0	0	6	0	12	5	0	0	17	159
Total	10	303	6	1	0	320	15	252	3	0	0	270	2	10	12	0	0	24	10	63	22	0	0	95	709
Approach %	3.1	94.7	1.9	0.3	-	-	5.6	93.3	1.1	0.0	-	-	8.3	41.7	50.0	0.0	-	-	10.5	66.3	23.2	0.0	-	-	-
Total %	1.4	42.7	0.8	0.1	-	45.1	2.1	35.5	0.4	0.0	-	38.1	0.3	1.4	1.7	0.0	-	3.4	1.4	8.9	3.1	0.0	-	13.4	-
PHF	0.833	0.823	0.375	0.250	-	0.808	0.625	0.926	0.375	0.000	-	0.912	0.500	0.833	0.600	0.000	-	0.750	0.500	0.788	0.917	0.000	-	0.819	0.891
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	9	246	6	1	-	262	14	196	1	0	-	211	2	10	10	0	-	22	10	60	21	0	-	91	586
% Cars & Light Goods	90.0	81.2	100.0	100.0	-	81.9	93.3	77.8	33.3	-	-	78.1	100.0	100.0	83.3	-	-	91.7	100.0	95.2	95.5	-	-	95.8	82.7
Buses	1	0	0	0	-	1	0	1	1	0	-	2	0	0	2	0	-	2	0	2	1	0	-	3	8
% Buses	10.0	0.0	0.0	0.0	-	0.3	0.0	0.4	33.3	-	-	0.7	0.0	0.0	16.7	-	-	8.3	0.0	3.2	4.5	-	-	3.2	1.1
Single-Unit Trucks	0	27	0	0	-	27	1	17	1	0	-	19	0	0	0	0	-	0	0	1	0	0	-	1	47
% Single-Unit Trucks	0.0	8.9	0.0	0.0	-	8.4	6.7	6.7	33.3	-	-	7.0	0.0	0.0	0.0	-	-	0.0	0.0	1.6	0.0	-	-	1.1	6.6
Articulated Trucks	0	30	0	0	-	30	0	38	0	0	-	38	0	0	0	0	-	0	0	0	0	0	-	0	68
% Articulated Trucks	0.0	9.9	0.0	0.0	-	9.4	0.0	15.1	0.0	-	-	14.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	9.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (7:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022

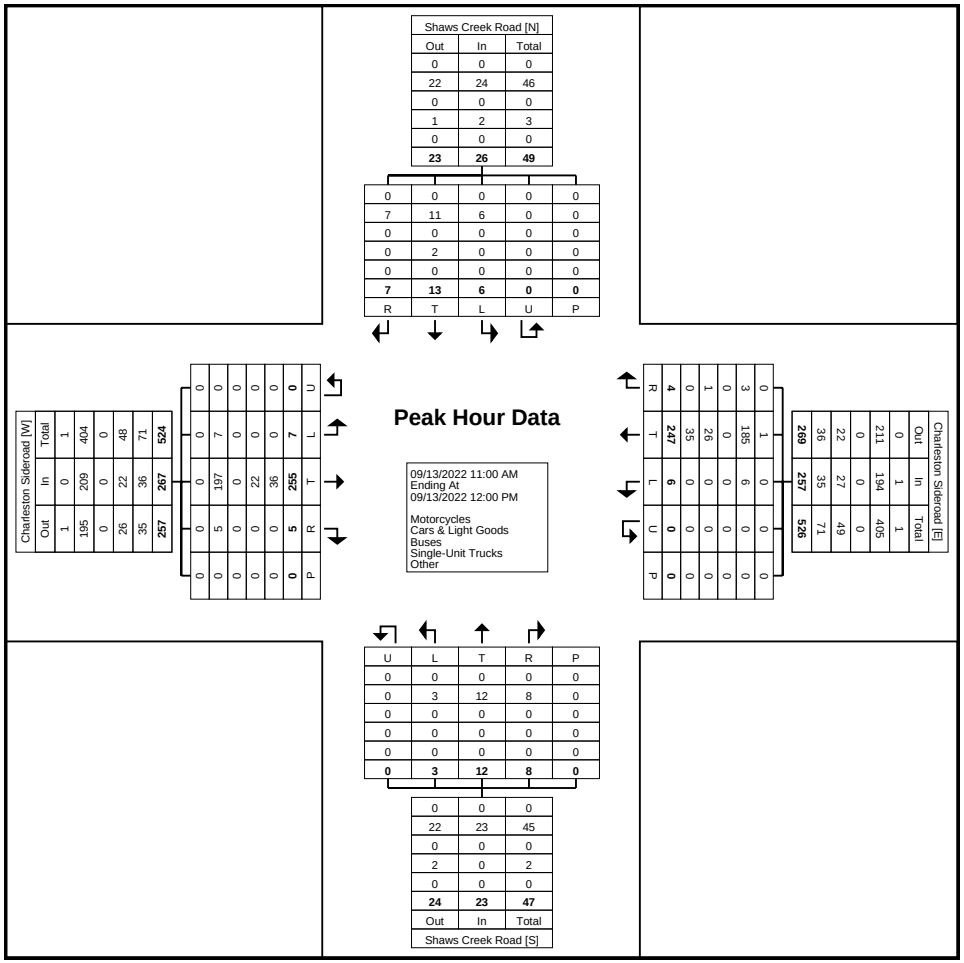
Turning Movement Peak Hour Data (11:00 AM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Shaws Creek Road Northbound						Shaws Creek Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	0	73	1	0	0	74	3	55	1	0	0	59	0	2	4	0	0	6	2	5	1	0	0	8	147
11:15 AM	4	60	3	0	0	67	3	75	0	0	0	78	1	6	1	0	0	8	3	4	0	0	0	7	160
11:30 AM	1	59	1	0	0	61	0	56	3	0	0	59	1	3	1	0	0	5	0	4	5	0	0	9	134
11:45 AM	2	63	0	0	0	65	0	61	0	0	0	61	1	1	2	0	0	4	1	0	1	0	0	2	132
Total	7	255	5	0	0	267	6	247	4	0	0	257	3	12	8	0	0	23	6	13	7	0	0	26	573
Approach %	2.6	95.5	1.9	0.0	-	-	2.3	96.1	1.6	0.0	-	-	13.0	52.2	34.8	0.0	-	-	23.1	50.0	26.9	0.0	-	-	-
Total %	1.2	44.5	0.9	0.0	-	46.6	1.0	43.1	0.7	0.0	-	44.9	0.5	2.1	1.4	0.0	-	4.0	1.0	2.3	1.2	0.0	-	4.5	-
PHF	0.438	0.873	0.417	0.000	-	0.902	0.500	0.823	0.333	0.000	-	0.824	0.750	0.500	0.500	0.000	-	0.719	0.500	0.650	0.350	0.000	-	0.722	0.895
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	7	197	5	0	-	209	6	185	3	0	-	194	3	12	8	0	-	23	6	11	7	0	-	24	450
% Cars & Light Goods	100.0	77.3	100.0	-	-	78.3	100.0	74.9	75.0	-	-	75.5	100.0	100.0	100.0	-	-	100.0	100.0	84.6	100.0	-	-	92.3	78.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	22	0	0	-	22	0	26	1	0	-	27	0	0	0	0	-	0	0	2	0	0	-	2	51
% Single-Unit Trucks	0.0	8.6	0.0	-	-	8.2	0.0	10.5	25.0	-	-	10.5	0.0	0.0	0.0	-	-	0.0	0.0	15.4	0.0	-	-	7.7	8.9
Articulated Trucks	0	36	0	0	-	36	0	35	0	0	-	35	0	0	0	0	-	0	0	0	0	0	-	0	71
% Articulated Trucks	0.0	14.1	0.0	-	-	13.5	0.0	14.2	0.0	-	-	13.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	12.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022

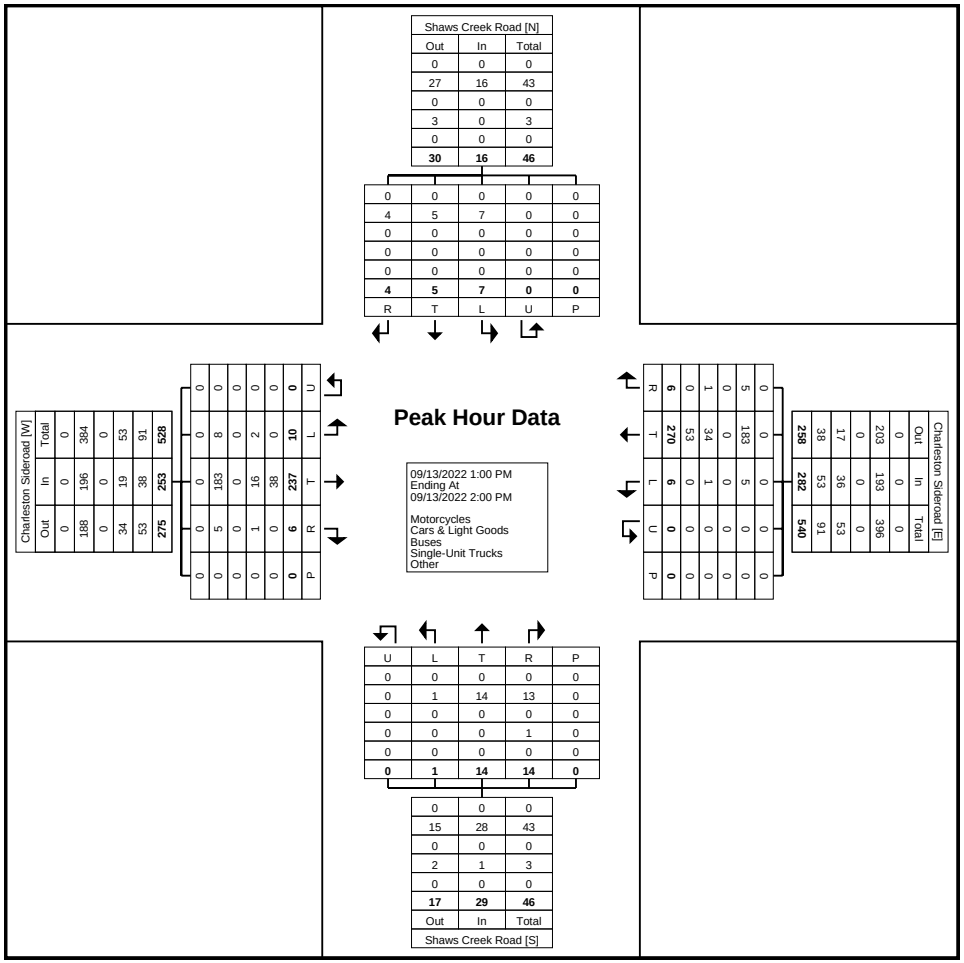
Turning Movement Peak Hour Data (1:00 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Shaws Creek Road Northbound						Shaws Creek Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
1:00 PM	5	52	2	0	0	59	2	58	1	0	0	61	0	3	4	0	0	7	1	3	1	0	0	5	132
1:15 PM	2	72	1	0	0	75	1	56	2	0	0	59	0	2	6	0	0	8	1	1	1	0	0	3	145
1:30 PM	2	62	0	0	0	64	0	67	3	0	0	70	0	2	1	0	0	3	3	1	2	0	0	6	143
1:45 PM	1	51	3	0	0	55	3	89	0	0	0	92	1	7	3	0	0	11	2	0	0	0	0	2	160
Total	10	237	6	0	0	253	6	270	6	0	0	282	1	14	14	0	0	29	7	5	4	0	0	16	580
Approach %	4.0	93.7	2.4	0.0	-	-	2.1	95.7	2.1	0.0	-	-	3.4	48.3	48.3	0.0	-	-	43.8	31.3	25.0	0.0	-	-	-
Total %	1.7	40.9	1.0	0.0	-	43.6	1.0	46.6	1.0	0.0	-	48.6	0.2	2.4	2.4	0.0	-	5.0	1.2	0.9	0.7	0.0	-	2.8	-
PHF	0.500	0.823	0.500	0.000	-	0.843	0.500	0.758	0.500	0.000	-	0.766	0.250	0.500	0.583	0.000	-	0.659	0.583	0.417	0.500	0.000	-	0.667	0.906
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	8	183	5	0	-	196	5	183	5	0	-	193	1	14	13	0	-	28	7	5	4	0	-	16	433
% Cars & Light Goods	80.0	77.2	83.3	-	-	77.5	83.3	67.8	83.3	-	-	68.4	100.0	100.0	92.9	-	-	96.6	100.0	100.0	100.0	-	-	100.0	74.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	2	16	1	0	-	19	1	34	1	0	-	36	0	0	1	0	-	1	0	0	0	0	-	0	56
% Single-Unit Trucks	20.0	6.8	16.7	-	-	7.5	16.7	12.6	16.7	-	-	12.8	0.0	0.0	7.1	-	-	3.4	0.0	0.0	0.0	-	-	0.0	9.7
Articulated Trucks	0	38	0	0	-	38	0	53	0	0	-	53	0	0	0	0	-	0	0	0	0	0	-	0	91
% Articulated Trucks	0.0	16.0	0.0	-	-	15.0	0.0	19.6	0.0	-	-	18.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	15.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022



Turning Movement Peak Hour Data Plot (1:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 amakarewicz@ptsl.com

Count Name: Charleston Sideroad & Shaws Creek Road
Site Code: 220397
Start Date: 09/13/2022

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Charleston Sideroad Eastbound						Charleston Sideroad Westbound						Shaws Creek Road Northbound						Shaws Creek Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:30 PM	5	87	2	0	0	94	2	85	5	0	0	92	0	17	3	0	0	20	3	2	4	0	0	9	215
4:45 PM	5	86	0	0	0	91	0	94	3	0	0	97	0	11	2	0	0	13	2	6	4	0	0	12	213
5:00 PM	11	84	0	0	0	95	1	79	2	0	0	82	3	17	5	0	0	25	0	0	3	0	0	3	205
5:15 PM	3	75	3	0	0	81	2	101	5	0	0	108	5	11	5	0	0	21	1	5	3	0	0	9	219
Total	24	332	5	0	0	361	5	359	15	0	0	379	8	56	15	0	0	79	6	13	14	0	0	33	852
Approach %	6.6	92.0	1.4	0.0	-	-	1.3	94.7	4.0	0.0	-	-	10.1	70.9	19.0	0.0	-	-	18.2	39.4	42.4	0.0	-	-	-
Total %	2.8	39.0	0.6	0.0	-	42.4	0.6	42.1	1.8	0.0	-	44.5	0.9	6.6	1.8	0.0	-	9.3	0.7	1.5	1.6	0.0	-	3.9	-
PHF	0.545	0.954	0.417	0.000	-	0.950	0.625	0.889	0.750	0.000	-	0.877	0.400	0.824	0.750	0.000	-	0.790	0.500	0.542	0.875	0.000	-	0.688	0.973
Motorcycles	4	2	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	6
% Motorcycles	16.7	0.6	0.0	-	-	1.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Cars & Light Goods	20	291	5	0	-	316	5	342	14	0	-	361	7	55	14	0	-	76	4	12	14	0	-	30	783
% Cars & Light Goods	83.3	87.7	100.0	-	-	87.5	100.0	95.3	93.3	-	-	95.3	87.5	98.2	93.3	-	-	96.2	66.7	92.3	100.0	-	-	90.9	91.9
Buses	0	2	0	0	-	2	0	0	1	0	-	1	0	1	0	0	-	1	1	0	0	0	-	1	5
% Buses	0.0	0.6	0.0	-	-	0.6	0.0	0.0	6.7	-	-	0.3	0.0	1.8	0.0	-	-	1.3	16.7	0.0	0.0	-	-	3.0	0.6
Single-Unit Trucks	0	17	0	0	-	17	0	2	0	0	-	2	1	0	1	0	-	2	1	1	0	0	-	2	23
% Single-Unit Trucks	0.0	5.1	0.0	-	-	4.7	0.0	0.6	0.0	-	-	0.5	12.5	0.0	6.7	-	-	2.5	16.7	7.7	0.0	-	-	6.1	2.7
Articulated Trucks	0	20	0	0	-	20	0	15	0	0	-	15	0	0	0	0	-	0	0	0	0	0	-	0	35
% Articulated Trucks	0.0	6.0	0.0	-	-	5.5	0.0	4.2	0.0	-	-	4.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	4.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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Count Name: Charleston Sideroad & Shaws Creek Road
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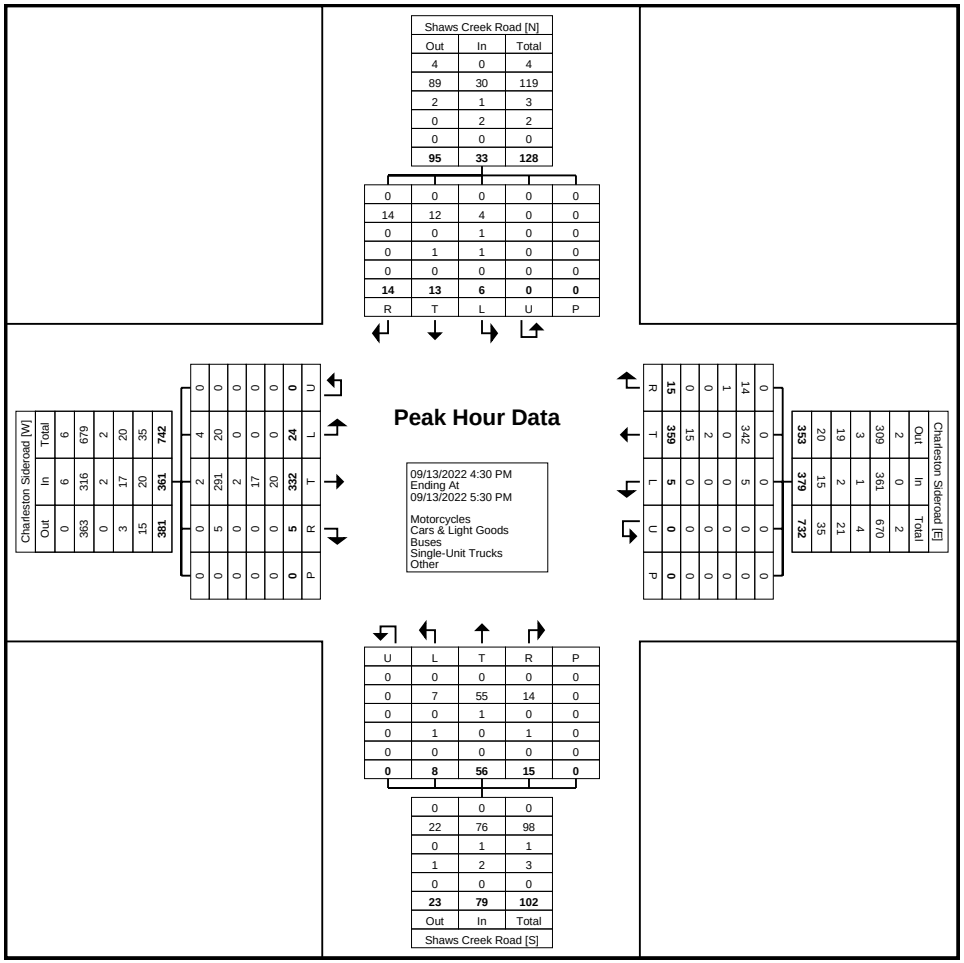


Turning Movement Peak Hour Data Plot (4:30 PM)

Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
Full Length (7 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA

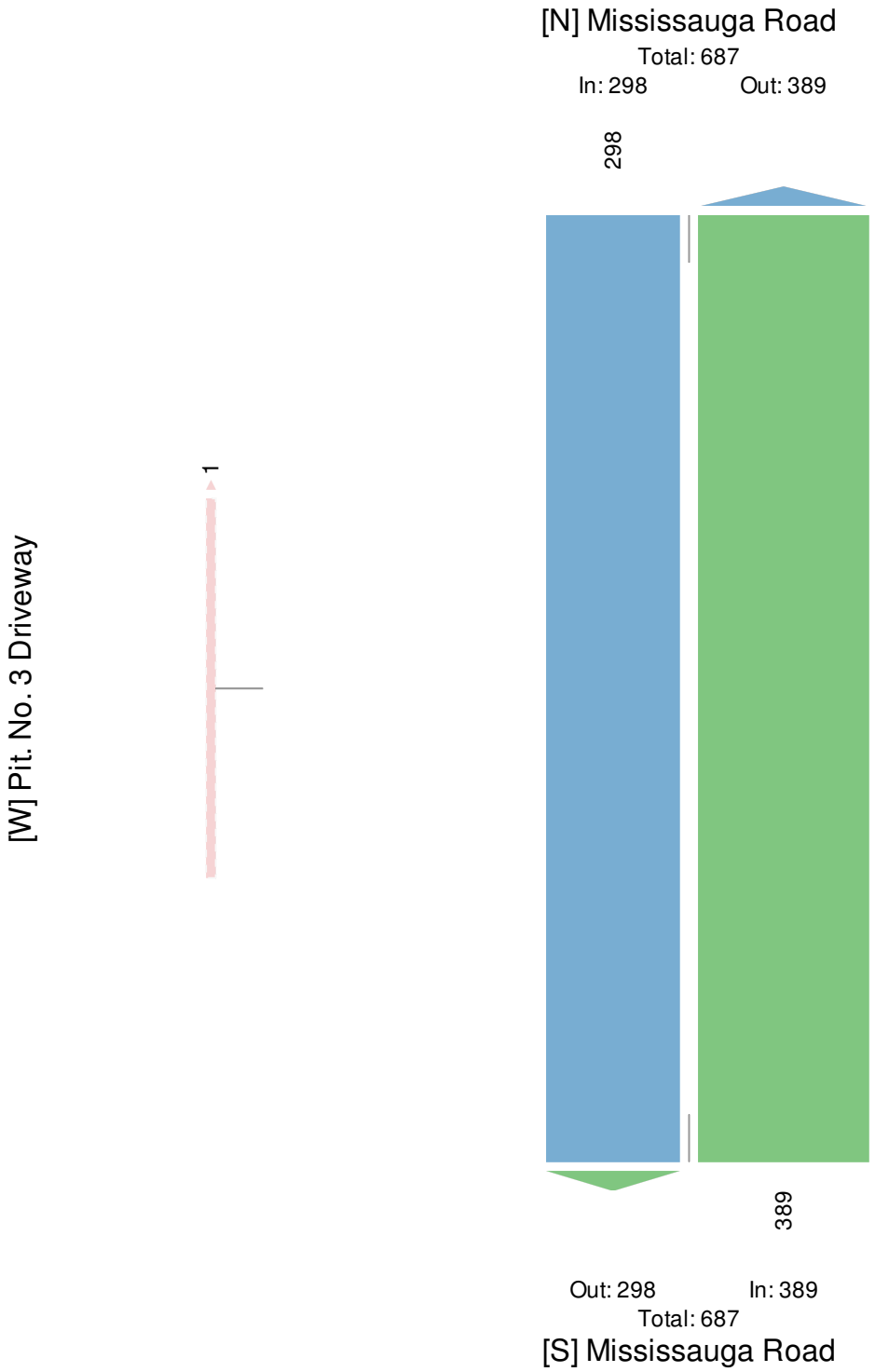
Leg	Mississauga Road					Mississauga Road					Pit. No. 3 Driveway					
Direction	Southbound					Northbound					Eastbound					
Time	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	Int
2019-04-25 7:00AM	0	13	0	**13**	0	0	0	0	**0**	0	0	0	0	**0**	0	**13**
7:15AM	0	13	0	**13**	0	2	0	0	**2**	0	0	0	0	**0**	0	**15**
7:30AM	0	12	0	**12**	0	2	0	0	**2**	0	0	0	0	**0**	0	**14**
7:45AM	0	11	0	**11**	0	2	0	0	**2**	0	0	0	0	**0**	0	**13**
Hourly Total	0	49	0	**49**	0	6	0	0	**6**	0	0	0	0	**0**	0	**55**
8:00AM	0	11	0	**11**	0	2	0	0	**2**	0	0	0	0	**0**	0	**13**
8:15AM	0	6	0	**6**	0	9	0	0	**9**	0	0	0	0	**0**	0	**15**
8:30AM	0	7	0	**7**	0	2	0	0	**2**	0	0	0	0	**0**	0	**9**
8:45AM	0	7	0	**7**	0	15	0	0	**15**	0	0	0	0	**0**	0	**22**
Hourly Total	0	31	0	**31**	0	28	0	0	**28**	0	0	0	0	**0**	0	**59**
9:00AM	0	5	0	**5**	0	6	0	0	**6**	0	0	0	0	**0**	0	**11**
9:15AM	0	3	0	**3**	0	6	0	0	**6**	0	0	0	0	**0**	0	**9**
9:30AM	0	2	0	**2**	0	9	0	0	**9**	0	0	0	0	**0**	0	**11**
9:45AM	0	5	0	**5**	0	0	0	0	**0**	0	0	0	0	**0**	0	**5**
Hourly Total	0	15	0	**15**	0	21	0	0	**21**	0	0	0	0	**0**	0	**36**
10:00AM	0	4	0	**4**	0	1	0	0	**1**	0	0	0	0	**0**	0	**5**
10:15AM	0	5	0	**5**	0	6	0	0	**6**	0	0	0	0	**0**	0	**11**
10:30AM	0	3	0	**3**	0	5	0	0	**5**	0	0	0	0	**0**	0	**8**
10:45AM	0	3	0	**3**	0	3	0	0	**3**	0	0	0	0	**0**	0	**6**
Hourly Total	0	15	0	**15**	0	15	0	0	**15**	0	0	0	0	**0**	0	**30**
11:00AM	0	4	0	**4**	0	3	0	0	**3**	0	0	0	0	**0**	0	**7**
11:15AM	0	4	0	**4**	0	7	0	0	**7**	0	0	0	0	**0**	0	**11**
11:30AM	0	5	0	**5**	0	5	0	0	**5**	0	0	0	0	**0**	0	**10**
11:45AM	0	5	0	**5**	0	6	0	0	**6**	0	0	0	0	**0**	0	**11**
Hourly Total	0	18	0	**18**	0	21	0	0	**21**	0	0	0	0	**0**	0	**39**
12:00PM	0	4	0	**4**	0	9	0	0	**9**	0	0	0	0	**0**	0	**13**
12:15PM	0	4	0	**4**	0	9	0	0	**9**	0	0	0	0	**0**	0	**13**
12:30PM	0	7	0	**7**	0	7	0	0	**7**	0	0	0	0	**0**	0	**14**
12:45PM	0	5	0	**5**	0	12	0	0	**12**	0	0	0	0	**0**	0	**17**
Hourly Total	0	20	0	**20**	0	37	0	0	**37**	0	0	0	0	**0**	0	**57**
1:00PM	0	12	0	**12**	0	8	0	0	**8**	0	0	0	0	**0**	0	**20**
1:15PM	0	7	0	**7**	0	6	0	0	**6**	0	0	0	0	**0**	0	**13**
1:30PM	0	6	0	**6**	0	13	0	0	**13**	0	0	0	0	**0**	1	**19**
1:45PM	0	9	0	**9**	0	5	0	0	**5**	0	0	0	0	**0**	0	**14**
Hourly Total	0	34	0	**34**	0	32	0	0	**32**	0	0	0	0	**0**	1	**66**
2:00PM	0	6	0	**6**	0	5	0	0	**5**	0	0	0	0	**0**	0	**11**
2:15PM	0	4	0	**4**	0	9	0	0	**9**	0	0	0	0	**0**	0	**13**
2:30PM	0	0	0	**0**	0	13	0	0	**13**	0	0	0	0	**0**	0	**13**
2:45PM	0	6	0	**6**	0	11	0	0	**11**	0	0	0	0	**0**	0	**17**
Hourly Total	0	16	0	**16**	0	38	0	0	**38**	0	0	0	0	**0**	0	**54**
3:00PM	0	10	0	**10**	0	8	0	0	**8**	0	0	0	0	**0**	0	**18**
3:15PM	0	8	0	**8**	0	8	0	0	**8**	0	0	0	0	**0**	0	**16**
3:30PM	0	8	0	**8**	0	7	0	0	**7**	0	0	0	0	**0**	0	**15**
3:45PM	0	5	0	**5**	0	14	0	0	**14**	0	0	0	0	**0**	0	**19**
Hourly Total	0	31	0	**31**	0	37	0	0	**37**	0	0	0	0	**0**	0	**68**
4:00PM	0	10	0	**10**	0	19	0	0	**19**	0	0	0	0	**0**	0	**29**
4:15PM	0	5	0	**5**	0	10	0	0	**10**	0	0	0	0	**0**	0	**15**
4:30PM	0	6	0	**6**	0	20	0	0	**20**	0	0	0	0	**0**	0	**26**
4:45PM	0	6	0	**6**	0	10	0	0	**10**	0	0	0	0	**0**	0	**16**
Hourly Total	0	27	0	**27**	0	59	0	0	**59**	0	0	0	0	**0**	0	**86**
5:00PM	0	8	0	**8**	0	13	0	0	**13**	0	0	0	0	**0**	0	**21**
5:15PM	0	8	0	**8**	0	12	0	0	**12**	0	0	0	0	**0**	0	**20**

