627 Lyons Lane, Oakville
Transportation Impact Study
(3rd Submission)

Paradigm Transportation Solutions Limited

May 2022

Project Summary

Project Number
210060

May 2022

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Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Study (TIS) for a residential development located at 627 Lyons Lane in the Town of Oakville.

Conclusions

This study evaluated the impacts of the construction of 281 apartment units in a 28-storey building on a parcel of land bounded by South Service Road and Lyons Lane. Vehicular access to the building's parking facilities and loading area is proposed via two accesses to the South Service Road located at the eastern limits of the property. The western driveway will be designated for pick-up and drop-off service for clarification. Overall, the proposed development will generate approximately 112 new vehicle trips during the weekday AM peak hour and 110 new vehicle trips during the weekday PM peak hour.

Detailed traffic analysis was conducted for each study area intersections under Base conditions, 2025, 2030 and 2035 Background and Total conditions.

The new traffic forecast to be added by full build-out of the development to the study area results in relatively small impacts at the various study intersections. The analysis has further determined that the proposed driveways to South Service Road and Lyons Lane will operate at LOS A during the weekday peak periods, and separate left-turn lanes are not warranted at either driveway connection under the 2035 Total conditions.

It is acknowledged that deficiencies currently exist at specific locations, primarily along the Trafalgar Road corridor within the study area. They can be expected to persist in the future with anticipated growth in traffic, independent of the development.

A variety of roadway improvements are planned within the study area to address the existing and long-term impacts of traffic growth, including the construction of new direct off-ramps for the QEW at Trafalgar Road, a revised local road network for Midtown Oakville, an extension of Cross Avenue and a variety of intersection improvements. It is understood that these improvements will provide some relief to operational issues. However, capacity constraints will persist for the overall transportation network.

Due to the high levels of congestion and the expected long-term transit network anticipated to be developed (BRT along Trafalgar Road), further remedial measures to improve intersection capacity are not likely to be implemented. Instead, future improvements to the transportation network are expected to focus on public transit infrastructure.

By focusing on shifting commuter travel to public transit, intersection operations could be expected to maintain the status quo (a capacity condition during peak hours) or possibly improve if fewer vehicles transverse the intersections during the peak hours of a typical weekday.

As requested by the Town, a sensitivity analysis has also been assessed, assuming Lyons Lane is closed off at Cross Avenue. If this occurs, and considering the MOEA roadway network is not established, the intersection of South Service Road at Argus Road would experience considerable delay and congestion, and mitigation measures would need to be implemented (i.e., the potential for restricted movements)

Recommendations

- The site plan is updated to include short-term bicycle parking at the main entrances of the buildings in a visible well-lit area.
- Long-term bicycle parking in a safe and secure area (either a dedicated room or storage lockers) be included in the site plan.
- The on-site pedestrian sidewalks are well-lit and conform to the Town of Oakville's design standards and the Accessibility for Ontarians with Disabilities Act (AODA) design standards.
- Consider unbundling parking where parking spaces are provided as a separate cost to residents.
- Provide general education on all travel mode options (walking, cycling, and transit) that identify benefits and how residents can best utilize these modes. New residents should be provided with a welcome package that outlines proximity to transit, cycling facilities and the proximity to local activity centres
- If any, the site operator monitors the long-term desire lines created by the erosion caused by pedestrians crossing the site's landscaped areas. Should desire lines form, there may be an opportunity to adjust the site's landscaping to encourage the use of the designated on-site pedestrian sidewalks.
- The site operator monitors the on-site bicycle parking supply to ensure that the appropriate amount of bicycle parking is provided.

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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Study (TIS) for a residential development located at 627 Lyons Lane in the Town of Oakville, Ontario. **Figure 1.1** details the location of the subject development.

1.2 Previous Submission

Two previous submissions of the Transportation Impact Study for the subject lands were undertaken as described:

- 180307: 627 Lyons Lane, Oakville, Transportation Impact Study, August 2019.
- 210060: 627 Lyons Lane, Oakville, Transportation Impact Study (2nd Submission), August 2021.

In response to comments received from the Town and Region, Paradigm has prepared this third Submission to address comments received and minor changes to the concept plan. The comments and responses are provided in **Appendix A**.

1.3 Purpose and Scope

The purpose of the study is to assess current traffic and site conditions in the vicinity of the proposed development, forecast additional traffic that will be generated by the proposed development, analyze the impact that this traffic may have on the adjacent roadway network and provide the municipality and owner required to mitigate the identified impacts of the site generated traffic.

More specifically, the scope of this study is to:

- Forecast traffic from the proposed development;
- Assign the projected volumes to the surrounding road network based on the existing traffic patterns at the driveway connection;
- Assess total future traffic within the study area. The following horizons have been considered: Opening Year (2025), five years from Opening Year (2030), and ten years from Opening Year (2035); and
- Identify operational or safety concerns and any mitigation measures that may be required to improve operations; and
- Review and identify potential Transportation Demand Management (TDM) measures that can be implemented for the proposed development.

This report adheres to the terms of reference developed by Paradigm and agreed upon by the Region of Halton and the Ministry of Transportation, Ontario (MTO). It is noted that the Town of Oakville was included in terms of reference correspondence; however, the Town did not provide any feedback. The correspondence is provided in **Appendix B**. The study area, as agreed upon with the review agencies, includes the following intersections:

- Trafalgar Road and QEW Westbound Off-Ramp / North Service Road (Signalized);
- Trafalgar Road and QEW Eastbound Off-Ramp (Signalized);
- Trafalgar Road and Cross Avenue / South Service Road (Signalized);
- Trafalgar Road and Cornwall Road (Signalized);
- Cross Avenue and Argus Road / GO Station Driveway (Signalized);
- Cross Avenue and Lyons Lane / Commercial Driveway (Signalized);
- Cross Avenue and Lyons Lane (Unsignalized);
- Lyons Lane and South Service Road (Unsignalized);
- Trafalgar Road and Argus Road (Unsignalized); and
- Argus Road and South Service Road.

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Study Area & Development Location

627 Lyons Lane, Oakville
210060

Figure 1.1

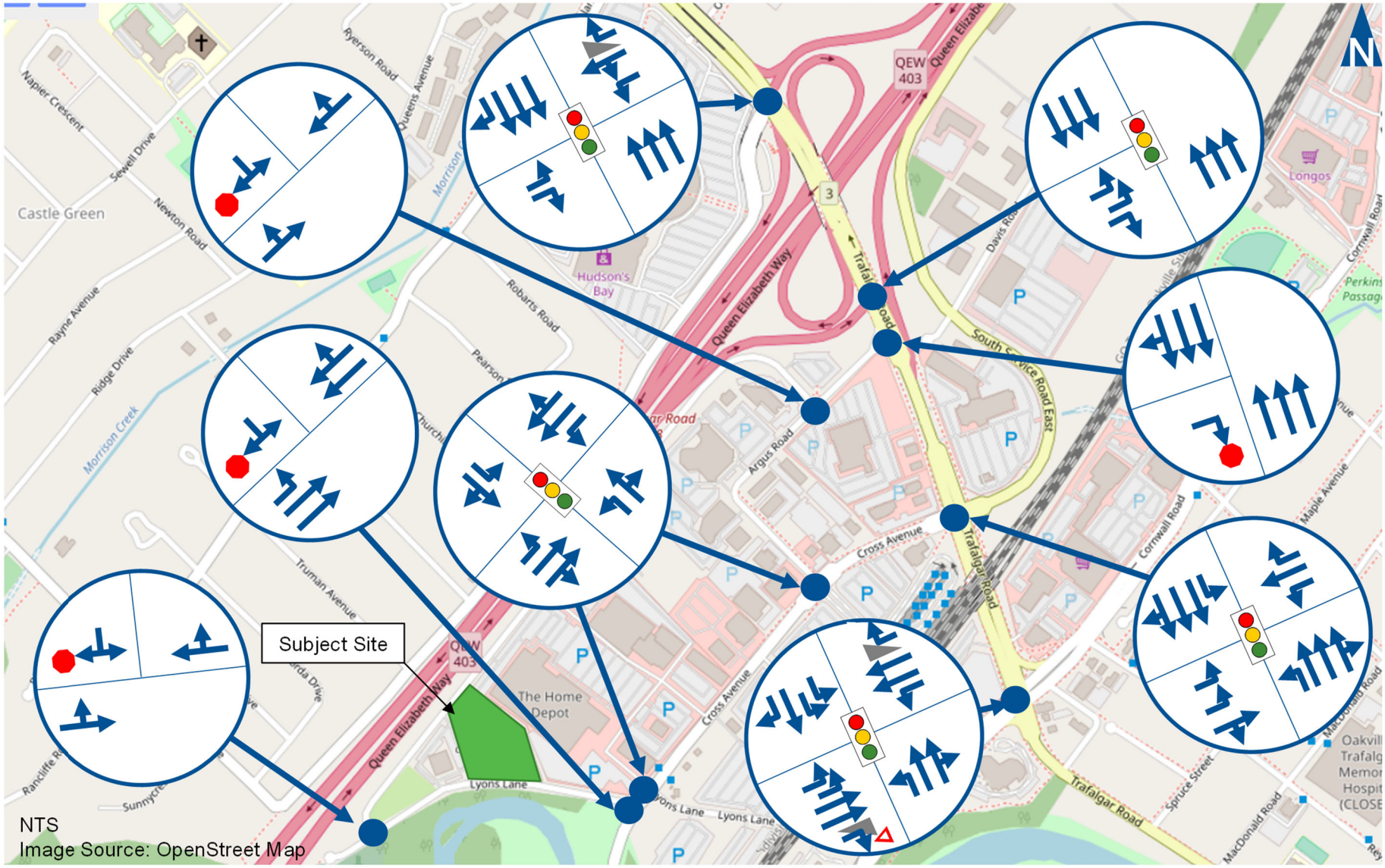
2 Existing Conditions

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 constraints identified at this stage will be fundamental to defining the required remedial measures.

2.1 Road Network

Figure 2.1 displays the existing lane configurations and traffic control provisions at the study area intersections. The roadways that the subject development will directly impact include:

- **Trafalgar Road** (Halton Region Road 3) is an urban major arterial road from Cornwall Road northwards and an urban minor arterial road southward from Cornwall Road. The roadway consists of a six-lane cross-section from Cornwall Road northwards and tapers down to a two-lane cross-section southward. The posted speed limit along Trafalgar Road is 50 kilometres per hour. Pedestrian facilities are provided along both sides of the road in the study area.
- **Cross Avenue** is an urban minor arterial road from Trafalgar Road to Cornwall Road. It provides access to the Oakville GO Station and the Commercial businesses surrounding the station. East of Trafalgar Road, Cross Avenue continues as South Service Road, eastwards towards Royal Windsor Drive. The assumed speed limit of Cross Avenue is 50 kilometres per hour. Pedestrian facilities are provided along both sides of the road in the study area.
- **Lyons Lane** is a two-lane local road north of Cross Avenue. Lyons Lane terminates as a cul-de-sac west of its intersection with South Service Road. There is a sidewalk on the east side of Lyons Lane. The assumed speed limit of Lyons Lane is 50 kilometres per hour.
- **South Service Road East** is a two-lane local road that fronts the QEW and provides additional access to the existing built lands. From its west end of Lyons Lane, it runs east parallel to the QEW, turning south to intersect with Argus Road. The assumed speed limit of South Service Road is 50 kilometres per hour. There are no pedestrian facilities along South Service Road.
- **Argus Road** is a two-lane local road that connects Trafalgar Road to Cross Avenue. There is a sidewalk on the south and east side of the roadway. The assumed speed limit of Argus Road is 50 kilometres per hour.



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Existing Lane Configuration & Traffic Control

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Figure 2.1

2.2 Existing Transit Service

2.2.1 Oakville Transit

Oakville Transit owns and operates the public transit system in Oakville. The subject site is located within the Midtown Oakville Urban Growth Area, one of the most transit-accessible locations within the Town. The subject site is located approximately 450 metres to the western end of the Oakville GO Station, which is currently serviced by 14 out of 21 Oakville Transit Routes. The majority of the transit routes which provide access to all of the Town of Oakville operate seven days a week from early morning to late evening, with headways generally between 10 and 30 minutes depending on the day of week and time of day.

Figure 2.2 illustrates the existing Oakville Transit network

2.2.2 GO Inter-Regional Transit

The proposed development is located approximately 450 metres to the western end of the Oakville GO Station. This station is located along the Lakeshore West Line, which currently operates a two-way all-day train service seven days a week and GO Bus connections to Hamilton and Sheridan College and York University via Highway 407.

Figure 2.3 illustrates the GO Network's relation to the site.

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Existing Oakville Transit Network

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Figure 2.2

NTS
Image Source: GO Transit

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Existing GO Transit Network

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Figure 2.3

2.3 Active Transportation

2.3.1 Pedestrians

The site is within walking distance of a number of retail opportunities providing for a range of destinations for prospective residents of the proposed development that can be readily accessed without using a vehicle.

Pedestrian sidewalks are provided on at least one side of streets through most study areas. Crosswalks, pedestrian pushbuttons, and indicators are provided for all approaches at the signalized intersections within the study area. A pedestrian connection under the QEW at the 16 Mile Creek connects both the north and south sides of the Highway.

The proximity of the site to such a range of amenities and destinations within walking distance reduces the need for residents to travel regularly using a car and own a vehicle.

2.3.2 Cycling

On-road cycling lanes are not currently provided on the streets in the study area. However, the Town of Oakville's Active Transportation Master Plan identifies that Trafalgar Road, Cross Avenue, and Lyons Lane are proposed to be reconstructed with on-street cycle lanes, as indicated in **Figure 2.4**.

In addition, as cyclists are permitted to ride on most roads except controlled-access highways, the lack of separate bicycle lanes on all other local and collector roadways will not prohibit this type of travel.

2.3.3 Travel Characteristics

A review of existing modes of transportation by area residents has been completed. Data on primary modes of transportation for all trips within Ward 3 was extracted from the 2016 Transportation Tomorrow Survey (TTS)[1]. The TTS data indicates that during the AM peak hour, the automobile accounts for 71 percent of trips made by residents, while transit accounts for 13 percent (one percent for local transit and 12 percent for GO Train). Walking and cycling (8 percent) and other modes (8 percent) account for the remaining percentages.

[1] Transportation Tomorrow Survey 2016, Regional Municipality of Halton Summary by Ward, March 2018, Malatest

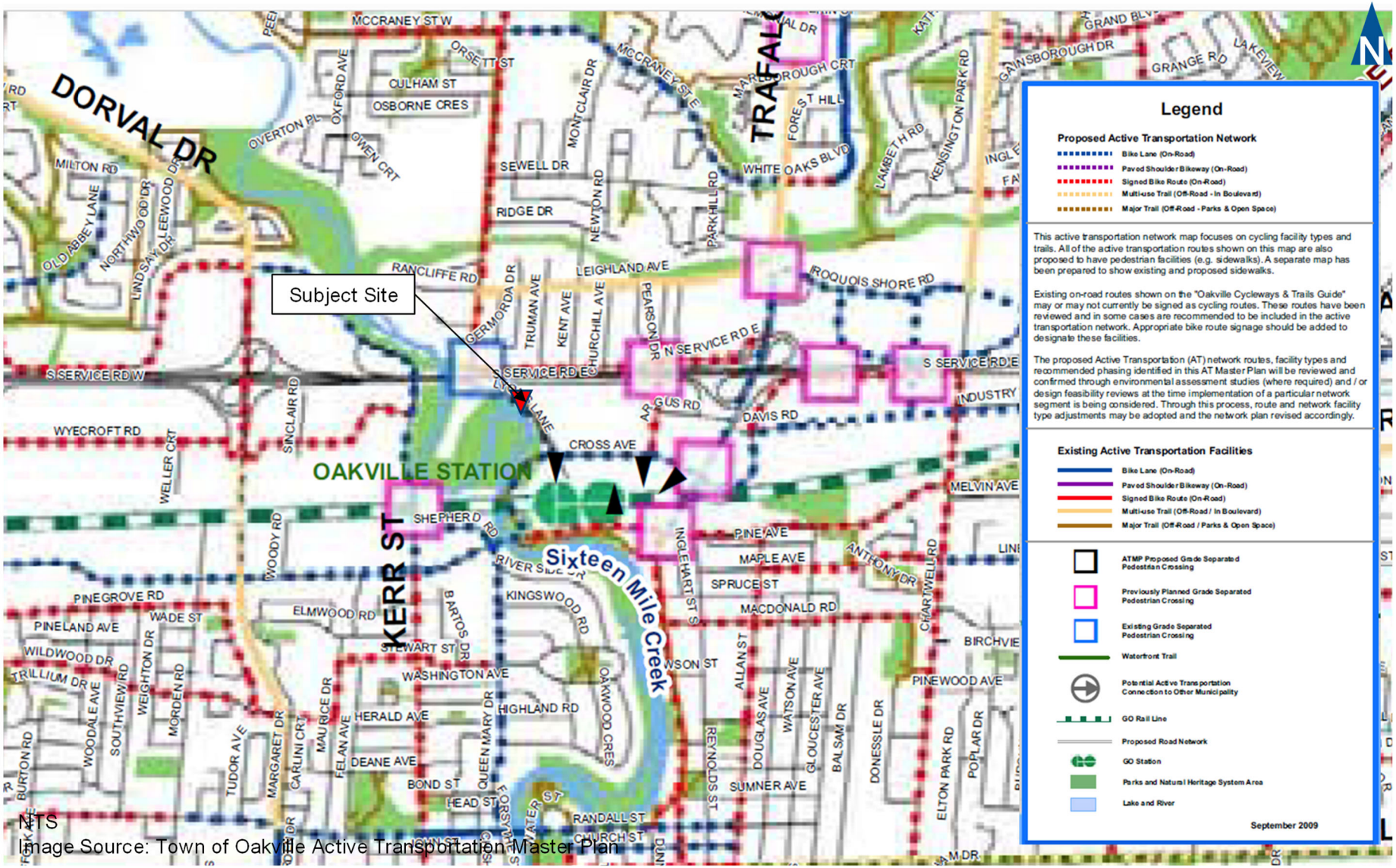

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Image Source: Town of Oakville Active Transportation Master Plan

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Proposed Cycle & Trail Network

627 Lyons Lane, Oakville
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Figure 2.4

2.4 Traffic Volumes

To assess intersection operation, turning movement counts are used to quantify the movement of vehicles through the area. Existing traffic data at an intersection or on a 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. **Appendix C** contains the traffic data utilized in this report.

The MTO Traffic Impact Study Guidelines indicate the requirement for collecting new data for counts three years or older. Acknowledging this requirement and the current situation related to COVID-19, the ability to conduct up-to-date data collection is impacted.

Given that the GO Station essentially drives the traffic volumes along the study area roadways during weekday peak hours and since transit usage has been significantly hampered due to reduced demand, the ability to collect new traffic count data was not feasible as the volumes may not be representative of typical traffic volumes. However, the MTO recognizes the current situation and has supported the use of pre-COVID-19 TMCs, and, if deemed necessary, to apply a factor to the volumes.

As a result, historic TMC data has been used and adjusted using a growth rate of 2% per annum to provide reasonable traffic volumes for the baseline horizon (2022).

2.4.1 Traffic Data

Existing historical traffic counts were obtained from the Region of Halton, MTO, and count data Paradigm undertook as part of the 1st Submission. **Table 2.1** provides a summary of traffic count locations and sources**.**

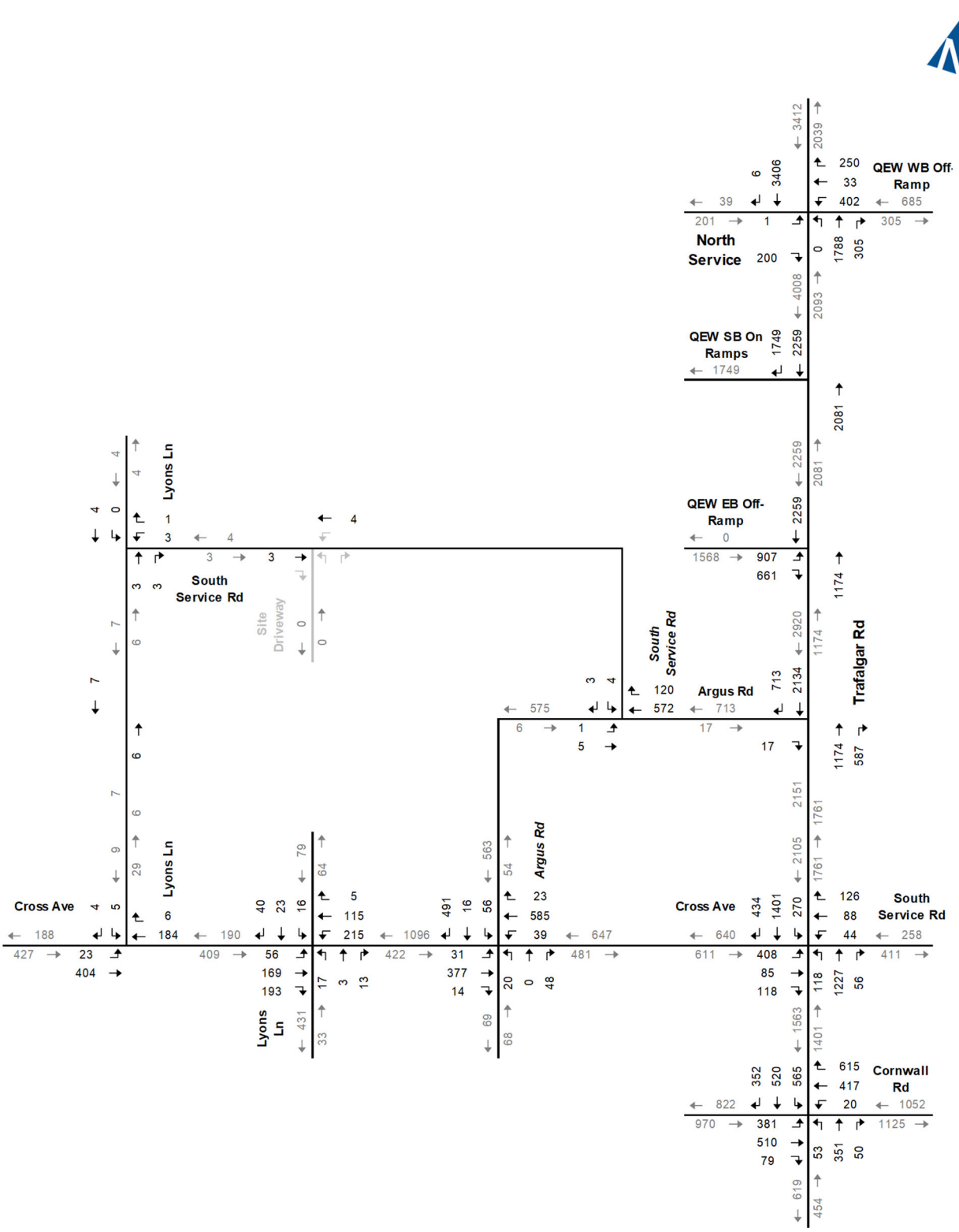
TABLE 2.1: TRAFFIC COUNT SUMMARY

Intersection		Date
Trafalgar Road	QEW Westbound Off-Ramp/North Service Road	June 1, 2017
	QEW Eastbound Off-Ramp	June 1, 2017
	Argus Road	May 15, 2017
	Cross Avenue/South Service Road	June 1, 2017
	Cornwall Road	June 1, 2017
Cross Avenue	Argus Road/GO Station Driveway	January 10, 2019
	Lyons Lane	January 10, 2019
South Service Road	Argus Road	January 10, 2019
	Lyons Lane	January 10, 2019

2.4.2 Volume Balancing

Volume balancing along Trafalgar Road has also been applied between the North Service Road and Argus Road to ensure that the corridor maintains proper upstream and downstream flow. No balancing occurred on Trafalgar Road, south of Argus Road and along Cross Avenue west of Argus Road to account for the GO Station and commercial driveways.

Figures 2.5A and **2.5B** illustrate the adjusted base year traffic volumes during the weekday AM and PM peak hours.



Base Year Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
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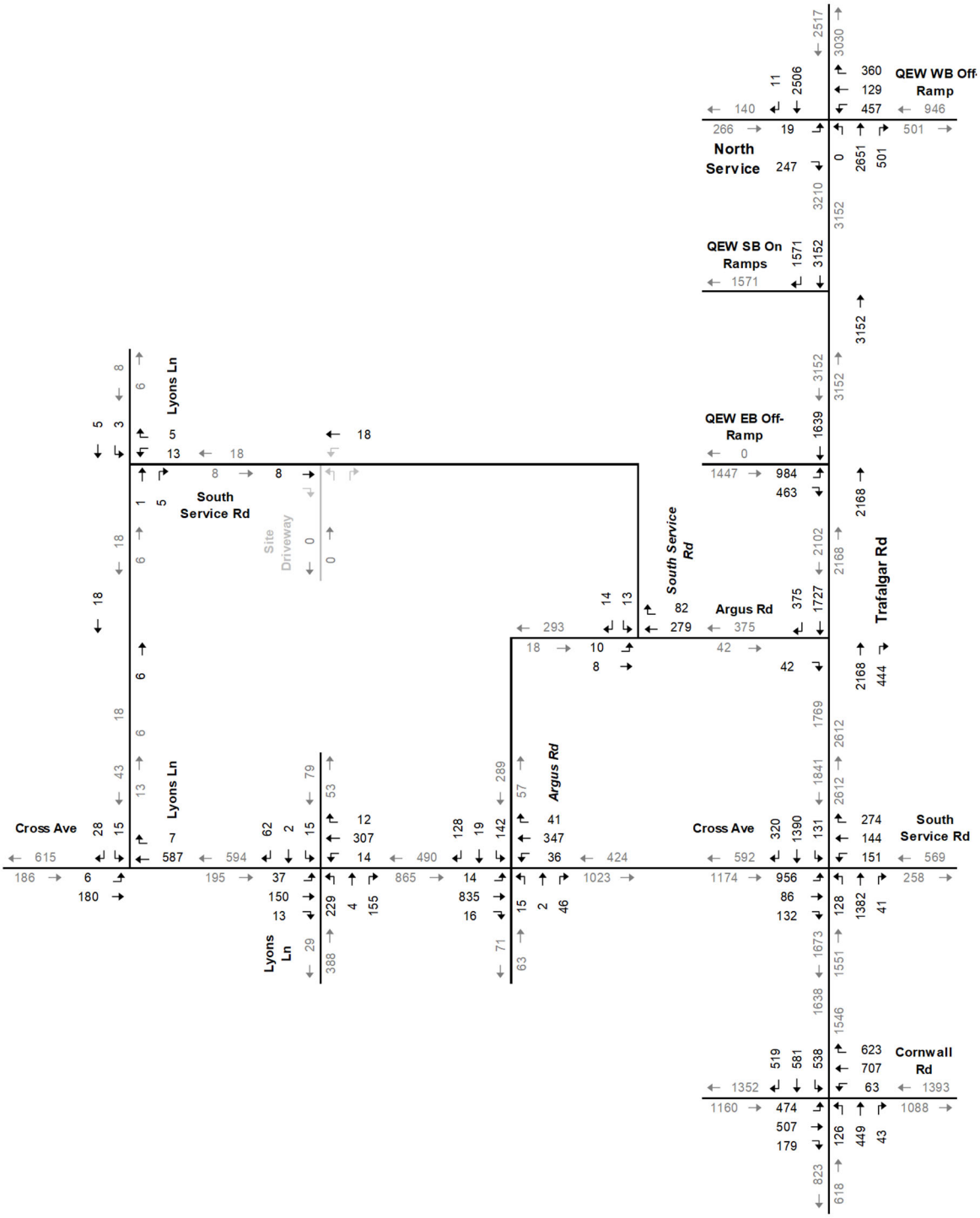
Figure 2.5A



Base Year Traffic Volumes
PM Peak Hour

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Figure 2.5B

3 Development Concept

3.1 Development Description

The property at 627 Lyons Lane is located between Lyons Lane and South Service Road, east of the Lyons Lane and South Service Road intersection.

The development proposal for the site consists of a 28-storey building with 281 apartment units. Vehicular access to the building's parking facilities and loading area is proposed via two accesses to the South Service Road located at the eastern limits of the property. For clarification, the western driveway will be designated for pick-up and drop-off service and has not been assessed as part of the operational analysis. **Figure 3.1** illustrates the development site plan.

3.1.1 Pedestrian Routes

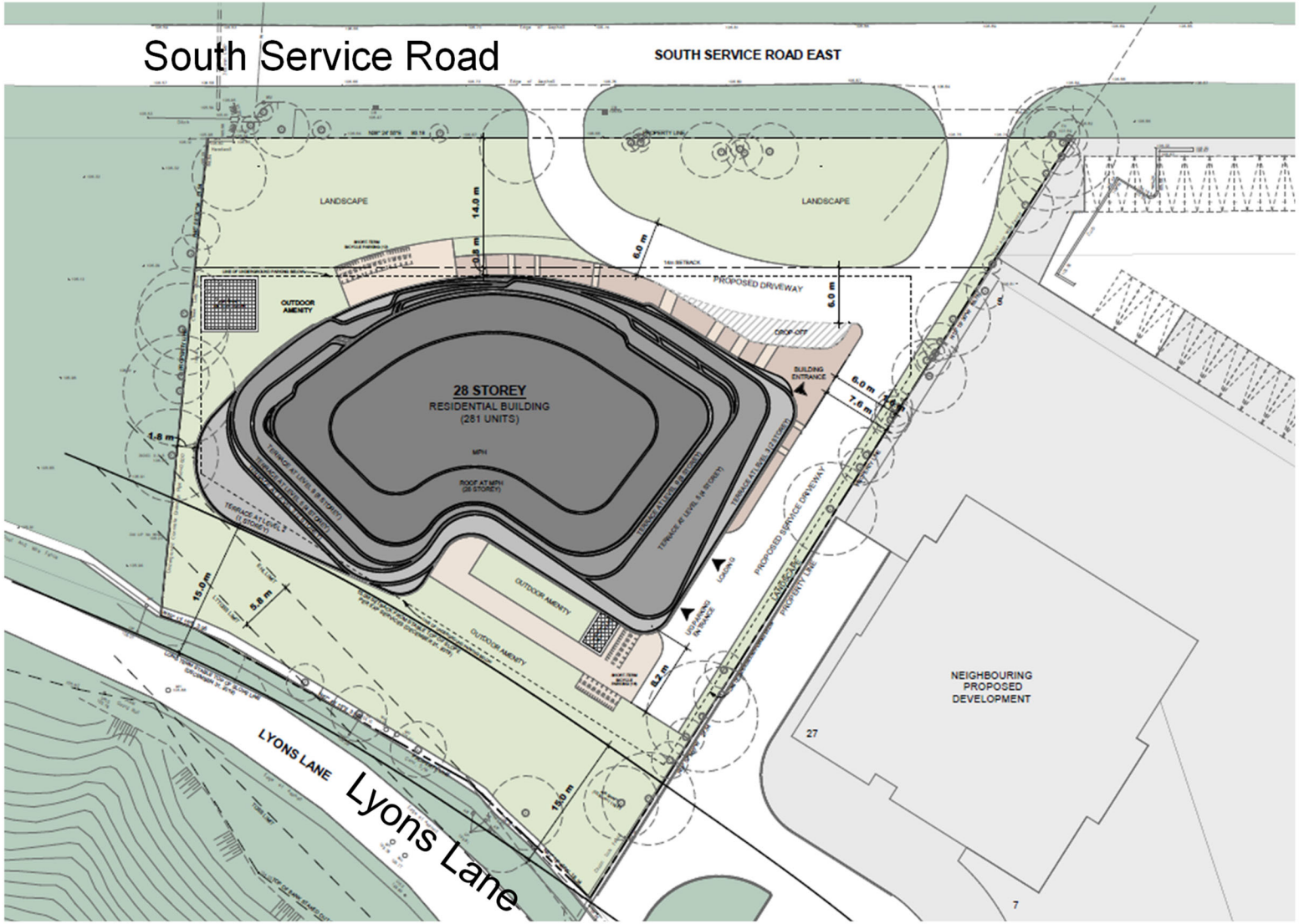
Figure 3.2 illustrates the proposed pedestrian circulation plan related to the proposed development. Owning to its active transportation-oriented design, the proposed plan has a high degree of pedestrian connections providing three connections with the municipal sidewalks network along Lyons Lane, providing access to retail uses within the area and the Oakville GO Station.

3.1.2 Swept Path Analysis

The truck turning assessment was completed using AutoTURN swept path analysis software to ensure adequate manoeuvrability through the site. The vehicle movements were examined using a CAD base file of the development plan dated 20 April 2022. The swept path analysis was conducted to investigate the on-site maneuverability of the larger design vehicles expected to utilize the site; Medium Single Unit (MSU) and Front-End Loader Garbage Truck (Custom). The vehicle dimensions for the garbage truck are based on specifications outlined in the Development Design Guidelines for Source Separation of Solid Waste17.

Appendix D provides the vehicle manoeuvring analysis and the profile and dimensions of the designed vehicles. The AutoTURN analyses indicate that the design vehicles have minor difficulty entering the loading bay.

Modifications to the loading bay are required to accommodate these vehicles entering the site. The AutoTURN swept path analysis indicates that large design vehicles will function adequately in terms of overall manoeuvring from a site circulation perspective.



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Site Plan

627 Lyons Lane, Oakville
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Figure 3.1

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Pedestrian Circulation Plan

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Figure 3.2

3.2 Development Trip Generation

The Town has requested that Multifamily Housing (Mid-Rise) Land Use (Land Use Code 221) from the Institute of Transportation Engineers (ITE) Trip Generation 10th Edition be used to estimate the weekday AM and PM peak hour traffic volumes that the development will generate.

As shown in **Table 3.1**, using the fitted curve equation, the estimated trip generation for the development indicates that 112 trips are forecasted to be generated during the AM peak hour and 110 trips during the PM peak hour.

TABLE 3.1: TRIP GENERATION

ITE Land Use	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
221 - Multifamily Housing (Mid Rise)	281	26	86	112	67	43	110
Trip Generation		**26**	**86**	**112**	**67**	**43**	**110**

Trip reductions to account for transit usage (6.6%), active transportation modes (6.0%), and travel demand management (6.0%) have been applied to the base trip generation. The trip reductions were obtained from the Town of Oakville Transportation Master Plan[2].

As shown in **Table 3.2**, the estimated trip generation after the reductions applied indicates 91 weekday AM peak hour and 89 weekday PM peak hour trips.

TABLE 3.2: TRIP GENERATION WITH MODE SPLIT REDUCTION

ITE Land Use	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
221 - Multifamily Housing (Mid Rise)	281	26	86	112	67	43	110
Trip Generation		**26**	**86**	**112**	**67**	**43**	**110**
Transit Mode Split	*6.6%*	*-2*	*-6*	*-7*	*-4*	*-3*	*-7*
Active Transportation Mode Split	*6.0%*	*-2*	*-5*	*-7*	*-4*	*-3*	*-7*
Travel Demand Management Split	*6.0%*	*-2*	*-5*	*-7*	*-4*	*-3*	*-7*
Total Net Trip Generation		**20**	**70**	**91**	**55**	**34**	**89**

However, as per MTO comments received as part of the 1st Submission, MTO's opinion that this level of mode share is too optimistic. As a result, the analysis has not assumed any mode split for the proposed development.

[2] Town of Oakville Transportation Master Plan Review Final Draft January 2018, WSP + GLP

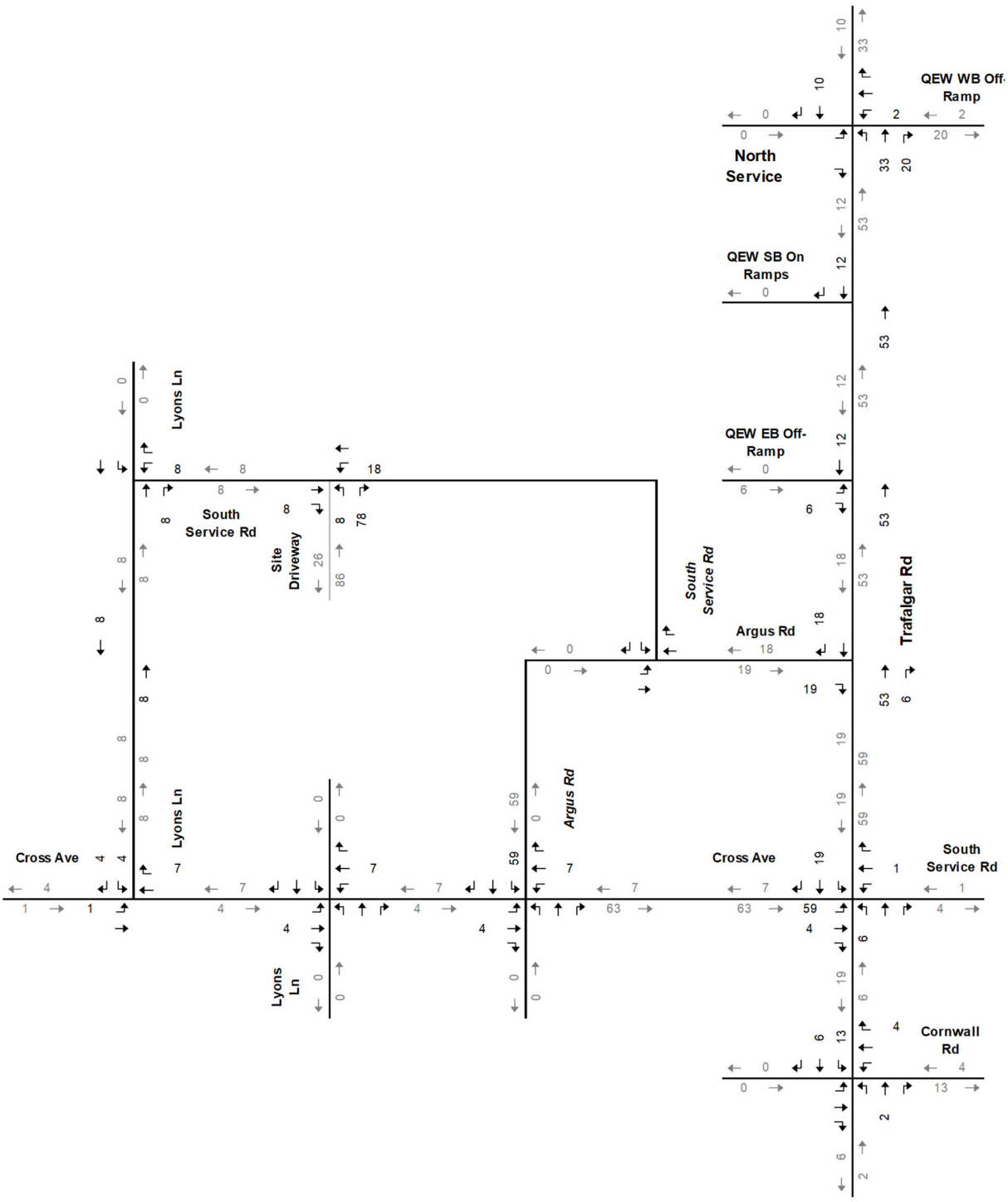
3.3 Development Trip Distribution and Assignment

The site-generated trips were assigned to the road network based on the existing distribution of traffic at the study area intersections. The distribution is summarized in **Table 3.3**.

Figure 3.2A and **Figure 3.2B** display the resulting AM and PM peak hour site-generated trip assignments.

TABLE 3.3: TRIP DISTRIBUTION

Direction	Route	AM Peak Hour	PM Peak Hour
North	Trafalgar Road	39%	38%
South	Trafalgar Road	7%	9%
East	QEW	7%	9%
	South Service Road	5%	5%
	Cornwall Road	15%	15%
West	QEW	23%	19%
	Cross Ave	4%	5%
	Total	**100%**	**100%**



Site Generated Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
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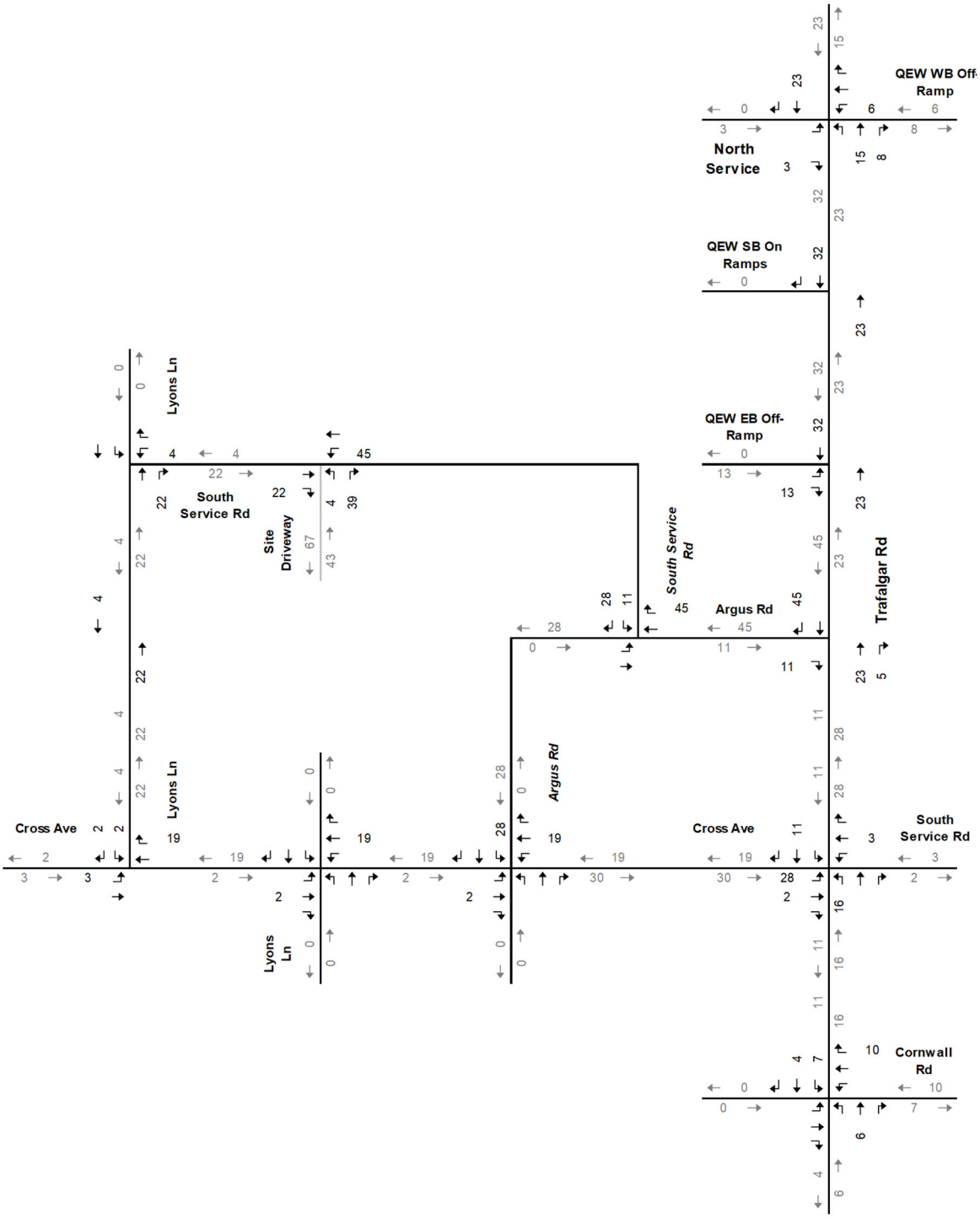
Figure 3.2A



Site Generated Traffic Volumes
PM Peak Hour

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Figure 3.2B

4 Future Conditions

To remain consistent with MTO and Region traffic impact study guidelines, the horizon years of 2025, 2030 and 2035 have been utilized to analyze future traffic conditions.

4.1 Trafalgar Road EA

The Trafalgar Road (Regional Road 3)[3] Improvements Class Environmental Assessment Study from Cornwall Road to Highway 407 was completed in May 2015. It was recommended that Trafalgar Road be widened from four (4) to six (6) lanes and potentially converted the curb lanes to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening.

Trafalgar Road is currently a six-lane cross-section plus exclusive left-turn lanes in both directions within the study area. It is assumed that the Trafalgar corridor will operate as a six-lane corridor with HOV curb lanes for future horizons. The only modification to the road network for future analyses is removing the eastbound channelized right turn at Trafalgar Road and Cornwall Road to be consistent with the preferred design.

4.2 Midtown Oakville EA

The Town of Oakville completed a Class Environmental Assessment (EA) for Midtown Oakville (MOEA)[4] to guide the development of the transportation and municipal stormwater network needed to accommodate the planned growth in Midtown Oakville. The MOEA identified critical changes to the existing and planned road network that would be required to support intentional growth.

In addition, other master plans have been updated and technical studies completed, including the Halton Region Transportation Master Plan, the Town of Oakville Transportation Master Plan – Switching Gears, the Midtown Parking Strategy (2014), and Designing Midtown Oakville (2014). As a result, the Town has proposed an Official Plan Amendment (OPA) that would incorporate the results of these studies into the Official Plan and bring the policies and Schedules into alignment with the most current source documents.

The changes to the Midtown-related transportation network include modifications designed to the broader area network and changes to the local road network within Midtown Oakville. To accommodate traffic to and from Midtown Oakville and to provide an alternative to Trafalgar Road, several

[3] Trafalgar Road Improvements Class Environmental Assessment Study From Cornwall Road to Highway 407, Town of Oakville, AECOM, April 2015.
[4] Midtown Oakville Transportation and Stormwater Municipal Class Environmental Assessment, Cole Engineering, June 2015.

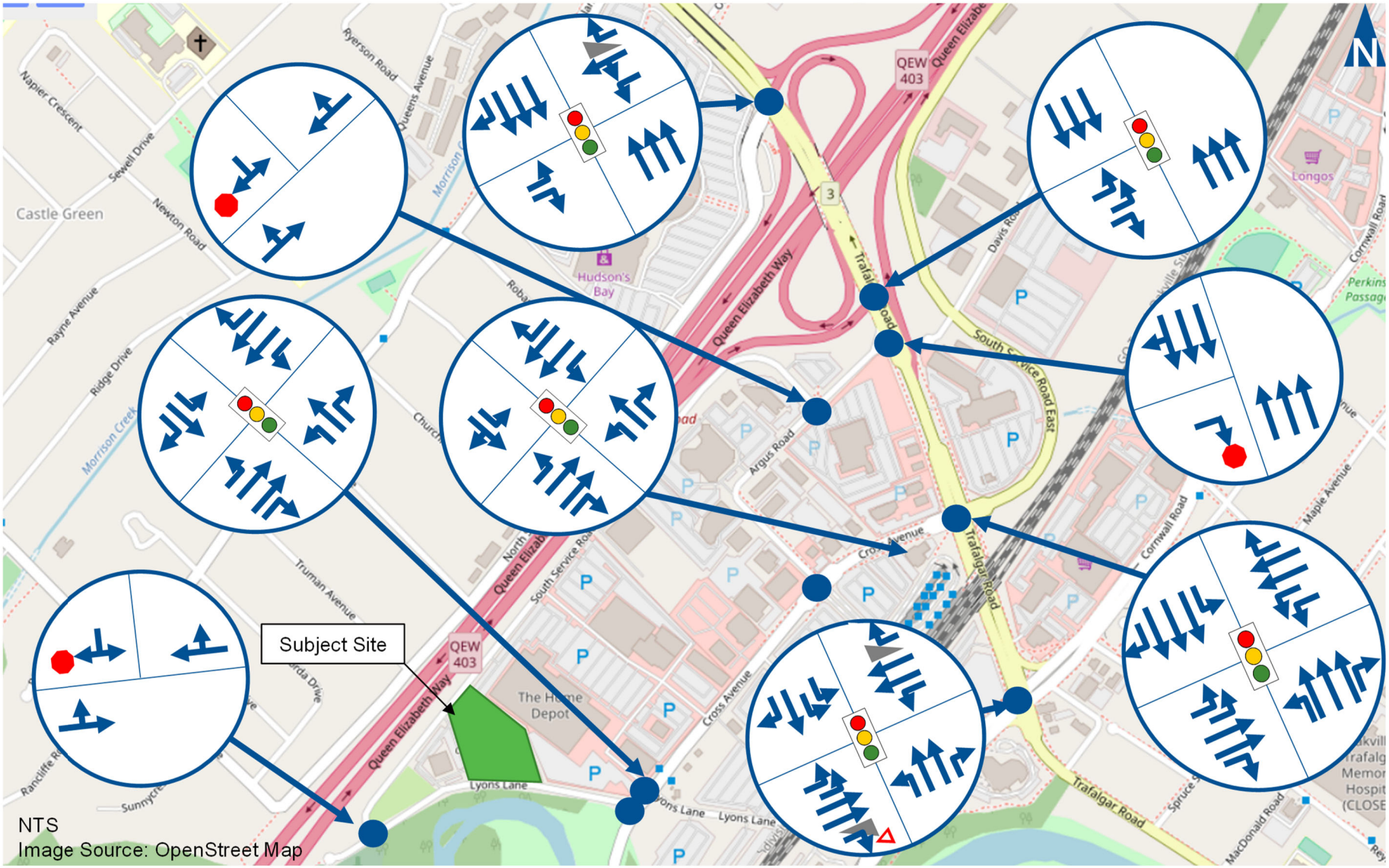
improvements are provided, including direct off-ramps from eastbound QEW at Trafalgar Road and new ramps to/from the QEW at Royal Windsor Drive;

- A direct route from eastbound QEW to Midtown Oakville is provided via a new off-ramp that crosses under Trafalgar Road. This reduces the impacts of future traffic demand on the existing constrained intersections along Trafalgar Road at the off-ramp and Cross Avenue. The underpass of Trafalgar Road also provides the opportunity for improved active transportation connections into Midtown Oakville.
- A direct route from eastbound QEW to Midtown Oakville is provided via a new off-ramp to Cross Avenue at the Royal Windsor Drive interchange. A direct route from Midtown Oakville to eastbound QEW is provided via a new on-ramp at Royal Windsor Drive opposite Cross Avenue. A new westbound QEW off-ramp at Royal Windsor Drive will offer an alternative route to Midtown Oakville and surrounding areas.
- Cross Avenue is extended from Trafalgar Road to Royal Windsor Drive, connecting with the enhanced QEW interchange. Cross Avenue will provide accessible facilities for pedestrians and cyclists to travel safely, on-street parking where appropriate and four vehicular travel lanes.
- For access and circulation within Midtown Oakville, a revised local road network for Midtown Oakville is designed to support and align with the broader transportation network determined through the MOEA. As part of the revised road network, Lyons Lane at Cross Avenue is proposed to be realigned to form a four-way signalized intersection.

The proposed improvements are not expected to significantly impact the QEW mainline operations with the refinements to the design to accommodate weaving and merging better. The new ramps at Royal Windsor Drive and Trafalgar Road will accommodate the additional travel demand from Midtown Oakville's planned intensification, thereby relieving the existing Trafalgar Road interchange. **Figure 4.1A** illustrates the future lane configuration.

These improvements are assumed to be in place for the 2030 and 2035 horizons to assess the long-term impacts on the area. **Figures 4.2A and 4.2B** illustrate the proposed transportation network for Midtown Oakville.

The MOEA recognized that the roadway improvements identified herein would relieve operational issues; however, capacity constraints will persist for the overall transportation network.



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Future Lane Configuration & Traffic Control

627 Lyons Lane, Oakville
210060

Figure 4.1A

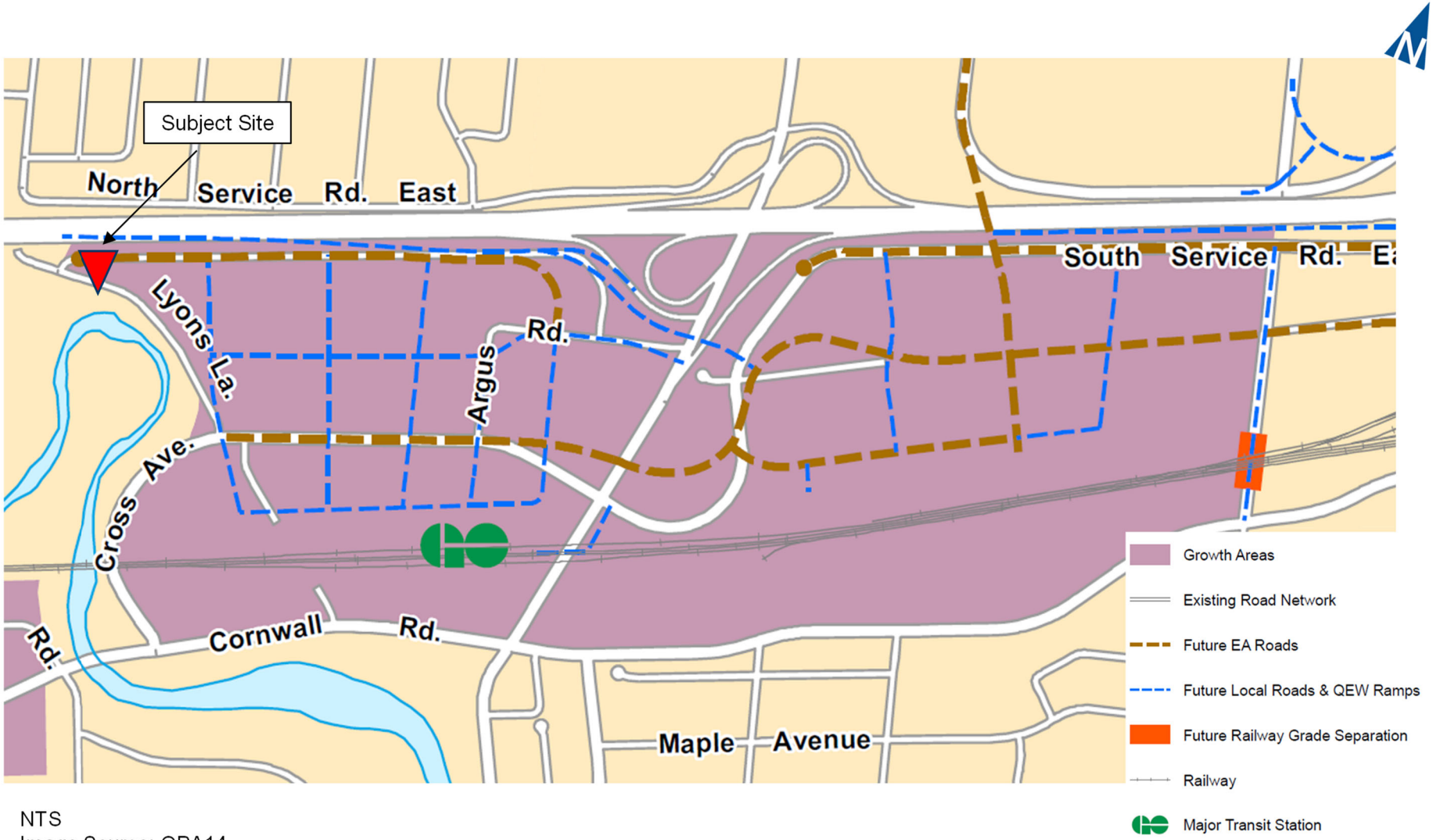

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Image Source: OPA14

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Midtown Oakville
Overall Road Network

627 Lyons Lane, Oakville
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Figure 4.1B

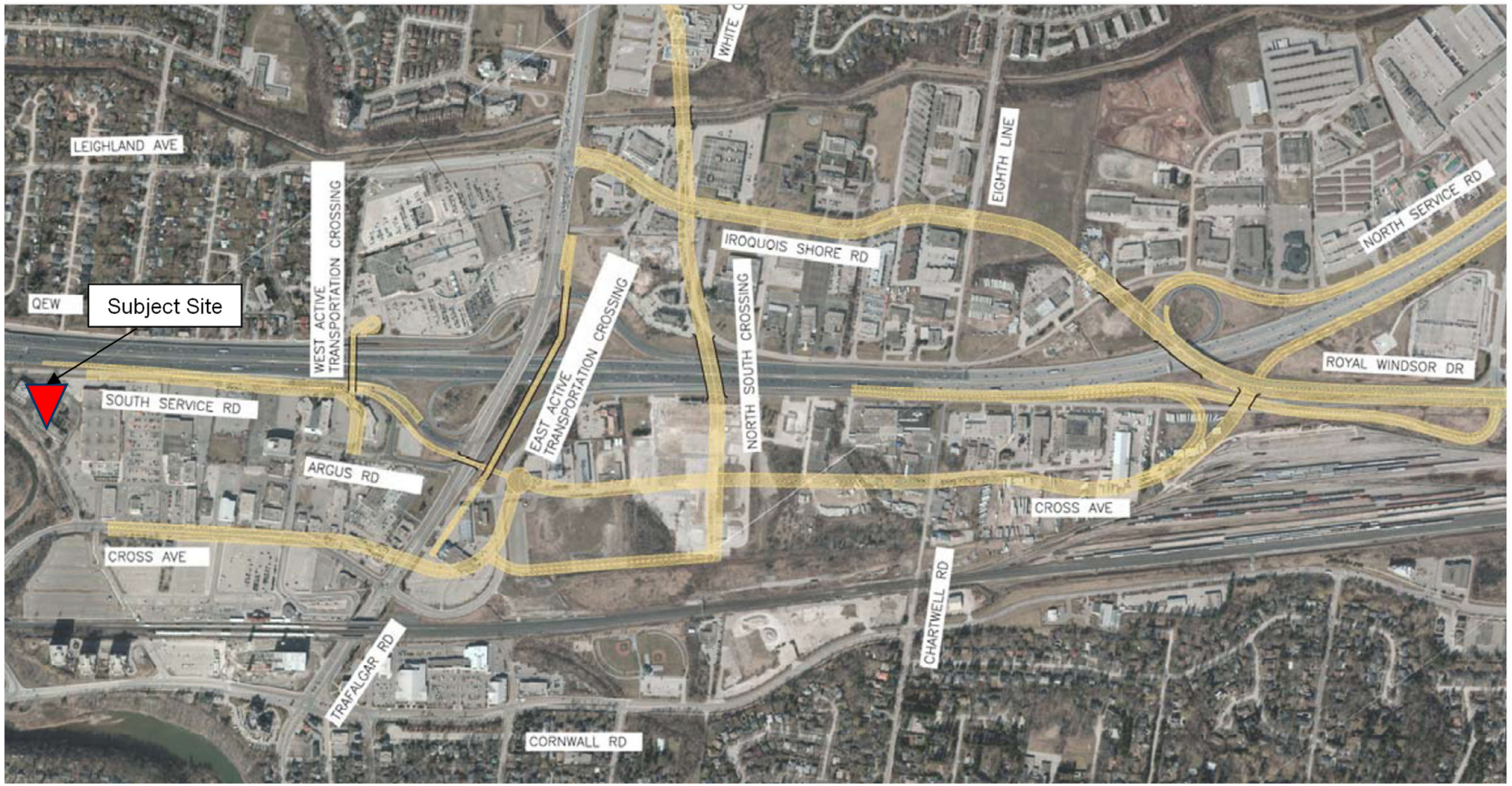

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Image Source: Midtown Oakville Class EA

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Midtown Oakville
Broader Area Improvements

627 Lyons Lane, Oakville
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Figure 4.1C

4.3 Future Forecasts

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. A frequently used procedure estimates an annual percentage increase and applies 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 were utilized.