Leg Direction	Mississauga Road Southbound					Mississauga Road Northbound					Pit. No. 3 Driveway Eastbound					
Time	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
5:30PM	0	7	0	**7**	0	16	0	0	**16**	0	0	0	0	**0**	0	**23**
5:45PM	0	1	0	**1**	0	21	0	0	**21**	0	0	0	0	**0**	0	**22**
Hourly Total	0	24	0	**24**	0	62	0	0	**62**	0	0	0	0	**0**	0	**86**
6:00PM	0	5	0	**5**	0	8	0	0	**8**	0	0	0	0	**0**	0	**13**
6:15PM	0	2	0	**2**	0	9	0	0	**9**	0	0	0	0	**0**	0	**11**
6:30PM	0	4	0	**4**	0	6	0	0	**6**	0	0	0	0	**0**	0	**10**
6:45PM	0	7	0	**7**	0	10	0	0	**10**	0	0	0	0	**0**	0	**17**
Hourly Total	0	18	0	**18**	0	33	0	0	**33**	0	0	0	0	**0**	0	**51**
Total	0	298	0	**298**	0	389	0	0	**389**	0	0	0	0	**0**	1	**687**
% Approach	0%	100%	0%	**-**	-	100%	0%	0%	**-**	-	0%	0%	0%	**-**	-	**-**
% Total	0%	43.4%	0%	**43.4%**	-	56.6%	0%	0%	**56.6%**	-	0%	0%	0%	**0%**	-	**-**
Lights	0	280	0	**280**	-	375	0	0	**375**	-	0	0	0	**0**	-	655
% Lights	0%	94.0%	0%	**94.0%**	-	96.4%	0%	0%	**96.4%**	-	0%	0%	0%	**-**	-	95.3%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	9	0	**9**	-	9	0	0	**9**	-	0	0	0	**0**	-	18
% Buses and Single-Unit Trucks	0%	3.0%	0%	**3.0%**	-	2.3%	0%	0%	**2.3%**	-	0%	0%	0%	**-**	-	2.6%
Bicycles on Road	0	9	0	**9**	-	5	0	0	**5**	-	0	0	0	**0**	-	14
% Bicycles on Road	0%	3.0%	0%	**3.0%**	-	1.3%	0%	0%	**1.3%**	-	0%	0%	0%	**-**	-	2.0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
Full Length (7 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA



Mississauga Road & Pit No. 3 Driveway - TMC

Thu Apr 25, 2019
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

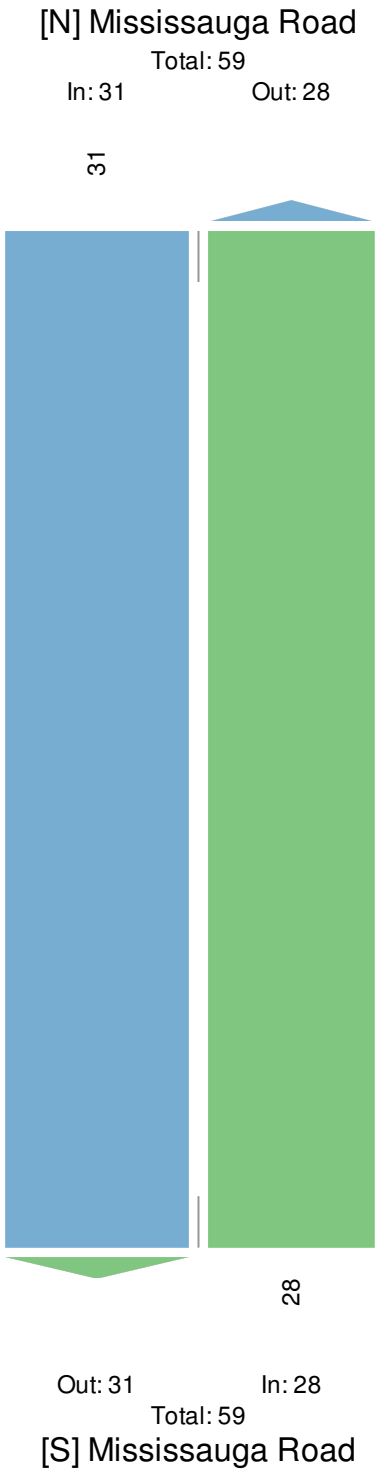
Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA

Leg	Mississauga Road					Mississauga Road					Pit. No. 3 Driveway					
Direction	Southbound					Northbound					Eastbound					
Time	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2019-04-25 8:00AM	0	11	0	**11**	0	2	0	0	**2**	0	0	0	0	**0**	0	**13**
8:15AM	0	6	0	**6**	0	9	0	0	**9**	0	0	0	0	**0**	0	**15**
8:30AM	0	7	0	**7**	0	2	0	0	**2**	0	0	0	0	**0**	0	**9**
8:45AM	0	7	0	**7**	0	15	0	0	**15**	0	0	0	0	**0**	0	**22**
Total	0	31	0	**31**	0	28	0	0	**28**	0	0	0	0	**0**	0	**59**
% Approach	0%	100%	0%	**-**	-	100%	0%	0%	**-**	-	0%	0%	0%	**-**	-	-
% Total	0%	52.5%	0%	**52.5%**	-	47.5%	0%	0%	**47.5%**	-	0%	0%	0%	**0%**	-	-
PHF	-	0.705	-	**0.705**	-	0.467	-	-	**0.467**	-	-	-	-	**-**	-	0.670
Lights	0	29	0	**29**	-	28	0	0	**28**	-	0	0	0	**0**	-	57
% Lights	0%	93.5%	0%	**93.5%**	-	100%	0%	0%	**100%**	-	0%	0%	0%	**-**	-	96.6%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	2	0	**2**	-	0	0	0	**0**	-	0	0	0	**0**	-	2
% Buses and Single-Unit Trucks	0%	6.5%	0%	**6.5%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	3.4%
Bicycles on Road	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA



Mississauga Road & Pit No. 3 Driveway - TMC

Thu Apr 25, 2019
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

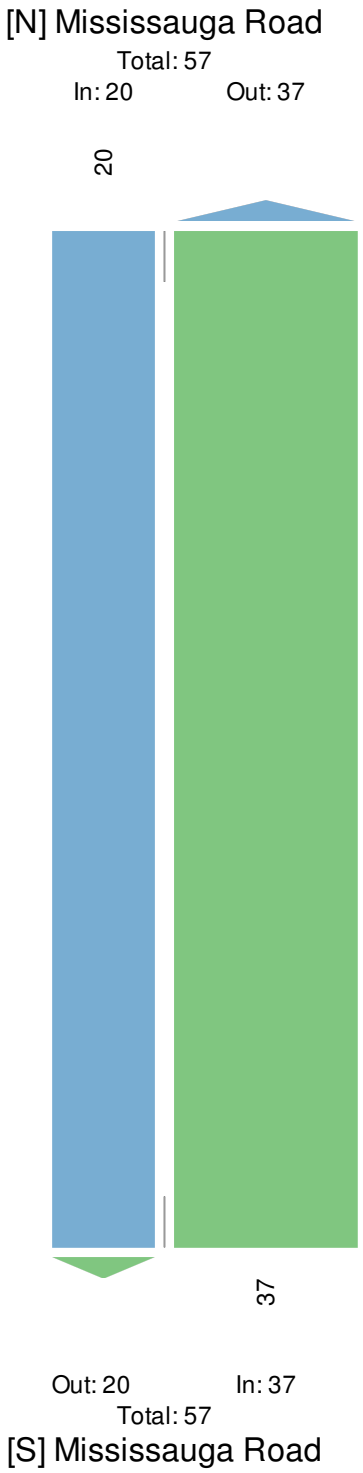
Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA

Leg	Mississauga Road					Mississauga Road					Pit. No. 3 Driveway					
Direction	Southbound					Northbound					Eastbound					
Time	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2019-04-25 12:00PM	0	4	0	**4**	0	9	0	0	**9**	0	0	0	0	**0**	0	**13**
12:15PM	0	4	0	**4**	0	9	0	0	**9**	0	0	0	0	**0**	0	**13**
12:30PM	0	7	0	**7**	0	7	0	0	**7**	0	0	0	0	**0**	0	**14**
12:45PM	0	5	0	**5**	0	12	0	0	**12**	0	0	0	0	**0**	0	**17**
Total	0	20	0	**20**	0	37	0	0	**37**	0	0	0	0	**0**	0	**57**
% Approach	0%	100%	0%	**-**	-	100%	0%	0%	**-**	-	0%	0%	0%	**-**	-	**-**
% Total	0%	35.1%	0%	**35.1%**	-	64.9%	0%	0%	**64.9%**	-	0%	0%	0%	**0%**	-	**-**
PHF	-	0.714	-	**0.714**	-	0.818	-	-	**0.818**	-	-	-	-	**-**	-	0.875
Lights	0	20	0	**20**	-	36	0	0	**36**	-	0	0	0	**0**	-	56
% Lights	0%	100%	0%	**100%**	-	97.3%	0%	0%	**97.3%**	-	0%	0%	0%	**-**	-	98.2%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Bicycles on Road	0	0	0	**0**	-	1	0	0	**1**	-	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	**0%**	-	2.7%	0%	0%	**2.7%**	-	0%	0%	0%	**-**	-	1.8%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA



Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

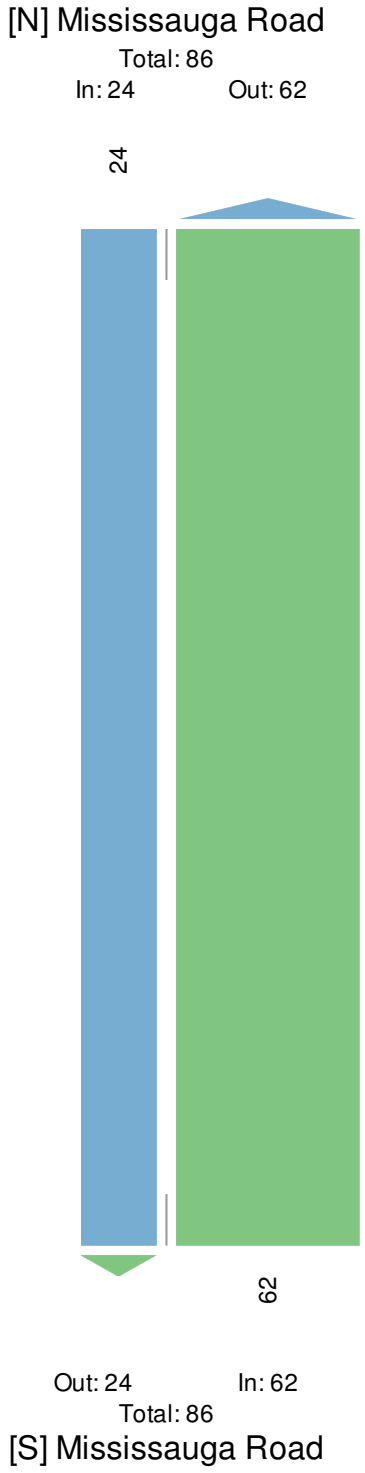
Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA

Leg	Mississauga Road					Mississauga Road					Pit. No. 3 Driveway					
Direction	Southbound					Northbound					Eastbound					
Time	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2019-04-25 5:00PM	0	8	0	**8**	0	13	0	0	**13**	0	0	0	0	**0**	0	**21**
5:15PM	0	8	0	**8**	0	12	0	0	**12**	0	0	0	0	**0**	0	**20**
5:30PM	0	7	0	**7**	0	16	0	0	**16**	0	0	0	0	**0**	0	**23**
5:45PM	0	1	0	**1**	0	21	0	0	**21**	0	0	0	0	**0**	0	**22**
Total	0	24	0	**24**	0	62	0	0	**62**	0	0	0	0	**0**	0	**86**
% Approach	0%	100%	0%	**-**	-	100%	0%	0%	**-**	-	0%	0%	0%	**-**	-	-
% Total	0%	27.9%	0%	**27.9%**	-	72.1%	0%	0%	**72.1%**	-	0%	0%	0%	**0%**	-	-
PHF	-	0.750	-	**0.750**	-	0.738	-	-	**0.738**	-	-	-	-	**-**	-	0.935
Lights	0	23	0	**23**	-	62	0	0	**62**	-	0	0	0	**0**	-	85
% Lights	0%	95.8%	0%	**95.8%**	-	100%	0%	0%	**100%**	-	0%	0%	0%	**-**	-	98.8%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	1	0	**1**	-	0	0	0	**0**	-	0	0	0	**0**	-	1
% Buses and Single-Unit Trucks	0%	4.2%	0%	**4.2%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	1.2%
Bicycles on Road	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**-**	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Mississauga Road & Pit No. 3 Driveway - TMC
Thu Apr 25, 2019
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 647365, Location: 43.811749, -80.026797

Provided by: Paradigm Transportation Solutions Limited
5A-150 Pinebush Road,
Cambridge, ON, N1R 8J8, CA



Appendix B

Base Year Traffic Operations

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	303	6	15	252	3	2	10	12	10	63	22
Future Volume (vph)	10	303	6	15	252	3	2	10	12	10	63	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.932			0.969	
Flt Protected		0.998			0.997			0.996			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1575	0	0	1614	0
Flt Permitted		0.998			0.997			0.996			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1575	0	0	1614	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	11	329	7	16	274	3	2	11	13	11	68	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	340	7	0	290	3	0	26	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	303	6	15	252	3	2	10	12	10	63	22
Future Volume (Veh/h)	10	303	6	15	252	3	2	10	12	10	63	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	329	7	16	274	3	2	11	13	11	68	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	277			336			715	660	329	676	664	274
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	277			336			715	660	329	676	664	274
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			99			99	97	98	96	81	97
cM capacity (veh/h)	1145			1159			283	364	677	309	354	770

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	340	7	290	3	26	103
Volume Left	11	0	16	0	2	11
Volume Right	0	7	0	3	13	24
cSH	1145	1700	1159	1700	460	398
Volume to Capacity	0.01	0.00	0.01	0.00	0.06	0.26
Queue Length 95th (m)	0.2	0.0	0.3	0.0	1.4	7.7
Control Delay (s)	0.4	0.0	0.6	0.0	13.3	17.2
Lane LOS	A		A		B	C
Approach Delay (s)	0.4		0.6		13.3	17.2
Approach LOS					B	C

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	39.5%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	248	1	20	282	4	10	2	3	7	9	13
Future Volume (vph)	8	248	1	20	282	4	10	2	3	7	9	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.975			0.941	
Flt Protected		0.998			0.997			0.967			0.988	
Satd. Flow (prot)	0	1589	1633	0	1633	1089	0	1598	0	0	1472	0
Flt Permitted		0.998			0.997			0.967			0.988	
Satd. Flow (perm)	0	1589	1633	0	1633	1089	0	1598	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	9	270	1	22	307	4	11	2	3	8	10	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	279	1	0	329	4	0	16	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	248	1	20	282	4	10	2	3	7	9	13
Future Volume (Veh/h)	8	248	1	20	282	4	10	2	3	7	9	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	270	1	22	307	4	11	2	3	8	10	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	311			271			658	643	270	643	640	307
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	311			271			658	643	270	643	640	307
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			98			97	99	100	98	97	98
cM capacity (veh/h)	1063			1190			336	384	752	378	367	656

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	279	1	329	4	16	32
Volume Left	9	0	22	0	11	8
Volume Right	0	1	0	4	3	14
cSH	1063	1700	1190	1700	381	459
Volume to Capacity	0.01	0.00	0.02	0.00	0.04	0.07
Queue Length 95th (m)	0.2	0.0	0.4	0.0	1.0	1.7
Control Delay (s)	0.4	0.0	0.7	0.0	14.9	13.4
Lane LOS	A		A		B	B
Approach Delay (s)	0.4		0.7		14.9	13.4
Approach LOS					B	B

Intersection Summary					
Average Delay	1.5				
Intersection Capacity Utilization	41.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	131	191	134	123	21	95	639	68	41	1548	4
Future Volume (vph)	65	131	191	134	123	21	95	639	68	41	1548	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	3528	0	1789	3579	0
Flt Permitted	0.671			0.666			0.099			0.360		
Satd. Flow (perm)	1264	1883	1601	1254	1883	1601	186	3528	0	678	3579	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	142	208	146	134	23	103	695	74	45	1683	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	142	208	146	134	23	103	769	0	45	1687	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	

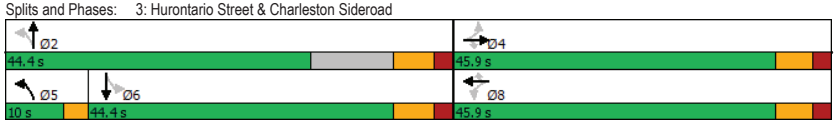
Lanes, Volumes, Timings
3: Hurontario Street & Charleston Sideroad
Base Year AM Peak Hour.syn
07-11-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	13.9	13.9	13.9	13.9	13.9	13.9	49.6	45.1		37.5	37.5	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.61		0.51	0.51	
v/c Ratio	0.30	0.40	0.47	0.62	0.38	0.06	0.38	0.35		0.13	0.92	
Control Delay	29.2	29.8	10.4	39.6	29.4	0.3	9.3	8.0		13.4	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	29.2	29.8	10.4	39.6	29.4	0.3	9.3	8.0		13.4	29.4	
LOS	C	C	B	D	C	A	A	A		B	C	
Approach Delay		20.1			32.1			8.1			29.0	
Approach LOS		C			C			A			C	
Queue Length 50th (m)	8.8	17.9	3.9	19.3	16.8	0.0	4.1	23.6		3.3	114.2	
Queue Length 95th (m)	19.3	32.7	19.8	36.3	31.2	0.0	12.2	43.1		10.6	#196.3	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)												
Base Capacity (vph)	679	1012	942	674	1012	898	280	2292		345	1826	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.14	0.22	0.22	0.13	0.03	0.37	0.34		0.13	0.92	

Intersection Summary

Area Type: Other
Cycle Length: 100.3
Actuated Cycle Length: 73.5
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	131	191	134	123	21	95	639	68	41	1548	4
Future Volume (vph)	65	131	191	134	123	21	95	639	68	41	1548	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1883	1601	1789	1883	1601	1789	3527		1789	3577	
Flt Permitted	0.67	1.00	1.00	0.67	1.00	1.00	0.10	1.00		0.36	1.00	
Satd. Flow (perm)	1264	1883	1601	1255	1883	1601	186	3527		678	3577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	142	208	146	134	23	103	695	74	45	1683	4
RTOR Reduction (vph)	0	0	142	0	0	19	0	6	0	0	0	0
Lane Group Flow (vph)	71	142	66	146	134	4	103	763	0	45	1687	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	13.9	13.9	13.9	13.9	13.9	13.9	45.8	45.8		37.5	37.5	
Effective Green, g (s)	13.9	13.9	13.9	13.9	13.9	13.9	45.8	45.8		37.5	37.5	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.62	0.62		0.51	0.51	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	237	353	300	235	353	300	229	2182		343	1812	
v/s Ratio Prot		0.08			0.07		c0.03	0.22			c0.47	
v/s Ratio Perm	0.06		0.04	c0.12		0.00	0.25			0.07		
v/c Ratio	0.30	0.40	0.22	0.62	0.38	0.01	0.45	0.35		0.13	0.93	
Uniform Delay, d1	25.9	26.4	25.5	27.6	26.3	24.5	13.2	6.9		9.6	17.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	0.4	5.0	0.7	0.0	1.4	0.4		0.8	10.1	
Delay (s)	26.6	27.2	25.8	32.7	27.0	24.5	14.6	7.3		10.4	27.2	
Level of Service	C	C	C	C	C	C	B	A		B	C	
Approach Delay (s)		26.4			29.5			8.2			26.7	
Approach LOS		C			C			A			C	

Intersection Summary				
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	83.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	332	5	5	359	15	8	56	15	6	13	14
Future Volume (vph)	24	332	5	5	359	15	8	56	15	6	13	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.975			0.944	
Flt Protected		0.997			0.999			0.995			0.990	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1688	0	0	1588	0
Flt Permitted		0.997			0.999			0.995			0.990	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1688	0	0	1588	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	26	361	5	5	390	16	9	61	16	7	14	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	5	0	395	16	0	86	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	332	5	5	359	15	8	56	15	6	13	14
Future Volume (Veh/h)	24	332	5	5	359	15	8	56	15	6	13	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	361	5	5	390	16	9	61	16	7	14	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	406			366			835	829	361	860	818	390
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	406			366			835	829	361	860	818	390
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	97			100			97	79	98	96	95	98
cM capacity (veh/h)	1021			1129			266	288	649	195	285	663