Based on discussions with Region of Halton staff, a general growth rate of 2.0% was applied to the area roadways to account for population and employment growth.

The MOEA[5] provides the best source for the overall development context and traffic growth expectations for the immediate study area. This report provides traffic forecast for a 17-year horizon with a development assumption of 5,960 residential units, 370,000 square feet of retail uses, 1.4 million square feet of office spaces with supporting institutional and recreational uses. In addition to the general traffic growth, it is assumed that a portion of Midtown Oakville's redevelopment will occur in the 2030 and 2035 horizons. This report considers 20% to 40% build-out for the 2030 and 2035 horizons.

Given that the MOEA most closely models the overall redevelopment plans, traffic projections contained within the MOEA were the primary source for developing background development projections. Adjustments were made to the traffic forecasts extracted from this study to account solely for site-specific growth. Specifically, as a growth rate of 2% per annum was most likely utilized in these forecasts, this growth has been removed.

Appendix E provides traffic projections related to site-specific growth.

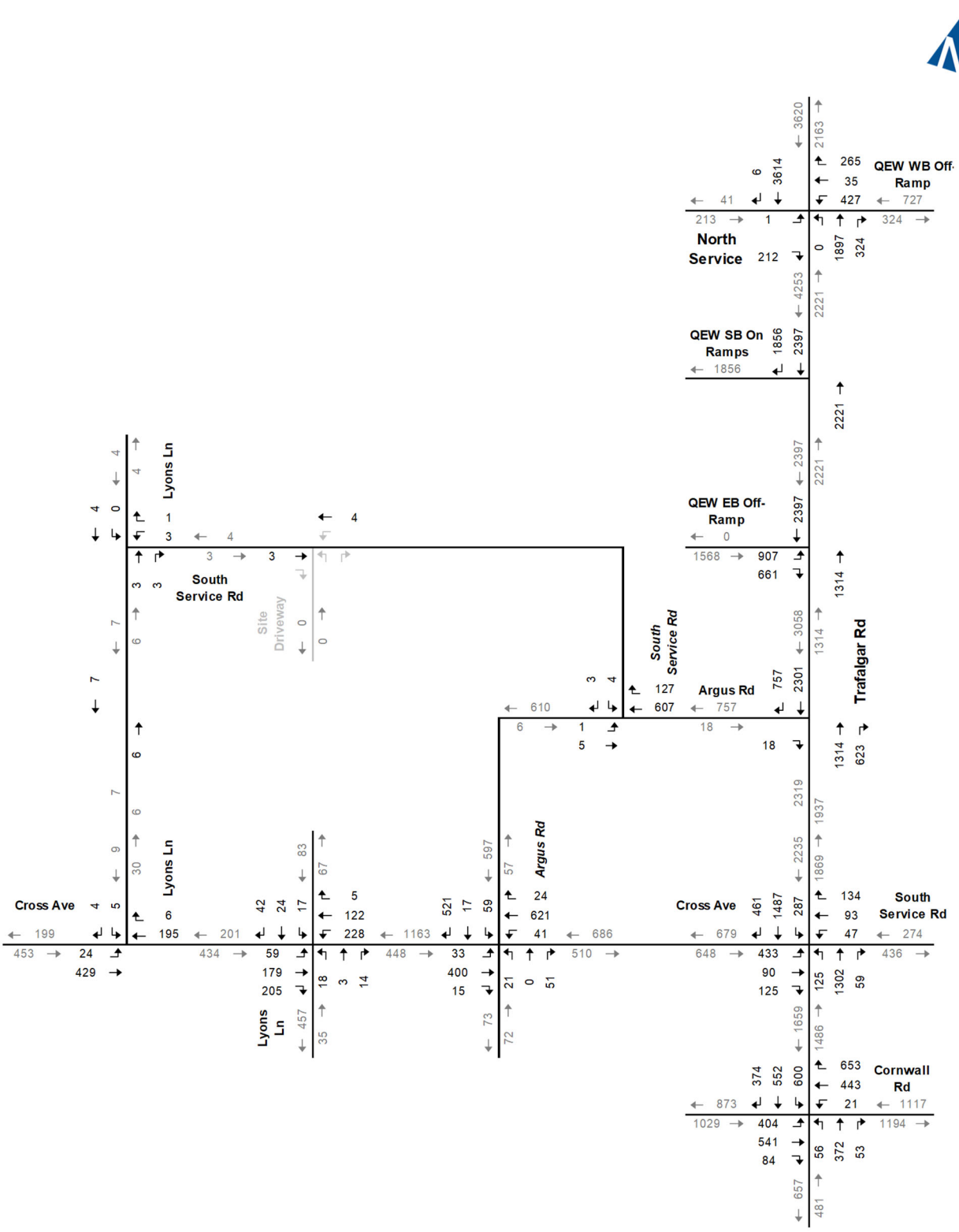
4.3.1 Background projections

The weekday AM and PM peak hour background traffic volumes for 2025, 2030 and 2035 horizons are illustrated in **Figures 4.2 - 4.3**.

4.3.2 Total Projections

The projected site-generated traffic volumes were added to the Background projections to develop the Total traffic volumes. The weekday AM, and PM peak hours Total traffic volumes for 2025, 2030 and 2035 horizons are illustrated in **Figures 4.5 - 4.7**.

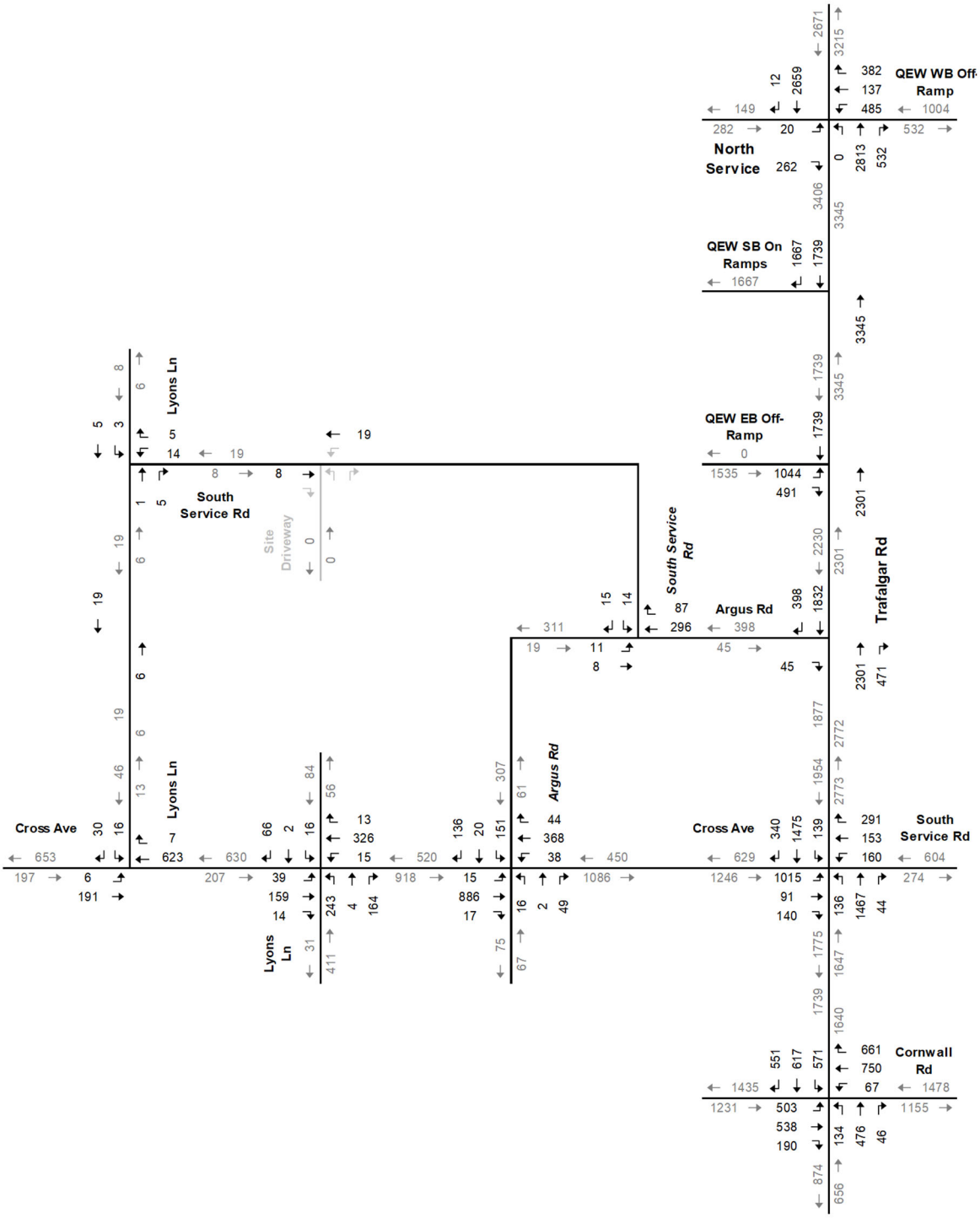
[5] Midtown Oakville Transportation and Stormwater Municipal Class Environmental Assessment, Cole Engineering, June 2015.