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	387	5	395	16	86	36
Volume Left	26	0	5	0	9	7
Volume Right	0	5	0	16	16	15
cSH	1021	1700	1129	1700	319	335
Volume to Capacity	0.03	0.00	0.00	0.01	0.27	0.11
Queue Length 95th (m)	0.6	0.0	0.1	0.0	8.1	2.7
Control Delay (s)	0.8	0.0	0.2	0.0	20.4	17.0
Lane LOS	A		A		C	C
Approach Delay (s)	0.8		0.1		20.4	17.0
Approach LOS					C	C

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	330	9	12	365	6	3	17	11	5	6	8
Future Volume (vph)	20	330	9	12	365	6	3	17	11	5	6	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.951			0.942	
Flt Protected		0.997			0.998			0.995			0.988	
Satd. Flow (prot)	0	1581	1633	0	1637	1089	0	1734	0	0	1474	0
Flt Permitted		0.997			0.998			0.995			0.988	
Satd. Flow (perm)	0	1581	1633	0	1637	1089	0	1734	0	0	1474	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	22	359	10	13	397	7	3	18	12	5	7	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	381	10	0	410	7	0	33	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	330	9	12	365	6	3	17	11	5	6	8
Future Volume (Veh/h)	20	330	9	12	365	6	3	17	11	5	6	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	359	10	13	397	7	3	18	12	5	7	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	404			369			838	833	359	847	836	397
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	404			369			838	833	359	847	836	397
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	98			99			99	94	98	98	97	98
cM capacity (veh/h)	976			1092			253	296	670	259	279	581

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	381	10	410	7	33	21
Volume Left	22	0	13	0	3	5
Volume Right	0	10	0	7	12	9
cSH	976	1700	1092	1700	364	351
Volume to Capacity	0.02	0.01	0.01	0.00	0.09	0.06
Queue Length 95th (m)	0.5	0.0	0.3	0.0	2.3	1.4
Control Delay (s)	0.7	0.0	0.4	0.0	15.9	15.9
Lane LOS	A		A		C	C
Approach Delay (s)	0.7		0.4		15.9	15.9
Approach LOS					C	C

Intersection Summary					
Average Delay	1.5				
Intersection Capacity Utilization	43.7%	ICU Level of Service		A	
Analysis Period (min)	15				

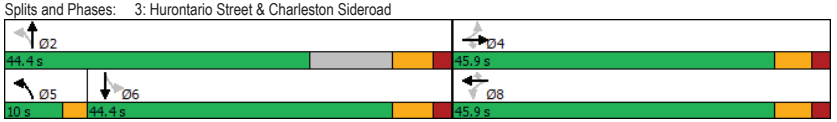
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	172	118	110	209	63	176	1439	137	63	773	65
Future Volume (vph)	94	172	118	110	209	63	176	1439	137	63	773	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.540			0.630			0.234			0.108		
Satd. Flow (perm)	995	1731	1423	1108	1715	1576	424	3509	0	176	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	102	187	128	120	227	68	191	1564	149	68	840	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	187	128	120	227	68	191	1713	0	68	911	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	15.8	15.8	15.8	15.8	15.8	15.8	51.6	47.2		37.1	37.1	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.67	0.61		0.48	0.48	
v/c Ratio	0.50	0.53	0.33	0.53	0.65	0.18	0.48	0.80		0.81	0.57	
Control Delay	35.9	32.8	7.3	36.1	37.1	6.0	9.8	16.2		83.9	16.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.9	32.8	7.3	36.1	37.1	6.0	9.8	16.2		83.9	16.8	
LOS	D	C	A	D	D	A	A	B		F	B	
Approach Delay		25.8			31.7			15.6			21.4	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	13.3	24.5	0.0	15.7	30.6	0.0	8.7	86.8		7.9	46.2	
Queue Length 95th (m)	27.2	42.6	12.0	30.8	51.4	7.3	21.4	152.0		#34.6	76.8	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	503	876	783	560	868	837	400	2146		84	1591	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.20	0.21	0.16	0.21	0.26	0.08	0.48	0.80		0.81	0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.3			
Natural Cycle: 135			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 91.7%		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: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	172	118	110	209	63	176	1439	137	63	773	65
Future Volume (vph)	94	172	118	110	209	63	176	1439	137	63	773	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1546	3304	
Flt Permitted	0.54	1.00	1.00	0.63	1.00	1.00	0.23	1.00		0.11	1.00	
Satd. Flow (perm)	995	1731	1424	1109	1715	1577	424	3509		175	3304	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	187	128	120	227	68	191	1564	149	68	840	71
RTOR Reduction (vph)	0	0	102	0	0	54	0	5	0	0	5	0
Lane Group Flow (vph)	102	187	26	120	227	14	191	1708	0	68	906	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	15.8	15.8	15.8	15.8	15.8	15.8	47.2	47.2		37.2	37.2	
Effective Green, g (s)	15.8	15.8	15.8	15.8	15.8	15.8	47.2	47.2		37.2	37.2	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	353	291	226	350	322	376	2142		84	1590	
v/s Ratio Prot		0.11			c0.13		0.05	c0.49			0.27	
v/s Ratio Perm	0.10		0.02	0.11		0.01	0.26			0.39		
v/c Ratio	0.50	0.53	0.09	0.53	0.65	0.04	0.51	0.80		0.81	0.57	
Uniform Delay, d1	27.3	27.4	24.9	27.4	28.2	24.7	7.6	11.4		17.0	14.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.4	0.1	2.4	4.1	0.1	1.1	3.2		55.3	1.5	
Delay (s)	29.2	28.9	25.1	29.8	32.3	24.7	8.7	14.6		72.4	15.8	
Level of Service	C	C	C	C	C	C	A	B		E	B	
Approach Delay (s)		27.8			30.4			14.0			19.7	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	91.7%	ICU Level of Service	F	
Analysis Period (min)	15			

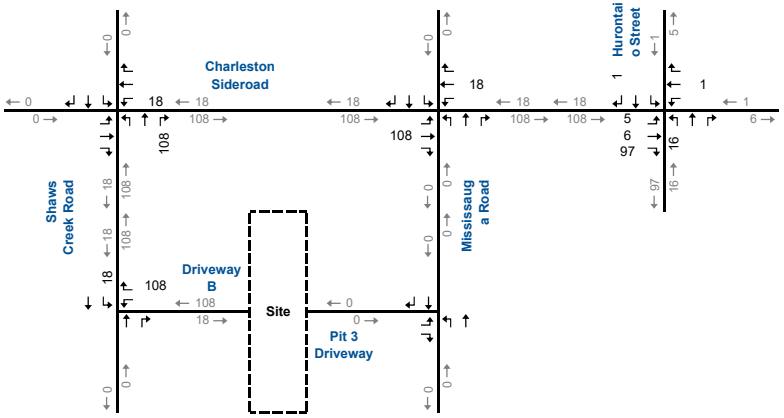
c Critical Lane Group

Appendix C

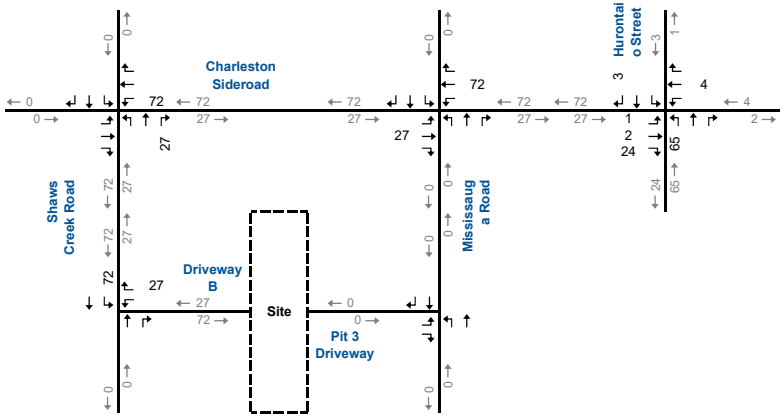
Passenger Car Equivalent Traffic Forecasts

Site Generated PCE

AM Peak Hour (Route A)

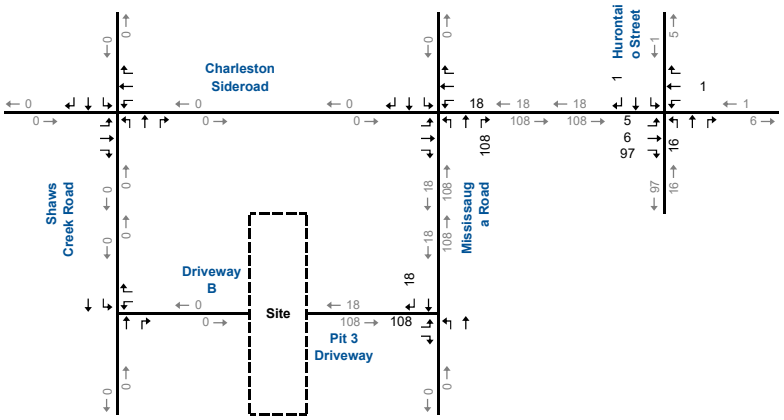


PM Peak Hour (Route A)

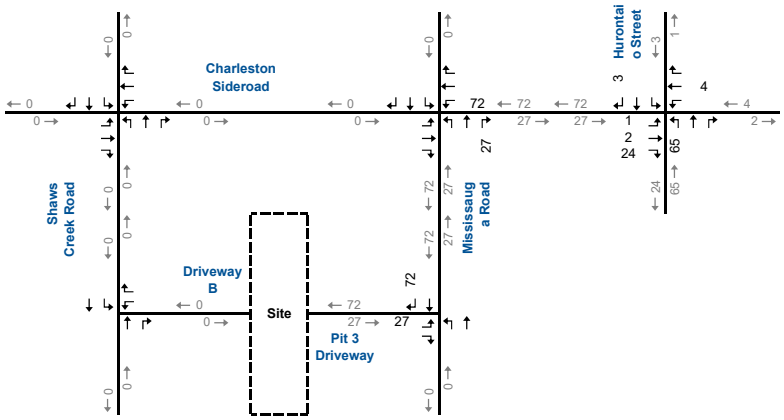


Site Generated PCE

AM Peak Hour (Route B)

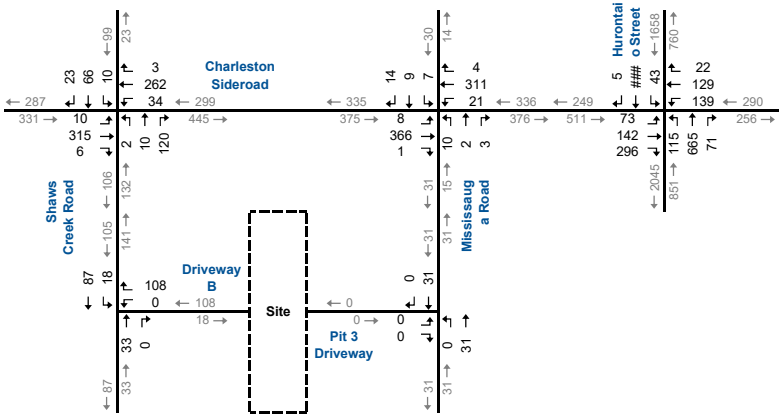


PM Peak Hour (Route B)

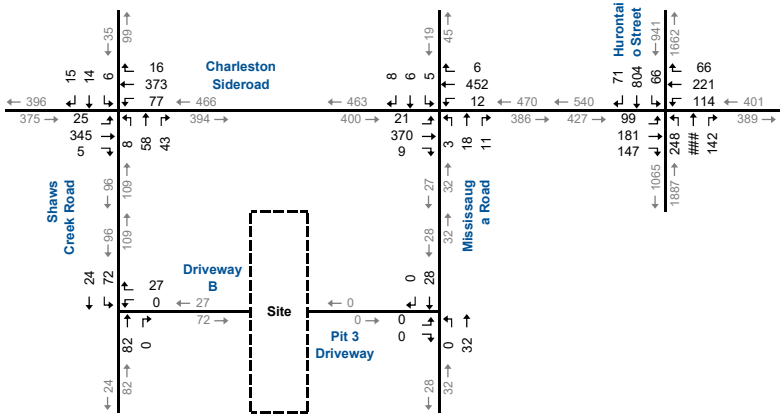


2025 Total PCE (Route A)

AM Peak Hour

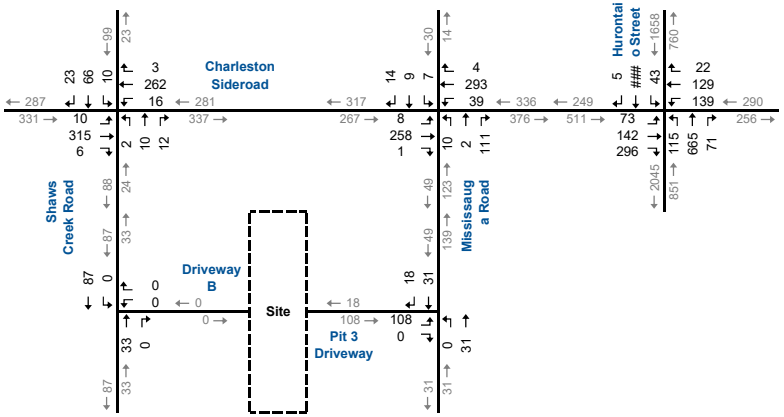


PM Peak Hour

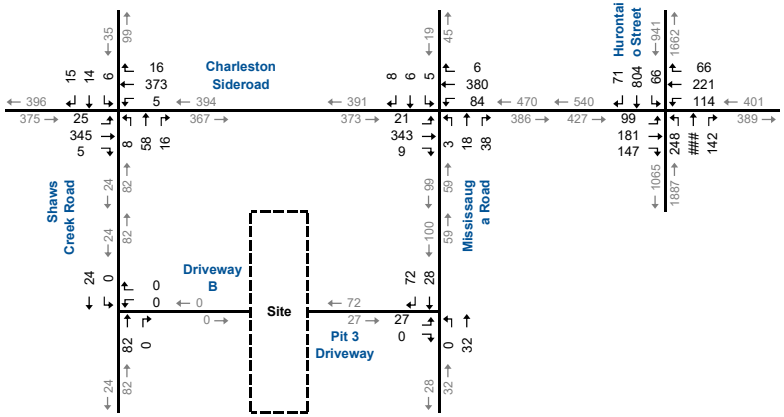


2025 Total PCE (Route B)

AM Peak Hour

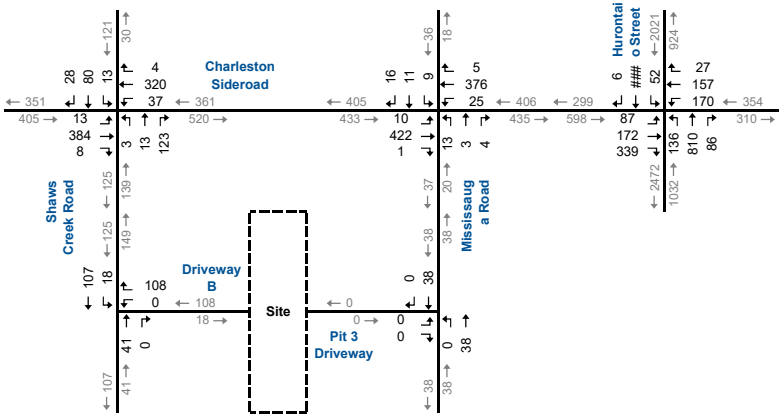


PM Peak Hour

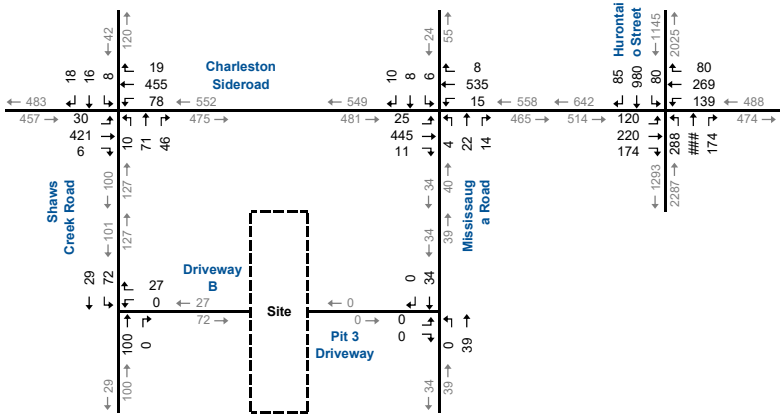


2035 Total PCE (Route A)

AM Peak Hour

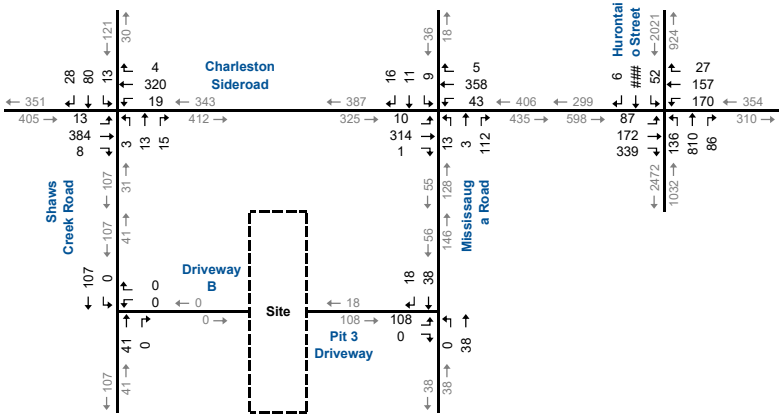


PM Peak Hour

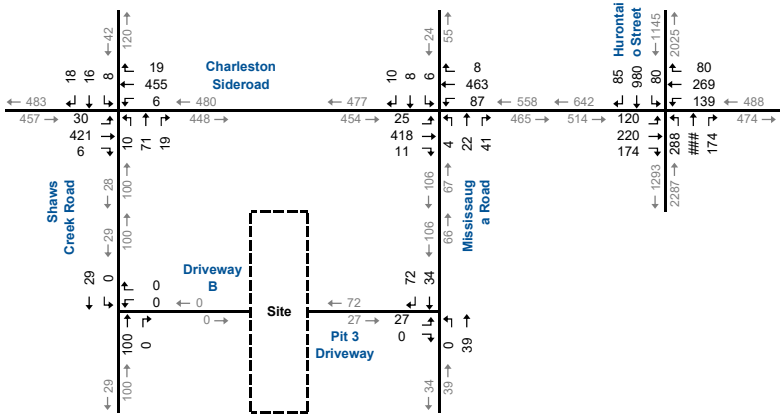


2035 Total PCE (Route A)

AM Peak Hour

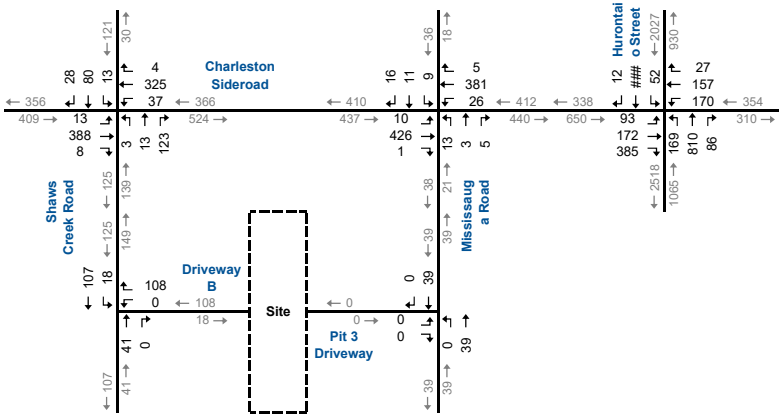


PM Peak Hour

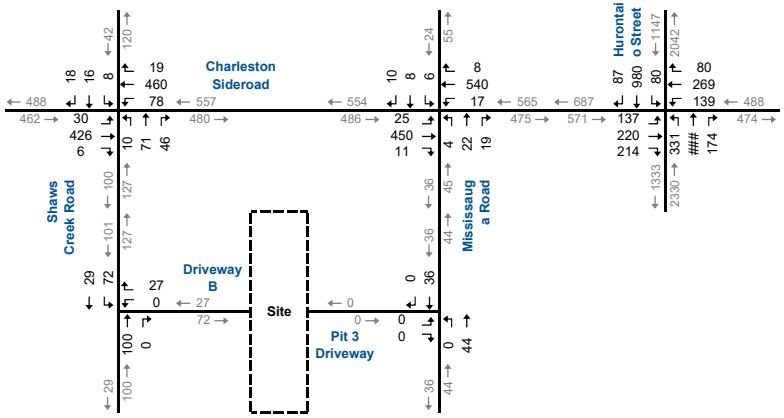


2035 Total CMB PCE (Route A)

AM Peak Hour

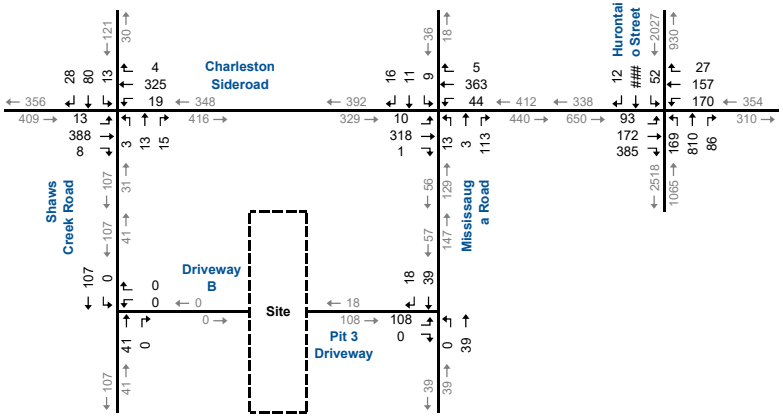


PM Peak Hour

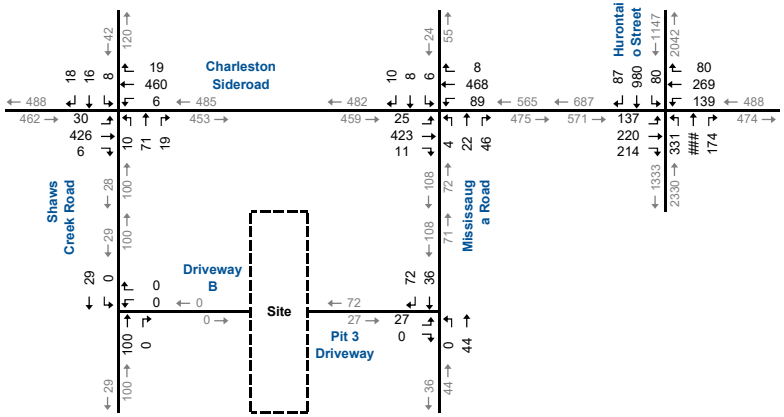


2035 Total CMB PCE (Route B)

AM Peak Hour



PM Peak Hour



Appendix D

Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	315	6	16	262	3	2	10	12	10	66	23
Future Volume (vph)	10	315	6	16	262	3	2	10	12	10	66	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.932			0.969	
Flt Protected		0.998			0.997			0.996			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1575	0	0	1615	0
Flt Permitted		0.998			0.997			0.996			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1575	0	0	1615	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	11	342	7	17	285	3	2	11	13	11	72	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	7	0	302	3	0	26	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	315	6	16	262	3	2	10	12	10	66	23
Future Volume (Veh/h)	10	315	6	16	262	3	2	10	12	10	66	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	342	7	17	285	3	2	11	13	11	72	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	288			349			744	686	342	702	690	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			349			744	686	342	702	690	285
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			99			99	97	98	96	79	97
cM capacity (veh/h)	1134			1146			265	352	666	296	342	759

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	353	7	302	3	26	108
Volume Left	11	0	17	0	2	11
Volume Right	0	7	0	3	13	25
cSH	1134	1700	1146	1700	445	385
Volume to Capacity	0.01	0.00	0.01	0.00	0.06	0.28
Queue Length 95th (m)	0.2	0.0	0.3	0.0	1.4	8.6
Control Delay (s)	0.4	0.0	0.6	0.0	13.6	18.0
Lane LOS	A		A		B	C
Approach Delay (s)	0.3		0.6		13.6	18.0
Approach LOS					B	C

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	41.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	258	1	21	293	4	10	2	3	7	9	14
Future Volume (vph)	8	258	1	21	293	4	10	2	3	7	9	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.975			0.939	
Flt Protected		0.998			0.997			0.967			0.988	
Satd. Flow (prot)	0	1589	1633	0	1633	1089	0	1598	0	0	1463	0
Flt Permitted		0.998			0.997			0.967			0.988	
Satd. Flow (perm)	0	1589	1633	0	1633	1089	0	1598	0	0	1463	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	9	280	1	23	318	4	11	2	3	8	10	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	289	1	0	341	4	0	16	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	258	1	21	293	4	10	2	3	7	9	14
Future Volume (Veh/h)	8	258	1	21	293	4	10	2	3	7	9	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	280	1	23	318	4	11	2	3	8	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	322			281			682	666	280	666	663	318
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	322			281			682	666	280	666	663	318
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			98			97	99	100	98	97	98
cM capacity (veh/h)	1052			1180			322	372	742	365	355	646

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	289	1	341	4	16	33
Volume Left	9	0	23	0	11	8
Volume Right	0	1	0	4	3	15
cSH	1052	1700	1180	1700	367	450
Volume to Capacity	0.01	0.00	0.02	0.00	0.04	0.07
Queue Length 95th (m)	0.2	0.0	0.5	0.0	1.0	1.8
Control Delay (s)	0.3	0.0	0.7	0.0	15.2	13.6
Lane LOS	A		A		C	B
Approach Delay (s)	0.3		0.7		15.2	13.6
Approach LOS					C	B

Intersection Summary					
Average Delay	1.5				
Intersection Capacity Utilization	42.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	136	199	139	128	22	99	665	71	43	1610	4
Future Volume (vph)	68	136	199	139	128	22	99	665	71	43	1610	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3349	0
Flt Permitted	0.668			0.663			0.099			0.349		
Satd. Flow (perm)	1230	1731	1423	1166	1715	1576	179	3503	0	567	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	74	148	216	151	139	24	108	723	77	47	1750	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	148	216	151	139	24	108	800	0	47	1754	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	15.1	15.1	15.1	15.1	15.1	15.1	49.6	45.1		37.5	37.5	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.66	0.60		0.50	0.50	
v/c Ratio	0.30	0.42	0.51	0.64	0.40	0.06	0.42	0.38		0.17	1.04	
Control Delay	28.8	30.1	11.5	40.9	29.7	0.3	11.4	8.7		15.0	56.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.8	30.1	11.5	40.9	29.7	0.3	11.4	8.7		15.0	56.7	
LOS	C	C	B	D	C	A	B	A		B	E	
Approach Delay		20.7			32.8			9.0			55.6	
Approach LOS		C			C			A			E	
Queue Length 50th (m)	9.2	18.9	4.9	20.3	17.7	0.0	4.6	26.0		3.6	~151.0	
Queue Length 95th (m)	19.8	34.1	21.9	38.1	32.4	0.0	14.7	48.0		11.9	#224.5	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	650	916	835	616	907	871	265	2239		284	1681	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.11	0.16	0.26	0.25	0.15	0.03	0.41	0.36		0.17	1.04	

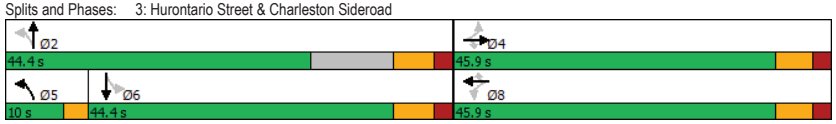
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 74.7			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 36.9		Intersection LOS: D	
Intersection Capacity Utilization 89.1%		ICU Level of Service E	

Analysis Period (min) 15

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

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

Splits and Phases: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	136	199	139	128	22	99	665	71	43	1610	4
Future Volume (vph)	68	136	199	139	128	22	99	665	71	43	1610	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3502		1545	3347	
Flt Permitted	0.67	1.00	1.00	0.66	1.00	1.00	0.10	1.00		0.35	1.00	
Satd. Flow (perm)	1231	1731	1424	1166	1715	1577	179	3502		568	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	148	216	151	139	24	108	723	77	47	1750	4
RTOR Reduction (vph)	0	0	140	0	0	19	0	6	0	0	0	0
Lane Group Flow (vph)	74	148	76	151	139	5	108	794	0	47	1754	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	15.1	15.1	15.1	15.1	15.1	15.1	45.8	45.8		37.5	37.5	
Effective Green, g (s)	15.1	15.1	15.1	15.1	15.1	15.1	45.8	45.8		37.5	37.5	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.61	0.61		0.50	0.50	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	247	347	285	234	344	316	217	2132		283	1669	
v/s Ratio Prot		0.09			0.08		c0.03	0.23			c0.52	
v/s Ratio Perm	0.06		0.05	c0.13		0.00	0.27			0.08		
v/c Ratio	0.30	0.43	0.27	0.65	0.40	0.02	0.50	0.37		0.17	1.05	
Uniform Delay, d1	25.6	26.3	25.4	27.6	26.1	24.1	15.1	7.4		10.3	18.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	0.5	6.0	0.8	0.0	1.8	0.5		1.3	36.8	
Delay (s)	26.2	27.1	25.9	33.6	26.9	24.1	16.9	7.9		11.6	55.6	
Level of Service	C	C	C	C	C	C	B	A		B	E	
Approach Delay (s)		26.4			29.9			9.0			54.5	
Approach LOS		C			C			A			D	

Intersection Summary					
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.89				
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	89.1%	ICU Level of Service	E		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	345	5	5	373	16	8	58	16	6	14	15
Future Volume (vph)	25	345	5	5	373	16	8	58	16	6	14	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.943	
Flt Protected		0.997			0.999			0.995			0.991	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1685	0	0	1592	0
Flt Permitted		0.997			0.999			0.995			0.991	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1685	0	0	1592	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	27	375	5	5	405	17	9	63	17	7	15	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	5	0	410	17	0	89	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	345	5	5	373	16	8	58	16	6	14	15
Future Volume (Veh/h)	25	345	5	5	373	16	8	58	16	6	14	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	375	5	5	405	17	9	63	17	7	15	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	422			380			868	861	375	892	849	405
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422			380			868	861	375	892	849	405
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	97			100			96	77	97	96	95	98
cM capacity (veh/h)	1007			1116			251	276	637	182	273	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	402	5	410	17	89	38
Volume Left	27	0	5	0	9	7
Volume Right	0	5	0	17	17	16
cSH	1007	1700	1116	1700	306	322
Volume to Capacity	0.03	0.00	0.00	0.01	0.29	0.12
Queue Length 95th (m)	0.6	0.0	0.1	0.0	9.0	3.0
Control Delay (s)	0.9	0.0	0.1	0.0	21.5	17.7
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.1		21.5	17.7
Approach LOS					C	C

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	343	9	12	380	6	3	18	11	5	6	8
Future Volume (vph)	21	343	9	12	380	6	3	18	11	5	6	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.954			0.942	
Flt Protected		0.997			0.998			0.996			0.988	
Satd. Flow (prot)	0	1581	1633	0	1637	1089	0	1746	0	0	1474	0
Flt Permitted		0.997			0.998			0.996			0.988	
Satd. Flow (perm)	0	1581	1633	0	1637	1089	0	1746	0	0	1474	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	23	373	10	13	413	7	3	20	12	5	7	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	10	0	426	7	0	35	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	343	9	12	380	6	3	18	11	5	6	8
Future Volume (Veh/h)	21	343	9	12	380	6	3	18	11	5	6	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	373	10	13	413	7	3	20	12	5	7	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	420			383			870	865	373	880	868	413
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	420			383			870	865	373	880	868	413
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	98			99			99	93	98	98	97	98
cM capacity (veh/h)	962			1079			240	283	658	244	267	568

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	396	10	426	7	35	21
Volume Left	23	0	13	0	3	5
Volume Right	0	10	0	7	12	9
cSH	962	1700	1079	1700	345	336
Volume to Capacity	0.02	0.01	0.01	0.00	0.10	0.06
Queue Length 95th (m)	0.6	0.0	0.3	0.0	2.5	1.5
Control Delay (s)	0.8	0.0	0.4	0.0	16.6	16.4
Lane LOS	A		A		C	C
Approach Delay (s)	0.7		0.4		16.6	16.4
Approach LOS					C	C

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	45.2%	ICU Level of Service		A	
Analysis Period (min)	15				

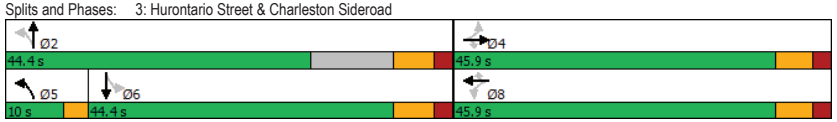
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	179	123	114	217	66	183	1497	142	66	804	68
Future Volume (vph)	98	179	123	114	217	66	183	1497	142	66	804	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.522			0.613			0.218			0.108		
Satd. Flow (perm)	962	1731	1423	1078	1715	1576	395	3509	0	176	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	107	195	134	124	236	72	199	1627	154	72	874	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	195	134	124	236	72	199	1781	0	72	948	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	16.2	16.2	16.2	16.2	16.2	16.2	51.6	47.2		37.1	37.1	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.61		0.48	0.48	
v/c Ratio	0.54	0.54	0.33	0.55	0.66	0.18	0.52	0.83		0.86	0.60	
Control Delay	37.3	32.9	7.2	36.9	37.3	6.5	11.1	18.0		95.1	17.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.3	32.9	7.2	36.9	37.3	6.5	11.1	18.0		95.1	17.5	
LOS	D	C	A	D	D	A	B	B		F	B	
Approach Delay		26.1			32.1			17.3			22.9	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	14.1	25.7	0.0	16.4	32.0	0.0	9.3	95.2		8.7	49.4	
Queue Length 95th (m)	28.7	44.1	12.3	32.1	53.2	8.2	22.8	#187.6		#37.4	82.1	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	484	871	783	542	863	833	381	2134		84	1583	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.22	0.22	0.17	0.23	0.27	0.09	0.52	0.83		0.86	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.7			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 94.0%		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: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	179	123	114	217	66	183	1497	142	66	804	68
Future Volume (vph)	98	179	123	114	217	66	183	1497	142	66	804	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3510		1546	3304	
Flt Permitted	0.52	1.00	1.00	0.61	1.00	1.00	0.22	1.00		0.11	1.00	
Satd. Flow (perm)	962	1731	1424	1078	1715	1577	395	3510		175	3304	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	195	134	124	236	72	199	1627	154	72	874	74
RTOR Reduction (vph)	0	0	106	0	0	57	0	5	0	0	5	0
Lane Group Flow (vph)	107	195	28	124	236	15	199	1776	0	72	943	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.2	37.2	
Effective Green, g (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.2	37.2	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	360	296	224	357	328	359	2132		83	1581	
v/s Ratio Prot		0.11			c0.14		0.05	c0.51			0.29	
v/s Ratio Perm	0.11		0.02	0.12		0.01	0.29			0.41		
v/c Ratio	0.54	0.54	0.09	0.55	0.66	0.05	0.55	0.83		0.87	0.60	
Uniform Delay, d1	27.4	27.4	24.8	27.5	28.2	24.6	8.0	12.1		18.1	14.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.7	0.1	2.9	4.5	0.1	1.9	4.0		66.9	1.7	
Delay (s)	30.1	29.1	25.0	30.5	32.8	24.6	9.9	16.1		85.0	16.4	
Level of Service	C	C	C	C	C	C	A	B		F	B	
Approach Delay (s)		28.1			30.8			15.5			21.3	
Approach LOS		C			C			B			C	

Intersection Summary					
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	94.0%	ICU Level of Service	F		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	384	8	19	320	4	3	13	15	13	80	28
Future Volume (vph)	13	384	8	19	320	4	3	13	15	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.935			0.969	
Flt Protected		0.998			0.997			0.995			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Flt Permitted		0.998			0.997			0.995			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	417	9	21	348	4	3	14	16	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	431	9	0	369	4	0	33	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	384	8	19	320	4	3	13	15	13	80	28
Future Volume (Veh/h)	13	384	8	19	320	4	3	13	15	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	417	9	21	348	4	3	14	16	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	352			426			908	839	417	858	844	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352			426			908	839	417	858	844	348
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			98			98	95	97	94	68	96
cM capacity (veh/h)	1071			1072			182	284	603	224	275	700

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	431	9	369	4	33	131
Volume Left	14	0	21	0	3	14
Volume Right	0	9	0	4	16	30
cSH	1071	1700	1072	1700	357	310
Volume to Capacity	0.01	0.01	0.02	0.00	0.09	0.42
Queue Length 95th (m)	0.3	0.0	0.5	0.0	2.3	15.3
Control Delay (s)	0.4	0.0	0.7	0.0	16.1	24.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.7		16.1	24.8
Approach LOS					C	C

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	48.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	314	1	25	358	5	13	3	4	9	11	16
Future Volume (vph)	10	314	1	25	358	5	13	3	4	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.998			0.997			0.968			0.987	
Satd. Flow (prot)	0	1589	1633	0	1633	1089	0	1602	0	0	1472	0
Flt Permitted		0.998			0.997			0.968			0.987	
Satd. Flow (perm)	0	1589	1633	0	1633	1089	0	1602	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	341	1	27	389	5	14	3	4	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	1	0	416	5	0	21	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	314	1	25	358	5	13	3	4	9	11	16
Future Volume (Veh/h)	10	314	1	25	358	5	13	3	4	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	341	1	27	389	5	14	3	4	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	394			342			829	811	341	812	807	389
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	394			342			829	811	341	812	807	389
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			98			94	99	99	97	96	97
cM capacity (veh/h)	985			1118			250	305	686	288	290	587

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	352	1	416	5	21	39
Volume Left	11	0	27	0	14	10
Volume Right	0	1	0	5	4	17
cSH	985	1700	1118	1700	293	371
Volume to Capacity	0.01	0.00	0.02	0.00	0.07	0.10
Queue Length 95th (m)	0.3	0.0	0.6	0.0	1.7	2.7
Control Delay (s)	0.4	0.0	0.8	0.0	18.2	15.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.8		18.2	15.8
Approach LOS					C	C

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	49.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	166	242	170	156	27	120	810	86	52	1963	5
Future Volume (vph)	82	166	242	170	156	27	120	810	86	52	1963	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3349	0
Flt Permitted	0.650			0.644			0.099			0.294		
Satd. Flow (perm)	1197	1731	1423	1132	1715	1576	179	3503	0	478	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	89	180	263	185	170	29	130	880	93	57	2134	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	180	263	185	170	29	130	973	0	57	2139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	18.4	18.4	18.4	18.4	18.4	18.4	51.6	47.2		37.2	37.2	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.65	0.59		0.47	0.47	
v/c Ratio	0.32	0.45	0.57	0.71	0.43	0.07	0.52	0.47		0.26	1.37	
Control Delay	28.1	29.6	14.6	43.6	29.2	0.3	16.8	11.0		19.3	194.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.1	29.6	14.6	43.6	29.2	0.3	16.8	11.0		19.3	194.5	
LOS	C	C	B	D	C	A	B	B		B	F	
Approach Delay		21.9			34.0			11.7			190.0	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	11.2	23.5	11.1	25.8	22.1	0.0	6.5	38.4		5.0	~226.8	
Queue Length 95th (m)	22.8	40.4	31.6	46.4	38.3	0.0	#22.5	70.2		16.2	#317.3	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	587	849	787	555	842	814	251	2078		222	1559	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.15	0.21	0.33	0.33	0.20	0.04	0.52	0.47		0.26	1.37	

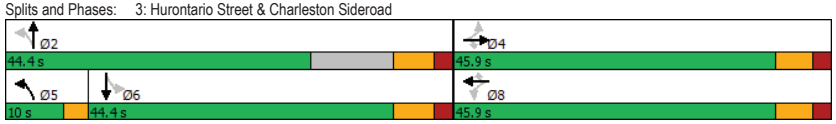
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 79.9			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.37			
Intersection Signal Delay: 107.9		Intersection LOS: F	
Intersection Capacity Utilization 103.2%		ICU Level of Service G	

Analysis Period (min) 15

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

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

Splits and Phases: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	166	242	170	156	27	120	810	86	52	1963	5
Future Volume (vph)	82	166	242	170	156	27	120	810	86	52	1963	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3503		1545	3347	
Flt Permitted	0.65	1.00	1.00	0.64	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1197	1731	1424	1133	1715	1577	180	3503		479	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	180	263	185	170	29	130	880	93	57	2134	5
RTOR Reduction (vph)	0	0	134	0	0	22	0	6	0	0	0	0
Lane Group Flow (vph)	89	180	129	185	170	7	130	967	0	57	2139	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	18.4	18.4	18.4	18.4	18.4	18.4	47.2	47.2		37.3	37.3	
Effective Green, g (s)	18.4	18.4	18.4	18.4	18.4	18.4	47.2	47.2		37.3	37.3	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.59	0.59		0.47	0.47	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	275	398	327	260	394	363	239	2069		223	1562	
v/s Ratio Prot		0.10			0.10		c0.05	0.28			c0.64	
v/s Ratio Perm	0.07		0.09	c0.16		0.00	0.27			0.12		
v/c Ratio	0.32	0.45	0.39	0.71	0.43	0.02	0.54	0.47		0.26	1.37	
Uniform Delay, d1	25.6	26.4	26.0	28.3	26.3	23.8	16.1	9.2		12.9	21.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	0.8	8.9	0.8	0.0	2.5	0.8		2.7	170.4	
Delay (s)	26.3	27.2	26.8	37.2	27.0	23.8	18.6	10.0		15.6	191.7	
Level of Service	C	C	C	D	C	C	B	B		B	F	
Approach Delay (s)		26.9			31.7			11.0			187.1	
Approach LOS		C			C			B			F	

Intersection Summary					
HCM 2000 Control Delay	106.7	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	103.2%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	421	6	6	455	19	10	71	19	8	16	18
Future Volume (vph)	30	421	6	6	455	19	10	71	19	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.997			0.999			0.995			0.990	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Flt Permitted		0.997			0.999			0.995			0.990	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	458	7	7	495	21	11	77	21	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	7	0	502	21	0	109	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	421	6	6	455	19	10	71	19	8	16	18
Future Volume (Veh/h)	30	421	6	6	455	19	10	71	19	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	458	7	7	495	21	11	77	21	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	516			465			1062	1054	458	1092	1040	495
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			465			1062	1054	458	1092	1040	495
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			99			94	63	96	92	92	97
cM capacity (veh/h)	925			1036			178	209	571	112	208	579

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	491	7	502	21	109	46
Volume Left	33	0	7	0	11	9
Volume Right	0	7	0	21	21	20
cSH	925	1700	1036	1700	234	234
Volume to Capacity	0.04	0.00	0.01	0.01	0.47	0.20
Queue Length 95th (m)	0.8	0.0	0.2	0.0	17.4	5.4
Control Delay (s)	1.0	0.0	0.2	0.0	33.2	24.2
Lane LOS	A		A		D	C
Approach Delay (s)	1.0		0.2		33.2	24.2
Approach LOS					D	C

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	59.8%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	418	11	15	463	8	4	22	14	6	8	10
Future Volume (vph)	25	418	11	15	463	8	4	22	14	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.953			0.945	
Flt Protected		0.997			0.998			0.995			0.987	
Satd. Flow (prot)	0	1581	1633	0	1637	1089	0	1740	0	0	1487	0
Flt Permitted		0.997			0.998			0.995			0.987	
Satd. Flow (perm)	0	1581	1633	0	1637	1089	0	1740	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	454	12	16	503	9	4	24	15	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	12	0	519	9	0	43	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	418	11	15	463	8	4	22	14	6	8	10
Future Volume (Veh/h)	25	418	11	15	463	8	4	22	14	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	454	12	16	503	9	4	24	15	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	512			466			1058	1052	454	1070	1055	503
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	512			466			1058	1052	454	1070	1055	503
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			98			98	89	97	96	96	98
cM capacity (veh/h)	885			1003			173	218	592	173	204	503

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	481	12	519	9	43	27
Volume Left	27	0	16	0	4	7
Volume Right	0	12	0	9	15	11
cSH	885	1700	1003	1700	271	254
Volume to Capacity	0.03	0.01	0.02	0.01	0.16	0.11
Queue Length 95th (m)	0.7	0.0	0.4	0.0	4.2	2.7
Control Delay (s)	0.9	0.0	0.5	0.0	20.8	20.9
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.4		20.8	20.9
Approach LOS					C	C

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	52.5%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	218	150	139	265	80	223	1825	174	80	980	82
Future Volume (vph)	119	218	150	139	265	80	223	1825	174	80	980	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.439			0.535			0.137			0.107		
Satd. Flow (perm)	809	1731	1423	941	1715	1576	248	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			163			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	129	237	163	151	288	87	242	1984	189	87	1065	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	237	163	151	288	87	242	2173	0	87	1154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.5	19.5	19.5	19.5	19.5	19.5	51.7	47.2		37.2	37.2	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.64	0.58		0.46	0.46	
v/c Ratio	0.66	0.57	0.35	0.67	0.70	0.20	0.85	1.06		1.10	0.76	
Control Delay	44.7	32.4	6.2	42.6	37.4	7.8	39.4	58.0		162.1	23.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.7	32.4	6.2	42.6	37.4	7.8	39.4	58.0		162.1	23.4	
LOS	D	C	A	D	D	A	D	E		F	C	
Approach Delay		27.3			34.0			56.1			33.1	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	18.0	32.1	0.0	21.0	40.4	0.8	13.8	~195.4		~15.2	73.4	
Queue Length 95th (m)	35.8	52.6	13.0	39.9	64.6	10.6	#54.3	#284.7		#47.5	120.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	391	836	772	454	828	803	285	2049		79	1520	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.33	0.28	0.21	0.33	0.35	0.11	0.85	1.06		1.10	0.76	

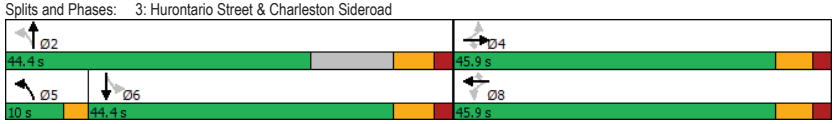
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.1			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 44.4		Intersection LOS: D	
Intersection Capacity Utilization 107.7%		ICU Level of Service G	

Analysis Period (min) 15

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

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

Splits and Phases: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	218	150	139	265	80	223	1825	174	80	980	82
Future Volume (vph)	119	218	150	139	265	80	223	1825	174	80	980	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3305	
Flt Permitted	0.44	1.00	1.00	0.53	1.00	1.00	0.14	1.00		0.11	1.00	
Satd. Flow (perm)	809	1731	1424	941	1715	1577	248	3509		175	3305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	237	163	151	288	87	242	1984	189	87	1065	89
RTOR Reduction (vph)	0	0	124	0	0	61	0	5	0	0	5	0
Lane Group Flow (vph)	129	237	39	151	288	26	242	2168	0	87	1149	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.5	19.5	19.5	19.5	19.5	19.5	47.3	47.3		37.3	37.3	
Effective Green, g (s)	19.5	19.5	19.5	19.5	19.5	19.5	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	194	416	342	226	412	379	271	2046		80	1520	
v/s Ratio Prot		0.14			c0.17		0.08	c0.62			0.35	
v/s Ratio Perm	0.16		0.03	0.16		0.02	0.44			0.50		
v/c Ratio	0.66	0.57	0.11	0.67	0.70	0.07	0.89	1.06		1.09	0.76	
Uniform Delay, d1	27.8	27.1	24.1	27.9	28.1	23.8	12.5	16.9		21.9	18.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.3	1.8	0.1	7.3	5.1	0.1	28.6	37.8		126.5	3.5	
Delay (s)	36.2	28.9	24.2	35.2	33.2	23.9	41.2	54.7		148.4	21.7	
Level of Service	D	C	C	D	C	C	D	D		F	C	
Approach Delay (s)		29.2			32.2			53.4			30.6	
Approach LOS		C			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	107.7%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	388	8	19	325	4	3	13	15	13	80	28
Future Volume (vph)	13	388	8	19	325	4	3	13	15	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.935			0.969	
Flt Protected		0.998			0.997			0.995			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Flt Permitted		0.998			0.997			0.995			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	422	9	21	353	4	3	14	16	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	436	9	0	374	4	0	33	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	388	8	19	325	4	3	13	15	13	80	28
Future Volume (Veh/h)	13	388	8	19	325	4	3	13	15	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	422	9	21	353	4	3	14	16	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	357			431			918	849	422	868	854	353
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	357			431			918	849	422	868	854	353
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			98			98	95	97	94	68	96
cM capacity (veh/h)	1067			1067			178	280	599	220	271	695

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	436	9	374	4	33	131
Volume Left	14	0	21	0	3	14
Volume Right	0	9	0	4	16	30
cSH	1067	1700	1067	1700	353	306
Volume to Capacity	0.01	0.01	0.02	0.00	0.09	0.43
Queue Length 95th (m)	0.3	0.0	0.5	0.0	2.3	15.6
Control Delay (s)	0.4	0.0	0.7	0.0	16.3	25.3
Lane LOS	A		A		C	D
Approach Delay (s)	0.4		0.7		16.3	25.3
Approach LOS					C	D