2025 Background Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

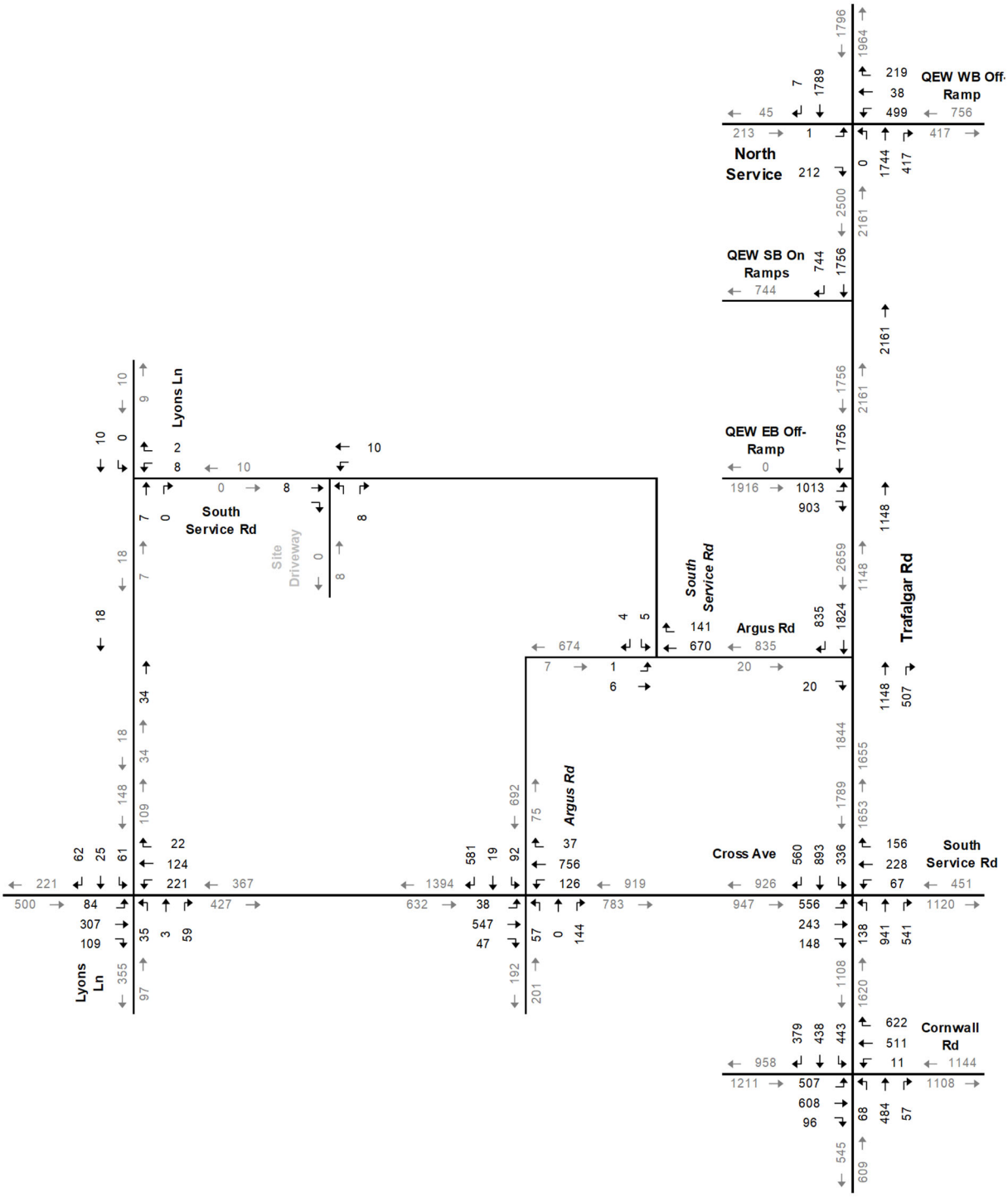
Figure 4.2A



2025 Background Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

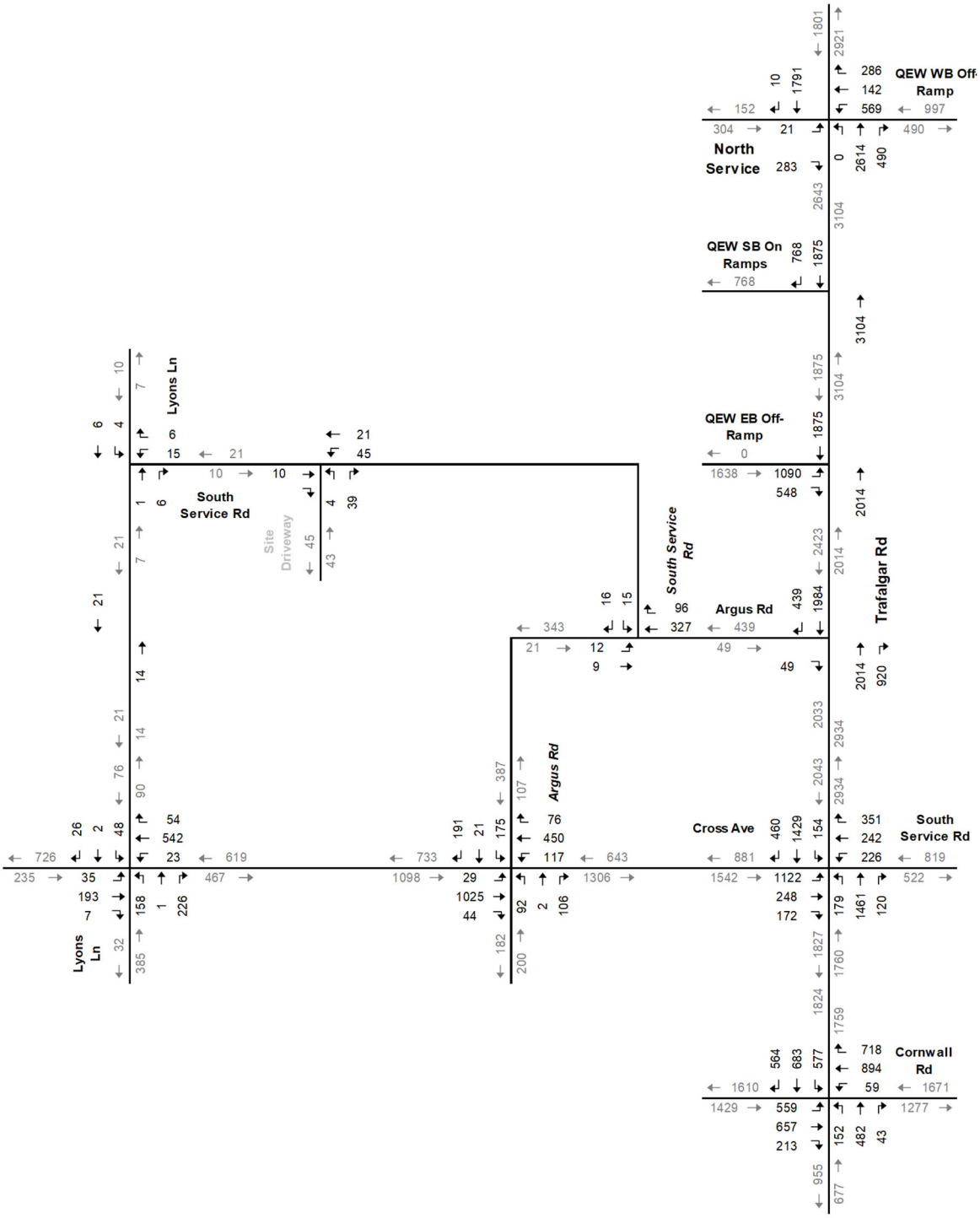
Figure 4.2B



2030 Background Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

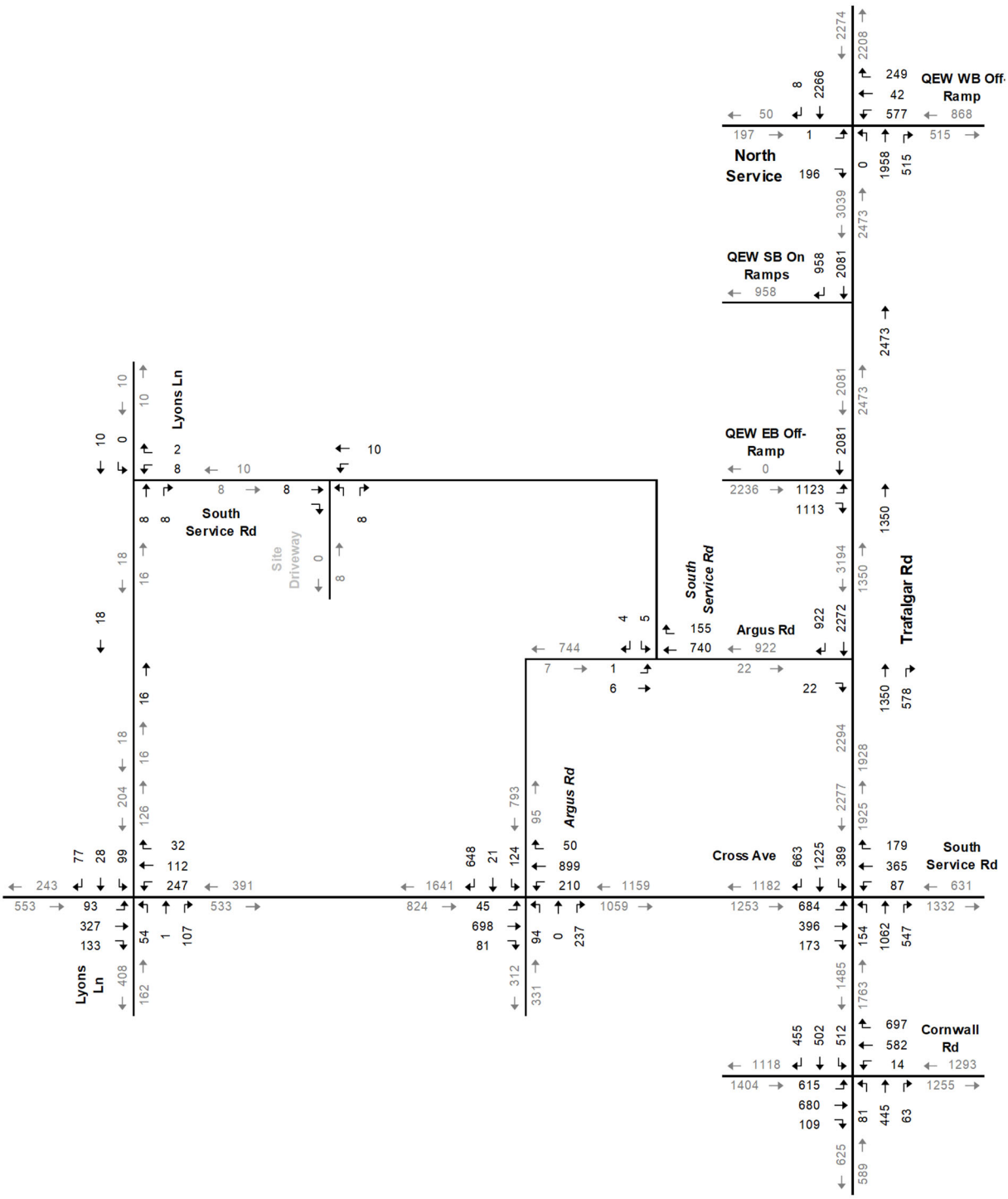
Figure 4.3A



2030 Background Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

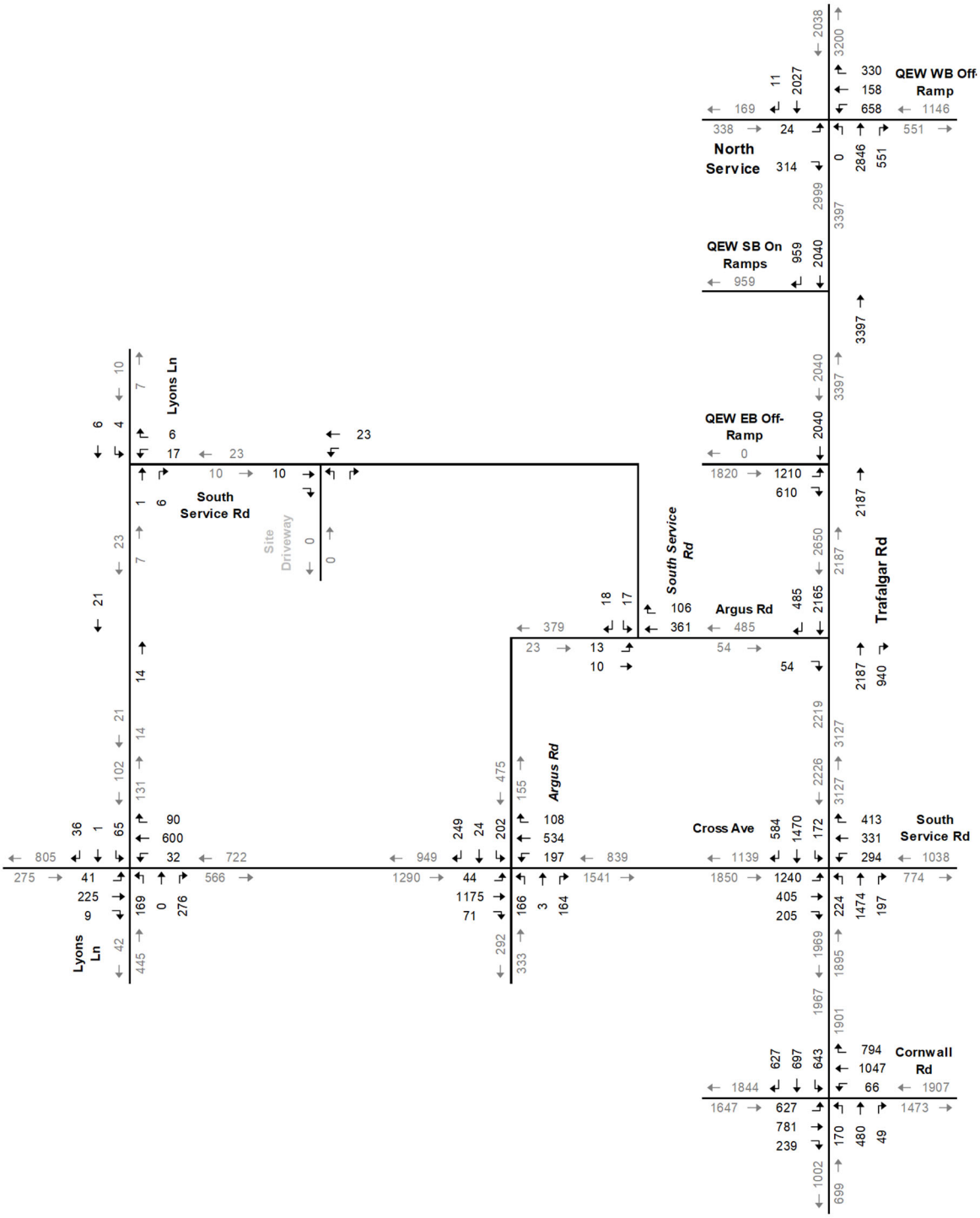
Figure 4.3B



2035 Background Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

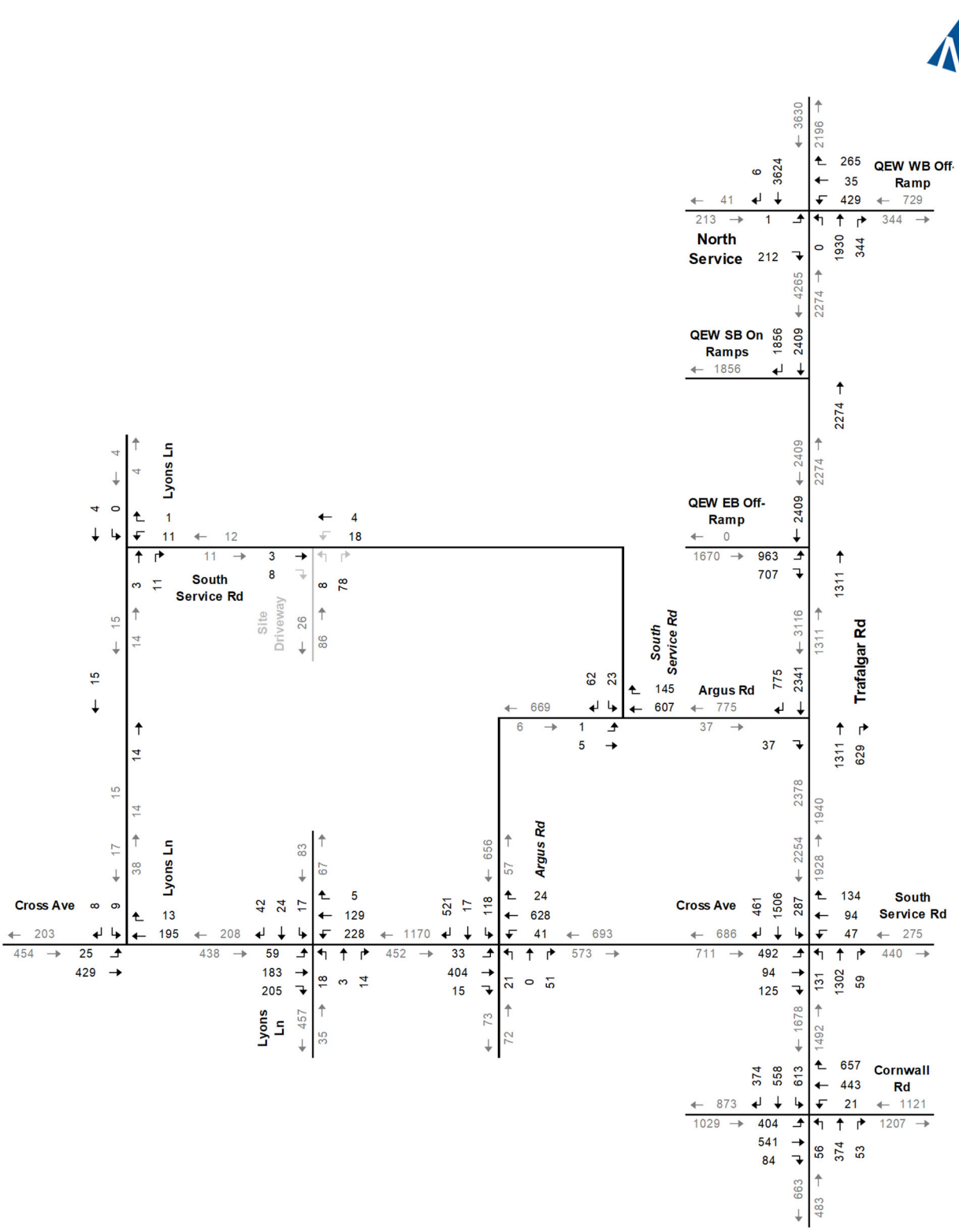
Figure 4.4A



2035 Background Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

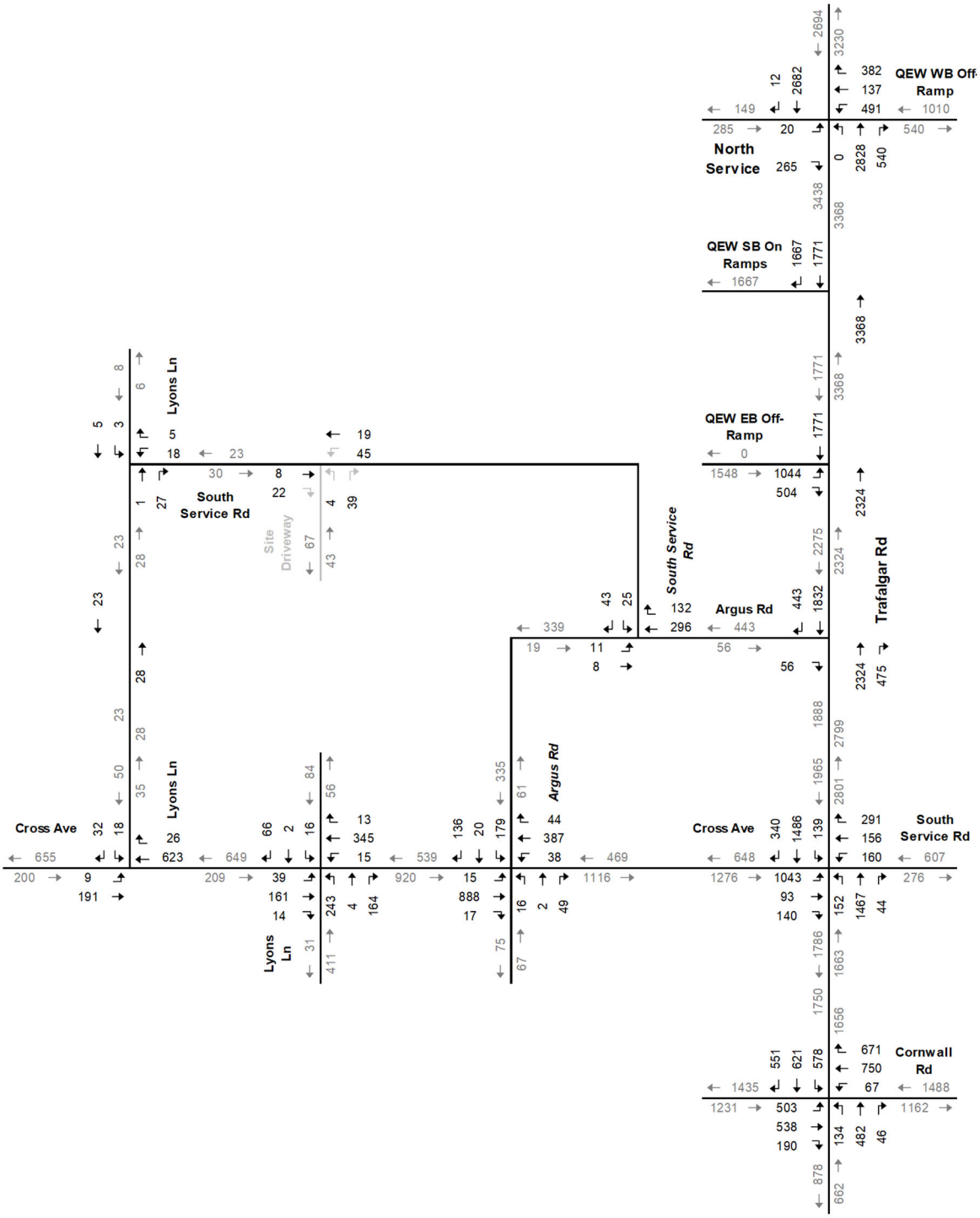
Figure 4.4B



2025 Total Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

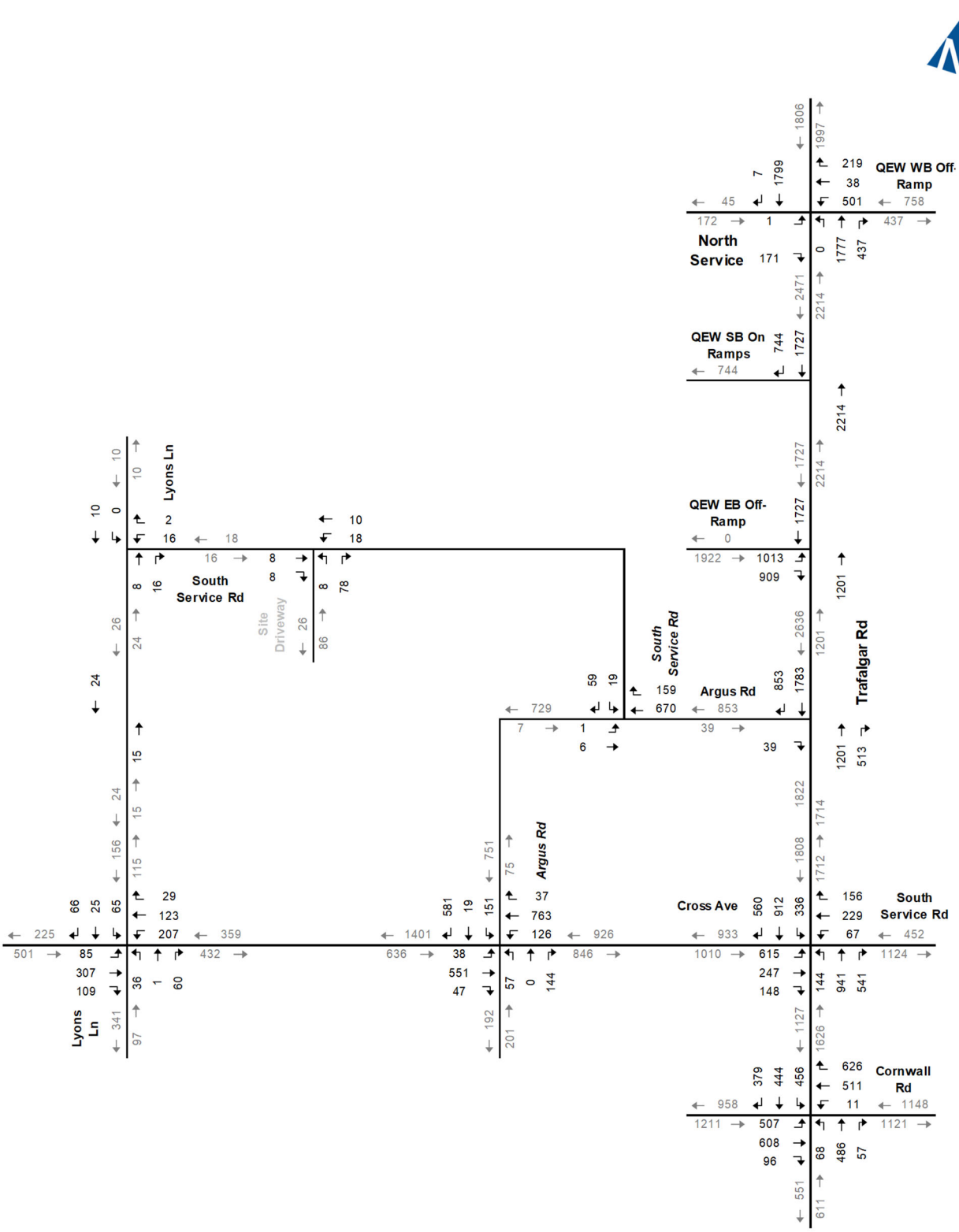
Figure 4.5A



2025 Total Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

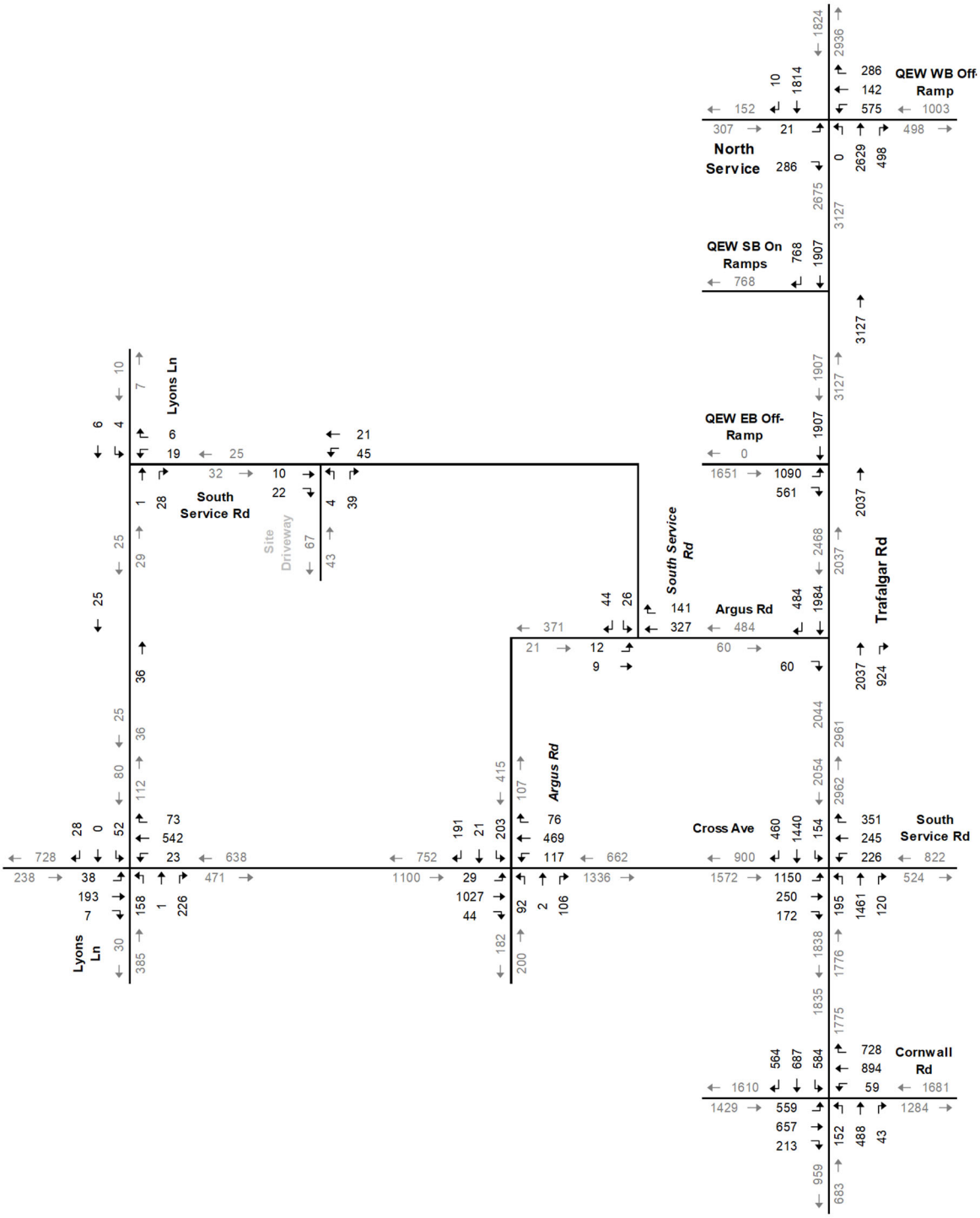
Figure 4.5B



2030 Total Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

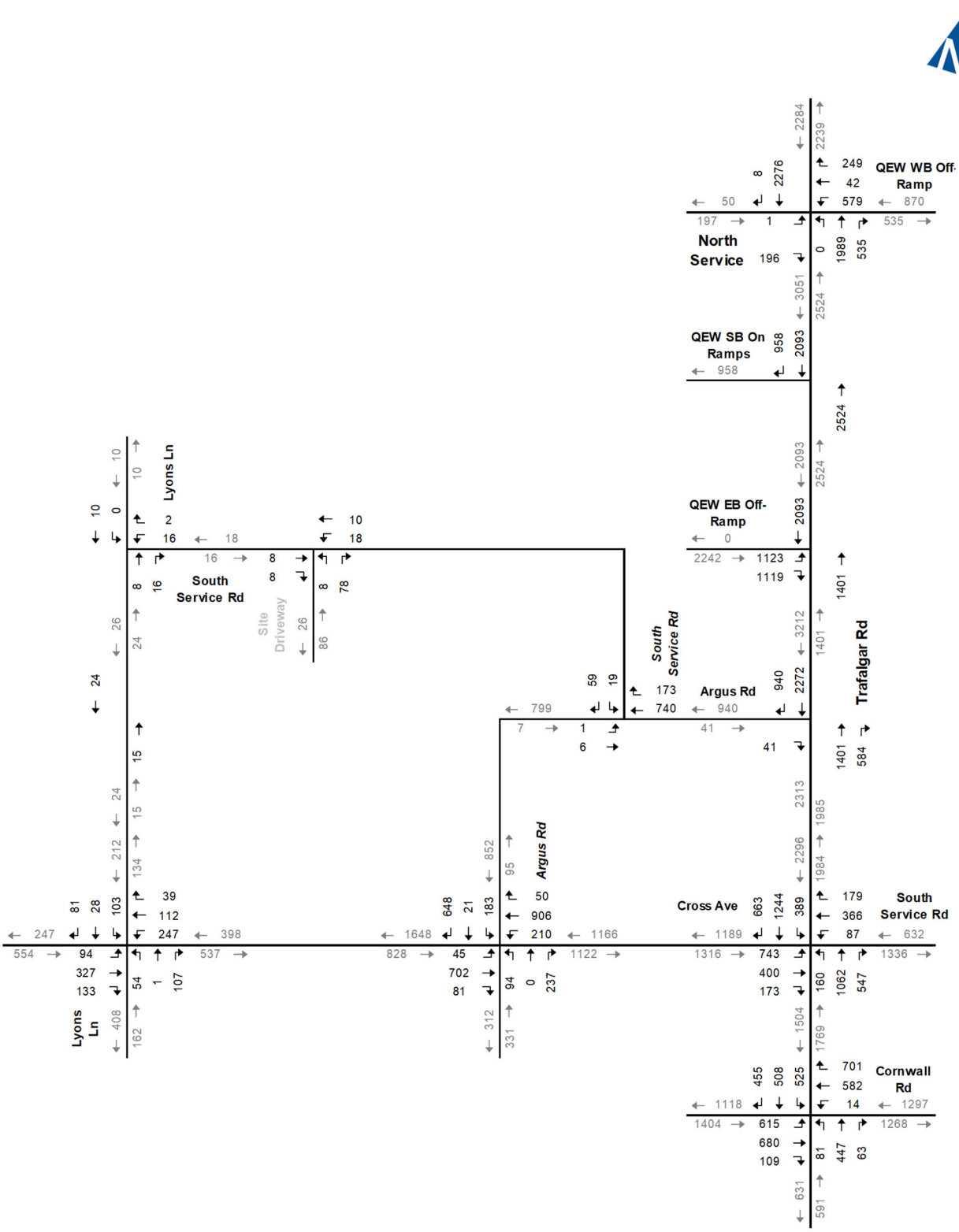
Figure 4.6A



2030 Total Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

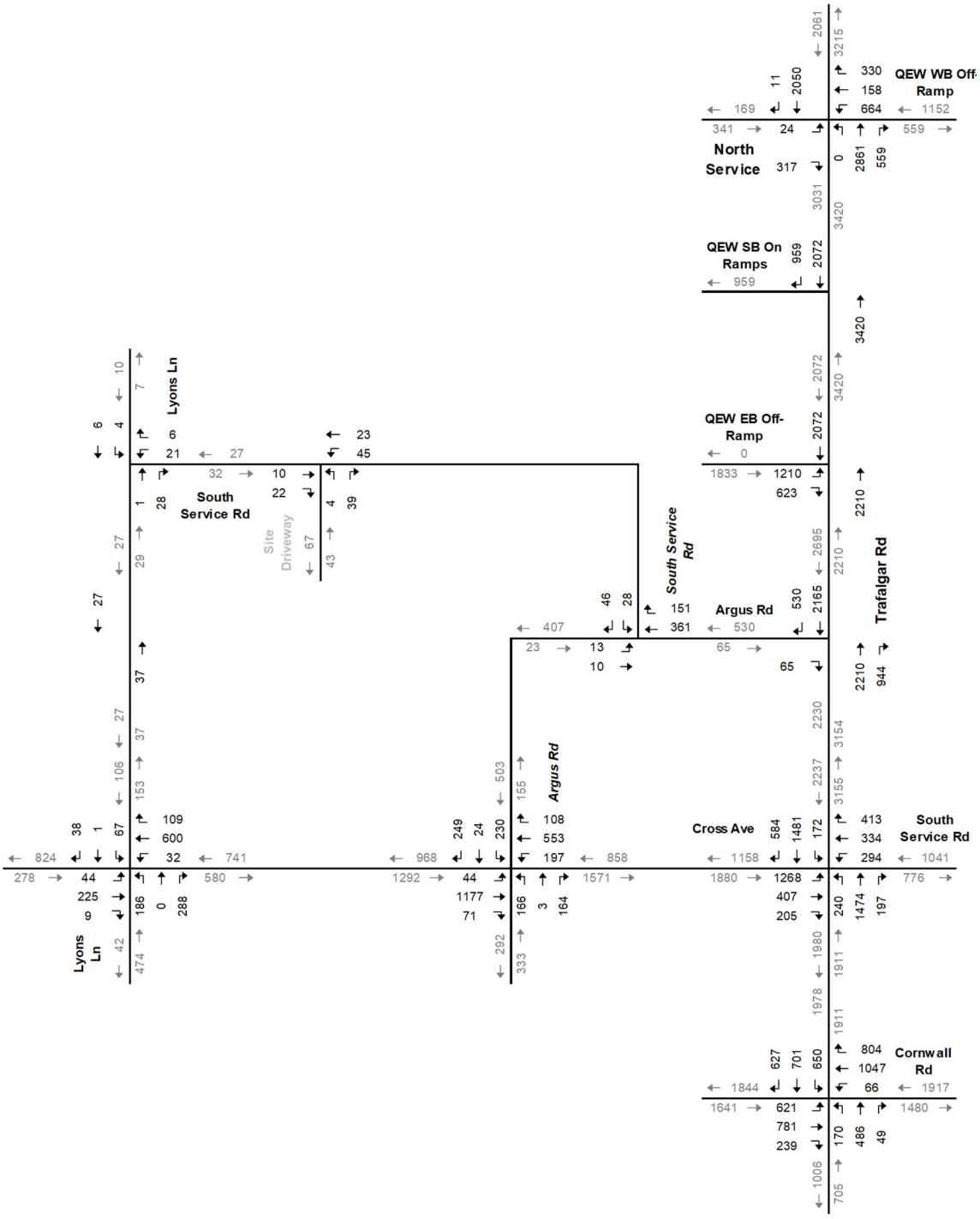
Figure 4.6B



2035 Total Traffic Volumes
AM Peak Hour

627 Lyons Lane, Oakville
210060

Figure 4.7A



2035 Total Traffic Volumes
PM Peak Hour

627 Lyons Lane, Oakville
210060

Figure 4.7B

5 Operational Assessment

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess the quality of flow, roadway capacity analysis was conducted concerning Base conditions and projected future Background and Total conditions. The capacity analysis indicates how the roadway facilities serve the traffic demands. Calculated levels of service classify roadway operating conditions.

5.1 Level of Service Criteria

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that provides an index to the operational qualities of a roadway segment or an intersection with designations that range from A to F, with LOS A representing the best-operating conditions and LOS F representing the worst operating conditions.

For signalized intersections, the analysis considered the operation of each lane or lane group entering the intersection and the level of service for the overall conditions at the intersection.

For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by the traffic on the side streets. The level of service is only determined for left turns from the main road and all movements from the minor street.

The evaluation criteria used to analyze intersections are based on the 2000 Highway Capacity Manual (HCM)[6].

[6] Transportation Research Board, Highway Capacity Manual, Washing, D.C. 2003.

5.2 Intersection Capacity Analysis

Intersection capacity analyses were conducted at all intersections in the study area. Analyses were conducted for the Base Conditions and 2025, 2030 and 2035 Background and Total Conditions.

Tables 5.1 and 5.2 summarize the capacity analyses for the study area intersections, respectively. The capacity analysis results are included in **Appendix F**. The following sub-sections outline the operations of the study area intersections.

5.2.1 Trafalgar Road at QEW Westbound Ramp

At the intersection of Trafalgar Road and QEW Westbound Ramp, several movements are operating at LOS E during the weekday peak hours.

Under the 2025 Background conditions, the southbound through a movement which presently operates at LOS E is projected to degrade to LOS F during the weekday AM and PM peak hours.

Under the 2030 Background conditions, the southbound through movement is projected to improve operation to LOS C. However, it will ultimately revert to LOS F under the 2035 Background conditions.

In terms of development traffic implications, similar levels of operation are expected under the Total conditions with only minor increases in delay resulting from site-generated traffic volumes.

5.2.2 Trafalgar Road at QEW Southbound On-Ramps

At the unsignalized intersection of Trafalgar Road and QEW Southbound On-Ramps, individual movements presently operate at LOS A during the weekday peak hours. Similar levels of operation are expected under future Background and Total traffic conditions with only a minor increase in delay resulting from site-generated traffic volumes.

5.2.3 Trafalgar Road at QEW Eastbound Ramp

At the intersection of Trafalgar Road at QEW Eastbound Ramp, the eastbound proper turn movement presently operates at LOS F during the weekday AM peak hour. The southbound through movement currently operate at LOS B during the weekday AM peak hour and is expected to degrade to LOS E under the 2025 Background conditions and ultimately to LOS F under the 2030 and 2035 Background conditions.

In terms of development traffic implications, similar levels of operation are expected under the Total conditions with only minor increases in delay resulting from site-generated traffic volumes.

5.2.4 Trafalgar Road at Argus Road

Individual movements at the unsignalized intersection of Trafalgar Road and Argus Road presently operate at LOS C or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total traffic conditions with only a minor increase in delay resulting from site-generated traffic volumes.

5.2.5 Trafalgar Road at Cross Avenue/South Service Road

At the intersection of Trafalgar Road and Cross Avenue/South Service Road, several movements are operating at LOS E during the weekday AM peak hour and LOS E and F during the weekday PM peak hour.

Under 2025 Background traffic conditions, many movements are projected to continue to operate with high levels of delay during the weekday peak hours.

Under the 2030 and 2035 horizons, increased congestion and delay are projected for several movements degrading from LOS E and F during the weekday peak hours.

In terms of development traffic implications, similar levels of operation are expected under the Total conditions with only minor increases in delay resulting from site-generated traffic volumes.

5.2.6 Trafalgar Road at Cornwall Road

At the intersection of Trafalgar Road and Cornwall Road, several movements are operating at LOS E and F during the weekday peak hours.

Under 2025, 2030 and 2035 Background traffic conditions, many movements are projected to continue to operate with high levels of delay during the weekday peak hours.

In terms of development traffic implications, similar levels of operation are expected under the Total conditions with only minor increases in delay resulting from site-generated traffic volumes.

5.2.7 Cross Avenue at Argus Road/GO Station Driveway

Individual movements at the signalized intersection of Cross Avenue and Argus Road/GO Station Driveway presently operate at LOS D or better during the weekday peak hours, except the northbound left-turn movement that operates at LOS F during the weekday AM peak hour. Similar levels of operation are expected under the 2025 Background conditions.

Under 2030 Background conditions, the southbound through/right turn movement is projected to degrade to LOS F and the westbound left-turn movement to degrade to LOS F. With additional growth under the 2035 Background conditions; these movements are expected to operate with increased delay and congestion during the weekday peak hours.

In terms of development traffic implications, similar levels of operation are expected under the Total conditions with only minor increases in delay resulting from site-generated traffic volumes.

5.2.8 Cross Avenue at Lyons Lane (Three Leg)

Individual movements at the unsignalized intersection of Cross Avenue and Lyons Lane presently operate at LOS B or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total traffic conditions with only a minor increase in delay resulting from site-generated traffic volumes.

5.2.9 Cross Avenue at Lyons Lane (Four Leg)

Individual movements at the signalized intersection of Cross Avenue and Lyons Lane presently operate at LOS D or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total traffic conditions with only a minor increase in delay resulting from site-generated traffic volumes.

5.2.10 South Service Road at Lyons Lane

Individual movements at the signalized intersection of Cross Avenue and Lyons Lane presently operate at LOS A during the weekday peak hours. Similar levels of operation are expected under future Background and Total traffic conditions with only a minor increase in delay resulting from site-generated traffic volumes.

5.2.11 Argus Road at South Service Road East

Individual movements at the unsignalized intersection of Argus Road and South Service Road East presently operate at LOS C or better during the weekday peak hours. Similar levels of operation are expected under 2025, 2030 and 2035 Background conditions.

Under the Total conditions (2025, 2030 and 2035), the increased delay is projected to the southbound approach, which will operate at LOS F. This is likely a result of high east-west traffic along Argus Road, leaving few gaps for southbound stop-controlled movements.

5.2.12 Development Driveway

Under the future traffic conditions with full-build out of the development, the new driveway connection is expected to operate at LOS A during the weekday peak hours under the Total conditions.

TABLE 5.1A: AM PEAK HOUR OPERATIONS - 2021-2035

Analysis Period	Intersection	Horizon	Control Type	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	Trafalgar Road & QEW Westbound Off-Ramp / North Service Road	Base Year	TCS	LOS	E		D	D	E	E	D	D		B	A	B		E	A	E	D
				Delay	68		46	46	57	58	47	54		11	10	11		59	7	58	42
				V/C	0.04		0.49		0.69	0.71	0.30			0.57	0.25			1.07	0.00		
				Q	2		64		92	93	37			126	16			511	0		
		2025 Background	TCS	LOS	E		D	D	E	E	D	D		A	A	A		F	A	F	E
				Delay	68		45	45	57	58	47	54		7	5	6		92	7	91.7	58.2
				V/C	0.04		0.50		0.71	0.72	0.35			0.61	0.27			1.15	0.00		
				Q	2		67		97	97	43			106	25			564	0		
		2025 Total	TCS	LOS	E		D	D	E	E	D	D		A	A	A		F	A	F	E
				Delay	68		45	45	57	58	47	54		6	5	6		94	7	94	59
				V/C	0.04		0.50		0.71	0.72	0.35			0.62	0.29			1.15	0.00		
				Q	2		67		97	43	0			105	26			567	0		
		2030 Background	TCS	LOS	E		C	C	C	D	C	D		B	A	B		C	B	C	C
				Delay	68		27	27	27	49	29	42		13	9	13		28	16	28	23
				V/C	0.04		0.25		0.25	0.84	0.15			0.74	0.41			0.74	0.01		
				Q	2		39		173	22	13			155	38			217	0		
		2030 Total	TCS	LOS	E		C	C	D	C	C	D		B	A	B		C	B	C	C
				Delay	68		26	27	49	29	28	42		14	8	12		28	16	28	23
				V/C	0.04		0.25		0.84	0.15	0.09			0.75	0.44			0.75	0.01		
				Q	2		39		174	22	13			170	39			219	0		
		2035 Background	TCS	LOS	E		B	B	C	C	C	C		D	C	D		F	C	F	E
				Delay	68		19	19	34	21	20	30		51	27	46		120	24	119	71
				V/C	0.04		0.24		0.76	0.16	0.11			1.02	0.60			1.16	0.01		
				Q	2		47		236	29	15			255	62			326	0		
		2035 Total	TCS	LOS	E		B	B	C	C	C	C		E	C	D		F	C	F	E
				Delay	68		18	19	34	21	20	30		60	29	53		125	24	124	76
				V/C	0.04		0.24		0.76	0.16	0.11			1.05	0.63			1.17	0.01		
				Q	2		47		237	29	15			263	67			329	0		
	Trafalgar Road & QEW Southbound On-Ramps	Base Year	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.44				0.48	1.12		
				Q										0				0	0		
		2025 Background	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.47				0.51	1.19		
				Q										0							
		2025 Total	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.48				0.51	1.19		
				Q										0				0	0		
		2030 Background	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.46				0.37	0.48		
				Q										0				0	0		
		2030 Total	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.47				0.37	0.48		
				Q										0				0	0		
		2035 Background	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.53				0.44	0.61		
				Q										0				0	0		
		2035 Total	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.54				0.45	0.61		
				Q										0				0	0		
AM Peak Hour	Trafalgar Road & QEW Eastbound Off-Ramp	Base Year	TCS	LOS	D		F	E						D		D		B		B	D
				Delay	40		120	74						42		42		15		15	46
				V/C	0.76		1.13							0.89				0.46			
				Q	155		311							275				51			
		2025 Background	TCS	LOS	C		F	E						D		D		D		D	D
				Delay	33		95	59						50		50		53		52.5	53
				V/C	0.70		1.08							0.55				1.04			
				Q	150		327							168				196			
		2025 Total	TCS	LOS	C		F							D		D		E		E	D
				Delay	33		98							46		46		55		55	54
				V/C	0.70		1.08							0.58				1.05			
				Q	150		331							172				197			
		2030 Background	TCS	LOS	D		F	F						C		C		B		B	F
				Delay	45		322	175						33		33		16		16	84
				V/C	0.85		1.60							0.45				0.67			
				Q	180		493							151				69			
		2030 Total	TCS	LOS	D		F	F						D		D		B		B	F
				Delay	45		326	178						35		35		16		16	85
				V/C	0.85		1.61							0.48				0.67			
				Q	180		496							158				70			
		2035 Background	TCS	LOS	C		F	F						D		D		F		F	F
				Delay	21		192	106						52		52		137		136.8	104.5
				V/C	0.64		1.31							0.79				1.20			
				Q	143		544							180				265			
		2035 Total	TCS	LOS	C		F	F						D		D		F		F	F
				Delay	21		187	104						51		51		152		152	108
				V/C	0.63		1.33							0.84				1.23			
				Q	140		544							183				268			

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.1B: AM PEAK HOUR OPERATIONS - 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	Trafalgar Road & Argus Road	Base Year	TWSC	LOS			C	C						A	A	A		A	A	A	
				Delay			16	16						0	0	0		0	0	0	
				V/C			0.05							0.25	0.38			0.55	0.73		
				Q			1							0	0			0	0		
		2025 Background	TWSC	LOS			B	A						A	A	A		A	A	A	
				Delay			12	0						0	0	0		0	0	0	
				V/C			0.04							0.27	0.40			0.58	0.77		
				Q			1							0	0			0	0		
		2025 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			12	12						0	0	0		0	0	0	
				V/C			0.08							0.28	0.40			0.58	0.78		
				Q			2							0	0			0	0		
		2030 Background	TWSC	LOS			A	A						A	A	A		A	A	A	
				Delay			10	10						0	0	0		0	0	0	
				V/C			0.07							0.24	0.32			0.45	0.76		
				Q			1							0	0			0	0		
		2030 Total	TWSC	LOS			A	A						A	A	A		A	A	A	
				Delay			10	10						0	0	0		0	0	0	
				V/C			0.05							0.26	0.33			0.45	0.77		
				Q			1							0	0			0	0		
		2035 Background	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.04							0.29	0.37			0.58	0.88		
				Q			1											0	0		
		2035 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.07							0.30	0.37			0.58	0.89		
				Q			2							0	0			0	0		
AM Peak Hour	Trafalgar Road & Cross Avenue / South Service Road	Base Year	TCS	LOS	E	D	D	D	D	E	E	D	D	D	D	D	D	C	C	D	D
				Delay	58	47	47	54	45	58	55	54	37	41	41	40	52	34	34	36	41
				V/C	0.73	0.49	0.49		0.16	0.44	0.09		0.09	0.74	0.68		0.86	0.82	0.82		
				Q	81	69	69		17	44	8		35	142	142		89	206	206		
		2025 Background	TCS	LOS	E	D	D	E	D	E	D	D	D	D	D	D	D	C	C	C	D
				Delay	70	51	51	63	45	58	55	54	36	42	42	41	54	20	20	24	37
				V/C	0.86	0.57	0.57		0.17	0.46	0.10		0.74	0.71	0.71		0.88	0.85	0.85		
				Q	97	79	79		19	46	10		33	144	144		59	44	44		
		2025 Total	TCS	LOS	F	D	D	E	D	E	E	D	D	D	D	D	D	C	C	C	D
				Delay	89	51	51	77	45	59	59	54	38	42	42	42	54	20	20	25	40
				V/C	0.97	0.58	0.58		0.17	0.47	0.10		0.77	0.71	0.71		0.89	0.86	0.86		
				Q	118	81	81		19	46	10		35	142	142		60	46	46		
		2030 Background	TCS	LOS	E	D	D	E	E	D	C	D	C	D	D	D	D	C	B	C	D
				Delay	61	47	44	55	59	36	32	50	32	43	40	41	42	21	12	22	38
				V/C	0.85	0.36	0.11		0.15	0.56	0.23		0.52	0.61	0.75		0.85	0.43	0.41		
				Q	110	53	21		16	50	31		32	96	63		81	69	6		
		2030 Total	TCS	LOS	E	D	D	D	D	E	D	D	C	D	D	D	D	C	B	C	D
				Delay	60	45	42	54	53	59	37	51	34	45	43	43	44	23	15	24	39
				V/C	0.86	0.34	0.11		0.15	0.57	0.27		0.57	0.64	0.79		0.88	0.46	0.42		
				Q	120	53	21		16	51	38		35	95	64		89	71	7		
		2035 Background	TCS	LOS	E	D	D	E	D	E	C	E	D	D	E	D	D	C	B	C	D
				Delay	68	44	39	57	54	67	33	55	38	53	60	54	50	24	12	25	43
				V/C	0.93	0.48	0.13		0.21	0.80	0.22		0.80	0.85	0.90		0.97	0.67	0.68		
				Q	147	79	21		20	80	32		35	99	78		60	77	12		
		2035 Total	TCS	LOS	E	D	D	E	D	E	C	E	D	D	E	D	D	C	B	C	D
				Delay	77	45	41	63	52	67	34	56	40	54	56	53	51	25	13	26	45
				V/C	0.98	0.50	0.13		0.19	0.81	0.29		0.84	0.87	0.92		0.98	0.69	0.70		
				Q	165	82	22		20	80	45		38	99	78		60	80	13		
AM Peak Hour	Trafalgar Road & Cornwall Road	Base Year	TCS	LOS	F	D	C	D	E	D	E	E	E	D	D	D	F	C	D	E	E
				Delay	84	35	30	54	68	46	71	61	79	41	41	46	82	30	52	56	56
				V/C	0.92	0.45	0.06		0.33	0.53	0.87		0.64	0.42	0.42		0.84	0.66	0.29		
				Q	94	85	0		16	78	154		33	73	73		118	122	45		
		2025 Background	TCS	LOS	F	C	C	D	E	D	F	E	F	D	D	D	F	D	D	E	E
				Delay	88	29	25	52	69	40	83	66	94	48	48	53	100	39	48	65	61
				V/C	0.94	0.41	0.06		0.37	0.46	0.97		0.73	0.52	0.52		0.97	0.80	0.36		
				Q	100	85	1		17	79	203		38	77	77		141	129	49		
		2025 Total	TCS	LOS	F	C	C	D	E	D	F	E	F	D	D	D	F	D	D	E	E
				Delay	88	29	25	52	69	40	85	67	94	48	48	53	105	40	48	68	62
				V/C	0.94	0.41	0.06		0.37	0.46	0.98		0.73	0.52	0.52		0.99	0.81	0.36		
				Q	100	85	1		17	79	206		38	78	78		142	129	48		
		2030 Background	TCS	LOS	F	C	C	D	E	D	F	E	F	D	D	E	F	C	B	D	E
				Delay	90	23	23	51	70	36	80	60	89	53	45	56	112	32	11	54	55
				V/C	0.98	0.45	0.45		0.26	0.46	0.98		0.73	0.64	0.04		0.95	0.80	0.36		
				Q	122	101	101		11	87	227		49	91	0		111	65	11		
		2030 Total	TCS	LOS	F	C	C	D	E	D	F	E	F	D	D	E	F	C	B	E	E
				Delay	90	23	23	51	70	36	82	61	89	53	45	56	122	31	11	57	57
				V/C	0.98	0.45	0.45		0.26	0.46	0.99		0.73	0.65	0.04		0.98	0.81	0.36		
				Q	122	101	101		11	87	229		49	92	0		115	65	10		
		2035 Background	TCS	LOS	F	C	C	E	E	D	F	F	F	D	D	E	F	D	C	F	F
				Delay	139	24	24	74	71	38	146	97	116	50	44	59	186	37	28	86	82
				V/C	1.14	0.51	0.51		0.33	0.54	1.18		0.87	0.57	0.04		1.16	0.91	0.55		
				Q	156	116	116		12	102	286		60	83	0		141	201	40		
		2035 Total	TCS	LOS	F	C	C	E	E	D	F	F	F	D	D	E	F	D	C	F	F
				Delay	139	24	24	74	71	38	149	98	116	50	44	59	197	39	29	92	84
				V/C	1.14	0.51	0.51		0.33	0.54	1.19		0.87	0.58	0.04		1.19	0.92	0.55		
				Q	156	116	116		12	102	289		60	83	0		145	205	44		

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.1C: AM PEAK HOUR OPERATIONS – 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	Cross Avenue & Argus Road / GO Station Driveway	Base Year	TCS	LOS	B	B	B	B	A	A	A	A	F	B	B	D	B	C	C	C	B
				Delay	18	18	18	18	10	10	10	10	81	15	15	38	15	30	30	28	19
				V/C	0.27	0.42	0.42		0.22	0.41	0.41		0.79	0.10	0.10		0.17	0.80	0.80		
				Q	8	35	35		7	38	38		10	0	0		13	31	31		
		2025 Background	TCS	LOS	C	C	C	C	B	B	B	B	F	B	B	D	B	D	D	C	C
				Delay	20	20	20	20	12	12	12	12	106	15	15	47	15	36	36	34	23
				V/C	0.30	0.46	0.46		0.25	0.45	0.45		0.87	0.10	0.10		0.17	0.88	0.88		
				Q	9	40	40		8	45	45		12	0	0		14	44	44		
		2025 Total	TCS	LOS	C	C	C	C	B	B	B	B	F	B	B	D	B	D	D	C	C
				Delay	20	20	20	20	12	12	12	12	106	15	15	47	17	37	37	33	23
				V/C	0.31	0.47	0.47		0.25	0.46	0.46		0.87	0.10	0.10		0.34	0.88	0.88		
				Q	9	40	40		8	45	45		12	0	0		26	45	45		
		2030 Background	TCS	LOS	C	C	B	C	E	B	B	C	F	A	B	E	C	F	F	F	E
				Delay	22	22	18	22	76	15	11	23	128	0	18	56	22	214	214	186	71
				V/C	0.38	0.56	0.10		0.96	0.54	0.03		1.06	0.00	0.28		0.32	1.38	1.38		
				Q	10	55	0		41	61	0		17	0	0		28	111	111		
		2030 Total	TCS	LOS	C	C	C	C	E	B	B	C	F	A	B	E	B	C	F	F	E
				Delay	22	22	22	22	76	15	11	23	128	0	18	56	18	25	216	174	70
				V/C	0.39	0.56	0.10		0.96	0.55	0.03		1.06	0.00	0.28		0.28	0.53	1.39		
				Q	10	55	0		41	62	0		18	0	0		44	111	111		
		2035 Background	TCS	LOS	C	C	B	C	F	B	A	F	F	A	D	F	C	F	F	F	F
				Delay	25	23	18	23	410	15	10	89	433	0	40	175	26	382	382	321	139
				V/C	0.52	0.65	0.18		1.18	0.61	0.05		1.82	0.00	0.79		0.46	1.76	1.76		
				Q	13	73	2		106	76	2		39	0	36		37	152	152		
		2035 Total	TCS	LOS	C	C	B	C	F	B	A	F	F	A	D	F	C	F	F	F	F
				Delay	26	23	18	23	416	15	10	90	441	0	40	178	32	383	383	301	138
				V/C	0.53	0.65	0.18		1.82	0.62	0.05		1.84	0.00	0.79		0.68	1.76	1.76		
				Q	13	74	2		106	77	2		39	0	36		55	153	153		
AM Peak Hour	Cross Avenue & Lyons Lane / Commercial Driveway	Base Year	TCS	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	A
				Delay	9	9	9	9	6	3	3	5	25	24	24	24	25	25	25	25	9
				V/C	0.13	0.24	0.24		0.56	0.08	0.08		0.10	0.03	0.03		0.13	0.13	0.13		
				Q	10	12	12		15	4	4		7	5	5		6	14	14		
		2025 Background	TCS	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	A
				Delay	10	10	10	10	6	3	3	5	26	25	25	25	26	26	26	26	10
				V/C	0.14	0.25	0.25		0.59	0.08	0.08		0.12	0.03	0.03		0.14	0.14	0.14		
				Q	12	15	15		16	5	5		8	5	5		7	15	15		
		2025 Total	TCS	LOS	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C	C	A
				Delay	10	10	10	10	6	3	3	5	26	25	25	25	26	26	26	26	10
				V/C	0.14	0.26	0.26		0.59	0.09	0.09		0.12	0.03	0.03		0.14	0.14	0.14		
				Q	12	15	15		16	5	5		8	5	5		7	15	15		
		2030 Background	TCS	LOS	C	C	C	C	B	A	A	B	B	B	B	B	B	B	B	B	B
				Delay	22	25	20	24	14	9	9	12	14	13	14	14	15	14	14	15	18
				V/C	0.43	0.67	0.08		0.59	0.10	0.03		0.08	0.00	0.04		0.20	0.04	0.11		
				Q	21	30	11		31	9	1		11	2	7		15	9	0		
		2030 Total	TCS	LOS	C	C	B	C	B	A	A	B	B	B	B	B	B	B	B	B	B
				Delay	22	25	19	24	13	10	9	11	14	13	13	13	15	13	14	14	18
				V/C	0.43	0.67	0.08		0.56	0.10	0.04		0.08	0.00	0.05		0.21	0.04	0.11		
				Q	21	30	11		29	9	1		11	1	7		16	8	0		
		2035 Background	TCS	LOS	C	C	C	C	B	A	A	B	B	B	B	B	B	B	B	B	C
				Delay	24	27	21	25	16	10	9	13	16	14	15	15	18	15	16	17	20
				V/C	0.45	0.69	0.10		0.65	0.09	0.05		0.13	0.00	0.08		0.33	0.05	0.13		
				Q	25	34	13		36	8	1		17	1	11		25	10	0		
		2035 Total	TCS	LOS	C	C	C	C	B	A	A	B	B	A	B	B	B	B	B	B	C
				Delay	24	27	21	25	16	10	10	13	16	0	15	15	18	15	16	17	20
				V/C	0.45	0.69	0.10		0.65	0.09	0.06		0.13	0.00	0.08		0.34	0.05	0.14		
				Q	25	34	13		36	8	1		17	0	0		26	10	0		
AM Peak Hour	Cross Avenue & Lyons Lane	Base Year	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	8	0		0		0	0	0					12		12	12	1
				V/C	0.02	0.20				0.08	0.08						0.03		0.03		
				Q	1	0				0	0						1		1		
		2025 Background	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	8	0		0		0	0	0					12		12	12	1
				V/C	0.03	0.22				0.09	0.05						0.03		0.03		
				Q	0	0				0	0						1		1		
		2025 Total	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	8	0		0		0	0	0					12		12	12	1
				V/C	0.03	0.22				0.09	0.06						0.06		0.06		
				Q	1	0				0	0						2		2		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.1D: AM PEAK HOUR OPERATIONS – 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	Lyons Lane & South Service Road	Base Year	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.00	0.00						0.01	0.01			
				Q	0	0				0	0						0	0			
		2025 Background	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.00	0.00						0.01	0.01			
				Q	0	0				0	0						0	0			
		2025 Total	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.01	0.01						0.04	0.04			
				Q	0	0				0	0						1	1			
		2030 Background	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.01	0.01						0.03	0.03			
				Q	0	0				0	0						1	1			
		2030 Total	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.02	0.02						0.06	0.06			
				Q	0	0				0	0						1	1			
		2035 Background	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.01	0.01						0.03	0.03			
				Q	0	0				0	0						1	1			
		2035 Total	TWSC	LOS	A	A		A		A	A	A					A	A		A	
				Delay	0	0		0		0	0	0					9	9		9	
				V/C	0.00	0.00				0.02	0.02						0.06	0.06			
				Q	0	0				0	0						1	1			
AM Peak Hour	Argus Road & South Service Road	Base Year	TWSC	LOS	A	A		A		A	A	A					C	C		C	
				Delay	3	3		3		0	0	0					15	15		15	
				V/C	0.01	0.01				0.49	0.49						0.07	0.07			
				Q	0	0				0	0						2	2			
		2025 Background	TWSC	LOS	A	A		A		A	A	A					C	C		C	
				Delay	3	3		3		0	0	0					16	16		16	
				V/C	0.01	0.01				0.52	0.52						0.08	0.08			
				Q	0	0				0	0						2	2			
		2025 Total	TWSC	LOS	A	A		A		A	A	A					F	F		F	
				Delay	3	3		3		0	0	0					63	63		63	
				V/C	0.01	0.01				0.53	0.53						0.92	0.92			
				Q	0	0				0	0						77	77			
		2030 Background	TWSC	LOS	A	A		A		A	A	A					C	C		C	
				Delay	3	3		3		0	0	0					17	17		17	
				V/C	0.01	0.01				0.54	0.54						0.10	0.10			
				Q	0	0				0	0						3	3			
		2030 Total	TWSC	LOS	A	A		A		A	A	A					F	F		F	
				Delay	3	3		3		0	0	0					72	72		72	
				V/C	0.01	0.01				0.59	0.59						0.94	0.94			
				Q	0	0				0	0						77	77			
		2035 Background	TWSC	LOS	A	A		A		A	A	A					C	C		C	
				Delay	3	3		3		0	0	0					19	19		19	
				V/C	0.01	0.01				0.63	0.63						0.13	0.13			
				Q	0	0				0	0						3	3			
		2035 Total	TWSC	LOS	A	A		A		A	A	A					F	F		F	
				Delay	3	3		3		0	0	0					109	109		109	
				V/C	0.01	0.01				0.65	0.65						1.06	1.06			
				Q	0	0				0	0						96	96			
AM Peak Hour	South Service Road & Site Driveway	2025 Total	TWSC	LOS	A	A		A		A	A	A	A		A	A					
				Delay	0	0		0		6	6	6	9		9	9					
				V/C	0.01	0.01				0.01	0.01		0.09		0.09						
				Q	0	0				0	0		2		2						
		2030 Total	TWSC	LOS	A	A		A		A	A	A	A		A	A					
				Delay	0	0		0		5	5	5	9		9	9					
				V/C	0.01	0.01				0.01	0.01		0.09		0.09						
				Q	0	0				0	0		2		2						
		2035 Total	TWSC	LOS	A	A		A		A	A	A	A		A	A					
				Delay	0	0		0		5	5	5	9		9	9					
				V/C	0.01	0.01				0.01	0.01		0.09		0.09						
				Q	0	0				0	0		2		2						

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.2A: PM PEAK HOUR OPERATIONS - 2021-2035

Analysis Period	Intersection	Horizon	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	
PM Peak Hour	Trafalgar Road & QEW Westbound Off-Ramp / North Service Road	Base Year	TCS	LOS	E		D	D	E	E	A	D		C	A	C		D	A	D	D
				Delay	67		39	41	57	57	0	35		24	1	20		53	10	53	35
				V/C	0.28		0.48		0.19	0.19	0.25			0.91	0.35			1.03	0.01		
				Q	15		73		118	121	0			362	0			380	0		
		2025 Background	TCS	LOS	E		D	D	E	E	A	D		C	A	C		F	B	F	D
				Delay	67		39	41	56	56	0	35		27	0	23		85	11	85	48
				V/C	0.29		0.50		0.77	0.77	0.27			0.98	0.37			1.12	0.01		
				Q	16		78		126	130	0			399	0			415	0		
		2025 Total	TCS	LOS	E		D	D	E	E	A	D		C	A	C		F	B	F	D
				Delay	67		38	41	56	56	0	35		29	0	24		90	11	90	51
				V/C	0.29		0.50		0.77	0.77	0.27			0.99	0.38			1.13	0.01		
				Q	16		80		127	131	0			402	0			421	0		
		2030 Background	TCS	LOS	E		D	D	E	E	D	E		B	A	B		C	A	C	C
				Delay	73		41	44	66	65	49	61		16	10	15		20	10	20	25
				V/C	0.45		0.56		0.87	0.86	0.64			0.89	0.44			0.74	0.01		
				Q	17		97		167	169	99			212	34			166	0		
		2030 Total	TCS	LOS	E		D	D	E	E	D	E		B	A	B		C	A	C	C
				Delay	73		41	43	66	65	49	61		16	10	15		20	10	20	25
				V/C	0.45		0.57		0.87	0.86	0.64			0.90	0.45			0.75	0.01		
				Q	17		98		171	170	99			218	34			170	0		
		2035 Background	TCS	LOS	E		D	D	E	E	D	E		C	A	C		C	B	C	C
				Delay	75		40	42	70	72	50	65		29	10	26		27	11	27	34
				V/C	0.51		0.59		0.91	0.92	0.71			1.01	0.52			0.86	0.01		
				Q	18		112		212	219	130			358	25			203	0		
		2035 Total	TCS	LOS	E		D	D	E	E	D	E		C	B	C		C	B	C	D
				Delay	75		40	43	72	73	50	66		32	11	29		28	11	28	35
				V/C	0.51		0.60		0.92	0.93	0.71			1.01	0.52			0.87	0.01		
				Q	18		114		215	221	130			362	25			207	0		
	Trafalgar Road & QEW Southbound On-Ramps	Base Year	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.35				0.67	1.00		
				Q										0				0	0		
		2025 Background	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.71				0.37	1.07		
				Q										0				0	0		
		2025 Total	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.72				0.38	1.07		
				Q										0				0	0		
		2030 Background	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.66				0.40	0.49		
				Q										0				0	0		
		2030 Total	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.67				0.41	0.49		
				Q										0				0	0		
		2035 Background	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.72				0.43	0.61		
				Q										0				0	0		
		2035 Total	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.69				0.44	0.61		
				Q										0				0	0		
PM Peak Hour	Trafalgar Road & QEW Eastbound Off-Ramp	Base Year	TCS	LOS	D		E	D						C		C		B		B	C
				Delay	47		57	50						32		32		17		17	32
				V/C	0.85		0.88							0.79				0.60			
				Q	173		193							218				95			
		2025 Background	TCS	LOS	D		E	D						D		D		B		B	D
				Delay	50		62	54						43		43		16		16	37
				V/C	0.89		0.92							0.85				0.64			
				Q	188		215							278				83			
		2025 Total	TCS	LOS	D		E	D						D		D		B		B	D
				Delay	44		56	48						46		46		19		18.5	38
				V/C	0.84		0.90							0.89				0.68			
				Q	179		212							287				93			
		2030 Background	TCS	LOS	D		D	D						D		D		C		C	D
				Delay	38		50	42						42		42		23		23	36
				V/C	0.79		0.88							0.84				0.78			
				Q	173		215							243				172			
		2030 Total	TCS	LOS	D		D	D						D		D		C		C	D
				Delay	37		51	42						45		45		24		24	37
				V/C	0.78		0.90							0.95				0.80			
				Q	173		229							243				179			
		2035 Background	TCS	LOS	D		E	D						D		D		C		C	D
				Delay	40		62	47						46		46		28		28	41
				V/C	0.85		0.96							0.93				0.87			
				Q	205		267							246				216			
		2035 Total	TCS	LOS	D		E	D						D		D		C		C	D
				Delay	38		62	46						47		47		31		31	41
				V/C	0.84		0.96							0.95				0.89			
				Q	203		273							247				228			

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.2B: PM PEAK HOUR OPERATIONS – 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	
PM Peak Hour	Trafalgar Road & Argus Road	Base Year	TWSC	LOS			A	A						A	A	A		A	A	A	
				Delay			10	10						0	0	0		0	0	0	
				V/C			0.06							0.46	0.28			0.44	0.46		
				Q			1							0	0			0	0		
		2025 Background	TWSC	LOS			A	A						A	A	A		A	A	A	
				Delay			10	10						0	0	0		0	0	0	
				V/C			0.06							0.49	0.30			0.47	0.49		
				Q			2							0	0			0	0		
		2025 Total	TWSC	LOS			A	A						A	A	A		A	A	A	
				Delay			10	10						0	0	0		0	0	0	
				V/C			0.08							0.50	0.30			0.48	0.52		
				Q			2							0	0			0	0		
		2030 Background	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.08							0.43	0.59			0.51	0.53		
				Q			2							0	0			0	0		
		2030 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.09							0.43	0.59			0.51	0.56		
				Q			3							0	0			0	0		
		2035 Background	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.09							0.47	0.60			0.55	0.59		
				Q			2							0	0			0	0		
		2035 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			12	12						0	0	0		0	0	0	
				V/C			0.11							0.47	0.60			0.55	0.62		
				Q			3							0	0			0	0		
PM Peak Hour	Trafalgar Road & Cross Avenue / South Service Road	Base Year	TCS	LOS	F	C	C	F	F	E	E	E	D	D	D	D	D	C	C	C	F
				Delay	277	31	31	232	125	58	55	74	43	39	39	40	36	31	31	31	84
				V/C	1.48	0.33	0.33		0.99	0.50	0.41		0.78	0.69	0.69		0.68	0.82	0.82		
				Q	257	59	59		97	68	50		33	106	106		34	191	191		
		2025 Background	TCS	LOS	F	C	C	F	F	E	F	F	F	D	D	D	E	E	E	E	E
				Delay	102	22	22	87	147	59	92	99	86	50	50	53	56	73	73	72	73
				V/C	1.08	0.29	0.29		1.06	0.61	0.91		0.96	0.87	0.87		0.88	1.05	1.05		
				Q	228	50	50		105	71	120		41	147	147		59	262	262		
		2025 Total	TCS	LOS	F	C	C	F	F	E	F	F	F	D	D	D	E	F	F	F	F
				Delay	103	22	22	88	147	60	92	98	93	51	51	54	56	93	93	90	80
				V/C	1.09	0.29	0.29		1.06	0.62	0.91		0.99	0.89	0.89		0.87	1.10	1.10		
				Q	234	50	50		105	73	120		48	146	146		55	272	272		
		2030 Background	TCS	LOS	F	C	C	E	E	E	F	E	E	D	E	E	D	D	C	D	E
				Delay	86	30	31	71	66	59	88	73	62	53	66	55	49	52	30	47	59
				V/C	1.05	0.22	0.14		0.69	0.57	0.93		0.87	0.95	0.11		0.81	0.97	0.67		
				Q	242	39	17		51	53	116		54	132	7		51	202	119		
		2030 Total	TCS	LOS	F	C	C	E	E	E	F	E	E	D	E	E	D	D	C	D	E
				Delay	86	30	31	71	66	59	88	73	64	54	75	57	53	38	29	37	57
				V/C	1.05	0.22	0.13		0.69	0.58	0.93		0.89	0.97	0.11		0.82	0.82	0.60		
				Q	248	39	17		51	53	116		56	133	8		48	148	100		
		2035 Background	TCS	LOS	F	C	C	F	E	E	F	F	F	E	E	E	E	E	D	E	E
				Delay	116	32	32	89	66	62	128	89	109	62	58	67	64	72	38	63	75
				V/C	1.13	0.36	0.20		0.74	0.72	1.08		1.10	1.01	0.22		0.92	1.06	0.92		
				Q	279	65	27		63	71	163		64	124	15		49	220	161		
		2035 Total	TCS	LOS	F	C	C	F	E	E	F	F	F	E	E	E	E	E	D	E	E
				Delay	126	32	32	96	66	62	128	89	143	62	58	72	64	76	38	65	79
				V/C	1.16	0.36	0.20		0.74	0.72	1.08		1.19	1.01	0.22		0.93	1.07	0.92		
				Q	288	65	27		63	72	163		66	123	15		46	223	153		
PM Peak Hour	Trafalgar Road & Cornwall Road	Base Year	TCS	LOS	F	D	D	F	E	D	E	D	F	D	D	D	E	D	C	D	F
				Delay	567	39	36	254	66	45	64	54	82	41	41	50	77	37	34	49	100
				V/C	2.09	0.49	0.14		0.52	0.70	0.87		0.79	0.49	0.49		0.85	0.82	0.71		
				Q	159	89	21		35	123	166		90	89	89		112	132	79		
		2025 Background	TCS	LOS	F	C	C	E	E	D	F	F	F	D	D	E	F	F	E	F	E
				Delay	99	29	29	58	72	46	125	83	126	52	52	67	92	92	72	86	76
				V/C	1.01	0.41	0.20		0.60	0.74	1.11		0.97	0.65	0.65		1.01	1.05	0.80		
				Q	123	83	31		38	139	237		88	98	98		93	150	86		
		2025 Total	TCS	LOS	F	C	C	E	E	D	F	F	F	D	D	E	F	F	E	F	E
				Delay	99	29	29	58	72	46	135	88	126	52	52	67	89	90	72	84	77
				V/C	1.01	0.41	0.20		0.60	0.74	1.13		0.97	0.66	0.66		1.02	1.06	0.80		
				Q	123	83	31		38	139	244		88	99	99		90	146	83		
		2030 Background	TCS	LOS	F	C	C	E	C	E	F	F	F	D	D	E	F	F	F	F	F
				Delay	134	32	32	72	33	55	166	102	137	48	39	67	141	101	80	107	92
				V/C	1.12	0.64	0.64		0.32	0.89	1.22		1.07	0.56	0.03		1.11	1.07	0.77		
				Q	144	137	137		19	182	283		83	89	89		124	253	117		
		2030 Total	TCS	LOS	F	C	C	E	C	E	F	F	F	D	D	E	F	F	E	F	F
				Delay	134	32	32	72	33	55	177	107	137	48	39	67	152	102	69	108	94
				V/C	1.12	0.64	0.64		0.32	0.89	1.25		1.07	0.57	0.03		1.13	1.08	0.77		
				Q	144	137	137		19	182	290		83	90	0		153	308	128		
		2035 Background	TCS	LOS	F	D	D	F	D	F	F	F	F	D	D	F	F	F	F	F	F
				Delay	182	36	36	91	36	86	242	149	181	48	39	80	192	107	87	128	119
				V/C	1.24	0.76	0.76		0.46	1.04	1.40		1.20	0.56	0.03		1.24	1.10	0.91		
				Q	165	172	172		20	236	335		97	89	0		134	236	125		
		2035 Total	TCS	LOS	F	D	D	F	D	F	F	F	F	D	D	E	F	F	F	F	F
				Delay	182	36	36	91	36	86	253	154	181	48	39	79	198	109	86	131	122
				V/C	1.24	0.76	0.76		0.46	1.04	1.43		1.20	0.57	0.03		1.26	1.10	0.91		
				Q	165	172	172		20	236	343		97	90	0		136	235	124		