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	48.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	318	1	26	363	5	13	3	5	9	11	16
Future Volume (vph)	10	318	1	26	363	5	13	3	5	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969			0.941	
Flt Protected		0.998			0.997			0.969			0.987	
Satd. Flow (prot)	0	1590	1633	0	1633	1089	0	1598	0	0	1472	0
Flt Permitted		0.998			0.997			0.969			0.987	
Satd. Flow (perm)	0	1590	1633	0	1633	1089	0	1598	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	346	1	28	395	5	14	3	5	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	357	1	0	423	5	0	22	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	318	1	26	363	5	13	3	5	9	11	16
Future Volume (Veh/h)	10	318	1	26	363	5	13	3	5	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	346	1	28	395	5	14	3	5	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	400			347			842	824	346	826	820	395
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			347			842	824	346	826	820	395
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			97			94	99	99	96	96	97
cM capacity (veh/h)	980			1114			245	299	681	281	285	583

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	357	1	423	5	22	39
Volume Left	11	0	28	0	14	10
Volume Right	0	1	0	5	5	17
cSH	980	1700	1114	1700	295	365
Volume to Capacity	0.01	0.00	0.03	0.00	0.07	0.11
Queue Length 95th (m)	0.3	0.0	0.6	0.0	1.8	2.7
Control Delay (s)	0.4	0.0	0.8	0.0	18.2	16.0
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.8		18.2	16.0
Approach LOS					C	C

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	50.5%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	166	288	170	156	27	153	810	86	52	1963	11
Future Volume (vph)	88	166	288	170	156	27	153	810	86	52	1963	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3345	0
Flt Permitted	0.650			0.644			0.099			0.294		
Satd. Flow (perm)	1197	1731	1423	1132	1715	1576	179	3503	0	478	3345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15			1	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	96	180	313	185	170	29	166	880	93	57	2134	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	180	313	185	170	29	166	973	0	57	2146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	18.4	18.4	18.4	18.4	18.4	18.4	51.7	47.3		37.2	37.2	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.65	0.59		0.46	0.46	
v/c Ratio	0.35	0.45	0.68	0.71	0.43	0.07	0.66	0.47		0.26	1.38	
Control Delay	28.7	29.7	20.0	43.7	29.2	0.3	25.8	11.0		19.4	197.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.7	29.7	20.0	43.7	29.2	0.3	25.8	11.0		19.4	197.9	
LOS	C	C	B	D	C	A	C	B		B	F	
Approach Delay		24.3			34.0			13.2			193.3	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	12.2	23.5	18.0	25.8	22.1	0.0	8.5	38.4		5.0	~230.6	
Queue Length 95th (m)	24.5	40.4	43.3	46.4	38.3	0.0	#40.9	70.2		16.2	#323.1	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	587	848	786	554	840	813	251	2075		222	1556	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.16	0.21	0.40	0.33	0.20	0.04	0.66	0.47		0.26	1.38	

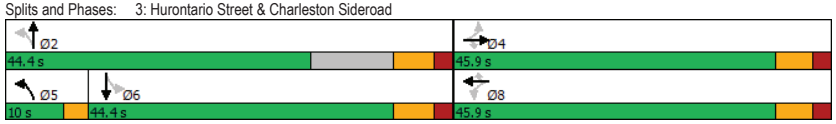
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 80			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 108.5		Intersection LOS: F	
Intersection Capacity Utilization 105.2%		ICU Level of Service G	

Analysis Period (min) 15

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

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

Splits and Phases: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	166	288	170	156	27	153	810	86	52	1963	11
Future Volume (vph)	88	166	288	170	156	27	153	810	86	52	1963	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3503		1545	3346	
Flt Permitted	0.65	1.00	1.00	0.64	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1197	1731	1424	1133	1715	1577	180	3503		479	3346	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	180	313	185	170	29	166	880	93	57	2134	12
RTOR Reduction (vph)	0	0	134	0	0	22	0	6	0	0	1	0
Lane Group Flow (vph)	96	180	179	185	170	7	166	967	0	57	2145	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	18.4	18.4	18.4	18.4	18.4	18.4	47.3	47.3		37.3	37.3	
Effective Green, g (s)	18.4	18.4	18.4	18.4	18.4	18.4	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.59	0.59		0.47	0.47	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	275	398	327	260	394	362	241	2071		223	1560	
v/s Ratio Prot		0.10			0.10		c0.06	0.28			c0.64	
v/s Ratio Perm	0.08		0.13	c0.16		0.00	0.35			0.12		
v/c Ratio	0.35	0.45	0.55	0.71	0.43	0.02	0.69	0.47		0.26	1.38	
Uniform Delay, d1	25.8	26.5	27.1	28.4	26.3	23.8	16.5	9.2		12.9	21.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.8	1.9	8.9	0.8	0.0	7.9	0.8		2.7	173.0	
Delay (s)	26.6	27.3	29.0	37.2	27.1	23.8	24.4	10.0		15.7	194.4	
Level of Service	C	C	C	D	C	C	C	A		B	F	
Approach Delay (s)		28.1			31.7			12.1			189.7	
Approach LOS		C			C			B			F	

Intersection Summary					
HCM 2000 Control Delay	106.7	HCM 2000 Level of Service		F	
HCM 2000 Volume to Capacity ratio	1.10				
Actuated Cycle Length (s)	80.0	Sum of lost time (s)		17.3	
Intersection Capacity Utilization	105.2%	ICU Level of Service		G	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	426	6	6	460	19	10	71	19	8	16	18
Future Volume (vph)	30	426	6	6	460	19	10	71	19	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.997			0.999			0.995			0.990	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Flt Permitted		0.997			0.999			0.995			0.990	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			771.0			149.8	
Travel Time (s)		11.3			105.0			57.8			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	463	7	7	500	21	11	77	21	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	496	7	0	507	21	0	109	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	426	6	6	460	19	10	71	19	8	16	18
Future Volume (Veh/h)	30	426	6	6	460	19	10	71	19	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	463	7	7	500	21	11	77	21	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	521			470			1072	1064	463	1102	1050	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521			470			1072	1064	463	1102	1050	500
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			99			94	63	96	92	92	97
cM capacity (veh/h)	921			1032			175	207	567	109	205	575

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	496	7	507	21	109	46
Volume Left	33	0	7	0	11	9
Volume Right	0	7	0	21	21	20
cSH	921	1700	1032	1700	231	230
Volume to Capacity	0.04	0.00	0.01	0.01	0.47	0.20
Queue Length 95th (m)	0.8	0.0	0.2	0.0	17.7	5.5
Control Delay (s)	1.0	0.0	0.2	0.0	33.9	24.5
Lane LOS	A		A		D	C
Approach Delay (s)	1.0		0.2		33.9	24.5
Approach LOS					D	C

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	60.0%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	423	11	17	468	8	4	22	19	6	8	10
Future Volume (vph)	25	423	11	17	468	8	4	22	19	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.945	
Flt Protected		0.997			0.998			0.996			0.987	
Satd. Flow (prot)	0	1582	1633	0	1637	1089	0	1713	0	0	1487	0
Flt Permitted		0.997			0.998			0.996			0.987	
Satd. Flow (perm)	0	1582	1633	0	1637	1089	0	1713	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	460	12	18	509	9	4	24	21	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	487	12	0	527	9	0	49	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	423	11	17	468	8	4	22	19	6	8	10
Future Volume (Veh/h)	25	423	11	17	468	8	4	22	19	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	460	12	18	509	9	4	24	21	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	518			472			1074	1068	460	1092	1071	509
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	518			472			1074	1068	460	1092	1071	509
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			98			98	89	96	96	95	98
cM capacity (veh/h)	880			998			168	213	587	165	199	499

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	487	12	527	9	49	27
Volume Left	27	0	18	0	4	7
Volume Right	0	12	0	9	21	11
cSH	880	1700	998	1700	284	246
Volume to Capacity	0.03	0.01	0.02	0.01	0.17	0.11
Queue Length 95th (m)	0.7	0.0	0.4	0.0	4.7	2.8
Control Delay (s)	0.9	0.0	0.5	0.0	20.3	21.4
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.5		20.3	21.4
Approach LOS					C	C

Intersection Summary					
Average Delay	2.0				
Intersection Capacity Utilization	52.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	218	190	139	265	80	266	1825	174	80	980	84
Future Volume (vph)	136	218	190	139	265	80	266	1825	174	80	980	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.442			0.536			0.135			0.107		
Satd. Flow (perm)	814	1731	1423	943	1715	1576	245	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			191			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	148	237	207	151	288	87	289	1984	189	87	1065	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	237	207	151	288	87	289	2173	0	87	1156	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.9	19.9	19.9	19.9	19.9	19.9	51.7	47.3		37.2	37.2	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.63	0.58		0.46	0.46	
v/c Ratio	0.75	0.56	0.42	0.66	0.69	0.20	1.02	1.07		1.10	0.76	
Control Delay	51.1	31.9	7.4	41.5	36.6	7.6	77.2	60.0		164.3	24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.1	31.9	7.4	41.5	36.6	7.6	77.2	60.0		164.3	24.0	
LOS	D	C	A	D	D	A	E	E		F	C	
Approach Delay		28.1			33.2			62.0			33.8	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	21.1	32.1	1.9	21.0	40.4	0.8	~22.9	~195.4		~15.2	73.5	
Queue Length 95th (m)	41.2	52.3	16.4	39.5	64.2	10.5	#78.6	#296.4		#48.8	#136.1	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	391	832	783	453	824	799	283	2039		79	1513	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.28	0.26	0.33	0.35	0.11	1.02	1.07		1.10	0.76	

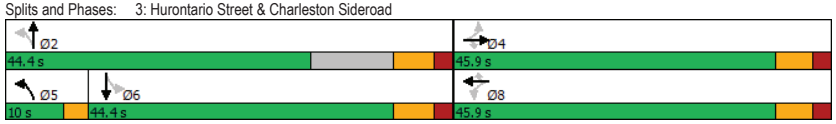
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.6			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 47.5		Intersection LOS: D	
Intersection Capacity Utilization 108.6%		ICU Level of Service 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: 3: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	218	190	139	265	80	266	1825	174	80	980	84
Future Volume (vph)	136	218	190	139	265	80	266	1825	174	80	980	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3304	
Flt Permitted	0.44	1.00	1.00	0.54	1.00	1.00	0.13	1.00		0.11	1.00	
Satd. Flow (perm)	814	1731	1424	944	1715	1577	244	3509		175	3304	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	237	207	151	288	87	289	1984	189	87	1065	91
RTOR Reduction (vph)	0	0	144	0	0	60	0	5	0	0	5	0
Lane Group Flow (vph)	148	237	63	151	288	27	289	2168	0	87	1151	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.3	47.3		37.3	37.3	
Effective Green, g (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	198	422	347	230	418	385	268	2036		80	1512	
v/s Ratio Prot		0.14			0.17		0.09	c0.62			0.35	
v/s Ratio Perm	c0.18		0.04	0.16		0.02	c0.53			0.50		
v/c Ratio	0.75	0.56	0.18	0.66	0.69	0.07	1.08	1.06		1.09	0.76	
Uniform Delay, d1	28.5	27.0	24.4	27.7	28.0	23.7	15.3	17.1		22.1	18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.3	1.7	0.3	6.6	4.7	0.1	77.4	39.7		126.5	3.7	
Delay (s)	42.7	28.7	24.6	34.3	32.7	23.8	92.7	56.8		148.6	22.1	
Level of Service	D	C	C	C	C	C	F	E		F	C	
Approach Delay (s)		30.8			31.7			61.0			30.9	
Approach LOS		C			C			E			C	

Intersection Summary					
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	1.02				
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	108.6%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Appendix E

Total Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	315	6	34	262	3	2	10	120	10	66	23
Future Volume (vph)	10	315	6	34	262	3	2	10	120	10	66	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.877			0.969	
Flt Protected		0.998			0.994			0.999			0.995	
Satd. Flow (prot)	0	1581	1633	0	1625	1228	0	1437	0	0	1615	0
Flt Permitted		0.998			0.994			0.999			0.995	
Satd. Flow (perm)	0	1581	1633	0	1625	1228	0	1437	0	0	1615	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	11	342	7	37	285	3	2	11	130	11	72	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	7	0	322	3	0	143	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	315	6	34	262	3	2	10	120	10	66	23
Future Volume (Veh/h)	10	315	6	34	262	3	2	10	120	10	66	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	342	7	37	285	3	2	11	130	11	72	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	288			349			784	726	342	858	730	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			349			784	726	342	858	730	285
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			97			99	97	80	94	77	97
cM capacity (veh/h)	1134			1146			242	327	666	186	318	759

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	353	7	322	3	143	108
Volume Left	11	0	37	0	2	11
Volume Right	0	7	0	3	130	25
cSH	1134	1700	1146	1700	603	339
Volume to Capacity	0.01	0.00	0.03	0.00	0.24	0.32
Queue Length 95th (m)	0.2	0.0	0.8	0.0	7.0	10.2
Control Delay (s)	0.4	0.0	1.2	0.0	12.8	20.5
Lane LOS	A		A		B	C
Approach Delay (s)	0.3		1.2		12.8	20.5
Approach LOS					B	C

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	53.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	366	1	21	311	4	10	2	3	7	9	14
Future Volume (vph)	8	366	1	21	311	4	10	2	3	7	9	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.975			0.939	
Flt Protected		0.999			0.997			0.967			0.988	
Satd. Flow (prot)	0	1593	1633	0	1633	1089	0	1598	0	0	1463	0
Flt Permitted		0.999			0.997			0.967			0.988	
Satd. Flow (perm)	0	1593	1633	0	1633	1089	0	1598	0	0	1463	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	9	398	1	23	338	4	11	2	3	8	10	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	1	0	361	4	0	16	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	366	1	21	311	4	10	2	3	7	9	14
Future Volume (Veh/h)	8	366	1	21	311	4	10	2	3	7	9	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	398	1	23	338	4	11	2	3	8	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	342			399			820	804	398	804	801	338
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	342			399			820	804	398	804	801	338
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			98			96	99	100	97	97	98
cM capacity (veh/h)	1033			1064			257	309	637	294	294	629

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	407	1	361	4	16	33
Volume Left	9	0	23	0	11	8
Volume Right	0	1	0	4	3	15
cSH	1033	1700	1064	1700	297	388
Volume to Capacity	0.01	0.00	0.02	0.00	0.05	0.09
Queue Length 95th (m)	0.2	0.0	0.5	0.0	1.3	2.1
Control Delay (s)	0.3	0.0	0.8	0.0	17.8	15.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.3		0.7		17.8	15.1
Approach LOS					C	C

Intersection Summary					
Average Delay	1.4				
Intersection Capacity Utilization	43.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	108	33	0	18	87
Future Volume (vph)	0	108	33	0	18	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.991
Satd. Flow (prot)	1629	0	1883	0	0	1866
Flt Permitted						0.991
Satd. Flow (perm)	1629	0	1883	0	0	1866
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	117	36	0	20	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	36	0	0	115
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	108	33	0	18	87
Future Volume (Veh/h)	0	108	33	0	18	87
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	117	36	0	20	95
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	171	36			36	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171	36			36	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			99	
cM capacity (veh/h)	809	1037			1575	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	117	36	115
Volume Left	0	0	20
Volume Right	117	0	0
cSH	1037	1700	1575
Volume to Capacity	0.11	0.02	0.01
Queue Length 95th (m)	2.9	0.0	0.3
Control Delay (s)	8.9	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Future Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3349	0
Flt Permitted	0.668			0.659			0.099			0.349		
Satd. Flow (perm)	1230	1731	1423	1159	1715	1576	179	3503	0	567	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	79	154	322	151	140	24	125	723	77	47	1750	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	154	322	151	140	24	125	800	0	47	1755	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	16.2	16.2	16.2	16.2	16.2	16.2	51.6	47.2		37.3	37.3	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.61		0.48	0.48	
v/c Ratio	0.31	0.43	0.74	0.63	0.39	0.06	0.49	0.38		0.17	1.09	
Control Delay	28.4	29.7	23.6	39.4	29.1	0.3	14.8	9.2		16.2	75.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.4	29.7	23.6	39.4	29.1	0.3	14.8	9.2		16.2	75.8	
LOS	C	C	C	D	C	A	B	A		B	E	
Approach Delay		26.0			31.8			10.0			74.2	
Approach LOS		C			C			A			E	
Queue Length 50th (m)	9.9	19.7	19.3	20.3	17.8	0.0	5.4	26.2		3.6	~151.6	
Queue Length 95th (m)	20.7	35.1	45.7	37.6	32.2	0.0	20.6	53.4		12.7	#240.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	621	874	805	585	865	835	258	2137		271	1604	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.18	0.40	0.26	0.16	0.03	0.48	0.37		0.17	1.09	

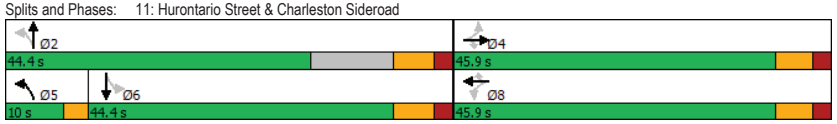
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.8			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 46.6		Intersection LOS: D	
Intersection Capacity Utilization 90.5%		ICU Level of Service 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: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Future Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3502		1545	3347	
Flt Permitted	0.67	1.00	1.00	0.66	1.00	1.00	0.10	1.00		0.35	1.00	
Satd. Flow (perm)	1230	1731	1424	1160	1715	1577	180	3502		568	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	154	322	151	140	24	125	723	77	47	1750	5
RTOR Reduction (vph)	0	0	139	0	0	19	0	6	0	0	0	0
Lane Group Flow (vph)	79	154	183	151	140	5	125	794	0	47	1755	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.3	37.3	
Effective Green, g (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.3	37.3	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	256	360	296	241	357	328	246	2127		272	1606	
v/s Ratio Prot		0.09			0.08		c0.05	0.23			c0.52	
v/s Ratio Perm	0.06		0.13	c0.13		0.00	0.26			0.08		
v/c Ratio	0.31	0.43	0.62	0.63	0.39	0.02	0.51	0.37		0.17	1.09	
Uniform Delay, d1	26.0	26.7	28.0	28.0	26.5	24.4	15.6	7.7		11.5	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	3.8	5.0	0.7	0.0	1.7	0.5		1.4	52.3	
Delay (s)	26.7	27.5	31.8	33.0	27.2	24.4	17.2	8.2		12.8	72.5	
Level of Service	C	C	C	C	C	C	B	A		B	E	
Approach Delay (s)		29.9			29.8			9.5			70.9	
Approach LOS		C			C			A			E	

Intersection Summary					
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.90				
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	90.5%	ICU Level of Service	E		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	345	5	77	373	16	8	58	43	6	14	15
Future Volume (vph)	25	345	5	77	373	16	8	58	43	6	14	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.947			0.943	
Flt Protected		0.997			0.991			0.996			0.991	
Satd. Flow (prot)	0	1576	1633	0	1623	1228	0	1612	0	0	1592	0
Flt Permitted		0.997			0.991			0.996			0.991	
Satd. Flow (perm)	0	1576	1633	0	1623	1228	0	1612	0	0	1592	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	27	375	5	84	405	17	9	63	47	7	15	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	5	0	489	17	0	119	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	345	5	77	373	16	8	58	43	6	14	15
Future Volume (Veh/h)	25	345	5	77	373	16	8	58	43	6	14	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	375	5	84	405	17	9	63	47	7	15	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	422			380			1026	1019	375	1080	1007	405
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422			380			1026	1019	375	1080	1007	405
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	97			92			95	69	93	94	93	98
cM capacity (veh/h)	1007			1116			183	206	637	112	204	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	402	5	489	17	119	38
Volume Left	27	0	84	0	9	7
Volume Right	0	5	0	17	47	16
cSH	1007	1700	1116	1700	278	237
Volume to Capacity	0.03	0.00	0.08	0.01	0.43	0.16
Queue Length 95th (m)	0.6	0.0	1.9	0.0	15.5	4.3
Control Delay (s)	0.9	0.0	2.2	0.0	27.3	23.1
Lane LOS	A		A		D	C
Approach Delay (s)	0.9		2.1		27.3	23.1
Approach LOS					D	C

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	60.3%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	366	1	21	311	4	10	2	3	7	9	14
Future Volume (vph)	8	366	1	21	311	4	10	2	3	7	9	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.975			0.939	
Flt Protected		0.999			0.997			0.967			0.988	
Satd. Flow (prot)	0	1593	1633	0	1633	1089	0	1598	0	0	1463	0
Flt Permitted		0.999			0.997			0.967			0.988	
Satd. Flow (perm)	0	1593	1633	0	1633	1089	0	1598	0	0	1463	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	9	398	1	23	338	4	11	2	3	8	10	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	1	0	361	4	0	16	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	366	1	21	311	4	10	2	3	7	9	14
Future Volume (Veh/h)	8	366	1	21	311	4	10	2	3	7	9	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	398	1	23	338	4	11	2	3	8	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	342			399			820	804	398	804	801	338
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	342			399			820	804	398	804	801	338
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			98			96	99	100	97	97	98
cM capacity (veh/h)	1033			1064			257	309	637	294	294	629

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	407	1	361	4	16	33
Volume Left	9	0	23	0	11	8
Volume Right	0	1	0	4	3	15
cSH	1033	1700	1064	1700	297	388
Volume to Capacity	0.01	0.00	0.02	0.00	0.05	0.09
Queue Length 95th (m)	0.2	0.0	0.5	0.0	1.3	2.1
Control Delay (s)	0.3	0.0	0.8	0.0	17.8	15.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.3		0.7		17.8	15.1
Approach LOS					C	C

Intersection Summary					
Average Delay	1.4				
Intersection Capacity Utilization	43.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	27	82	0	72	24
Future Volume (vph)	0	27	82	0	72	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.964
Satd. Flow (prot)	1629	0	1883	0	0	1816
Flt Permitted						0.964
Satd. Flow (perm)	1629	0	1883	0	0	1816
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	29	89	0	78	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	89	0	0	104
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	27	82	0	72	24
Future Volume (Veh/h)	0	27	82	0	72	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	89	0	78	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	271	89			89	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271	89			89	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			95	
cM capacity (veh/h)	681	969			1506	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	29	89	104
Volume Left	0	0	78
Volume Right	29	0	0
cSH	969	1700	1506
Volume to Capacity	0.03	0.05	0.05
Queue Length 95th (m)	0.7	0.0	1.2
Control Delay (s)	8.8	0.0	5.7
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	5.7
Approach LOS	A		

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		21.9%	ICU Level of Service	A
Analysis Period (min)		15		

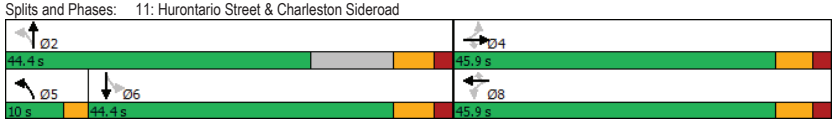
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Future Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.514			0.608			0.216			0.108		
Satd. Flow (perm)	947	1731	1423	1069	1715	1576	391	3509	0	176	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	108	197	160	124	240	72	270	1627	154	72	874	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	197	160	124	240	72	270	1781	0	72	951	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	16.4	16.4	16.4	16.4	16.4	16.4	51.6	47.2		37.1	37.1	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.61		0.48	0.48	
v/c Ratio	0.54	0.54	0.38	0.55	0.67	0.18	0.71	0.84		0.87	0.60	
Control Delay	37.7	32.8	7.1	36.9	37.4	6.5	19.9	18.2		95.7	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.7	32.8	7.1	36.9	37.4	6.5	19.9	18.2		95.7	17.6	
LOS	D	C	A	D	D	A	B	B		F	B	
Approach Delay		25.1			32.2			18.4			23.1	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	14.2	25.9	0.0	16.4	32.6	0.0	13.3	96.0		8.8	50.0	
Queue Length 95th (m)	29.1	44.4	13.4	32.2	54.1	8.2	#42.3	#188.7		#37.6	83.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	475	869	794	537	861	831	378	2129		83	1579	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.23	0.23	0.20	0.23	0.28	0.09	0.71	0.84		0.87	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.9			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 21.9		Intersection LOS: C	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	

Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Future Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3510		1546	3302	
Flt Permitted	0.51	1.00	1.00	0.61	1.00	1.00	0.22	1.00		0.11	1.00	
Satd. Flow (perm)	948	1731	1424	1071	1715	1577	392	3510		175	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	197	160	124	240	72	270	1627	154	72	874	77
RTOR Reduction (vph)	0	0	126	0	0	57	0	5	0	0	5	0
Lane Group Flow (vph)	108	197	34	124	240	15	270	1776	0	72	946	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.4	16.4	16.4	16.4	16.4	16.4	47.2	47.2		37.2	37.2	
Effective Green, g (s)	16.4	16.4	16.4	16.4	16.4	16.4	47.2	47.2		37.2	37.2	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	364	299	225	361	332	357	2126		83	1576	
v/s Ratio Prot		0.11			c0.14		0.07	c0.51			0.29	
v/s Ratio Perm	0.11		0.02	0.12		0.01	0.39			0.41		
v/c Ratio	0.54	0.54	0.11	0.55	0.66	0.05	0.76	0.84		0.87	0.60	
Uniform Delay, d1	27.4	27.4	24.9	27.5	28.2	24.5	8.8	12.2		18.2	14.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.6	0.2	2.9	4.6	0.1	8.8	4.1		66.9	1.7	
Delay (s)	30.4	29.0	25.0	30.4	32.8	24.6	17.6	16.3		85.1	16.6	
Level of Service	C	C	C	C	C	C	B	B		F	B	
Approach Delay (s)		28.0			30.7			16.5			21.4	
Approach LOS		C			C			B			C	

Intersection Summary					
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	94.3%	ICU Level of Service	F		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	384	8	37	320	4	3	13	123	13	80	28
Future Volume (vph)	13	384	8	37	320	4	3	13	123	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.880			0.969	
Flt Protected		0.998			0.995			0.999			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1445	0	0	1613	0
Flt Permitted		0.998			0.995			0.999			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1445	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	417	9	40	348	4	3	14	134	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	431	9	0	388	4	0	151	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	384	8	37	320	4	3	13	123	13	80	28
Future Volume (Veh/h)	13	384	8	37	320	4	3	13	123	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	417	9	40	348	4	3	14	134	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	352			426			946	877	417	1014	882	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352			426			946	877	417	1014	882	348
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			96			98	95	78	90	66	96
cM capacity (veh/h)	1071			1072			165	265	603	137	256	700

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	431	9	388	4	151	131
Volume Left	14	0	40	0	3	14
Volume Right	0	9	0	4	134	30
cSH	1071	1700	1072	1700	515	270
Volume to Capacity	0.01	0.01	0.04	0.00	0.29	0.48
Queue Length 95th (m)	0.3	0.0	0.9	0.0	9.2	18.8
Control Delay (s)	0.4	0.0	1.2	0.0	14.9	30.3
Lane LOS	A		A		B	D
Approach Delay (s)	0.4		1.2		14.9	30.3
Approach LOS					B	D

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	62.8%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	422	1	25	376	5	13	3	4	9	11	16
Future Volume (vph)	10	422	1	25	376	5	13	3	4	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.999			0.997			0.968			0.987	
Satd. Flow (prot)	0	1593	1633	0	1634	1089	0	1602	0	0	1472	0
Flt Permitted		0.999			0.997			0.968			0.987	
Satd. Flow (perm)	0	1593	1633	0	1634	1089	0	1602	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	459	1	27	409	5	14	3	4	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	470	1	0	436	5	0	21	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	422	1	25	376	5	13	3	4	9	11	16
Future Volume (Veh/h)	10	422	1	25	376	5	13	3	4	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	459	1	27	409	5	14	3	4	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	414			460			967	949	459	950	945	409
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	414			460			967	949	459	950	945	409
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			97			93	99	99	96	95	97
cM capacity (veh/h)	968			1008			199	253	588	231	240	572

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	470	1	436	5	21	39
Volume Left	11	0	27	0	14	10
Volume Right	0	1	0	5	4	17
cSH	968	1700	1008	1700	236	317
Volume to Capacity	0.01	0.00	0.03	0.00	0.09	0.12
Queue Length 95th (m)	0.3	0.0	0.6	0.0	2.2	3.2
Control Delay (s)	0.3	0.0	0.8	0.0	21.8	17.9
Lane LOS	A		A		C	C
Approach Delay (s)	0.3		0.8		21.8	17.9
Approach LOS					C	C

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	50.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	108	41	0	18	107
Future Volume (vph)	0	108	41	0	18	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.993
Satd. Flow (prot)	1629	0	1883	0	0	1870
Flt Permitted						0.993
Satd. Flow (perm)	1629	0	1883	0	0	1870
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	117	45	0	20	116
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	45	0	0	136
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	108	41	0	18	107
Future Volume (Veh/h)	0	108	41	0	18	107
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	117	45	0	20	116
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	201	45			45	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	201	45			45	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			99	
cM capacity (veh/h)	777	1025			1563	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	117	45	136
Volume Left	0	0	20
Volume Right	117	0	0
cSH	1025	1700	1563
Volume to Capacity	0.11	0.03	0.01
Queue Length 95th (m)	2.9	0.0	0.3
Control Delay (s)	9.0	0.0	1.2
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	1.2
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

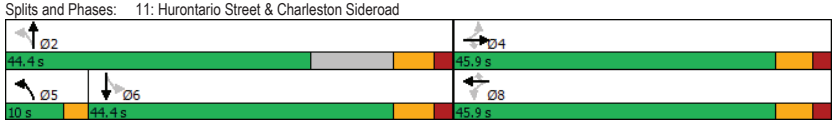
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Future Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3348	0
Flt Permitted	0.649			0.632			0.099			0.294		
Satd. Flow (perm)	1195	1731	1423	1111	1715	1576	179	3503	0	478	3348	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	95	187	368	185	171	29	148	880	93	57	2134	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	187	368	185	171	29	148	973	0	57	2141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.9	19.9	19.9	19.9	19.9	19.9	51.9	47.5		37.4	37.4	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.63	0.58		0.46	0.46	
v/c Ratio	0.33	0.44	0.77	0.69	0.41	0.07	0.60	0.48		0.26	1.40	
Control Delay	27.4	28.7	25.7	40.8	28.0	0.3	22.3	12.1		21.0	207.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	27.4	28.7	25.7	40.8	28.0	0.3	22.3	12.1		21.0	207.7	
LOS	C	C	C	D	C	A	C	B		C	F	
Approach Delay		26.8			32.1			13.5			202.9	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	12.0	24.5	27.6	25.9	22.2	0.0	7.9	40.3		5.1	~233.3	
Queue Length 95th (m)	24.0	41.2	57.0	46.0	38.1	0.0	#36.5	79.3		17.7	#341.7	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	575	833	775	534	825	800	246	2038		218	1528	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.17	0.22	0.47	0.35	0.21	0.04	0.60	0.48		0.26	1.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.8			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay: 112.7		Intersection LOS: F	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	

Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Future Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3503		1545	3347	
Flt Permitted	0.65	1.00	1.00	0.63	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1196	1731	1424	1111	1715	1577	180	3503		479	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	187	368	185	171	29	148	880	93	57	2134	7
RTOR Reduction (vph)	0	0	132	0	0	22	0	6	0	0	0	0
Lane Group Flow (vph)	95	187	236	185	171	7	148	967	0	57	2141	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.4	47.4		37.3	37.3	
Effective Green, g (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.4	47.4		37.3	37.3	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	291	422	347	270	418	384	238	2034		218	1529	
v/s Ratio Prot		0.11			0.10		c0.05	0.28			c0.64	
v/s Ratio Perm	0.08		0.17	c0.17		0.00	0.31			0.12		
v/c Ratio	0.33	0.44	0.68	0.69	0.41	0.02	0.62	0.48		0.26	1.40	
Uniform Delay, d1	25.3	26.2	28.0	28.0	25.9	23.4	16.6	9.9		13.7	22.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	5.4	7.0	0.7	0.0	5.0	0.8		2.9	184.1	
Delay (s)	26.0	26.9	33.4	35.0	26.6	23.5	21.6	10.7		16.6	206.3	
Level of Service	C	C	C	D	C	C	C	B		B	F	
Approach Delay (s)		30.5			30.4			12.1			201.4	
Approach LOS		C			C			B			F	

Intersection Summary					
HCM 2000 Control Delay	112.0	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.09				
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	104.4%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	421	6	78	455	19	10	71	46	8	16	18
Future Volume (vph)	30	421	6	78	455	19	10	71	46	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.951			0.941	
Flt Protected		0.997			0.993			0.996			0.990	
Satd. Flow (prot)	0	1576	1633	0	1625	1228	0	1623	0	0	1587	0
Flt Permitted		0.997			0.993			0.996			0.990	
Satd. Flow (perm)	0	1576	1633	0	1625	1228	0	1623	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	458	7	85	495	21	11	77	50	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	7	0	580	21	0	138	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	421	6	78	455	19	10	71	46	8	16	18
Future Volume (Veh/h)	30	421	6	78	455	19	10	71	46	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	458	7	85	495	21	11	77	50	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	516			465			1218	1210	458	1278	1196	495
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			465			1218	1210	458	1278	1196	495
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			92			91	51	91	86	89	97
cM capacity (veh/h)	925			1036			128	156	571	63	154	579

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	491	7	580	21	138	46
Volume Left	33	0	85	0	11	9
Volume Right	0	7	0	21	50	20
cSH	925	1700	1036	1700	207	161
Volume to Capacity	0.04	0.00	0.08	0.01	0.67	0.29
Queue Length 95th (m)	0.8	0.0	2.0	0.0	31.0	8.5
Control Delay (s)	1.0	0.0	2.2	0.0	51.6	36.2
Lane LOS	A		A		F	E
Approach Delay (s)	1.0		2.1		51.6	36.2
Approach LOS					F	E

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	445	11	15	535	8	4	22	14	6	8	10
Future Volume (vph)	25	445	11	15	535	8	4	22	14	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.953			0.945	
Flt Protected		0.997			0.999			0.995			0.987	
Satd. Flow (prot)	0	1582	1633	0	1639	1089	0	1740	0	0	1487	0
Flt Permitted		0.997			0.999			0.995			0.987	
Satd. Flow (perm)	0	1582	1633	0	1639	1089	0	1740	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	484	12	16	582	9	4	24	15	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	12	0	598	9	0	43	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	445	11	15	535	8	4	22	14	6	8	10
Future Volume (Veh/h)	25	445	11	15	535	8	4	22	14	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	484	12	16	582	9	4	24	15	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	591			496			1168	1161	484	1179	1164	582
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	591			496			1168	1161	484	1179	1164	582
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			98			97	87	97	95	95	98
cM capacity (veh/h)	823			977			144	187	569	143	175	451

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	511	12	598	9	43	27
Volume Left	27	0	16	0	4	7
Volume Right	0	12	0	9	15	11
cSH	823	1700	977	1700	236	216
Volume to Capacity	0.03	0.01	0.02	0.01	0.18	0.12
Queue Length 95th (m)	0.8	0.0	0.4	0.0	5.0	3.2
Control Delay (s)	0.9	0.0	0.4	0.0	23.6	24.0
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.4		23.6	24.0
Approach LOS					C	C

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	53.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	27	100	0	72	29
Future Volume (vph)	0	27	100	0	72	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.966
Satd. Flow (prot)	1629	0	1883	0	0	1819
Flt Permitted						0.966
Satd. Flow (perm)	1629	0	1883	0	0	1819
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	29	109	0	78	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	109	0	0	110
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	27	100	0	72	29
Future Volume (Veh/h)	0	27	100	0	72	29
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	109	0	78	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	297	109			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297	109			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			95	
cM capacity (veh/h)	658	945			1481	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	29	109	110
Volume Left	0	0	78
Volume Right	29	0	0
cSH	945	1700	1481
Volume to Capacity	0.03	0.06	0.05
Queue Length 95th (m)	0.7	0.0	1.3
Control Delay (s)	8.9	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Future Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.433			0.532			0.135			0.107		
Satd. Flow (perm)	798	1731	1423	936	1715	1576	245	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	130	239	189	151	292	87	313	1984	189	87	1065	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	239	189	151	292	87	313	2173	0	87	1157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.7	19.7	19.7	19.7	19.7	19.7	51.7	47.2		37.2	37.2	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.64	0.58		0.46	0.46	
v/c Ratio	0.67	0.57	0.39	0.67	0.70	0.20	1.11	1.06		1.10	0.76	
Control Delay	45.4	32.3	6.2	42.4	37.5	7.7	103.0	59.1		163.1	23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.4	32.3	6.2	42.4	37.5	7.7	103.0	59.1		163.1	23.7	
LOS	D	C	A	D	D	A	F	E		F	C	
Approach Delay		26.5			34.0			64.6			33.4	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	18.1	32.4	0.0	21.0	41.1	0.8	~23.8	~196.4		~15.3	74.1	
Queue Length 95th (m)	36.2	52.9	13.9	39.8	65.4	10.6	#84.5	#286.2		#47.7	#121.8	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	384	834	783	451	826	801	283	2043		79	1515	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.34	0.29	0.24	0.33	0.35	0.11	1.11	1.06		1.10	0.76	

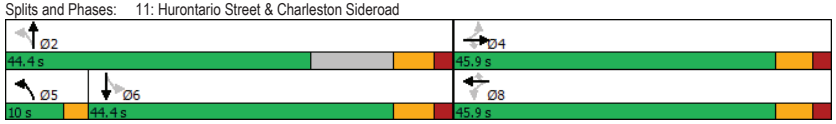
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.3			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 48.8		Intersection LOS: D	
Intersection Capacity Utilization 107.9%		ICU Level of Service 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: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Future Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3303	
Flt Permitted	0.43	1.00	1.00	0.53	1.00	1.00	0.14	1.00		0.11	1.00	
Satd. Flow (perm)	798	1731	1424	936	1715	1577	245	3509		175	3303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	239	189	151	292	87	313	1984	189	87	1065	92
RTOR Reduction (vph)	0	0	143	0	0	61	0	5	0	0	5	0
Lane Group Flow (vph)	130	239	46	151	292	26	313	2168	0	87	1152	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.7	19.7	19.7	19.7	19.7	19.7	47.3	47.3		37.3	37.3	
Effective Green, g (s)	19.7	19.7	19.7	19.7	19.7	19.7	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	419	345	226	415	382	269	2041		80	1515	
v/s Ratio Prot		0.14			c0.17		c0.10	0.62			0.35	
v/s Ratio Perm	0.16		0.03	0.16		0.02	c0.58			0.50		
v/c Ratio	0.67	0.57	0.13	0.67	0.70	0.07	1.16	1.06		1.09	0.76	
Uniform Delay, d1	27.9	27.1	24.1	27.8	28.1	23.7	15.2	17.0		22.0	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.9	1.9	0.2	7.3	5.3	0.1	106.5	38.8		126.5	3.6	
Delay (s)	36.8	29.0	24.3	35.1	33.5	23.8	121.7	55.8		148.5	21.9	
Level of Service	D	C	C	D	C	C	F	E		F	C	
Approach Delay (s)		29.2			32.4			64.1			30.8	
Approach LOS		C			C			E			C	

Intersection Summary					
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	1.07				
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	107.9%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	388	8	37	325	4	3	13	123	13	80	28
Future Volume (vph)	13	388	8	37	325	4	3	13	123	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.880			0.969	
Flt Protected		0.998			0.995			0.999			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1445	0	0	1613	0
Flt Permitted		0.998			0.995			0.999			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1445	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	422	9	40	353	4	3	14	134	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	436	9	0	393	4	0	151	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	388	8	37	325	4	3	13	123	13	80	28
Future Volume (Veh/h)	13	388	8	37	325	4	3	13	123	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	422	9	40	353	4	3	14	134	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	357			431			956	887	422	1024	892	353
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	357			431			956	887	422	1024	892	353
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			96			98	95	78	90	66	96
cM capacity (veh/h)	1067			1067			162	261	599	134	253	695

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	436	9	393	4	151	131
Volume Left	14	0	40	0	3	14
Volume Right	0	9	0	4	134	30
cSH	1067	1700	1067	1700	510	266
Volume to Capacity	0.01	0.01	0.04	0.00	0.30	0.49
Queue Length 95th (m)	0.3	0.0	0.9	0.0	9.3	19.2
Control Delay (s)	0.4	0.0	1.2	0.0	15.0	30.9
Lane LOS	A		A		B	D
Approach Delay (s)	0.4		1.2		15.0	30.9
Approach LOS					B	D

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	63.3%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	426	1	26	381	5	13	3	5	9	11	16
Future Volume (vph)	10	426	1	26	381	5	13	3	5	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969			0.941	
Flt Protected		0.999			0.997			0.969			0.987	
Satd. Flow (prot)	0	1593	1633	0	1634	1089	0	1598	0	0	1472	0
Flt Permitted		0.999			0.997			0.969			0.987	
Satd. Flow (perm)	0	1593	1633	0	1634	1089	0	1598	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	463	1	28	414	5	14	3	5	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	474	1	0	442	5	0	22	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	426	1	26	381	5	13	3	5	9	11	16
Future Volume (Veh/h)	10	426	1	26	381	5	13	3	5	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	463	1	28	414	5	14	3	5	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	419			464			978	960	463	962	956	414
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	419			464			978	960	463	962	956	414
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			97			93	99	99	96	95	97
cM capacity (veh/h)	963			1005			195	249	585	227	236	568

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	474	1	442	5	22	39
Volume Left	11	0	28	0	14	10
Volume Right	0	1	0	5	5	17
cSH	963	1700	1005	1700	238	312
Volume to Capacity	0.01	0.00	0.03	0.00	0.09	0.12
Queue Length 95th (m)	0.3	0.0	0.7	0.0	2.3	3.2
Control Delay (s)	0.3	0.0	0.9	0.0	21.6	18.2
Lane LOS	A		A		C	C
Approach Delay (s)	0.3		0.8		21.6	18.2
Approach LOS					C	C

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	51.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	108	41	0	18	107
Future Volume (vph)	0	108	41	0	18	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.993
Satd. Flow (prot)	1629	0	1883	0	0	1870
Flt Permitted						0.993
Satd. Flow (perm)	1629	0	1883	0	0	1870
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	117	45	0	20	116
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	45	0	0	136
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	108	41	0	18	107
Future Volume (Veh/h)	0	108	41	0	18	107
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	117	45	0	20	116
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	201	45			45	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	201	45			45	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			99	
cM capacity (veh/h)	777	1025			1563	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	117	45	136
Volume Left	0	0	20
Volume Right	117	0	0
cSH	1025	1700	1563
Volume to Capacity	0.11	0.03	0.01
Queue Length 95th (m)	2.9	0.0	0.3
Control Delay (s)	9.0	0.0	1.2
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	1.2
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Future Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3345	0
Flt Permitted	0.649			0.632			0.099			0.294		
Satd. Flow (perm)	1195	1731	1423	1111	1715	1576	179	3503	0	478	3345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15			1	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	101	187	418	185	171	29	184	880	93	57	2134	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	187	418	185	171	29	184	973	0	57	2147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	22.9	22.9	22.9	22.9	22.9	22.9	52.1	47.7		37.5	37.5	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.61	0.56		0.44	0.44	
v/c Ratio	0.31	0.40	0.82	0.62	0.37	0.06	0.77	0.49		0.27	1.46	
Control Delay	25.9	26.8	29.6	35.5	26.2	0.2	38.3	14.0		23.6	232.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	25.9	26.8	29.6	35.5	26.2	0.2	38.3	14.0		23.6	232.9	
LOS	C	C	C	D	C	A	D	B		C	F	
Approach Delay		28.3			28.7			17.9			227.4	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	12.9	24.5	37.3	25.9	22.2	0.0	12.2	45.8		5.6	~254.6	
Queue Length 95th (m)	24.8	40.7	70.0	45.2	37.4	0.0	#59.7	88.8		19.0	#374.5	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	555	804	754	516	796	774	238	1968		210	1475	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.18	0.23	0.55	0.36	0.21	0.04	0.77	0.49		0.27	1.46	

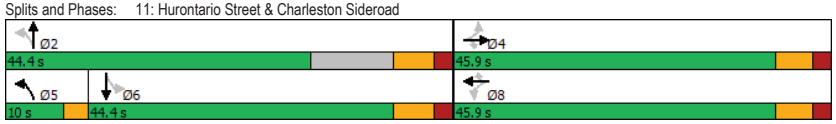
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 85.1			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay: 124.2		Intersection LOS: F	
Intersection Capacity Utilization 107.0%		ICU Level of Service G	

Analysis Period (min) 15

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

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

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Future Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	1731	1424	1671	1715	1577	1722	3503		1545	3345	
Flt Permitted	0.65	1.00	1.00	0.63	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1196	1731	1424	1112	1715	1577	179	3503		479	3345	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	187	418	185	171	29	184	880	93	57	2134	13
RTOR Reduction (vph)	0	0	127	0	0	21	0	7	0	0	1	0
Lane Group Flow (vph)	101	187	291	185	171	8	184	966	0	57	2146	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	22.9	22.9	22.9	22.9	22.9	22.9	47.6	47.6		37.5	37.5	
Effective Green, g (s)	22.9	22.9	22.9	22.9	22.9	22.9	47.6	47.6		37.5	37.5	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.56	0.56		0.44	0.44	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	322	467	384	300	463	425	229	1966		211	1479	
v/s Ratio Prot		0.11			0.10		c0.07	0.28			c0.64	
v/s Ratio Perm	0.08		c0.20	0.17		0.00	0.38			0.12		
v/c Ratio	0.31	0.40	0.76	0.62	0.37	0.02	0.80	0.49		0.27	1.45	
Uniform Delay, d1	24.7	25.3	28.4	27.1	25.1	22.7	18.4	11.3		15.0	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.6	8.3	3.7	0.5	0.0	18.1	0.9		3.1	206.9	
Delay (s)	25.2	25.9	36.7	30.8	25.6	22.7	36.6	12.2		18.1	230.6	
Level of Service	C	C	D	C	C	C	D	B		B	F	
Approach Delay (s)		32.2			27.9			16.0			225.1	
Approach LOS		C			C			B			F	

Intersection Summary				
HCM 2000 Control Delay	123.1	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.15			
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	107.0%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	426	6	78	460	19	10	71	46	8	16	18
Future Volume (vph)	30	426	6	78	460	19	10	71	46	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.951			0.941	
Flt Protected		0.997			0.993			0.996			0.990	
Satd. Flow (prot)	0	1576	1633	0	1625	1228	0	1623	0	0	1587	0
Flt Permitted		0.997			0.993			0.996			0.990	
Satd. Flow (perm)	0	1576	1633	0	1625	1228	0	1623	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			1542.0			149.8	
Travel Time (s)		11.3			105.0			115.7			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	463	7	85	500	21	11	77	50	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	496	7	0	585	21	0	138	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	426	6	78	460	19	10	71	46	8	16	18
Future Volume (Veh/h)	30	426	6	78	460	19	10	71	46	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	463	7	85	500	21	11	77	50	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	521			470			1228	1220	463	1288	1206	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521			470			1228	1220	463	1288	1206	500
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			92			91	50	91	85	89	97
cM capacity (veh/h)	921			1032			126	154	567	62	152	575

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	496	7	585	21	138	46
Volume Left	33	0	85	0	11	9
Volume Right	0	7	0	21	50	20
cSH	921	1700	1032	1700	204	157
Volume to Capacity	0.04	0.00	0.08	0.01	0.68	0.29
Queue Length 95th (m)	0.8	0.0	2.0	0.0	31.7	8.7
Control Delay (s)	1.0	0.0	2.2	0.0	53.1	37.0
Lane LOS	A		A		F	E
Approach Delay (s)	1.0		2.1		53.1	37.0
Approach LOS					F	E

Intersection Summary				
Average Delay	8.4			
Intersection Capacity Utilization	70.5%	ICU Level of Service		C
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	450	11	17	540	8	4	22	19	6	8	10
Future Volume (vph)	25	450	11	17	540	8	4	22	19	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.945	
Flt Protected		0.997			0.999			0.996			0.987	
Satd. Flow (prot)	0	1582	1633	0	1639	1089	0	1713	0	0	1487	0
Flt Permitted		0.997			0.999			0.996			0.987	
Satd. Flow (perm)	0	1582	1633	0	1639	1089	0	1713	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			106.6			53.4	
Travel Time (s)		105.0			80.8			8.0			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	489	12	18	587	9	4	24	21	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	516	12	0	605	9	0	49	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	450	11	17	540	8	4	22	19	6	8	10
Future Volume (Veh/h)	25	450	11	17	540	8	4	22	19	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	489	12	18	587	9	4	24	21	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	596			501			1182	1175	489	1199	1178	587
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	596			501			1182	1175	489	1199	1178	587
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			98			97	87	96	95	95	98
cM capacity (veh/h)	819			972			140	183	565	136	171	448

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	516	12	605	9	49	27
Volume Left	27	0	18	0	4	7
Volume Right	0	12	0	9	21	11
cSH	819	1700	972	1700	249	210
Volume to Capacity	0.03	0.01	0.02	0.01	0.20	0.13
Queue Length 95th (m)	0.8	0.0	0.4	0.0	5.4	3.3
Control Delay (s)	0.9	0.0	0.5	0.0	22.9	24.6
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.5		22.9	24.6
Approach LOS					C	C