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.2C: PM PEAK HOUR OPERATIONS – 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	
PM Peak Hour	Cross Avenue & Argus Road / GO Station Driveway	Base Year	TCS	LOS	B	B	B	B	A	A	A	A	C	C	C	C	C	C	C	C	B
				Delay	11	17	17	17	9	6	6	6	23	23	23	23	29	23	23	26	16
				V/C	0.05	0.69	0.69		0.25	0.20	0.20		0.19	0.14	0.14		0.58	0.21	0.21		
				Q	4	80	80		6	20	20		7	0	0		44	12	12		
		2025 Background	TCS	LOS	B	B	B	B	A	A	A	A	C	C	C	C	C	C	C	C	B
				Delay	11	18	18	18	10	6	6	6	24	23	23	23	30	23	23	27	17
				V/C	0.06	0.73	0.73		0.28	0.21	0.21		0.21	0.15	0.15		0.62	0.22	0.22		
				Q	5	89	89		7	22	22		7	0	0		46	12	12		
		2025 Total	TCS	LOS	B	B	B	B	B	A	A	A	C	C	C	C	C	C	C	C	B
				Delay	11	19	19	19	11	6	6	7	24	23	23	23	34	23	23	28	18
				V/C	0.06	0.74	0.74		0.29	0.22	0.22		0.20	0.15	0.15		0.69	0.21	0.21		
				Q	5	90	90		7	23	23		7	0	0		54	12	12		
		2030 Background	TCS	LOS	B	D	B	D	F	B	A	C	F	C	C	E	D	C	C	D	D
				Delay	19	43	19	41	89	11	10	25	93	22	26	56	51	34	34	41	39
				V/C	0.14	0.94	0.08		0.94	0.25	0.07		0.96	0.03	0.23		0.77	0.29	0.29		
				Q	10	145	0		57	35	5		36	1	4		65	14	14		
		2030 Total	TCS	LOS	C	D	B	D	F	B	A	C	F	C	C	D	E	C	C	D	D
				Delay	20	47	19	44	92	12	10	25	83	22	26	51	61	34	34	46	41
				V/C	0.14	0.96	0.08		0.95	0.27	0.07		0.92	0.03	0.23		0.85	0.28	0.28		
				Q	10	145	0		57	37	5		35	1	4		84	14	14		
		2035 Background	TCS	LOS	B	E	B	D	F	A	A	F	F	B	D	F	D	C	C	D	F
				Delay	16	58	16	54	497	10	9	123	632	19	35	321	43	30	30	35	105
				V/C	0.21	1.03	0.13		1.98	0.31	0.10		2.28	0.04	0.68		0.78	0.47	0.47		
				Q	12	163	1		98	38	6		85	1	24		68	23	23		
		2035 Total	TCS	LOS	B	E	B	E	F	B	A	F	F	B	C	F	D	C	C	D	F
				Delay	17	64	16	59	514	11	9	125	586	19	34	298	52	29	29	39	105
				V/C	0.22	1.05	0.13		2.02	0.32	0.10		2.17	0.04	0.67		0.85	0.48	0.48		
				Q	12	164	1		98	39	6		85	1	24		82	26	26		
PM Peak Hour	Cross Avenue & Lyons Lane / Commercial Driveway	Base Year	TCS	LOS	B	B	B	B	A	A	A	A	D	C	C	C	C	C	C	C	C
				Delay	15	15	15	15	9	9	9	9	41	20	20	33	20	20	20	20	21
				V/C	0.17	0.15	0.15		0.05	0.19	0.19		0.83	0.16	0.16		0.07	0.08	0.08		
				Q	10	16	16		3	22	22		61	0	0		6	1	1		
		2025 Background	TCS	LOS	B	B	B	B	A	A	A	A	D	C	C	D	C	C	C	C	C
				Delay	16	15	15	15	9	9	9	9	44	20	20	35	20	20	20	20	22
				V/C	0.18	0.16	0.16		0.05	0.21	0.21		0.86	0.17	0.17		0.08	0.09	0.09		
				Q	10	17	17		4	24	24		66	0	0		6	0	0		
		2025 Total	TCS	LOS	B	B	B	B	A	A	A	A	D	C	C	D	C	C	C	C	C
				Delay	16	15	15	15	9	9	9	9	44	20	20	35	20	20	20	20	22
				V/C	0.19	0.16	0.16		0.05	0.22	0.22		0.86	0.17	0.17		0.08	0.09	0.09		
				Q	10	17	17		4	25	25		66	0	0		6	0	0		
		2030 Background	TCS	LOS	C	B	B	C	B	C	B	C	A	A	A	A	A	A	A	A	B
				Delay	29	18	16	20	17	23	17	22	8	6	7	7	7	6	6	7	16
				V/C	0.61	0.25	0.01		0.08	0.71	0.07		0.24	0.00	0.17		0.15	0.00	0.05		
				Q	9	18	2		7	49	2		24	1	10		7	1	0		
		2030 Total	TCS	LOS	C	B	B	C	B	C	B	C	A	A	A	A	A	A	A	A	B
				Delay	31	17	16	21	16	22	16	21	8	0	7	7	7	0	6	7	16
				V/C	0.64	0.24	0.01		0.08	0.70	0.09		0.24	0.00	0.17		0.16	0.00	0.03		
				Q	10	18	2		7	48	2		24	0	0		7	0	0		
		2035 Background	TCS	LOS	D	B	B	C	B	C	B	C	A	A	A	A	A	A	A	A	B
				Delay	38	16	15	22	16	22	16	20	9	0	8	8	8	7	7	8	16
				V/C	0.71	0.26	0.01		0.11	0.71	0.11		0.27	0.00	0.21		0.21	0.00	0.06		
				Q	11	19	2		9	52	2		28	0	0		10	1	0		
		2035 Total	TCS	LOS	D	B	B	C	B	C	B	C	A	A	A	A	A	A	A	A	B
				Delay	41	16	15	23	16	21	16	20	9	0	9	9	9	7	7	8	16
				V/C	0.74	0.26	0.01		0.11	0.70	0.13		0.30	0.00	0.22		0.22	0.00	0.07		
				Q	11	19	2		9	52	1		33	0	0		11	1	0		
PM Peak Hour	Cross Avenue & Lyons Lane	Base Year	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	9	0		1		0	0	0					14		14	14	2
				V/C	0.01	0.06				0.27	0.14						0.20		0.20		
				Q	0	0				0	0						6		6		
		2025 Background	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	10	0		1		0	0	0					14		14	14	1.5
				V/C	0.01	0.06				0.29	0.15						0.22		0.22		
				Q	0	0				0	0						0		7		
		2025 Total	TCS	LOS	A	A		A		A	A	A					B		B	B	A
				Delay	10	0		1		0	0	0					15		15	15	2
				V/C	0.02	0.06				0.29	0.17						0.25		0.25		
				Q	0	0				0	0						0		0		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.2D: PM PEAK HOUR OPERATIONS – 2021-2035 (CONT.)

Analysis Period	Intersection	Horizon	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	
PM Peak Hour	Lyons Lane & South Service Road	Base Year	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.00	0.00		0.01	0.01							0.04	0.04		
				Q		0	0		0	0							1	1		
		2025 Background	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.00	0.00		0.01	0.01							0.04	0.04		
				Q		0	0		0	0							1	1		
		2025 Total	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.01	0.01		0.03	0.03							0.05	0.05		
				Q		0	0		0	0							1	1		
		2030 Background	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.01	0.01		0.01	0.01							0.04	0.04		
				Q		0	0		0	0							1	1		
		2030 Total	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.01	0.01		0.03	0.03							0.05	0.05		
				Q		0	0		0	0							1	1		
		2035 Background	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.01	0.01		0.01	0.01							0.05	0.05		
				Q		0	0		0	0							1	1		
		2035 Total	TWSC	LOS		A	A	A	A	A		A					A	A	A	
				Delay		4	4	4	0	0		0					9	9	9	
				V/C		0.01	0.01		0.03	0.03							0.06	0.06		
				Q		0	0		0	0							2	2		
PM Peak Hour	Argus Road & South Service Road	Base Year	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					11	11	11	
				V/C	0.02	0.02				0.26	0.26						0.06	0.06		
				Q	1	1				0	0						1	1		
		2025 Background	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					12	12	12	
				V/C	0.02	0.02				0.28	0.28						0.07	0.07		
				Q	1	1				0	0						2	2		
		2025 Total	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					12	12	12	
				V/C	0.02	0.02				0.31	0.31						0.17	0.17		
				Q	1	1				0	0						5	5		
		2030 Background	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					12	12	12	
				V/C	0.03	0.03				0.30	0.30						0.08	0.08		
				Q	1	1				0	0						2	2		
		2030 Total	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					13	13	13	
				V/C	0.03	0.03				0.34	0.34						0.19	0.19		
				Q	1	1				0	0						6	6		
		2035 Background	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					13	13	13	
				V/C	0.03	0.03				0.34	0.34						0.10	0.10		
				Q	1	1				0	0						3	3		
		2035 Total	TWSC	LOS	A	A		A		A	A	A					B	B	B	
				Delay	5	5		5		0	0	0					14	14	14	
				V/C	0.03	0.03				0.37	0.37						0.21	0.21		
				Q	1	1				0	0						6	6		
PM Peak Hour	South Service Road & Site Driveway	2025 Total	TWSC	LOS		A	A	A	A	A		A	A		A	A				
				Delay		0	0	0	5	5		5	9		9	9				
				V/C		0.02	0.02		0.03	0.03			0.04		0.04					
				Q		0	0		1	1			1		1					
		2030 Total	TWSC	LOS		A	A	A	A	A		A	A		A	A				
				Delay		0	0	0	5	5		5	9		9	9				
				V/C		0.02	0.02		0.03	0.03			0.04		0.04					
				Q		0	0		1	1			1		1					
		2035 Total	TWSC	LOS		A	A	A	A	A		A	A		A	A				
				Delay		0	0	0	5	5		5	9		9	9				
				V/C		0.02	0.02		0.03	0.03			0.04		0.04					
				Q		0	0		1	1			1		1					

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

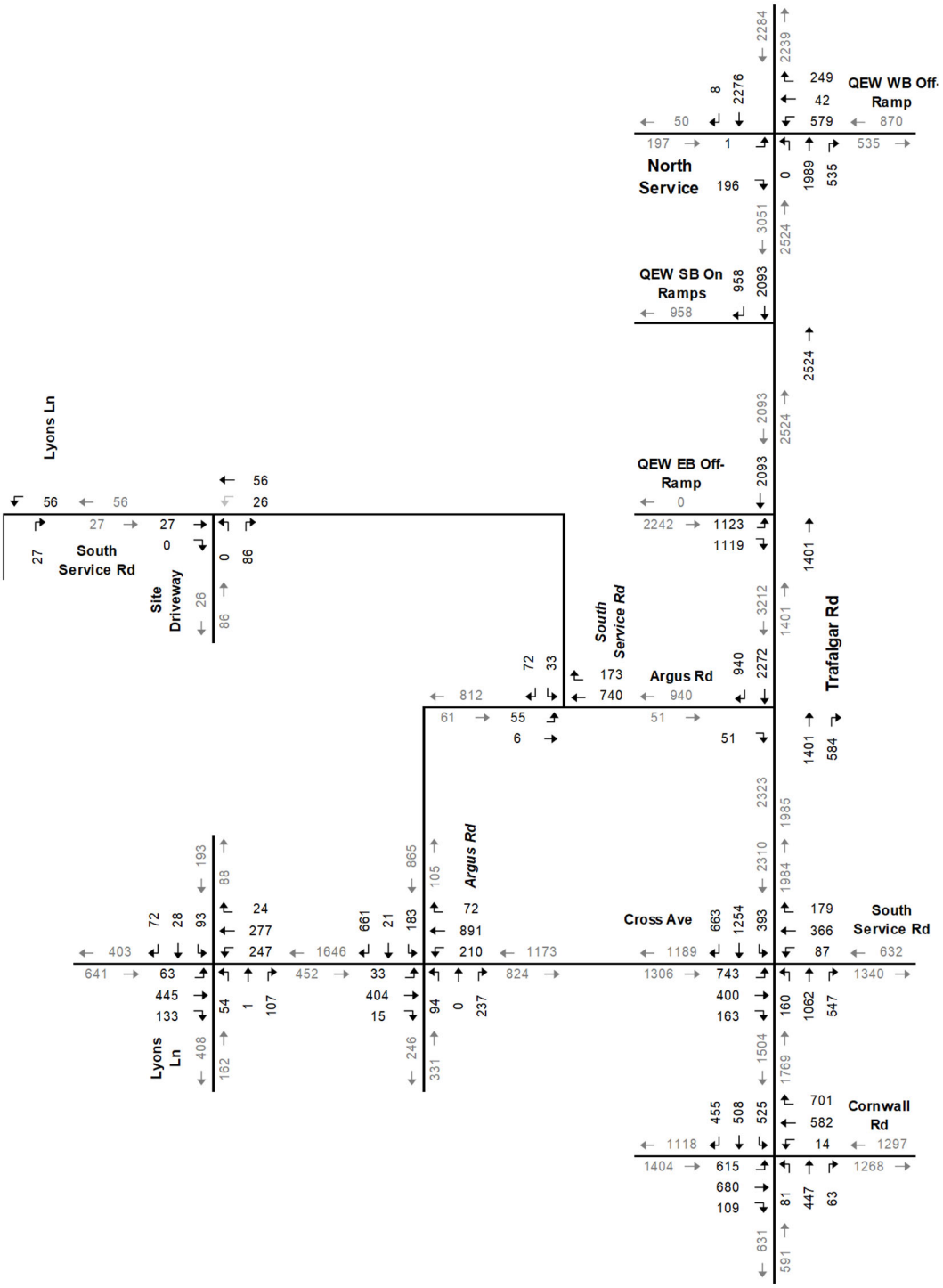
< - Shared Left-Turn
> - Shared Right-Turn

5.2 Lyons Lane Closure

North of Cross Avenue, Lyons Lane currently exhibits minimal traffic during the weekday peak hours, with approximately 40 two-way trips during the AM peak hour and 55 two-way trips during the PM peak hour. If Lyons Lane at Cross Avenue was closed before constructing the new MOEA road network, these existing trips would be reassigned to the intersection of South Service Road and Argus Road.

A sensitivity analysis has been completed that assessed the operations of the study area intersections with the closure of Lyons Lane, north of Cross Avenue, under the 2035 horizon. **Figure 5.1** illustrates the reassigned traffic volumes.

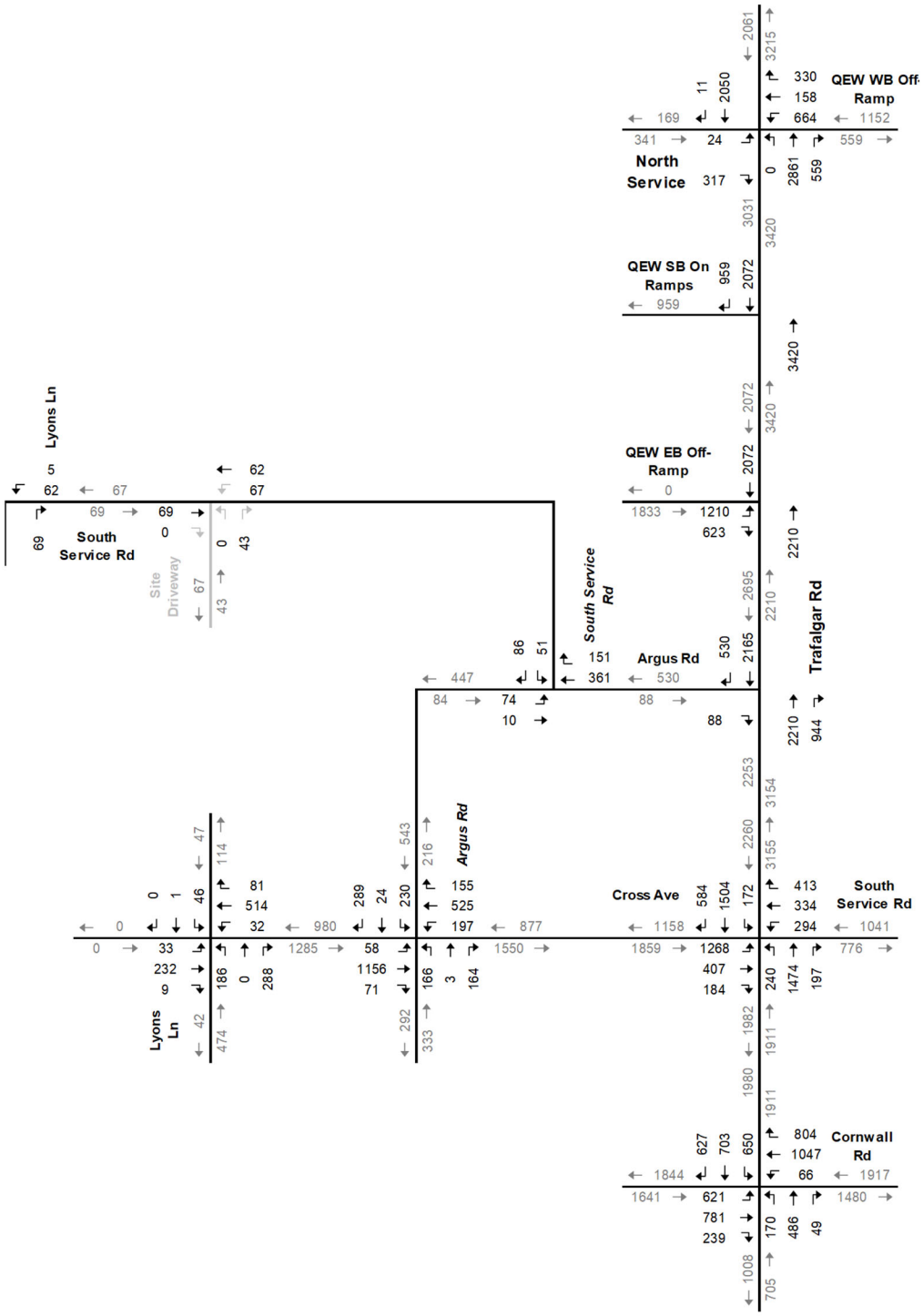
Table 5.3 summarizes the sensitivity analysis results, while **Appendix G** contains the detailed Synchro reports. Overall, the study area intersections are expected to operate with similar operations without the closure of Lyons Lane. An exception is the intersection of South Service Road and Argus Road, which is projected to operate with considerable delay. If Lyons Lane is closed to vehicular traffic without establishing the MOEA roadway network, South Service Road at Argus Road would likely require mitigation measures (i.e. potential restricted movements).



2035 Total Traffic Volumes
AM Peak Hour (Lyons Lane Closed)

627 Lyons Lane, Oakville
210060

Figure 5.1A



2035 Total Traffic Volumes
PM Peak Hour (Lyons Lane Closed)

627 Lyons Lane, Oakville
210060

Figure 5.1B

TABLE 5.3A: 2035 AM PEAK HOUR OPERATIONS (LYONS LANE CLOSED)

Analysis Period	Intersection	Horizon	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	Trafalgar Road & QEW Westbound Off-Ramp / North Service Road	2035 Total	TCS	LOS	E		B	B	C	C	C	C		E	C	D		F	C	F	E
				Delay	68		18	19	34	21	20	30		60	29	53		125	24	124	76
				V/C	0.04		0.24		0.76	0.16	0.11			1.05	0.63			1.17	0.01		
				Q	2		47		237	29	15			263	67			329	0		
	Trafalgar Road & QEW Southbound On-Ramps	2035 Total	FF	LOS										A		A		A	A	A	
				Delay										0		0		0	0	0	
				V/C										0.54				0.45	0.61		
				Q										0				0	0		
	Trafalgar Road & QEW Eastbound Off-Ramp	2035 Total	TCS	LOS	C		F	F						D		D		F		F	F
				Delay	21		187	104						51		51		152		152	108
				V/C	0.63		1.33							0.84				1.23			
				Q	140		544							183				268			
	Trafalgar Road & Argus Road	2035 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			11	11						0	0	0		0	0	0	
				V/C			0.08							0.30	0.37			0.58	0.89		
				Q			2							0	0			0	0		
	Trafalgar Road & Cross Avenue / South Service Road	2035 Total	TCS	LOS	E	D	D	E	D	E	C	E	D	D	E	D	D	C	B	C	D
				Delay	77	45	41	63	52	67	34	56	40	54	56	53	51	25	13	26	45
				V/C	0.98	0.50	0.13		0.19	0.81	0.29		0.84	0.87	0.92		0.98	0.69	0.70		
				Q	165	82	22		20	80	45		38	99	78		60	80	13		
	Trafalgar Road & Cornwall Road	2035 Total	TCS	LOS	F	C	C	E	E	D	F	F	F	D	D	E	F	D	C	F	F
				Delay	139	24	24	74	71	38	149	98	116	50	44	59	197	39	29	92	84
				V/C	1.14	0.51	0.51		0.33	0.54	1.19		0.87	0.58	0.04		1.19	0.92	0.55		
				Q	156	116	116		12	102	289		60	83	0		145	205	44		
	Cross Avenue & Argus Road / GO Station Driveway	2035 Total	TCS	LOS	C	C	B	C	F	B	B	D	F	A	C	F	C	F	F	F	F
				Delay	23	20	17	21	191	16	11	48	390	0	20	147	29	356	356	280	127
				V/C	0.41	0.41	0.03		1.31	0.64	0.07		1.74	0.00	0.46		0.64	1.71	1.71		
				Q	9	40	0		93	76	5		39	0	4		55	156	156		
	Cross Avenue & Lyons Lane / Commercial Driveway	2035 Total	TCS	LOS	C	C	C	C	C	A	A	B	B	B	B	B	C	B	B	B	C
				Delay	22	31	20	29	20	10	9	14	18	17	18	18	21	17	18	19	25
				V/C	0.32	0.82	0.10		0.71	0.21	0.03		0.14	0.00	0.08		0.33	0.05	0.12		
				Q	19	50	13		48	19	1		18	1	12		25	10	0		
	Argus Road & South Service Road	2035 Total	TWSC	LOS	D	D		D		A	A	A					F		F	F	
				Delay	26	26		26		0	0	0					Err		Err	Err	
				V/C	0.58	0.58				0.65	0.65						3.10		3.10		
				Q	28	28				0	0						Err		Err		
	South Service Road & Site Driveway	2035 Total	TWSC	LOS	A	A		A		A	A	A	A		A	A					
				Delay	0	0		0		2	2	2	9		9	9					
				V/C	0.02	0.02				0.02	0.02		0.09		0.09						
				Q	0	0				0	0		2		2						

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< - Shared Left-Turn
> - Shared Right-Turn

TABLE 5.3B: 2035 PM PEAK HOUR OPERATIONS (LYONS LANE CLOSED)

Analysis Period	Intersection	Horizon	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	
PM Peak Hour	Trafalgar Road & QEW Westbound Off-Ramp / North Service Road	2035 Total	TCS	LOS	E		D	D	E	E	D	E		C	B	C		C	B	C	D
				Delay	75		40	43	72	73	50	66		32	11	29		28	11	28	35
				V/C	0.51		0.60		0.92	0.93	0.71			1.01	0.52			0.87	0.01		
				Q	18		114		215	221	130			362	25			207	0		
	Trafalgar Road & QEW Southbound On-Ramps	2035 Total	TCS	LOS										A		A		A	A	A	A
				Delay										0		0		0	0	0	0
				V/C										0.69				0.44	0.61		
				Q										0				0	0		
	Trafalgar Road & QEW Eastbound Off-Ramp	2035 Total	TCS	LOS	D		E	D						D		D		C		C	D
				Delay	38		62	46						47		47		31		31	41
				V/C	0.84		0.96							0.95				0.89			
				Q	203		273							247				228			
	Trafalgar Road & Argus Road	2035 Total	TWSC	LOS			B	B						A	A	A		A	A	A	
				Delay			12	12						0	0	0		0	0	0	
				V/C			0.15							0.47	0.60			0.55	0.62		
				Q			4							0	0			0	0		
	Trafalgar Road & Cross Avenue / South Service Road	2035 Total	TCS	LOS	F	C	C	F	E	E	F	F	F	E	E	E	E	E	D	E	E
				Delay	126	32	32	96	66	62	128	89	143	62	58	72	64	76	38	65	79
				V/C	1.16	0.36	0.20		0.74	0.72	1.08		1.19	1.01	0.22		0.93	1.07	0.92		
				Q	288	65	27		63	72	163		66	123	15		46	223	153		
	Trafalgar Road & Cornwall Road	2035 Total	TCS	LOS	F	D	D	F	D	F	F	F	F	D	D	E	F	F	F	F	F
				Delay	182	36	36	91	36	86	253	154	181	48	39	79	198	109	86	131	122
				V/C	1.24	0.76	0.76		0.46	1.04	1.43		1.20	0.57	0.03		1.26	1.10	0.91		
				Q	165	172	172		20	236	343		97	90	0		136	235	124		
	Cross Avenue & Argus Road / GO Station Driveway	2035 Total	TCS	LOS	B	E	B	D	F	B	A	F	F	B	C	F	D	C	C	D	F
				Delay	18	58	16	53	514	11	10	121	766	19	34	385	52	32	32	40	112
				V/C	0.28	1.03	0.13		2.02	0.31	0.14		2.58	0.04	0.67		0.85	0.60	0.60		
				Q	15	159	1		98	37	7		81	1	24		82	34	34		
	Cross Avenue & Lyons Lane / Commercial Driveway	2035 Total	TCS	LOS	C	B	B	B	B	C	B	C	A	A	A	A	A	A	A	A	B
				Delay	22	17	16	18	16	21	16	20	8	0	7	9	7	7	6	7	15
				V/C	0.53	0.30	0.01		0.12	0.68	0.10		0.28	0.00	0.22		0.22	0.14	0.00		
				Q	8	20	2		9	44	2		27	0	0		6	1	1		
	Argus Road & South Service Road	2035 Total	TWSC	LOS	A	A		A		A	A	A					C		C	C	
				Delay	9	9		9		0	0	0					22		22	22	
				V/C	0.02	0.37				0.37	0.37						0.49		0.49		
				Q	5	5				0	0						21		21		
	South Service Road & Site Driveway	2035 Total	TWSC	LOS		A	A	A	A	A		A	A		A	A					
				Delay		0	0	0	4	4		4	9		9	9					
				V/C		0.04	0.04		0.05	0.05			0.05		0.05						
				Q		0	0		1	1			1		1						

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

Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control

< - Shared Left-Turn
> - Shared Right-Turn

6 Mitigation

As summarized in the analysis tables in the previous chapter, several study area locations either currently experience or are projected to experience operational deficiencies independent of the development. **The analysis also identified that the development would have minimal impacts on traffic conditions in the study area.**

6.1 Midtown Oakville Improvements

Mitigation measures at several study area intersections have been identified through the Midtown Oakville Environmental Assessment. The critical transportation network improvements include the following:

- The extension of Cross Avenue eastward to Royal Windsor Drive and the QEW. This extension will likely divert eastbound left-turns at Cross Avenue and Trafalgar Road to the QEW and Royal Windsor Drive interchange. In addition to the extension, Cross Avenue will be widened from Trafalgar Road to Lyons Lane.
- A new north-south crossing of the QEW east of Trafalgar Road. This north-south road will connect the Cross Avenue extension with Iroquois Shore Road and Trafalgar Road at McCraney Street. This new street will have pedestrian and cycling infrastructure, dedicated transit lanes, and general-purpose lanes. The purpose of the new roadway is to divert north/south traffic on Trafalgar Road;
- Realignment of the Trafalgar Road and QEW Eastbound Off-Ramp Terminal. A new eastbound QEW direct off-ramp will be constructed under Trafalgar Road and connect with the Cross Avenue extension. This new off-ramp will divert eastbound right-turns that will generally turn onto Trafalgar Road. The realignment of South Service Road and Argus Road to the west of its current location will be needed to accommodate this new off-ramp;
- Two new active transportation crossings of the QEW are west and east of Trafalgar Road. The west crossing will connect Oakville Place to the realigned Argus Road. The east crossing will be separate and east of Trafalgar Road; and
- Improvements to the QEW and Royal Windsor Drive interchange will include a new westbound off-ramp, a new eastbound on-ramp, a new eastbound direct off-ramp to Cross Avenue extension, and the widening and extension of Royal Windsor Drive to Iroquois Shore Road at Eighth Line. The improvements to this interchange will likely divert traffic to/from the Trafalgar Road interchanges.

Because the GO Oakville Station is located centrally within the study area, the Trafalgar Road corridor experiences many trips during the weekday peak hours. In most circumstances, widening existing roads or building new ones will infringe on private property, impact mature trees and green space, or compromise the current public realm (e.g. sidewalks, boulevards).

The Midtown Oakville and Trafalgar Road EAs recognize this and identify roadway improvements, which will relieve operational issues; however, capacity constraints will persist for the overall transportation network. Instead, the strategy is to further focus on providing a sustainable transportation strategy to move more people per kilometre by walking, cycling and transit or in combination with high occupancy vehicles.

6.2 Transportation Network Overview

The vehicle traffic analyses of intersection performance conducted overall conditions are expected to experience congestion during the weekday peak hours. This area surrounds one of the busiest GO Transit stations within the province; the area is expected to experience vehicle capacity constraints two to four hours a day on a typical weekday. The other 20 hours of the weekday, weekends and holidays would be expected to exhibit better vehicle traffic conditions.

Widening any arterial roads to accommodate vehicular traffic volumes is not recommended in the study area. Any potential road widening would accommodate dedicated bus lanes to improve transit capacity and efficiency. This would be counter-intuitive to the vision of a people-centric, pedestrian-friendly environment that expects people to use more sustainable modes to travel.

Conditions for pedestrians, cyclists and transit users would be expected to be significantly improved from existing conditions in the study area. The smaller block size and wide sidewalks on both sides of any new roads will aid in pedestrian connectivity through pedestrian pathways. Wider sidewalks and multi-use pathways are anticipated in areas of the highest pedestrian demand.

Cycling infrastructure presently is limited in the study area. The cycling network is expected to expand through redevelopment, and gaps in the network are expected to be filled.

Increased frequency of GO trains and buses and Oakville Transit buses are expected to make transit more convenient. Transit priority measures are recommended to be explored further by the Town to help make transit schedules more reliable and make transit a more attractive option.

There is forecast to be more vehicle traffic congestion, longer delays and long queues at full build-out of the study area. At the same time, with the people-centric approach to Midtown Oakville, there are expected to be more amenities and better connectivity for pedestrians and cyclists and more

frequent, reliable, and convenient service for transit passengers. The finer grain road network is proposed to provide enhanced multi-modal connectivity and access.

6.3 Right-In/Right-Out Conditions

6.3.1 Argus Road and South Service Road

Future southbound left-turn movements from South Service Road East are forecast to operate at LOS F due to high east-west volumes along Argus Road.

For this study, a significant portion of site traffic from South Service Road East was assumed to utilize Argus Road to access Cross Avenue as a "worst-case scenario." However, Midtown Oakville plans to introduce a revised local road network to alleviate congestion at this intersection by providing access to Cross Avenue via alternative north-south local roads.

To avoid situations where southbound drivers are experiencing significant delays, the southbound Leg of the South Service Road may be limited to right-in/right-out movements. A 2035 sensitivity test has been analyzed with restricted movements. Results of the Sensitivity test can be found in **Appendix H**.