Intersection Summary					
Average Delay	2.1				
Intersection Capacity Utilization	54.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	27	100	0	72	29
Future Volume (vph)	0	27	100	0	72	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.966
Satd. Flow (prot)	1629	0	1883	0	0	1819
Flt Permitted						0.966
Satd. Flow (perm)	1629	0	1883	0	0	1819
Link Speed (k/h)	48		48			48
Link Distance (m)	299.4		249.7			1542.0
Travel Time (s)	22.5		18.7			115.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	29	109	0	78	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	109	0	0	110
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	27	100	0	72	29
Future Volume (Veh/h)	0	27	100	0	72	29
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	109	0	78	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	297	109			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297	109			109	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			95	
cM capacity (veh/h)	658	945			1481	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	29	109	110
Volume Left	0	0	78
Volume Right	29	0	0
cSH	945	1700	1481
Volume to Capacity	0.03	0.06	0.05
Queue Length 95th (m)	0.7	0.0	1.3
Control Delay (s)	8.9	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Future Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.436			0.533			0.133			0.107		
Satd. Flow (perm)	803	1731	1423	937	1715	1576	241	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			191			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	149	239	233	151	292	87	360	1984	189	87	1065	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	239	233	151	292	87	360	2173	0	87	1160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	20.2	20.2	20.2	20.2	20.2	20.2	51.8	47.3		37.3	37.3	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.63	0.58		0.46	0.46	
v/c Ratio	0.76	0.56	0.47	0.66	0.69	0.19	1.29	1.07		1.10	0.77	
Control Delay	52.1	31.8	9.4	41.3	36.7	7.5	172.4	61.3		165.3	24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	52.1	31.8	9.4	41.3	36.7	7.5	172.4	61.3		165.3	24.3	
LOS	D	C	A	D	D	A	F	E		F	C	
Approach Delay		28.2			33.2			77.1			34.2	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	21.4	32.4	5.1	21.0	41.1	0.8	~36.0	~196.4		~15.3	74.4	
Queue Length 95th (m)	41.7	52.6	21.4	39.6	65.0	10.4	#113.6	#298.8		#48.8	#138.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	385	830	781	449	822	797	280	2033		79	1508	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.29	0.30	0.34	0.36	0.11	1.29	1.07		1.10	0.77	

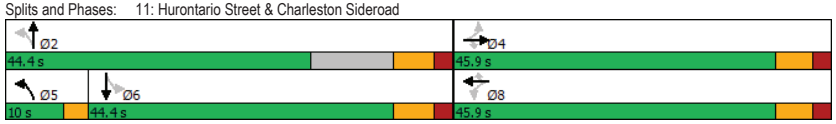
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.9			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 55.4		Intersection LOS: E	
Intersection Capacity Utilization 108.9%		ICU Level of Service 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: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Future Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3302	
Flt Permitted	0.44	1.00	1.00	0.53	1.00	1.00	0.13	1.00		0.11	1.00	
Satd. Flow (perm)	804	1731	1424	938	1715	1577	241	3509		175	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	239	233	151	292	87	360	1984	189	87	1065	95
RTOR Reduction (vph)	0	0	144	0	0	60	0	5	0	0	5	0
Lane Group Flow (vph)	149	239	89	151	292	27	360	2168	0	87	1155	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	20.1	20.1	20.1	20.1	20.1	20.1	47.3	47.3		37.3	37.3	
Effective Green, g (s)	20.1	20.1	20.1	20.1	20.1	20.1	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	425	350	230	421	387	266	2031		79	1507	
v/s Ratio Prot		0.14			0.17		c0.12	0.62			0.35	
v/s Ratio Perm	c0.19		0.06	0.16		0.02	c0.67			0.50		
v/c Ratio	0.76	0.56	0.25	0.66	0.69	0.07	1.35	1.07		1.10	0.77	
Uniform Delay, d1	28.5	27.0	24.8	27.7	28.0	23.6	15.5	17.2		22.2	18.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.2	1.7	0.4	6.6	4.9	0.1	181.7	40.7		131.5	3.8	
Delay (s)	43.7	28.7	25.2	34.3	32.9	23.7	197.2	57.9		153.7	22.3	
Level of Service	D	C	C	C	C	C	F	E		F	C	
Approach Delay (s)		31.0			31.8			77.7			31.5	
Approach LOS		C			C			E			C	

Intersection Summary					
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service		E	
HCM 2000 Volume to Capacity ratio	1.22				
Actuated Cycle Length (s)	81.7	Sum of lost time (s)		17.3	
Intersection Capacity Utilization	108.9%	ICU Level of Service		G	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	315	6	16	262	3	2	10	12	10	66	23
Future Volume (vph)	10	315	6	16	262	3	2	10	12	10	66	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.932			0.969	
Flt Protected		0.998			0.997			0.996			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1575	0	0	1615	0
Flt Permitted		0.998			0.997			0.996			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1575	0	0	1615	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	11	342	7	17	285	3	2	11	13	11	72	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	7	0	302	3	0	26	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	315	6	16	262	3	2	10	12	10	66	23
Future Volume (Veh/h)	10	315	6	16	262	3	2	10	12	10	66	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	342	7	17	285	3	2	11	13	11	72	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	288			349			744	686	342	702	690	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			349			744	686	342	702	690	285
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			99			99	97	98	96	79	97
cM capacity (veh/h)	1134			1146			265	352	666	296	342	759

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	353	7	302	3	26	108
Volume Left	11	0	17	0	2	11
Volume Right	0	7	0	3	13	25
cSH	1134	1700	1146	1700	445	385
Volume to Capacity	0.01	0.00	0.01	0.00	0.06	0.28
Queue Length 95th (m)	0.2	0.0	0.3	0.0	1.4	8.6
Control Delay (s)	0.4	0.0	0.6	0.0	13.6	18.0
Lane LOS	A		A		B	C
Approach Delay (s)	0.3		0.6		13.6	18.0
Approach LOS					B	C

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	41.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	258	1	39	293	4	10	2	111	7	9	14
Future Volume (vph)	8	258	1	39	293	4	10	2	111	7	9	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.878			0.939	
Flt Protected		0.998			0.994			0.996			0.988	
Satd. Flow (prot)	0	1589	1633	0	1626	1089	0	1534	0	0	1463	0
Flt Permitted		0.998			0.994			0.996			0.988	
Satd. Flow (perm)	0	1589	1633	0	1626	1089	0	1534	0	0	1463	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	9	280	1	42	318	4	11	2	121	8	10	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	289	1	0	360	4	0	134	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	258	1	39	293	4	10	2	111	7	9	14
Future Volume (Veh/h)	8	258	1	39	293	4	10	2	111	7	9	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	280	1	42	318	4	11	2	121	8	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	322			281			720	704	280	822	701	318
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	322			281			720	704	280	822	701	318
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			96			96	99	84	97	97	98
cM capacity (veh/h)	1052			1180			299	348	742	238	332	646

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	289	1	360	4	134	33
Volume Left	9	0	42	0	11	8
Volume Right	0	1	0	4	121	15
cSH	1052	1700	1180	1700	652	379
Volume to Capacity	0.01	0.00	0.04	0.00	0.21	0.09
Queue Length 95th (m)	0.2	0.0	0.8	0.0	5.8	2.2
Control Delay (s)	0.3	0.0	1.3	0.0	11.9	15.4
Lane LOS	A		A		B	C
Approach Delay (s)	0.3		1.3		11.9	15.4
Approach LOS					B	C

Intersection Summary					
Average Delay	3.2				
Intersection Capacity Utilization	49.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	108	0	0	31	31	18
Future Volume (vph)	108	0	0	31	31	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.950	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1789	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1789	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	0	0	34	34	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	0	34	54	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	0	0	31	31	18
Future Volume (Veh/h)	108	0	0	31	31	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	117	0	0	34	34	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	78	44	54			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	44	54			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	100	100			
cM capacity (veh/h)	925	1026	1551			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	117	34	54
Volume Left	117	0	0
Volume Right	0	0	20
cSH	925	1551	1700
Volume to Capacity	0.13	0.00	0.03
Queue Length 95th (m)	3.3	0.0	0.0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

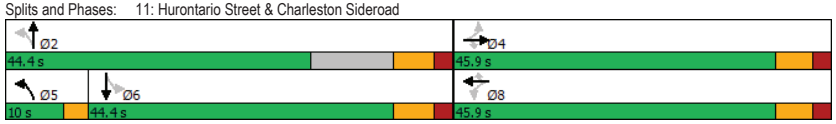
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Future Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3349	0
Flt Permitted	0.668			0.659			0.099			0.349		
Satd. Flow (perm)	1230	1731	1423	1159	1715	1576	179	3503	0	567	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	79	154	322	151	140	24	125	723	77	47	1750	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	154	322	151	140	24	125	800	0	47	1755	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	16.2	16.2	16.2	16.2	16.2	16.2	51.6	47.2		37.3	37.3	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.61		0.48	0.48	
v/c Ratio	0.31	0.43	0.74	0.63	0.39	0.06	0.49	0.38		0.17	1.09	
Control Delay	28.4	29.7	23.6	39.4	29.1	0.3	14.8	9.2		16.2	75.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.4	29.7	23.6	39.4	29.1	0.3	14.8	9.2		16.2	75.8	
LOS	C	C	C	D	C	A	B	A		B	E	
Approach Delay		26.0			31.8			10.0			74.2	
Approach LOS		C			C			A			E	
Queue Length 50th (m)	9.9	19.7	19.3	20.3	17.8	0.0	5.4	26.2		3.6	~151.6	
Queue Length 95th (m)	20.7	35.1	45.7	37.6	32.2	0.0	20.6	53.4		12.7	#240.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	621	874	805	585	865	835	258	2137		271	1604	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.18	0.40	0.26	0.16	0.03	0.48	0.37		0.17	1.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.8			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 46.6		Intersection LOS: D	
Intersection Capacity Utilization 90.5%		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: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Future Volume (vph)	73	142	296	139	129	22	115	665	71	43	1610	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3502		1545	3347	
Flt Permitted	0.67	1.00	1.00	0.66	1.00	1.00	0.10	1.00		0.35	1.00	
Satd. Flow (perm)	1230	1731	1424	1160	1715	1577	180	3502		568	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	154	322	151	140	24	125	723	77	47	1750	5
RTOR Reduction (vph)	0	0	139	0	0	19	0	6	0	0	0	0
Lane Group Flow (vph)	79	154	183	151	140	5	125	794	0	47	1755	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.3	37.3	
Effective Green, g (s)	16.2	16.2	16.2	16.2	16.2	16.2	47.2	47.2		37.3	37.3	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	256	360	296	241	357	328	246	2127		272	1606	
v/s Ratio Prot		0.09			0.08		c0.05	0.23			c0.52	
v/s Ratio Perm	0.06		0.13	c0.13		0.00	0.26			0.08		
v/c Ratio	0.31	0.43	0.62	0.63	0.39	0.02	0.51	0.37		0.17	1.09	
Uniform Delay, d1	26.0	26.7	28.0	28.0	26.5	24.4	15.6	7.7		11.5	20.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	3.8	5.0	0.7	0.0	1.7	0.5		1.4	52.3	
Delay (s)	26.7	27.5	31.8	33.0	27.2	24.4	17.2	8.2		12.8	72.5	
Level of Service	C	C	C	C	C	C	B	A		B	E	
Approach Delay (s)		29.9			29.8			9.5			70.9	
Approach LOS		C			C			A			E	

Intersection Summary				
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	90.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	345	5	5	373	16	8	58	16	6	14	15
Future Volume (vph)	25	345	5	5	373	16	8	58	16	6	14	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.943	
Flt Protected		0.997			0.999			0.995			0.991	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1685	0	0	1592	0
Flt Permitted		0.997			0.999			0.995			0.991	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1685	0	0	1592	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	27	375	5	5	405	17	9	63	17	7	15	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	402	5	0	410	17	0	89	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	345	5	5	373	16	8	58	16	6	14	15
Future Volume (Veh/h)	25	345	5	5	373	16	8	58	16	6	14	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	375	5	5	405	17	9	63	17	7	15	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	422			380			868	861	375	892	849	405
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422			380			868	861	375	892	849	405
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	97			100			96	77	97	96	95	98
cM capacity (veh/h)	1007			1116			251	276	637	182	273	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	402	5	410	17	89	38
Volume Left	27	0	5	0	9	7
Volume Right	0	5	0	17	17	16
cSH	1007	1700	1116	1700	306	322
Volume to Capacity	0.03	0.00	0.00	0.01	0.29	0.12
Queue Length 95th (m)	0.6	0.0	0.1	0.0	9.0	3.0
Control Delay (s)	0.9	0.0	0.1	0.0	21.5	17.7
Lane LOS	A		A		C	C
Approach Delay (s)	0.9		0.1		21.5	17.7
Approach LOS					C	C

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	343	9	84	380	6	3	18	38	5	6	8
Future Volume (vph)	21	343	9	84	380	6	3	18	38	5	6	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.914			0.942	
Flt Protected		0.997			0.991			0.998			0.988	
Satd. Flow (prot)	0	1581	1633	0	1617	1089	0	1644	0	0	1474	0
Flt Permitted		0.997			0.991			0.998			0.988	
Satd. Flow (perm)	0	1581	1633	0	1617	1089	0	1644	0	0	1474	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	23	373	10	91	413	7	3	20	41	5	7	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	10	0	504	7	0	64	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	343	9	84	380	6	3	18	38	5	6	8
Future Volume (Veh/h)	21	343	9	84	380	6	3	18	38	5	6	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	373	10	91	413	7	3	20	41	5	7	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	420			383			1026	1021	373	1065	1024	413
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	420			383			1026	1021	373	1065	1024	413
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	98			92			98	91	94	97	96	98
cM capacity (veh/h)	962			1079			176	213	658	162	200	568

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	396	10	504	7	64	21
Volume Left	23	0	91	0	3	5
Volume Right	0	10	0	7	41	9
cSH	962	1700	1079	1700	369	257
Volume to Capacity	0.02	0.01	0.08	0.00	0.17	0.08
Queue Length 95th (m)	0.6	0.0	2.1	0.0	4.7	2.0
Control Delay (s)	0.8	0.0	2.3	0.0	16.8	20.3
Lane LOS	A		A		C	C
Approach Delay (s)	0.7		2.3		16.8	20.3
Approach LOS					C	C

Intersection Summary					
Average Delay	3.0				
Intersection Capacity Utilization	57.4%	ICU Level of Service		B	
Analysis Period (min)	15				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	0	0	32	28	72
Future Volume (vph)	27	0	0	32	28	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.902	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1699	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1699	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	0	0	35	30	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	35	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	0	0	32	28	72
Future Volume (Veh/h)	27	0	0	32	28	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	0	35	30	78
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	104	69	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	104	69	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	894	994	1483			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	35	108
Volume Left	29	0	0
Volume Right	0	0	78
cSH	894	1483	1700
Volume to Capacity	0.03	0.00	0.06
Queue Length 95th (m)	0.8	0.0	0.0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

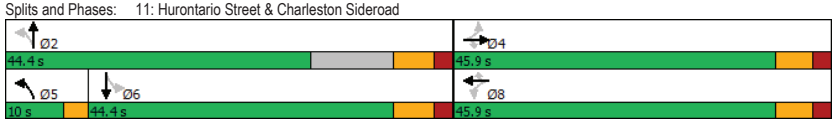
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Future Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.514			0.608			0.216			0.108		
Satd. Flow (perm)	947	1731	1423	1069	1715	1576	391	3509	0	176	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	108	197	160	124	240	72	270	1627	154	72	874	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	197	160	124	240	72	270	1781	0	72	951	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	16.4	16.4	16.4	16.4	16.4	16.4	51.6	47.2		37.1	37.1	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.61		0.48	0.48	
v/c Ratio	0.54	0.54	0.38	0.55	0.67	0.18	0.71	0.84		0.87	0.60	
Control Delay	37.7	32.8	7.1	36.9	37.4	6.5	19.9	18.2		95.7	17.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.7	32.8	7.1	36.9	37.4	6.5	19.9	18.2		95.7	17.6	
LOS	D	C	A	D	D	A	B	B		F	B	
Approach Delay		25.1			32.2			18.4			23.1	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	14.2	25.9	0.0	16.4	32.6	0.0	13.3	96.0		8.8	50.0	
Queue Length 95th (m)	29.1	44.4	13.4	32.2	54.1	8.2	#42.3	#188.7		#37.6	83.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	475	869	794	537	861	831	378	2129		83	1579	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.23	0.23	0.20	0.23	0.28	0.09	0.71	0.84		0.87	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 77.9			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 21.9		Intersection LOS: C	
Intersection Capacity Utilization 94.3%		ICU Level of Service F	

Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Future Volume (vph)	99	181	147	114	221	66	248	1497	142	66	804	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3510		1546	3302	
Flt Permitted	0.51	1.00	1.00	0.61	1.00	1.00	0.22	1.00		0.11	1.00	
Satd. Flow (perm)	948	1731	1424	1071	1715	1577	392	3510		175	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	197	160	124	240	72	270	1627	154	72	874	77
RTOR Reduction (vph)	0	0	126	0	0	57	0	5	0	0	5	0
Lane Group Flow (vph)	108	197	34	124	240	15	270	1776	0	72	946	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	16.4	16.4	16.4	16.4	16.4	16.4	47.2	47.2		37.2	37.2	
Effective Green, g (s)	16.4	16.4	16.4	16.4	16.4	16.4	47.2	47.2		37.2	37.2	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.61	0.61		0.48	0.48	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	364	299	225	361	332	357	2126		83	1576	
v/s Ratio Prot		0.11			c0.14		0.07	c0.51			0.29	
v/s Ratio Perm	0.11		0.02	0.12		0.01	0.39			0.41		
v/c Ratio	0.54	0.54	0.11	0.55	0.66	0.05	0.76	0.84		0.87	0.60	
Uniform Delay, d1	27.4	27.4	24.9	27.5	28.2	24.5	8.8	12.2		18.2	14.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.6	0.2	2.9	4.6	0.1	8.8	4.1		66.9	1.7	
Delay (s)	30.4	29.0	25.0	30.4	32.8	24.6	17.6	16.3		85.1	16.6	
Level of Service	C	C	C	C	C	C	B	B		F	B	
Approach Delay (s)		28.0			30.7			16.5			21.4	
Approach LOS		C			C			B			C	

Intersection Summary					
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	94.3%	ICU Level of Service	F		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	384	8	19	320	4	3	13	15	13	80	28
Future Volume (vph)	13	384	8	19	320	4	3	13	15	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.935			0.969	
Flt Protected		0.998			0.997			0.995			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Flt Permitted		0.998			0.997			0.995			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	417	9	21	348	4	3	14	16	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	431	9	0	369	4	0	33	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	384	8	19	320	4	3	13	15	13	80	28
Future Volume (Veh/h)	13	384	8	19	320	4	3	13	15	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	417	9	21	348	4	3	14	16	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	352			426			908	839	417	858	844	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352			426			908	839	417	858	844	348
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			98			98	95	97	94	68	96
cM capacity (veh/h)	1071			1072			182	284	603	224	275	700

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	431	9	369	4	33	131
Volume Left	14	0	21	0	3	14
Volume Right	0	9	0	4	16	30
cSH	1071	1700	1072	1700	357	310
Volume to Capacity	0.01	0.01	0.02	0.00	0.09	0.42
Queue Length 95th (m)	0.3	0.0	0.5	0.0	2.3	15.3
Control Delay (s)	0.4	0.0	0.7	0.0	16.1	24.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.7		16.1	24.8
Approach LOS					C	C

Intersection Summary					
Average Delay	4.3				
Intersection Capacity Utilization	48.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	314	1	43	358	5	13	3	112	9	11	16
Future Volume (vph)	10	314	1	43	358	5	13	3	112	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.882			0.941	
Flt Protected		0.998			0.995			0.995			0.987	
Satd. Flow (prot)	0	1589	1633	0	1628	1089	0	1538	0	0	1472	0
Flt Permitted		0.998			0.995			0.995			0.987	
Satd. Flow (perm)	0	1589	1633	0	1628	1089	0	1538	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	341	1	47	389	5	14	3	122	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	1	0	436	5	0	139	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	314	1	43	358	5	13	3	112	9	11	16
Future Volume (Veh/h)	10	314	1	43	358	5	13	3	112	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	341	1	47	389	5	14	3	122	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	394			342			869	851	341	970	847	389
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	394			342			869	851	341	970	847	389
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			96			94	99	82	95	96	97
cM capacity (veh/h)	985			1118			231	284	686	184	270	587

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	352	1	436	5	139	39
Volume Left	11	0	47	0	14	10
Volume Right	0	1	0	5	122	17
cSH	985	1700	1118	1700	558	305
Volume to Capacity	0.01	0.00	0.04	0.00	0.25	0.13
Queue Length 95th (m)	0.3	0.0	1.0	0.0	7.4	3.3
Control Delay (s)	0.4	0.0	1.3	0.0	13.6	18.5
Lane LOS	A		A		B	C
Approach Delay (s)	0.4		1.3		13.6	18.5
Approach LOS					B	C

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	56.9%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	108	0	0	38	38	18
Future Volume (vph)	108	0	0	38	38	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.956	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1801	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1801	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	0	0	41	41	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	0	41	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	0	0	38	38	18
Future Volume (Veh/h)	108	0	0	38	38	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	117	0	0	41	41	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	92	51	61			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	51	61			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	100	100			
cM capacity (veh/h)	908	1017	1542			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	117	41	61
Volume Left	117	0	0
Volume Right	0	0	20
cSH	908	1542	1700
Volume to Capacity	0.13	0.00	0.04
Queue Length 95th (m)	3.4	0.0	0.0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

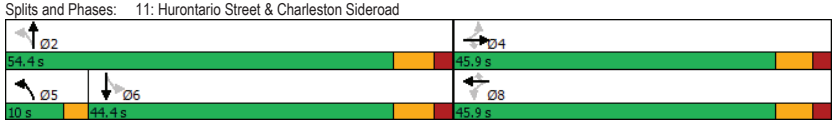
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Future Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3348	0
Flt Permitted	0.649			0.632			0.099			0.294		
Satd. Flow (perm)	1195	1731	1423	1111	1715	1576	179	3503	0	478	3348	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15				
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	95	187	368	185	171	29	148	880	93	57	2134	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	187	368	185	171	29	148	973	0	57	2141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	54.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	54.2%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	47.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.9	19.9	19.9	19.9	19.9	19.9	51.9	47.5		37.4	37.4	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.63	0.58		0.46	0.46	
v/c Ratio	0.33	0.44	0.77	0.69	0.41	0.07	0.60	0.48		0.26	1.40	
Control Delay	27.4	28.7	25.7	40.8	28.0	0.3	22.5	12.1		21.0	206.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	27.4	28.7	25.7	40.8	28.0	0.3	22.5	12.1		21.0	206.6	
LOS	C	C	C	D	C	A	C	B		C	F	
Approach Delay		26.8			32.1			13.5			201.8	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	12.0	24.5	27.6	25.9	22.2	0.0	7.9	40.3		5.1	~233.3	
Queue Length 95th (m)	24.0	41.2	57.0	46.0	38.1	0.0	#36.5	79.3		17.7	#341.7	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	575	833	775	534	825	800	246	2038		218	1531	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.17	0.22	0.47	0.35	0.21	0.04	0.60	0.48		0.26	1.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.8			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay: 112.2		Intersection LOS: F	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	

Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Future Volume (vph)	87	172	339	170	157	27	136	810	86	52	1963	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3503		1545	3347	
Flt Permitted	0.65	1.00	1.00	0.63	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1196	1731	1424	1111	1715	1577	179	3503		479	3347	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	187	368	185	171	29	148	880	93	57	2134	7
RTOR Reduction (vph)	0	0	132	0	0	22	0	6	0	0	0	0
Lane Group Flow (vph)	95	187	236	185	171	7	148	967	0	57	2141	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.4	47.4		37.4	37.4	
Effective Green, g (s)	19.9	19.9	19.9	19.9	19.9	19.9	47.4	47.4		37.4	37.4	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	291	422	347	270	418	384	236	2034		219	1534	
v/s Ratio Prot		0.11			0.10		c0.05	0.28			c0.64	
v/s Ratio Perm	0.08		0.17	c0.17		0.00	0.31			0.12		
v/c Ratio	0.33	0.44	0.68	0.69	0.41	0.02	0.63	0.48		0.26	1.40	
Uniform Delay, d1	25.3	26.2	28.0	28.0	25.9	23.4	16.7	9.9		13.6	22.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.7	5.4	7.0	0.7	0.0	5.1	0.8		2.9	182.1	
Delay (s)	26.0	26.9	33.4	35.0	26.6	23.5	21.8	10.7		16.5	204.2	
Level of Service	C	C	C	D	C	C	C	B		B	F	
Approach Delay (s)		30.5			30.4			12.2			199.3	
Approach LOS		C			C			B			F	