6.4 Left Turn Lane

The need for auxiliary turn lanes was reviewed at the development's new driveway connection. A design speed of 10 kilometres per hour over the posted and assumed speed limit had been utilized. The warrants for left-turn lanes follow the Ministry of Transportation's (MTO) Geometric Design Standards[7] requirements. **Table 6.1** summarizes the results of the left-turn lane warrant analyses.

TABLE 6.1: LEFT TURN LANE WARRANT

South Servie Road at Site Driveway		
Approach Direction Design Speed	Westbound 60 km/h	
Horizon	2034 Total	
Peak Hour	AM	PM
Advancing Volume	25	66
Opposing Volumes	15	32
Left Turning Traffic	15	44
% of Left Turning Traffic	60.0%	66.7%
Figure Used*	9A-9 (40%)	9A-9 (40%)
Warranted	**No**	**No**
Storage Length Required	N/A	N/A

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

[7] MTO Design Supplement- TAC Geometric Design Guide for Canadian Road, June 2017

7 Travel Demand Management

The Town of Oakville is actively engaging the development community to integrate Travel Demand Management (TDM) in all current and future development applications. A TDM Study aims to outline a transparent process for selecting and implementing TDM measures.

7.1 Area Opportunities

7.1.1 Pedestrians

This area in the Town of Oakville is primarily commercial and within proximity of the Oakville GO Station; therefore, pedestrian facilities are limited to the sidewalk network along the east side of Lyons Lane. Directly to the west of the subject property, a pedestrian path leads under the Queen Elizabeth Way/Highway 403 to enable pedestrians to safely cross the Highway to the residential area to the north. There are no pedestrian facilities along South Service Road.

The site is within walking distance of numerous and significant retail and transportation opportunities providing a range of destinations for prospective residents of the proposed building that can be readily accessed without using a car.

Pedestrian sidewalks are provided on a least one side of streets throughout most of the study area. Crosswalks, pedestrian pushbuttons, and indicators are provided for all approaches at the signalized intersections within the study area. These facilities will further help foster and promote walking trips to/from the development.

Furthermore, MOEA identified additional links for pedestrians and cyclists are recommended by two grade-separated, active transportation crossings of the QEW. The crossing proposed on the west side of Trafalgar Road is located approximately 600 metres from the proposed development. This crossing will encourage residents of the development and general area to explore active transportation mode choices and improve access to transit.

7.1.2 Cycling

On-road cycling lanes are not currently provided on the streets in the study area. However, as cyclists are permitted to ride on most roads except controlled-access highways, the lack of a separate bicycle lane will not prohibit this type of travel, particularly for this development.

Reviewing the Town of Oakville's Active Transportation Master Plan (ATPM) document for cycling network plans and existing facilities within the proposed development indicates that there are currently no cycling facilities present. However, within the ATMP, on-street bike lanes are proposed along Lyons Lane and are proposed to be completed in the Long-Term Phase (11-20+ years), and Cross Avenue to be completed in 2020.

7.1.3 Oakville Transit

Oakville Transit owns and operates the public transit system in Oakville. The subject site is located within the Midtown Oakville Urban Growth Area, one of the most transit-accessible locations within the Town. The subject site is located approximately 450 metres to the western end of the Oakville GO Station, which is currently serviced by 14 out of 21 Oakville Transit Routes. The majority of the transit routes operate seven days a week from early morning to late evening and provide access to all of the Town of Oakville.

The Trafalgar Road Class EA recommended that the curb lane of Trafalgar Road be converted to a high occupancy vehicle (HOV) or bus rapid transit (BRT) lane. With the presence of a BRT line along Trafalgar Road, ridership in the service area typically increases by as much as 50%. This future transit line provides a further incentive for residents of the development to choose transit as a primary commuting option.

7.1.4 GO Inter-Regional Transit

The proposed development is located approximately 450 metres to the western end of the Oakville GO Station. This station is located along the Lakeshore West Line, which currently operates a two-way all-day train service seven days a week plus GO Bus connections to Hamilton, Sheridan College and York University via Highway 407.

7.1.5 Ride-Hailing & Car Services

Ride-hailing car services in the Town of Oakville include Oakville Taxi, Oakville United Taxi, A1 Oakville Taxi, Halton Taxi Svc, Blue Line Taxi, Oakville Para-transit and Uber/Lyft. These services offer on-demand private car services.

7.2 Site Specific Measures

A Transportation Demand Management Plan (TDMP) is a strategy using policies, programs, services, and products that result in more efficient use of transportation resources. A TDMP is designed to assist people and organizations in getting where they are going by being environmentally, economically, and socially responsible for their transportation actions.

This plan intends to support employee and patron's travel patterns to the subject site using sustainable transportation options.

7.2.1 Walking

The proposed site plan does not show sidewalks connections from the building to the municipal streets. Well-lit sidewalks and walkways between the building should be included to/from roads, parking areas and main entrances. Weather protection by main entrances and on adjacent sidewalks should also be considered.

It is recommended that the on-site pedestrian sidewalks be well-lit and conform to the Town of Oakville's design standards and the Accessibility for Ontarians with Disabilities Act (AODA) design standards.

7.2.2 Cycling

The site plan provides for a total of 221 long-term and 74 short-term bicycle parking spaces. The facilities are located on the first two-level of the underground parking garage and the grade floor.

7.2.3 Transit

No transit-related infrastructure is proposed as part of this development application. The existing transit stops located south of the subject site on Cross Avenue are expected to continue to service the area. The addition of the Oakville GO station nearby helps reduce the vehicle demand from the subject site.

7.2.4 Unbundled Parking

Rather than automatically including a certain amount of parking with building space, users can pay parking costs directly by "unbundling," which means that parking is rented or sold separately. This is more equitable and efficient since occupants are not forced to pay for parking they do not need and allows consumers to adjust their parking supply to reflect their needs. The applicant will charge for parking at a separate cost to occupants. If it is found that not all car parking spaces are utilized, then the vacant spaces can be repurposed (i.e. converted to bicycle storage).

7.2.5 Travel Planning/Education/Promotion

Increasing awareness of sustainable transportation opportunities for site residents should be considered. Residents should be provided with a welcome package that outlines the available transit routes and active transportation options, such as the availability of bicycle parking and proximity to the existing bicycle network.

7.3 Site Specific Monitoring

7.3.1 Walking Infrastructure Monitoring

It is recommended that the site operator monitor the long-term desire lines, if any, created by the erosion caused by pedestrians crossing the site's landscaped areas. Should desire lines form, there may be an opportunity to adjust the site's landscaping to encourage the use of the designated on-site pedestrian sidewalks.

7.3.2 Cycling Infrastructure Monitoring

It is recommended that the site operator monitor the on-site bicycle parking spaces to ensure demand matches supply. An indicator to suggest that the site's bicycle parking demand exceeds supply is observing bicycles locked to the street furniture on-site or immediately adjacent to the subject site.

Should the site's bicycle parking demand regularly exceed the supply, consideration should be given to expanding the amount of on-site bicycle parking provided.

7.4 TDM Conclusions

The site plan does not indicate TDM measures such as short-term or long-term bicycle parking or sidewalk connections. Measures that are currently not included on the site plan that is recommended to help further promote and encourage TDM include:

- The on-site pedestrian sidewalks are well-lit and conform to the Town of Oakville's and AODA design standards.
- Consider unbundling parking where parking spaces are provided as a separate cost to residents.
- Provide general education on all travel mode options (walking, cycling, and transit) that identify benefits and how residents can best utilize these modes. New residents should be provided with a welcome package that outlines proximity to transit, cycling facilities and the proximity to local activity centres
- The site operator monitors the long-term desired lines and adjusts the site's landscaping to encourage the use of the designated on-site pedestrian sidewalks.
- The site operator monitors the on-site bicycle parking supply to ensure that the appropriate amount of bicycle parking is provided.

7 Conclusions and Recommendations

7.1 Conclusions

This study evaluated the impacts of the construction of 281 apartment units in a 28-storey building on a parcel of land bounded by South Service Road and Lyons Lane. Vehicular access to the building's parking facilities and loading area is proposed via two accesses to the South Service Road located at the eastern limits of the property. The western driveway will be designated for pick-up and drop-off service for clarification. Overall, the proposed development will generate approximately 112 new vehicle trips during the weekday AM peak hour and 110 new vehicle trips during the weekday PM peak hour.

Detailed traffic analysis was conducted for each study area intersections under Base conditions, 2025, 2030 and 2035 Background and Total conditions.

The new traffic forecast to be added by full build-out of the development to the study area results in relatively small impacts at the various study intersections. The analysis has further determined that the proposed driveways to South Service Road and Lyons Lane will operate at LOS A during the weekday peak periods, and separate left-turn lanes are not warranted at either driveway connection under the 2035 Total conditions.

It is acknowledged that deficiencies currently exist at specific locations, primarily along the Trafalgar Road corridor within the study area. They can be expected to persist in the future with anticipated growth in traffic, independent of the development.

A variety of roadway improvements are planned within the study area to address the existing and long-term impacts of traffic growth, including the construction of new direct off-ramps for the QEW at Trafalgar Road, a revised local road network for Midtown Oakville, an extension of Cross Avenue and a variety of intersection improvements. It is understood that these improvements will provide some relief to operational issues. However, capacity constraints will persist for the overall transportation network.

Due to the high levels of congestion and the expected long-term transit network anticipated to be developed (BRT along Trafalgar Road), further remedial measures to improve intersection capacity are not likely to be implemented. Instead, future improvements to the transportation network are expected to focus on public transit infrastructure.

By focusing on shifting commuter travel to public transit, intersection operations could be expected to maintain the status quo (a capacity condition during peak hours) or possibly improve if fewer vehicles transverse the intersections during the peak hours of a typical weekday.

As requested by the Town, a sensitivity analysis has also been assessed, assuming Lyons Lane is closed off at Cross Avenue. If this occurs, and considering the MOEA roadway network is not established, the intersection of South Service Road at Argus Road would experience considerable delay and congestion, and mitigation measures would need to be implemented (i.e., the potential for restricted movements)

7.2 Recommendations

Based on the findings of this study, it is recommended that the development be allowed to proceed with the following TDM measures:

- The site plan is updated to include short-term bicycle parking at the main entrances of the buildings in a visible well-lit area.
- Long-term bicycle parking in a safe and secure area (either a dedicated room or storage lockers) be included in the site plan.
- The on-site pedestrian sidewalks are well-lit and conform to the Town of Oakville's design standards and the Accessibility for Ontarians with Disabilities Act (AODA) design standards.
- Consider unbundling parking where parking spaces are provided as a separate cost to residents.
- Provide general education on all travel mode options (walking, cycling, and transit) that identify benefits and how residents can best utilize these modes. New residents should be provided with a welcome package that outlines proximity to transit, cycling facilities and the proximity to local activity centres
- If any, the site operator monitors the long-term desire lines created by the erosion caused by pedestrians crossing the site's landscaped areas. Should desire lines form, there may be an opportunity to adjust the site's landscaping to encourage the use of the designated on-site pedestrian sidewalks.
- The site operator monitors the on-site bicycle parking supply to ensure that the appropriate amount of bicycle parking is provided.

Appendix A

First Submission Comments

5A-150 Pinebush Road
Cambridge ON N1R 8J8
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www.ptsl.com

27 August 2021
Project: 190665

Town of Oakville
Tricia Collingwood
1225 Trafalgar Rd,
Oakville, ON L6H 0H3

RE: 627 LYONS LANE – TOWN OF OAKVILLE TRANSPORTATION PLANNING COMMENTS

In August 2019, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study (TIS)[1] for the proposed development located at 627 Lyons Lane in the Town of Oakville. Town of Oakville Transportation Planning staff provided comments on the TIS in a letter dated 16 March 2020.

This letter provides additional information and responds to the Transportation Planning comments. For ease of review, each comment is copied below followed by our response/clarification to the comment.

Town Comment #1

Please provide a pedestrian circulation plan to show the interim connections to the existing roadways, and ultimate connections with the future roadways outlined in the Midtown Oakville EA. [Circ. 1]

This has been provided in the updated TIS.

[1] 180307: 627 Lyons Lane, Oakville, Transportation Impact Study, Paradigm, August 2019

Town Comment #2

The Metrolinx Midtown Oakville Mobility Hub Study proposed the relocation of the Oakville GO station and bus terminal from the existing location to the east side of Trafalgar Road. The future GO station will be slightly further east from the site than it is today. [Circ. 1].

Acknowledged.

Town Comment #3

The nearest existing bus stops to the site are located on Cross Avenue at Lyons Lane. The site driveway to South Service Road does not provide a convenient walking option to Cross Avenue to access the bus stops and the GO station. Please consider a pedestrian only site access from Lyons Lane and provide a pedestrian circulation plan to show the ultimate connections with the future roadways outlined in the Midtown Oakville plan. [Circ. 1]

This has been considered in the updated TIS.

Town Comment #4

Oakville Transit provides door-to-door paratransit service called care-A-van for persons with disabilities. Service is provided by low-floor, fully accessible 26ft buses supplemented in partnership with local taxi providers. Drivers will leave the vehicle and escort the customer to the first accessible public entrance. Please identify paratransit pick up/drop off location on the site plan in the Site Plan process. [Circ. 1]

Acknowledged.

Town Comment #5

The proposed development is envisioned with one full movement access on South Service Road. What is the plan for a secondary access upon full build-out? Most of the study area intersections are operating at or below capacity under the existing conditions. Until such time, the Midtown Oakville Infrastructure improvement study is finalized, of which the timing of implementation is unknown, what is the interim plan to safely accommodate the additional (proposed site-generated) traffic on the network? TIS needs to evaluate the minimum required/necessary improvements accordingly for vehicular, transit, pedestrian and bicycle traffic in, from, and within the site. [Circ. 1]

To our understanding a single connection is only contemplated. Appropriate sidewalks, crossing and bicycle storage facilities will be provided to accommodate active transportation within the site.

Town Comment #6

1. Town of Oakville Transportation Master Plan projects anticipated to be constructed by 2031 (by the town or by others), and the new proposed project is anticipated completed in 2022. From the TIS report LOS, and queue at QEW off-ramp intersections are not acceptable at the time when new proposed building is completed. **Please provide a recommendation that improve operational conditions to an acceptable level at the intersections from 2022 to before the Master Plan implemented.**

It is understood that even with improvements as identified in the Trafalgar Road EA and Midtown Oakville EA, capacity constraints will persist for the overall transportation network. Future improvements to the transportation network are expected to focus on public transit infrastructure rather than typical geometric improvements to improve operational conditions. The implementation of interim improvements would be considered temporary and will involve considerable throw away costs. It is also acknowledged that increased delay is projected at the QEW off-ramps without build-out of the proposed development.

Town Comment #7

Meanwhile, the consultant is required to explain in more details the questions listed below:

- Trip Generation with Mode Split - Section 3.2

At reports Page 17, “Trip reductions to account to transit usage (6.6%), active transportation modes (6.0%), and travel demand management (6.0%) have been applied to the base trip generation. The trip reductions were obtained from the Town of Oakville Transportation Master Plan”.

  - The percentage is a target, and by year 2031, the new proposed development will be completed by year 2022, the report applied mode split from 2022. Suggesting the mode split should apply after the Mater Plan projects completed, and please provide detail schedule of the projects including design and construction stage etc...

The TIS included a review of three horizons (2022, 2027 and 2032) representing near term, short term and long-term implications. The use of the modal split as provided provides for a most likely case planning scenario for the long-term implications. It is noted that use of this modal split for the near term and short term provides for a reasonable best-case scenario, however removal of this modal split assumption would not impact, alter and result in modifications to the recommendations given the modal split accounts for a reduction in 20-25 two-way vehicle trips during the weekday peak hours.

Town Comment #8

In general, trips at QEW have longer travel distance than local road such as Town of Oakville, and origin/destination is not within Oakville only, wider such as GTHA. The mode split should be different at different class of roadway. For example, what type of 6% active transportation mode will be on QEW ramps?

Due to the proximity of the proposed site to a major transit station (Oakville GO Station), we would expect that active transportation mode split to be high for this development.

Town Comment #9

- Trip Assignment - Table 3.3.
  - New trip assigned at QEW East (Toronto) is 7% - 9%, and West (Hamilton) is 23% - 19%, during AM and PM peak hours, based on existing distribution of traffic. Please provide more detail information of the assumption.

The trip distribution was developed based the existing link volumes for the study area roadways. See below the weekday AM and PM peak hour link volumes.

Weekday AM Peak Hour				Weekday AM Peak Hour			
North	Trafalgar Road	4937	37%	North	Trafalgar Road	5024	35%
South	Trafalgar Road	972	7%	South	Trafalgar Road	1305	9%
East	QEW	896	7%	East	QEW	1311	9%
	South Service Road	607	5%		South Service Road	749	5%
	Cornwall Road	1972	15%		Cornwall Road	2246	15%
West	QEW	3005	23%	West	QEW	2733	19%
	South Service Road	580	4%		South Service Road	755	5%
	Cornwall Road	217	2%		Cornwall Road	368	3%
		13186	**100%**			**14491**	**100%**

Town Comment #10

- Future forecast – Section 4

Appendix C provides traffic projections related to site specific growth in 2027 and 2032, reference from MOEA report 20% and 40% built-out assumption. Figure C.1 - C.4, (Figure C.2 same as Report Figure 4.3B). please clarify more in detail below points.

  - Traffic volume on Northbound of Trafalgar Rd has significantly reduced, especially QEW off-ramps turn to Northbound Trafalgar Rd. E.g. in 2022 is 346, and 2032 is 286, 10 years' after the volume has a negative growth.

Volumes were developed based on the projections as contained in the MOEA. The MOEA outlines a number of movements are expected to see a decrease due to travel pattern changes. The following calculations were completed to derive the 20% and 40% build-out assumption:

MOEA Volumes utilized.

2031 Preferred Network Volumes were subtracted from 2014 Existing Volumes to provide for a general basis of growth expected and travel pattern changes to the study area roadways. A growth rate of 2% per annum between year 2014 and 2031 was factored out of the volumes to remove general growth assumptions.

For the 20% build out scenario, 20% of the MOEA projections as derived in Step 1 were utilized. For the 40% build out scenario, 40% of the MOEA projections as derived were utilized.

Adjustments and further refinements were completed to maintain balancing along the study area corridors

Town Comment #11

  - Traffic pattern or trip origin/destination at QEW off-ramps are different with local road of Town of Oakville. E.g. the trips at QEW off-ramps generated is not by Town of Oakville only, by GTHA.

Acknowledged. The trip distribution was based on a wider area and included additional roadways in the development of the trip distribution.

Town Comment #12

- According to MOEA, major growth area is located south of QEW, but at North of QEW of Oakville will still has a minor growth, so the traffic from/to northbound of Trafalgar Rd should not decrease significantly.

We disagree based on the projections outlined in the MOEA. 2014 existing two-way link volumes along Trafalgar Road north of the North Service Road/QEW WB Ramp are between 4,000 and 5,100 vph. The 2031 projected volumes as contained in the MOEA results in between 2,900 and 3,300 vph.

Town Comment #13

- Population, total households, total vehicles, and average vehicle ownership are increasing, but how traffic volume is decreasing.

Given the needs for the Midtown Oakville area, potential infrastructure improvements range from revised road alignments to new road, transit, and active transportation connections, including additional crossings of the QEW.

The MOEA identified that to accommodate traffic to and from Midtown Oakville and to provide an alternate to Trafalgar Road, several improvements are contemplated within the preferred concept. Through these improvements, traffic isn't so much decreasing but will be re-routed through new connections away from the heavily used Trafalgar Road corridor. The net result is a reduction in volumes along Trafalgar Road. The volumes projected in the MOEA identified this reduction in consultation with the MTO.

Town Comment #14

2. Turning Movement Counts, at the report had compared two years' TMCs of 2015 and 2017, and from the comparison concluded that 2017 traffic volumes had decreased from 2015 at intersection of QEW ramps at Trafalgar Rd. The major volume decreased legs were off-ramps of QEW. But there have discrepancies with MTO database. For example, when comparing TMC data of 2017 (page 95-97) QEW EB off-ramp intersection, MTO data is showing the volume was not decreased. Please see below table for the detail and recommended conduct new TMCs, or using 2015 TMCs data applying annual growth rate.

AM Peak

MTO database				2017 TMC			
Day	Ending	Total		Left	Right	Total	Difference
6/1/2017	8:00	449	1254				331
6/1/2017	8:15	418	1472				
6/1/2017	8:30	471	1666				
6/1/2017	8:45	414	1752	822	599	1421	

Noon Peak

MTO database				2017 TMC			
Day	Ending	Total		Left	Right	Total	Difference
6/1/2017	11:45	306	1350				253
6/1/2017	12:00	375	1381				
6/1/2017	12:15	317	1350				
6/1/2017	12:30	364	1362	673	436	1109	

PM peak

MTO database				2017 TMC			
Day	Ending	Total		Left	Right	Total	Difference
6/1/2017	17:15	378	1415				298
6/1/2017	17:30	437	1476				
6/1/2017	17:45	402	1536				
6/1/2017	18:00	391	1608	891	419	1310	

The other factor is population, total households, total vehicles, and average vehicle ownership of Town of Oakville is increasing over the years, as well as GTA, so the traffic volume should have increasing trend.

As stated in the comment above, the ramp terminals experienced a decrease, thus a factor applied to these movements is not warranted. In terms of through volumes along Trafalgar Road, the upstream and downstream volumes were balanced along the Trafalgar Road corridor to compensate for daily volume fluctuations along the study area roadways.

Town Comment #15

3 Synchro reports and analysis, please update below points according to TIS guideline.
- For ramps, a v/c ratio for terminal ramp approaches with a value greater than 0.75 would be deemed critical and should be evaluated for possible operational improvements.

As stated in the report, the MOEA identified that even with the proposed improvements implemented, capacity constraints is still projected to occur.

Town Comment #16

- 95%ile Queue length at intersections, should not exceeding existing available storage length. The queue length should determine by Sim Traffic, and simulation time of seeding is 15min, recording time is 60 min.

A SimTraffic analysis can be undertaken, however as stated in the MOEA, with the proposed improvements implemented, capacity constraints are still projected to occur.

Town Comment #17

- Synchro simulation should ne matching with existing roadway conditions such as lane configuration. For example, QEW WB off-ramp SBT, number of lanes of approaching and receiving is balanced, missing on-ramp leg.

Will be reviewed.

Town Comment #18

- Default value of lost time adjustment is zero, if adjust the value please provide more detail information such as filed study.

We have reviewed the MTO TIS Guidelines and have not come across any reference to lost time. If available please provide. As a result, we have defaulted to the Region of Halton that stipulates four seconds of lost time be included in the Synchro calculations.

If you have any questions or would like to discuss our responses in more detail, please feel free to contact us.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Adam J. Makarewicz
Dipl.T., C.E.T. MITE
Senior Project Manager

Stew Elkins
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04 May 2022
Project: 190665

Town of Oakville
Tricia Collingwood
1225 Trafalgar Rd,
Oakville, ON L6H 0H3

RE: 627 LYONS LANE – TOWN OF OAKVILLE TRANSPORTATION PLANNING COMMENTS (2ND SUBMISSION)

In August 2021, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study (TIS)[1] for the proposed development located at 627 Lyons Lane in the Town of Oakville. The Review Agencies provided comments on the TIS in a letter dated 22 February 2022.

This letter provides additional information and responds to the Transportation Planning comments. For ease of review, each comment is copied below followed by our response/clarification to the comment.

Town Comment #1a

a. Confirm that the site plan is the current site plan and that there is no proposed building structure in the 50m buffer zone.

Updated site plan reflects the 50m buffer in the updated TIS.

Town Comment #2a

a. Confirm if floor plan 3 & 4 is the same as floor plan 2, as Floor plan 3&4 was not provided.

Addressed by others.

[1] 210060: 627 Lyons Lane, Oakville, Transportation Impact Study, Paradigm, August 2021

Town Comment #3a

a. The traffic site plan illustrate three (3) pedestrian connectivity to Lyons Lane, please identify on the current site plan.

Addressed by others.

Town Comment #3b

The Land Use Code for the development should be LU 221 rather than LU 222 as LU 221 provided a small sample for the rates provided.

LUC 221 has been used in the updated TIS.

Town Comment #3c

Provide Lane configuration figures to represent the difference in the existing lanes and the proposed future lanes.

Addressed in updated TIS.

Town Comment #3d

Hwy 403 does not intersect Trafalgar Road, please update for future report.

Acknowledged

Town Comment #3e

The assessment for the intersection of North Service Road and Trafalgar Road is separate from Trafalgar Road and QEW WB on ramp/Off ramp.

The QEW WB Ramp terminal are located opposite the North Service Road and has been assessed as such. Traffic data provided by the Region at Trafalgar Road and North Service Road includes the QEW WB ramp volumes as the east leg of the intersection.

Town Comment #3f

The assessment for the intersection of North Service Road and Trafalgar Road is separate from Trafalgar Road and QEW WB on ramp/Off ramp.

Trafalgar Road and QEW EB Off Ramp has been reassessed solely with off-ramp volumes rather than including the on-ramp volumes. Rather, a new intersection has been included along Trafalgar Road that includes the QEW On-Ramp for Southbound traffic.

Town Comment #3g

Please provide a sensitivity analysis summarizing the impacts of closing Lyons Lane to future vehicular traffic to the surrounding intersections within the study area.

Addressed in updated TIS.

Town Comment #3h

Please ensure that there are proper identification on any site plan being use for turning movement plan. There are no dimensions or road name to identify the site.

Addressed in updated TIS.

Town Comment #3I

Provide the turning movement plans with visual of the whole site not in pieces.

Addressed in updated TIS.

Region Comment Transportation Impact Study (Part 1)

A Transportation Impact Study was completed by Paradigm dated August 2021. **A study resubmission will be required** to address the issue outlined below.

The study states in section 2.4.2:

"*The traffic data collected for this project was obtained in 2017 and 2019. To quantify a reasonable factor that should be applied, historic 2015 traffic data at the Trafalgar Road and QEW Ramp terminals were also reviewed. Based on the growth comparison outlined herein, an average decrease of 3.5% has occurred between 2017 and 2019. As a result, no factors to the 2017 or 2019 turning movement counts were applied."*

It should be noted, in a 2017 memo by Town staff on another area development file, it was stated:

"*Please note the former hospital site was closed on December 13, 2015 and the bridge work along Trafalgar Road has yet to be completed. MTO is completing the bridge work in phases and although was expected to be completed in December 2016, will now be completed by the summer of 2017. Currently all six (6) lanes of traffic are open, however, please confirm with MTO that the lanes will remain open at the time of any traffic counts."*

Therefore, the decrease in traffic counts when comparing 2015 to 2017 was, in all likelihood, due to the MTO bridge works during the 2016-2017 time period. Therefore, the 3-4% decrease is explainable and, not applying growth rates to the 2017 and 2019 count data is unacceptable. **Town of Oakville comments from the previous submission also did not support a decrease in traffic volumes to be used in the study (MTO did not support this decrease as well).** The following strategy is recommended for a more accurate assessment:

- The Study terms of reference comments provided by Halton Region stated:

"Halton's transportation model predicts growth rates averaging two percent per annum, to the year 2031, on various sections of Trafalgar Road and the crossings streets."

Addressed in updated TIS. Historical counts have been factored with the use of 2% per annum growth rate.

Region Comment Transportation Impact Study (Part 2)

The Ministry of Transportation (MTO) had previously reviewed the study and required several changes, and a study resubmission was necessary. While MTO will review and confirm their previous comments, it does not look like MTO concerns have been addressed. Some of the previous comments unresolved with this study submission

include:

• MTO data is showing the volume was not decreased. The other factor is population, total households, total vehicles, and average vehicle ownership of Town of Oakville is increasing over the years, as well as GTA, so the traffic volume should have increasing trend.

• For ramps, a v/c ratio for terminal ramp approaches with a value greater than 0.75 would be deemed critical and should be evaluated for possible operational improvements.

• Synchro simulation should be matching with existing roadway conditions such as lane configuration. For example, QEW WB off-ramp SBT, number of lanes of approaching and receiving is balanced, missing on-ramp leg.

To our understanding, the MTO had no further comments regarding the 2nd Submission. Regardless, these comments have been further addressed as part of the updated TIS:

- Historical counts have been factored with the use of 2% per annum growth rate
- As stated in the report, the MOEA identified that even with the proposed improvements implemented, capacity constraints over 0.75 will occur.
- Synchro lane Configuration has been updated to reflect existing conditions.

If you have any questions or would like to discuss our responses in more detail, please feel free to contact us.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Adam J. Makarewicz
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Senior Project Manager

Stew Elkins
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Appendix B

Terms of Reference

From:	Gariscsak, Anne
To:	Andrew Evans
Cc:	syed.rizvi@oakville.ca; Polus, Asia (MTO) (Asia.Polus@ontario.ca); Natywary, Laurielle; Krusto, Matt; Scattolon, Walter; West, Taylor
Subject:	FW: 627 Lyons Lane, Town of Oakville -TIS Scope of Work- Halton Region Comments
Date:	December 11, 2018 9:01:43 AM
Attachments:	image001.png
Importance:	High

Andrew,

Halton Region staff have reviewed the subject TIS scope of work and offer the following comments.

Data Requests:

-Data requests for Halton Region information (traffic counts/signal timing) should be completed via the data request process as noted on the Halton Region website http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=12457 or from the Town of Oakville. **If traffic data is older than 2 years, then updated turning movement counts are required.**

-Town of Oakville will provide area development details, as well as details related to planned town roadway improvements.