Intersection Summary					
HCM 2000 Control Delay	111.0	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.09				
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	104.4%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	421	6	6	455	19	10	71	19	8	16	18
Future Volume (vph)	30	421	6	6	455	19	10	71	19	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.997			0.999			0.995			0.990	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Flt Permitted		0.997			0.999			0.995			0.990	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	458	7	7	495	21	11	77	21	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	7	0	502	21	0	109	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	421	6	6	455	19	10	71	19	8	16	18
Future Volume (Veh/h)	30	421	6	6	455	19	10	71	19	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	458	7	7	495	21	11	77	21	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	516			465			1062	1054	458	1092	1040	495
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			465			1062	1054	458	1092	1040	495
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			99			94	63	96	92	92	97
cM capacity (veh/h)	925			1036			178	209	571	112	208	579

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	491	7	502	21	109	46
Volume Left	33	0	7	0	11	9
Volume Right	0	7	0	21	21	20
cSH	925	1700	1036	1700	234	234
Volume to Capacity	0.04	0.00	0.01	0.01	0.47	0.20
Queue Length 95th (m)	0.8	0.0	0.2	0.0	17.4	5.4
Control Delay (s)	1.0	0.0	0.2	0.0	33.2	24.2
Lane LOS	A		A		D	C
Approach Delay (s)	1.0		0.2		33.2	24.2
Approach LOS					D	C

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	59.8%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	418	11	87	463	8	4	22	41	6	8	10
Future Volume (vph)	25	418	11	87	463	8	4	22	41	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.917			0.945	
Flt Protected		0.997			0.992			0.997			0.987	
Satd. Flow (prot)	0	1581	1633	0	1620	1089	0	1649	0	0	1487	0
Flt Permitted		0.997			0.992			0.997			0.987	
Satd. Flow (perm)	0	1581	1633	0	1620	1089	0	1649	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	454	12	95	503	9	4	24	45	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	12	0	598	9	0	73	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	418	11	87	463	8	4	22	41	6	8	10
Future Volume (Veh/h)	25	418	11	87	463	8	4	22	41	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	454	12	95	503	9	4	24	45	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	512			466			1216	1210	454	1258	1213	503
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	512			466			1216	1210	454	1258	1213	503
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			91			97	85	92	94	94	98
cM capacity (veh/h)	885			1003			125	162	592	111	151	503

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	481	12	598	9	73	27
Volume Left	27	0	95	0	4	7
Volume Right	0	12	0	9	45	11
cSH	885	1700	1003	1700	284	187
Volume to Capacity	0.03	0.01	0.09	0.01	0.26	0.14
Queue Length 95th (m)	0.7	0.0	2.4	0.0	7.6	3.8
Control Delay (s)	0.9	0.0	2.4	0.0	22.0	27.5
Lane LOS	A		A		C	D
Approach Delay (s)	0.9		2.4		22.0	27.5
Approach LOS					C	D

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	66.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	0	0	39	34	72
Future Volume (vph)	27	0	0	39	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.908	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1710	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1710	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	0	0	42	37	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	42	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	0	0	39	34	72
Future Volume (Veh/h)	27	0	0	39	34	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	0	42	37	78
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	118	76	115			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	76	115			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	878	985	1474			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	42	115
Volume Left	29	0	0
Volume Right	0	0	78
cSH	878	1474	1700
Volume to Capacity	0.03	0.00	0.07
Queue Length 95th (m)	0.8	0.0	0.0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Future Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.433			0.532			0.135			0.107		
Satd. Flow (perm)	798	1731	1423	936	1715	1576	245	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	130	239	189	151	292	87	313	1984	189	87	1065	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	239	189	151	292	87	313	2173	0	87	1157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	19.7	19.7	19.7	19.7	19.7	19.7	51.7	47.2		37.2	37.2	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.64	0.58		0.46	0.46	
v/c Ratio	0.67	0.57	0.39	0.67	0.70	0.20	1.11	1.06		1.10	0.76	
Control Delay	45.4	32.3	6.2	42.4	37.5	7.7	103.0	59.1		163.1	23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.4	32.3	6.2	42.4	37.5	7.7	103.0	59.1		163.1	23.7	
LOS	D	C	A	D	D	A	F	E		F	C	
Approach Delay		26.5			34.0			64.6			33.4	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	18.1	32.4	0.0	21.0	41.1	0.8	~23.8	~196.4		~15.3	74.1	
Queue Length 95th (m)	36.2	52.9	13.9	39.8	65.4	10.6	#84.5	#286.2		#47.7	#121.8	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	384	834	783	451	826	801	283	2043		79	1515	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.34	0.29	0.24	0.33	0.35	0.11	1.11	1.06		1.10	0.76	

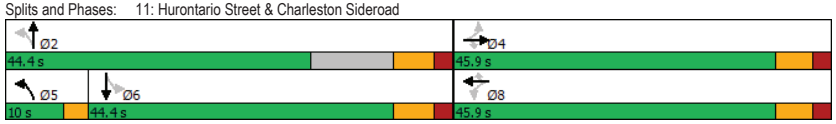
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.3			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 48.8		Intersection LOS: D	
Intersection Capacity Utilization 107.9%		ICU Level of Service 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: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Future Volume (vph)	120	220	174	139	269	80	288	1825	174	80	980	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3303	
Flt Permitted	0.43	1.00	1.00	0.53	1.00	1.00	0.14	1.00		0.11	1.00	
Satd. Flow (perm)	798	1731	1424	936	1715	1577	245	3509		175	3303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	239	189	151	292	87	313	1984	189	87	1065	92
RTOR Reduction (vph)	0	0	143	0	0	61	0	5	0	0	5	0
Lane Group Flow (vph)	130	239	46	151	292	26	313	2168	0	87	1152	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	19.7	19.7	19.7	19.7	19.7	19.7	47.3	47.3		37.3	37.3	
Effective Green, g (s)	19.7	19.7	19.7	19.7	19.7	19.7	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	419	345	226	415	382	269	2041		80	1515	
v/s Ratio Prot		0.14			c0.17		c0.10	0.62			0.35	
v/s Ratio Perm	0.16		0.03	0.16		0.02	c0.58			0.50		
v/c Ratio	0.67	0.57	0.13	0.67	0.70	0.07	1.16	1.06		1.09	0.76	
Uniform Delay, d1	27.9	27.1	24.1	27.8	28.1	23.7	15.2	17.0		22.0	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.9	1.9	0.2	7.3	5.3	0.1	106.5	38.8		126.5	3.6	
Delay (s)	36.8	29.0	24.3	35.1	33.5	23.8	121.7	55.8		148.5	21.9	
Level of Service	D	C	C	D	C	C	F	E		F	C	
Approach Delay (s)		29.2			32.4			64.1			30.8	
Approach LOS		C			C			E			C	

Intersection Summary					
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	1.07				
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	17.3		
Intersection Capacity Utilization	107.9%	ICU Level of Service	G		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	388	8	19	325	4	3	13	15	13	80	28
Future Volume (vph)	13	388	8	19	325	4	3	13	15	13	80	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.935			0.969	
Flt Protected		0.998			0.997			0.995			0.995	
Satd. Flow (prot)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Flt Permitted		0.998			0.997			0.995			0.995	
Satd. Flow (perm)	0	1581	1633	0	1626	1228	0	1582	0	0	1613	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	14	422	9	21	353	4	3	14	16	14	87	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	436	9	0	374	4	0	33	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	388	8	19	325	4	3	13	15	13	80	28
Future Volume (Veh/h)	13	388	8	19	325	4	3	13	15	13	80	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	422	9	21	353	4	3	14	16	14	87	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	357			431			918	849	422	868	854	353
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	357			431			918	849	422	868	854	353
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	99			98			98	95	97	94	68	96
cM capacity (veh/h)	1067			1067			178	280	599	220	271	695

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	436	9	374	4	33	131
Volume Left	14	0	21	0	3	14
Volume Right	0	9	0	4	16	30
cSH	1067	1700	1067	1700	353	306
Volume to Capacity	0.01	0.01	0.02	0.00	0.09	0.43
Queue Length 95th (m)	0.3	0.0	0.5	0.0	2.3	15.6
Control Delay (s)	0.4	0.0	0.7	0.0	16.3	25.3
Lane LOS	A		A		C	D
Approach Delay (s)	0.4		0.7		16.3	25.3
Approach LOS					C	D

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	318	1	44	363	5	13	3	113	9	11	16
Future Volume (vph)	10	318	1	44	363	5	13	3	113	9	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.881			0.941	
Flt Protected		0.998			0.995			0.995			0.987	
Satd. Flow (prot)	0	1590	1633	0	1628	1089	0	1536	0	0	1472	0
Flt Permitted		0.998			0.995			0.995			0.987	
Satd. Flow (perm)	0	1590	1633	0	1628	1089	0	1536	0	0	1472	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	11	346	1	48	395	5	14	3	123	10	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	357	1	0	443	5	0	140	0	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	318	1	44	363	5	13	3	113	9	11	16
Future Volume (Veh/h)	10	318	1	44	363	5	13	3	113	9	11	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	346	1	48	395	5	14	3	123	10	12	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	400			347			882	864	346	984	860	395
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			347			882	864	346	984	860	395
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	99			96			94	99	82	94	95	97
cM capacity (veh/h)	980			1114			226	278	681	179	265	583

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	357	1	443	5	140	39
Volume Left	11	0	48	0	14	10
Volume Right	0	1	0	5	123	17
cSH	980	1700	1114	1700	553	299
Volume to Capacity	0.01	0.00	0.04	0.00	0.25	0.13
Queue Length 95th (m)	0.3	0.0	1.0	0.0	7.6	3.4
Control Delay (s)	0.4	0.0	1.3	0.0	13.7	18.8
Lane LOS	A		A		B	C
Approach Delay (s)	0.4		1.3		13.7	18.8
Approach LOS					B	C

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	57.5%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	108	0	0	38	38	18
Future Volume (vph)	108	0	0	38	38	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.956	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1801	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1801	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	0	0	41	41	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	0	41	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	108	0	0	38	38	18
Future Volume (Veh/h)	108	0	0	38	38	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	117	0	0	41	41	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	92	51	61			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	51	61			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	100	100			
cM capacity (veh/h)	908	1017	1542			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	117	41	61
Volume Left	117	0	0
Volume Right	0	0	20
cSH	908	1542	1700
Volume to Capacity	0.13	0.00	0.04
Queue Length 95th (m)	3.4	0.0	0.0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Future Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.986			0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3503	0	1547	3345	0
Flt Permitted	0.649			0.632			0.099			0.294		
Satd. Flow (perm)	1195	1731	1423	1111	1715	1576	179	3503	0	478	3345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174			80		15			1	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	101	187	418	185	171	29	184	880	93	57	2134	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	187	418	185	171	29	184	973	0	57	2147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	54.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	54.2%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	47.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	22.9	22.9	22.9	22.9	22.9	22.9	52.1	47.7		37.5	37.5	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.61	0.56		0.44	0.44	
v/c Ratio	0.31	0.40	0.82	0.62	0.37	0.06	0.77	0.49		0.27	1.46	
Control Delay	25.9	26.8	29.6	35.5	26.2	0.2	38.3	14.0		23.6	232.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	25.9	26.8	29.6	35.5	26.2	0.2	38.3	14.0		23.6	232.9	
LOS	C	C	C	D	C	A	D	B		C	F	
Approach Delay		28.3			28.7			17.9			227.4	
Approach LOS		C			C			B			F	
Queue Length 50th (m)	12.9	24.5	37.3	25.9	22.2	0.0	12.2	45.8		5.6	~254.6	
Queue Length 95th (m)	24.8	40.7	70.0	45.2	37.4	0.0	#59.7	88.8		19.0	#374.5	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	555	804	754	516	796	774	238	1968		210	1475	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.18	0.23	0.55	0.36	0.21	0.04	0.77	0.49		0.27	1.46	

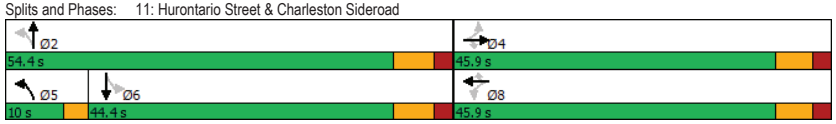
Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 85.1			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay: 124.2		Intersection LOS: F	
Intersection Capacity Utilization 107.0%		ICU Level of Service G	

Analysis Period (min) 15

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

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

Splits and Phases: 11: Hurontario Street & Charleston Sideroad



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Future Volume (vph)	93	172	385	170	157	27	169	810	86	52	1963	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	1731	1424	1671	1715	1577	1722	3503		1545	3345	
Flt Permitted	0.65	1.00	1.00	0.63	1.00	1.00	0.10	1.00		0.29	1.00	
Satd. Flow (perm)	1196	1731	1424	1112	1715	1577	179	3503		479	3345	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	187	418	185	171	29	184	880	93	57	2134	13
RTOR Reduction (vph)	0	0	127	0	0	21	0	7	0	0	1	0
Lane Group Flow (vph)	101	187	291	185	171	8	184	966	0	57	2146	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	22.9	22.9	22.9	22.9	22.9	22.9	47.6	47.6		37.5	37.5	
Effective Green, g (s)	22.9	22.9	22.9	22.9	22.9	22.9	47.6	47.6		37.5	37.5	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.56	0.56		0.44	0.44	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	322	467	384	300	463	425	229	1966		211	1479	
v/s Ratio Prot		0.11			0.10		c0.07	0.28			c0.64	
v/s Ratio Perm	0.08		c0.20	0.17		0.00	0.38			0.12		
v/c Ratio	0.31	0.40	0.76	0.62	0.37	0.02	0.80	0.49		0.27	1.45	
Uniform Delay, d1	24.7	25.3	28.4	27.1	25.1	22.7	18.4	11.3		15.0	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.6	8.3	3.7	0.5	0.0	18.1	0.9		3.1	206.9	
Delay (s)	25.2	25.9	36.7	30.8	25.6	22.7	36.6	12.2		18.1	230.6	
Level of Service	C	C	D	C	C	C	D	B		B	F	
Approach Delay (s)		32.2			27.9			16.0			225.1	
Approach LOS		C			C			B			F	

Intersection Summary				
HCM 2000 Control Delay	123.1	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.15			
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	17.3	
Intersection Capacity Utilization	107.0%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lanes, Volumes, Timings
1: Shaws Creek Road & Charleston Sideroad 03-26-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	426	6	6	460	19	10	71	19	8	16	18
Future Volume (vph)	30	426	6	6	460	19	10	71	19	8	16	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.974			0.941	
Flt Protected		0.997			0.999			0.995			0.990	
Satd. Flow (prot)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Flt Permitted		0.997			0.999			0.995			0.990	
Satd. Flow (perm)	0	1576	1633	0	1627	1228	0	1684	0	0	1587	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		150.3			1400.0			114.3			149.8	
Travel Time (s)		11.3			105.0			8.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	29%	21%	0%	14%	18%	33%	0%	10%	18%	33%	17%	0%
Adj. Flow (vph)	33	463	7	7	500	21	11	77	21	9	17	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	496	7	0	507	21	0	109	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: Shaws Creek Road & Charleston Sideroad 03-26-2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	426	6	6	460	19	10	71	19	8	16	18
Future Volume (Veh/h)	30	426	6	6	460	19	10	71	19	8	16	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	463	7	7	500	21	11	77	21	9	17	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	521			470			1072	1064	463	1102	1050	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521			470			1072	1064	463	1102	1050	500
tC, single (s)	4.4			4.2			7.1	6.6	6.4	7.4	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.3			3.5	4.1	3.5	3.8	4.2	3.3
p0 queue free %	96			99			94	63	96	92	92	97
cM capacity (veh/h)	921			1032			175	207	567	109	205	575

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	496	7	507	21	109	46
Volume Left	33	0	7	0	11	9
Volume Right	0	7	0	21	21	20
cSH	921	1700	1032	1700	231	230
Volume to Capacity	0.04	0.00	0.01	0.01	0.47	0.20
Queue Length 95th (m)	0.8	0.0	0.2	0.0	17.7	5.5
Control Delay (s)	1.0	0.0	0.2	0.0	33.9	24.5
Lane LOS	A		A		D	C
Approach Delay (s)	1.0		0.2		33.9	24.5
Approach LOS					D	C

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes, Volumes, Timings
2: Mississauga Road & Charleston Sideroad

03-26-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	423	11	89	468	8	4	22	46	6	8	10
Future Volume (vph)	25	423	11	89	468	8	4	22	46	6	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		30.0	0.0		30.0	0.0		0.0	0.0		0.0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.913			0.945	
Flt Protected		0.997			0.992			0.997			0.987	
Satd. Flow (prot)	0	1582	1633	0	1620	1089	0	1640	0	0	1487	0
Flt Permitted		0.997			0.992			0.997			0.987	
Satd. Flow (perm)	0	1582	1633	0	1620	1089	0	1640	0	0	1487	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1400.0			1077.4			1428.3			53.4	
Travel Time (s)		105.0			80.8			107.1			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	40%	20%	0%	21%	17%	50%	17%	0%	9%	0%	15%	38%
Adj. Flow (vph)	27	460	12	97	509	9	4	24	50	7	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	487	12	0	606	9	0	78	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

HCM Unsignalized Intersection Capacity Analysis
2: Mississauga Road & Charleston Sideroad

03-26-2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	423	11	89	468	8	4	22	46	6	8	10
Future Volume (Veh/h)	25	423	11	89	468	8	4	22	46	6	8	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	460	12	97	509	9	4	24	50	7	9	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)												
pX, platoon unblocked												
vC, conflicting volume	518			472			1232	1226	460	1279	1229	509
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	518			472			1232	1226	460	1279	1229	509
tC, single (s)	4.5			4.3			7.3	6.5	6.3	7.1	6.7	6.6
tC, 2 stage (s)												
tF (s)	2.6			2.4			3.7	4.0	3.4	3.5	4.1	3.6
p0 queue free %	97			90			97	85	91	93	94	98
cM capacity (veh/h)	880			998			121	158	587	106	147	499

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	487	12	606	9	78	27
Volume Left	27	0	97	0	4	7
Volume Right	0	12	0	9	50	11
cSH	880	1700	998	1700	288	181
Volume to Capacity	0.03	0.01	0.10	0.01	0.27	0.15
Queue Length 95th (m)	0.7	0.0	2.4	0.0	8.1	3.9
Control Delay (s)	0.9	0.0	2.5	0.0	22.1	28.4
Lane LOS	A		A		C	D
Approach Delay (s)	0.9		2.5		22.1	28.4
Approach LOS					C	D

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Lanes, Volumes, Timings
4: Mississauga Road & Driveway 03-26-2024

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	0	0	39	34	72
Future Volume (vph)	27	0	0	39	34	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.908	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1710	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1710	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	243.2			253.1	1428.3	
Travel Time (s)	18.2			19.0	107.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	0	0	42	37	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	42	115	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: Mississauga Road & Driveway 03-26-2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	0	0	39	34	72
Future Volume (Veh/h)	27	0	0	39	34	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	0	0	42	37	78
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	118	76	115			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	76	115			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	878	985	1474			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	42	115
Volume Left	29	0	0
Volume Right	0	0	78
cSH	878	1474	1700
Volume to Capacity	0.03	0.00	0.07
Queue Length 95th (m)	0.8	0.0	0.0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Future Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		60.0	35.0		60.0	80.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00	1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	1731	1445	1674	1715	1601	1722	3509	0	1547	3303	0
Flt Permitted	0.436			0.533			0.133			0.107		
Satd. Flow (perm)	803	1731	1423	937	1715	1576	241	3509	0	174	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			191			80		13			10	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		1077.4			77.4			144.3			83.9	
Travel Time (s)		80.8			5.8			10.8			6.3	
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Adj. Flow (vph)	149	239	233	151	292	87	360	1984	189	87	1065	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	239	233	151	292	87	360	2173	0	87	1160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (s)	45.9	45.9	45.9	45.9	45.9	45.9	10.0	44.4		44.4	44.4	
Total Split (%)	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	10.0%	44.3%		44.3%	44.3%	
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	39.0	7.0	37.0		37.0	37.0	
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	3.0	5.0		5.0	5.0	
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	0.0	2.4		2.4	2.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max		Max	Max	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0		21.0		21.0	21.0	
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0	17.0		16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0		0	0	
Act Effct Green (s)	20.2	20.2	20.2	20.2	20.2	20.2	51.8	47.3		37.3	37.3	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.63	0.58		0.46	0.46	
v/c Ratio	0.76	0.56	0.47	0.66	0.69	0.19	1.29	1.07		1.10	0.77	
Control Delay	52.1	31.8	9.4	41.3	36.7	7.5	172.4	61.3		165.3	24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	52.1	31.8	9.4	41.3	36.7	7.5	172.4	61.3		165.3	24.3	
LOS	D	C	A	D	D	A	F	E		F	C	
Approach Delay		28.2			33.2			77.1			34.2	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	21.4	32.4	5.1	21.0	41.1	0.8	~36.0	~196.4		~15.3	74.4	
Queue Length 95th (m)	41.7	52.6	21.4	39.6	65.0	10.4	#113.6	#298.8		#48.8	#138.0	
Internal Link Dist (m)		1053.4			53.4			120.3			59.9	
Turn Bay Length (m)	40.0		60.0	35.0		60.0	80.0			30.0		
Base Capacity (vph)	385	830	781	449	822	797	280	2033		79	1508	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.29	0.30	0.34	0.36	0.11	1.29	1.07		1.10	0.77	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100.3			
Actuated Cycle Length: 81.9			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 55.4		Intersection LOS: E	
Intersection Capacity Utilization 108.9%		ICU Level of Service G	

Lanes, Volumes, Timings
11: Hurontario Street & Charleston Sideroad

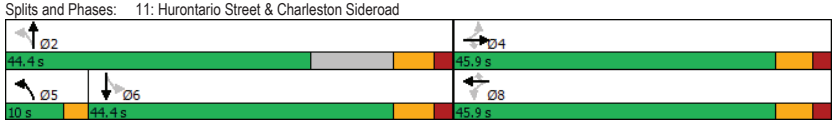
03-26-2024

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: 11: Hurontario Street & Charleston Sideroad



HCM Signalized Intersection Capacity Analysis
11: Hurontario Street & Charleston Sideroad

03-26-2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Future Volume (vph)	137	220	214	139	269	80	331	1825	174	80	980	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	1731	1424	1671	1715	1577	1722	3509		1547	3302	
Flt Permitted	0.44	1.00	1.00	0.53	1.00	1.00	0.13	1.00		0.11	1.00	
Satd. Flow (perm)	804	1731	1424	938	1715	1577	241	3509		175	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	239	233	151	292	87	360	1984	189	87	1065	95
RTOR Reduction (vph)	0	0	144	0	0	60	0	5	0	0	5	0
Lane Group Flow (vph)	149	239	89	151	292	27	360	2168	0	87	1155	0
Confl. Peds. (#/hr)	5		4	4		5	1		4	4		1
Heavy Vehicles (%)	4%	11%	13%	9%	12%	2%	6%	2%	7%	18%	9%	9%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	20.1	20.1	20.1	20.1	20.1	20.1	47.3	47.3		37.3	37.3	
Effective Green, g (s)	20.1	20.1	20.1	20.1	20.1	20.1	47.3	47.3		37.3	37.3	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.58	0.58		0.46	0.46	
Clearance Time (s)	6.9	6.9	6.9	6.9	6.9	6.9	3.0	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	425	350	230	421	387	266	2031		79	1507	
v/s Ratio Prot		0.14			0.17		c0.12	0.62			0.35	
v/s Ratio Perm	c0.19		0.06	0.16		0.02	c0.67			0.50		
v/c Ratio	0.76	0.56	0.25	0.66	0.69	0.07	1.35	1.07		1.10	0.77	
Uniform Delay, d1	28.5	27.0	24.8	27.7	28.0	23.6	15.5	17.2		22.2	18.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.2	1.7	0.4	6.6	4.9	0.1	181.7	40.7		131.5	3.8	
Delay (s)	43.7	28.7	25.2	34.3	32.9	23.7	197.2	57.9		153.7	22.3	
Level of Service	D	C	C	C	C	C	F	E		F	C	
Approach Delay (s)		31.0			31.8			77.7			31.5	
Approach LOS		C			C			E			C	

Intersection Summary					
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service		E	
HCM 2000 Volume to Capacity ratio	1.22				
Actuated Cycle Length (s)	81.7	Sum of lost time (s)		17.3	
Intersection Capacity Utilization	108.9%	ICU Level of Service		G	
Analysis Period (min)	15				

c Critical Lane Group