Transportation Impact Study Requirements (TIS):

-The following intersections have been proposed for the Transportation Impact Study area, and are acceptable:

- South Service Road at Lyons Lane;
- South Service Road at Argus Road;
- Cross Avenue at Lyons Lane;
- Cross Avenue at Argus Road / Oakville GO Station East Entrance;
- Trafalgar Road at Cross Avenue;
- Highway 403 at Eastbound Off-Ramp; and
- Highway 403 at Westbound Off-Ramp.

-The following intersections must also be included in the Transportation Impact Study area:

- Trafalgar Road and Cornwall Road
- Trafalgar Road and Argus Road

Analysis Assumptions:

-Horizon years: The proposed horizon years analysis is acceptable.

The TIS report shall include:

- Site Plan and Map,
- Size & Number of Development Phases,
- Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),
- Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),
- Future Background Conditions (Horizon Years, Horizon Year Volumes)
- Background Traffic Demand (with TMC's < 2 years old),
- Background Traffic Demand Forecast (with acceptable growth rates)
- Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)
- Future Total Traffic Demand,
- Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),
- Traffic Impacts (Tables – Total Traffic with/without Mitigation)
- Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),
- Recommendations,
- TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)
- Conclusions

Background Traffic:

-Halton's transportation model predicts growth rates averaging two percent per annum, to the year 2031, on various sections of Trafalgar Road and the crossings streets.

-Growth rates for Town roads must be verified with the Town of Oakville.

-Proposed Transit mode splits, as well as TDM & Active Transportation assumptions must be provided to Halton Region & the Town of Oakville for review/approval, due to the proximity of the proposed site to a major transit station (Oakville GO Station).

Site Access:

-Study must be in accordance to Halton Region's Transportation Impact Guidelines
http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=12612

-Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.

Should you have any detailed technical questions with respect to Halton Region's comments, please contact Matt Krusto (cc'd) directly.

Thank you,
Anne Gariscsak.

Anne Gariscsak, MCIP RPP
Planner
Planning Services
Legislative & Planning Services
Halton Region
905-825-6000, ext. 7109 | 1-866-442-5866

From: Krusto, Matt
Sent: Thursday, December 06, 2018 1:36 PM
To: Gariscsak, Anne
Cc: Natywary, Laurielle
Subject: FW: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Anne – please circulate through the one window for review.

Thanks!

Matt

Matt Krusto
Transportation Planning Coordinator
Infrastructure Planning & Policy
Public Works
Halton Region
905-825-6000, ext. 7225 | 1-866-442-5866

From: Andrew Evans [mailto:aevans@ptsl.com]

Sent: Thursday, December 06, 2018 1:12 PM
To: Syed Rizvi:; Jakaitis, Alicia; Asia.Polus@ontario.ca
Subject: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Greetings,

Paradigm Transportation Solutions Limited have been retained to undertake a Transportation Impact Study (TIS) for a proposed residential development located at 627 Lyons Lane in the Town of Oakville. The developer is envisioning 220 residential units with vehicle access provided by a westerly driveway to Lyons Lane and a driveway to South Service Road.

As the development is in the permit control area of the Ministry of Transportation (MTO), the TIS will be competed following the MTO Traffic Impact Study Guidelines.

The study area will comprise of the following intersections:
- South Service Road at Lyons Lane;
- South Service Road at Argus Road;
- Cross Avenue at Lyons Lane;
- Cross Avenue at Argus Road;
- Trafalgar Road at Cross Avenue;
- Highway 403 at Eastbound Off-Ramp; and
- Highway 403 at Westbound Off-Ramp.

Traffic forecasts and analysis for the weekday AM and PM peak hours will be completed for three (3) horizon years:
- Opening Date;
- Five (5) years after Opening; and
- Ten (10) years after Opening.

Future Background Traffic will be estimated by applying a growth rate to existing traffic volumes and adding anticipated trips from nearby approved and in-stream developments.
- Growth rates and background developments will need to be confirmed by Town of Oakville.

Development generated trips will be forecast based on rates developed from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). These trips will be assigned to the study area intersections based on existing traffic patterns and/or Transportation Tomorrow Survey (TTS) data.

We will analyze the operation of the study area intersections for Existing, Future Background and Future Total traffic conditions for each horizon year and analysis period using Synchro software. Volume to capacity (v/c) ratios, Level of Service (LOS) and queuing will be assessed. We will identify any operational deficiencies as well as the net impact of the proposed development on the study area road network. The need for improvements (e.g. auxiliary turn lanes) and/or other mitigating measures (e.g. traffic control device modifications) to address deficiencies will be

determined. We will assess whether these measures are required due to non-site traffic (i.e. Existing or Future Background) or the increase in volumes resulting from the proposed development (i.e. Future Total).

If you have and questions or comments, please feel free to contact me.

Thank you and regards.

Andrew Evans, M.Sc.
Transportation Planner

Paradigm Transportation Solutions Limited
5A-150 Pinebush Road Cambridge ON N1R 8J8
p: 905.381.2229 x **305 <<< New Extension Number**
m: 519.497.3239
e: aevans@ptsl.com
w: www.ptsl.com

From:	Polus, Asia (MTO)
To:	Andrew Evans
Cc:	Scholz, Kevin (MTO); Lawrence, Morgan (MTO); Syed Rizvi:; alicia.jakaitis@halton.ca; Adam Makarewicz
Subject:	RE: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work
Date:	December 21, 2018 10:14:47 AM
Attachments:	image001.png

Hi Andrew,

Further to your request, please note that after additional review of your previously provided Scope of work the ministry's Traffic Office offers the following comments:

- The proponent can remove our previous requirement to analyst the QEW at Dorval/Kerr ramp terminals, however all other requirements are still applicable.

I trust that the above is clear, however if you have any questions please feel free to ask.

Best Regards

W. Asia Polus
Corridor Management Planner

Ministry of Transportation
Central Region, Highway Corridor Management Section
159 Sir William Hearst Ave. 7th Floor
Toronto, ON M3M 0B7
Tel. 416 - 235-3991
Fax 416 - 235-4267

From: Polus, Asia (MTO)
Sent: December-18-18 12:46 PM
To: 'Andrew Evans' <aevans@ptsl.com>
Cc: Scholz, Kevin (MTO) <Kevin.Scholz@ontario.ca>; Lawrence, Morgan (MTO) <Morgan.Lawrence@ontario.ca>; Syed Rizvi: <syed.rizvi@oakville.ca>; alicia.jakaitis@halton.ca; Adam Makarewicz <amakarewicz@ptsl.com>
Subject: RE: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Hi Andrew,

Your request was sent to the ministry's traffic Office for review and I will contact you as soon as any comments are available.

Regards

W. Asia Polus
Corridor Management Planner

Ministry of Transportation
Central Region, Highway Corridor Management Section

159 Sir William Hearst Ave. 7th Floor
Toronto, ON M3M 0B7
Tel. 416 - 235-3991
Fax 416 - 235-4267

From: Andrew Evans [mailto:aevans@ptsl.com]
Sent: December-18-18 10:49 AM
To: Polus, Asia (MTO) <Asia.Polus@ontario.ca>
Cc: Scholz, Kevin (MTO) <Kevin.Scholz@ontario.ca>; Lawrence, Morgan (MTO) <Morgan.Lawrence@ontario.ca>; Syed Rizvi: <syed.rizvi@oakville.ca>; alicia.jakaitis@halton.ca; Adam Makarewicz <amakarewicz@ptsl.com>
Subject: RE: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Hi Asia,

Thank you for responding to our scope. The need to include the QEW/Dorval and QEW/Kerr ramp terminals does not seem to be warranted based on the expected distribution.

The proposed development is for 220 residential units which based on the Institute Transportation of Engineers Trip Generation Manual (10th Edition) will generate approximately 74 trips during the weekday AM peak hour and 83 trips during the weekday PM peak hour (not including any reductions for transit and active transportation modes).

Referring to the Midtown Oakville Class EA (2014) , this urban growth centre includes over 100 hectares of developable land and includes the subject development. The study area for this class EA did not include the QEW/Dorval and QEW/Kerr ramp terminal and the residential distribution as outlined in the Class EA does not project any trips to utilize these ramp terminals.

Trips generated by this development will utilize the Trafalgar Road ramp terminals (which are included in the study) rather than the Dorval/Kerr ramp terminals due to travel time and distances between the site and ramp terminals. Any trips that would likely use the Dorval/Kerr ramp terminals would be less than 1% of the hourly volumes at those intersections and not likely to significantly impact their operations.

Based on the above, these intersections will not experience a significant increase in traffic related to the proposed development. We respectfully request you review the following and reconsider the need for an expanded scope.

Thank you and regards.

Andrew Evans, M.Sc.
Transportation Planner

Paradigm Transportation Solutions Limited
p: 905.381.2229 x **305 <<< New Extension Number**
m: 519.497.3239

From: Polus, Asia (MTO) <Asia.Polus@ontario.ca>
Sent: December 13, 2018 2:37 PM
To: Andrew Evans <aevans@ptsl.com>; Syed Rizvi: <syed.rizvi@oakville.ca>; alicia.jakaitis@halton.ca
Cc: Scholz, Kevin (MTO) <Kevin.Scholz@ontario.ca>; Lawrence, Morgan (MTO) <Morgan.Lawrence@ontario.ca>
Subject: RE: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Hi Andrew,

Thank you for your e-mail, please note that your request was reviewed by the ministry's Traffic Office and the following requirements were provided:

- The Study must include the both ramp terminals at QEW/Dorval and QEW/Trafalgar intersections as well as the QEW WB ramp terminal at Kerr St.

Please note that any submission regarding this development proposal has to be sent through the Town of Oakville with the attention to Kevin Scholz, included in this e-mail, he is a new Corridor Management Officer for this area and he can be reached at 416-235-5383.

If you have any questions or require some clarification please do not hesitate to contact us.

Best Regards

W. Asia Polus
Corridor Management Planner

Ministry of Transportation
Central Region, Highway Corridor Management Section
159 Sir William Hearst Ave. 7th Floor
Toronto, ON M3M 0B7
Tel. 416 - 235-3991
Fax 416 - 235-4267

From: Andrew Evans [mailto:aevans@ptsl.com]
Sent: December-06-18 1:12 PM
To: Syed Rizvi: <syed.rizvi@oakville.ca>; alicia.jakaitis@halton.ca; Polus, Asia (MTO) <Asia.Polus@ontario.ca>
Subject: (180307) 627 Lyons Lane, Town of Oakville -TIS Scope of Work

Greetings,

Paradigm Transportation Solutions Limited have been retained to undertake a

Transportation Impact Study (TIS) for a proposed residential development located at 627 Lyons Lane in the Town of Oakville. The developer is envisioning 220 residential units with vehicle access provided by a westerly driveway to Lyons Lane and a driveway to South Service Road.

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- South Service Road at Argus Road;
- Cross Avenue at Lyons Lane;
- Cross Avenue at Argus Road;
- Trafalgar Road at Cross Avenue;
- Highway 403 at Eastbound Off-Ramp; and
- Highway 403 at Westbound Off-Ramp.

Traffic forecasts and analysis for the weekday AM and PM peak hours will be completed for three (3) horizon years:

- Opening Date;
- Five (5) years after Opening; and
- Ten (10) years after Opening.

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We will analyze the operation of the study area intersections for Existing, Future Background and Future Total traffic conditions for each horizon year and analysis period using Synchro software. Volume to capacity (v/c) ratios, Level of Service (LOS) and queuing will be assessed. We will identify any operational deficiencies as well as the net impact of the proposed development on the study area road network. The need for improvements (e.g. auxiliary turn lanes) and/or other mitigating measures (e.g. traffic control device modifications) to address deficiencies will be determined. We will assess whether these measures are required due to non-site traffic (i.e. Existing or Future Background) or the increase in volumes resulting from the proposed development (i.e. Future Total).

If you have and questions or comments, please feel free to contact me.

Thank you and regards.

Andrew Evans, M.Sc.
Transportation Planner

Paradigm Transportation Solutions Limited
5A-150 Pinebush Road Cambridge ON N1R 8J8
p: 905.381.2229 x **305 <<< New Extension Number**
m: 519.497.3239
e: aevans@ptsl.com
w: www.ptsl.com

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Appendix C

Turning Movement Counts

Trafalgar Rd @ Cornwall Rd

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Halton Region
Site #: 0000003011
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 4
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	2557			
North Entering:	1337			
North Peds:	25			
Peds Cross:	⋈			

Heavys	9	6	19	34
Trucks	10	6	4	20
Cars	300	471	512	1283
Totals	319	483	535	

Heavys	14			
Trucks	9			
Cars	1197			
Totals	1220			

East Leg Total:	1995			
East Entering:	953			
East Peds:	18			
Peds Cross:	⧖			

Trafalgar Rd

Heavys	Trucks	Cars	Totals
19	13	713	745

Cars	Trucks	Heavys	Totals
543	5	9	557
366	3	9	378
17	1	0	18
926	9	18	

Cornwall Rd

N
W E
S

Heavys	Trucks	Cars	Totals
3	3	339	345
12	7	443	462
1	0	71	72
16	10	853	

Cornwall Rd

Cars	Trucks	Heavys	Totals
1000	11	31	1042

Trafalgar Rd

Peds Cross:	⧖			
West Peds:	9			
West Entering:	879			
West Leg Total:	1624			

Cars	559			
Trucks	7			
Heavys	7			
Totals	573			

Cars	47	315	45	407
Trucks	0	1	0	1
Heavys	1	2	0	3
Totals	48	318	45	

Peds Cross:	⋈			
South Peds:	7			
South Entering:	411			
South Leg Total:	984			

Comments

Trafalgar Rd @ Cornwall Rd

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

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

Municipality: Halton Region
Site #: 0000003011
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 4
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	2692			
North Entering:	1309			
North Peds:	24			
Peds Cross:	⋈			

Heavys	8	1	12	21
Trucks	10	3	6	19
Cars	186	516	567	1269
Totals	204	520	585	

Heavys	22			
Trucks	23			
Cars	1338			
Totals	1383			

East Leg Total:	2106			
East Entering:	1076			
East Peds:	13			
Peds Cross:	⧖			

Trafalgar Rd

Heavys	Trucks	Cars	Totals
21	17	576	614

Cornwall Rd

Heavys	Trucks	Cars	Totals
5	6	324	335
6	5	368	379
0	2	37	39
11	13	729	

Cars	Trucks	Heavys	Totals
626	13	13	652
359	7	13	379
44	1	0	45
1029	21	26	

N
W E
S

Cornwall Rd

Cars	Trucks	Heavys	Totals
1001	11	18	1030

Trafalgar Rd

Peds Cross:	⧖			
West Peds:	6			
West Entering:	753			
West Leg Total:	1367			

Cars	597			
Trucks	6			
Heavys	1			
Totals	604			

Cars	31	388	66	485
Trucks	0	4	0	4
Heavys	0	4	0	4
Totals	31	396	66	

Peds Cross:	⋈			
South Peds:	8			
South Entering:	493			
South Leg Total:	1097			

Comments

Trafalgar Rd @ Cornwall Rd

Afternoon Peak Diagram

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

One Hour Peak
From: 17:00:00
To: 18:00:00

Municipality: Halton Region
Site #: 0000003011
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 4
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total: 2883
North Entering: 1483
North Peds: 21
Peds Cross: ⋈

Heavys	6	0	11	17
Trucks	2	2	1	5
Cars	462	524	475	1461
Totals	470	526	487	

Heavys	8
Trucks	7
Cars	1385
Totals	1400

East Leg Total: 2246
East Entering: 1261
East Peds: 10
Peds Cross: ⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
11	5	1208	1224

Cornwall Rd

Cars	Trucks	Heavys	Totals
556	3	5	564
634	1	5	640
57	0	0	57
1247	4	10	

N
W E
S

Heavys	Trucks	Cars	Totals
3	2	424	429
6	6	447	459
1	0	161	162
10	8	1032	

Cornwall Rd

Cars	Trucks	Heavys	Totals
961	7	17	985

Trafalgar Rd

Peds Cross: ⧖
West Peds: 17
West Entering: 1050
West Leg Total: 2274

Cars	742
Trucks	2
Heavys	1
Totals	745

Cars	112	405	39	556
Trucks	2	2	0	4
Heavys	0	0	0	0
Totals	114	407	39	

Peds Cross: ⋈
South Peds: 14
South Entering: 560
South Leg Total: 1305

Comments

Trafalgar Rd @ Cornwall Rd

Total Count Diagram

Municipality: Halton Region
Site #: 0000003011
Intersection: Trafalgar Rd & Cornwall Rd
TFR File #: 4
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	20400
North Entering:	10198
North Peds:	147
Peds Cross:	⋈

Heavys	58	29	112	199
Trucks	60	29	40	129
Cars	2277	3661	3932	9870
Totals	2395	3719	4084	

Heavys	146
Trucks	111
Cars	9945
Totals	10202

East Leg Total:	15937
East Entering:	8450
East Peds:	79
Peds Cross:	⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
151	98	6219	6468

Cornwall Rd

Cars	Trucks	Heavys	Totals
4396	51	87	4534
3495	36	87	3618
293	4	1	298
8184	91	175	

N
W E
S

Heavys	Trucks	Cars	Totals
40	36	2602	2678
68	35	2939	3042
5	9	490	504
113	80	6031	

Cornwall Rd

Cars	Trucks	Heavys	Totals
7227	79	181	7487

Trafalgar Rd

Peds Cross:	⧖
West Peds:	79
West Entering:	6224
West Leg Total:	12692

Cars	4444
Trucks	42
Heavys	35
Totals	4521

Cars	447	2947	356	3750
Trucks	2	24	4	30
Heavys	6	19	1	26
Totals	455	2990	361	

Peds Cross:	⋈
South Peds:	68
South Entering:	3806
South Leg Total:	8327

Comments

Trafalgar Rd @ South Service Rd

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Halton Region
Site #: 0000003012
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 5
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	3502			
North Entering:	1907			
North Peds:	1			
Peds Cross:	⋈			
Heavys	14	16	3	33
Trucks	2	21	5	28
Cars	377	1232	237	1846
Totals	393	1269	245	
Heavys	54			
Trucks	15			
Cars	1526			
Totals	1595			
East Leg Total:	607			
East Entering:	234			
East Peds:	52			
Peds Cross:	⧖			

Trafalgar Rd

Heavys	Trucks	Cars	Totals
28	5	547	580

Cars	Trucks	Heavys	Totals
109	1	4	114
74	1	5	80
39	1	0	40
222	3	9	

Cross Ave

N
W E
S

Heavys	Trucks	Cars	Totals
27	6	337	370
5	0	72	77
9	4	94	107
41	10	503	

South Service Rd

Cars	Trucks	Heavys	Totals
360	5	8	373

Trafalgar Rd

Peds Cross:	⧖			
West Peds:	10			
West Entering:	554			
West Leg Total:	1134			
Cars	1365			
Trucks	26			
Heavys	25			
Totals	1416			
Cars	96	1080	51	1227
Trucks	2	8	0	10
Heavys	9	23	0	32
Totals	107	1111	51	
Peds Cross:	⋈			
South Peds:	4			
South Entering:	1269			
South Leg Total:	2685			

Comments

Trafalgar Rd @ South Service Rd

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

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

Municipality: Halton Region
Site #: 0000003012
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 5
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	3320			
North Entering:	1509			
North Peds:	0			
Peds Cross:	⋈			
Heavys	9	12	4	25
Trucks	6	21	2	29
Cars	232	1101	122	1455
Totals	247	1134	128	
Heavys	42			
Trucks	25			
Cars	1744			
Totals	1811			
East Leg Total:	594			
East Entering:	336			
East Peds:	8			
Peds Cross:	⧖			

Trafalgar Rd

Heavys	Trucks	Cars	Totals
17	8	450	475

Cars	Trucks	Heavys	Totals
151	3	6	160
89	0	2	91
80	2	3	85
320	5	11	

Cross Ave

N
W E
S

Heavys	Trucks	Cars	Totals
21	2	407	430
2	2	70	74
6	0	88	94
29	4	565	

South Service Rd

Cars	Trucks	Heavys	Totals
246	6	6	258

Trafalgar Rd

Peds Cross:	⧖			
West Peds:	20			
West Entering:	598			
West Leg Total:	1073			
Cars	1269			
Trucks	23			
Heavys	21			
Totals	1313			
Cars	129	1186	54	1369
Trucks	2	20	2	24
Heavys	6	15	0	21
Totals	137	1221	56	
Peds Cross:	⋈			
South Peds:	28			
South Entering:	1414			
South Leg Total:	2727			

Comments

Trafalgar Rd @ South Service Rd

Afternoon Peak Diagram

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

One Hour Peak
From: 17:00:00
To: 18:00:00

Municipality: Halton Region
Site #: 0000003012
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 5
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

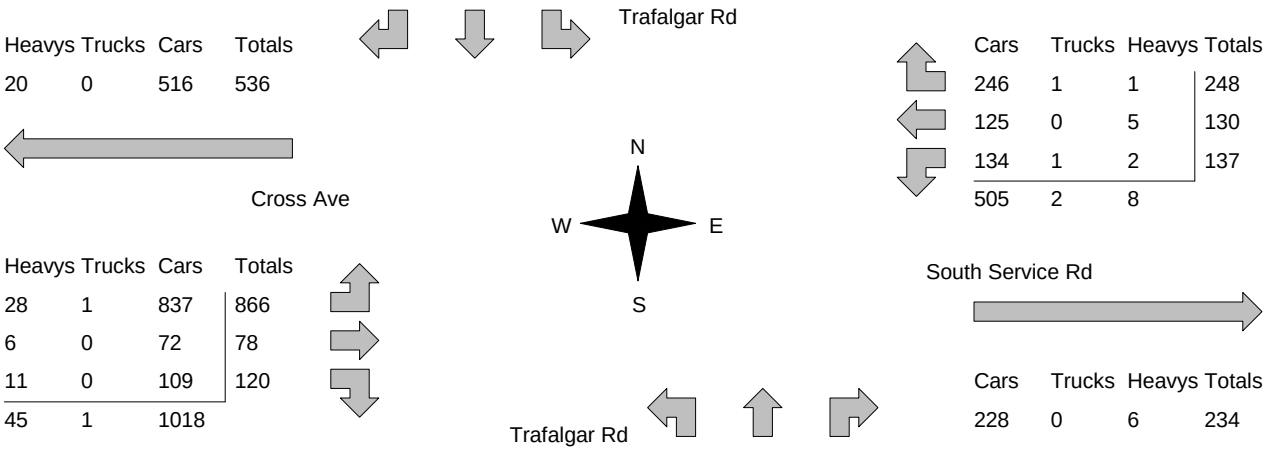
Major Road: Trafalgar Rd runs N/S

North Leg Total: 4034
North Entering: 1668
North Peds: 0
Peds Cross: ⋈

Heavys	9	5	0	14
Trucks	0	4	0	4
Cars	281	1250	119	1650
Totals	290	1259	119	

Heavys	34
Trucks	9
Cars	2323
Totals	2366

East Leg Total: 749
East Entering: 515
East Peds: 70
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 18
West Entering: 1064
West Leg Total: 1600

Cars	1493
Trucks	5
Heavys	18
Totals	1516

Cars	110	1240	37	1387
Trucks	0	7	0	7
Heavys	6	5	0	11
Totals	116	1252	37	

Peds Cross: ⋈
South Peds: 15
South Entering: 1405
South Leg Total: 2921

Comments

Trafalgar Rd @ South Service Rd

Total Count Diagram

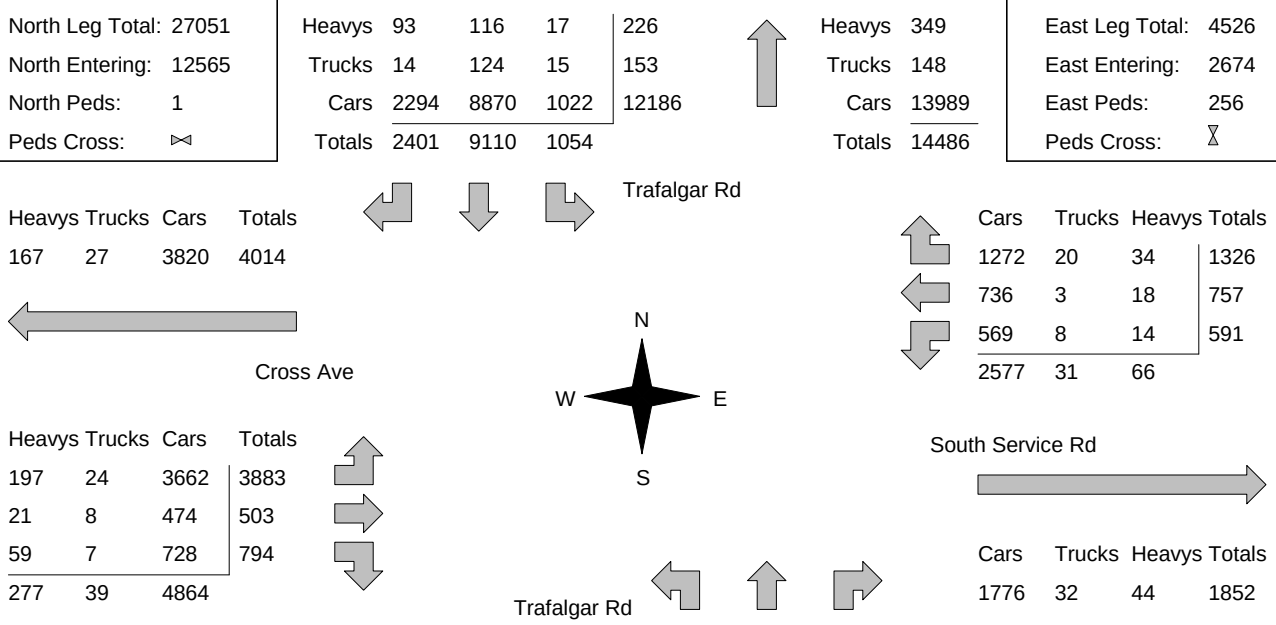
Municipality: Halton Region
Site #: 0000003012
Intersection: Trafalgar Rd & South Service Rd
TFR File #: 5
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Argus Rd

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

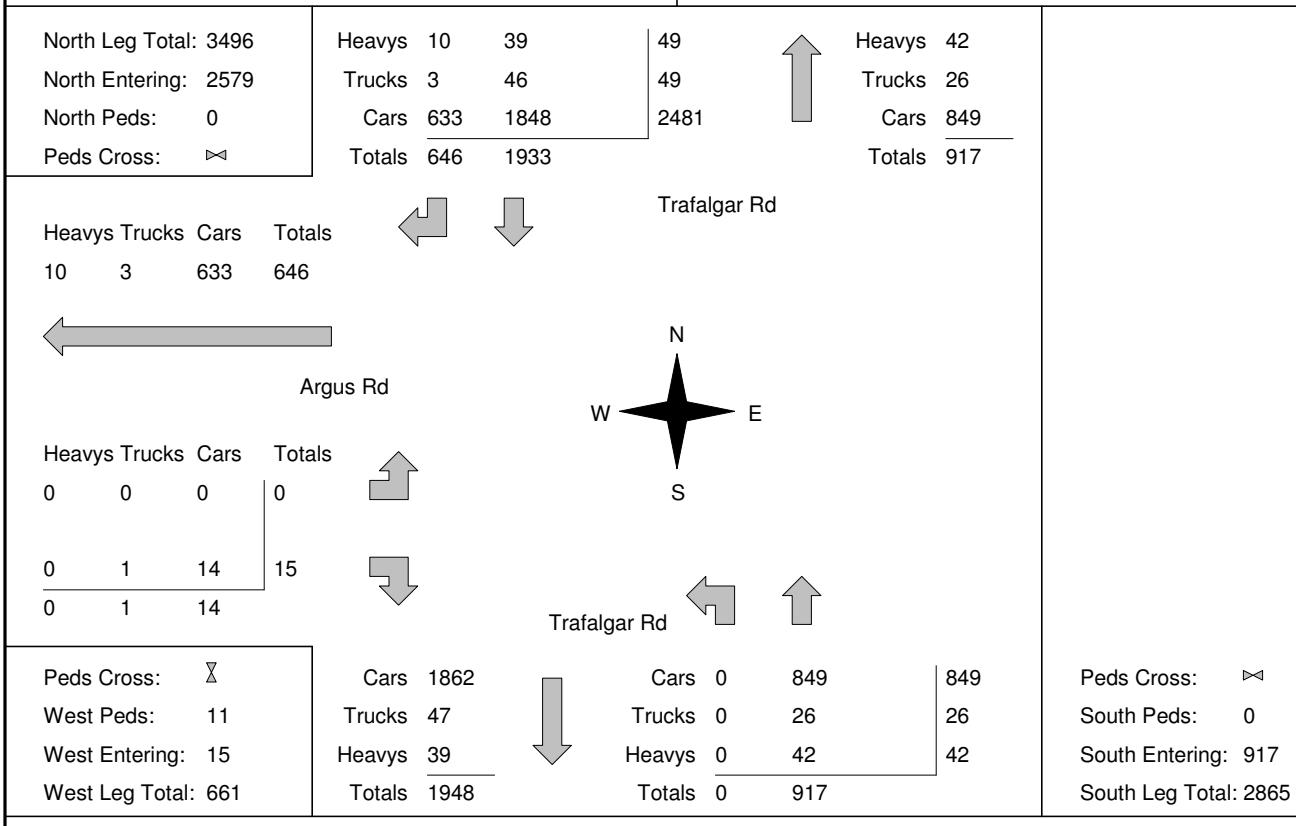
Municipality: Halton Region
Site #: 0000003013
Intersection: Trafalgar Rd & Argus Rd
TFR File #: 2
Count date: 15-May-2017

Weather conditions:
Sunny/Dry

Person(s) who counted:
Bronek
Radek

**** Non-Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Argus Rd

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:15:00
To: 13:15:00

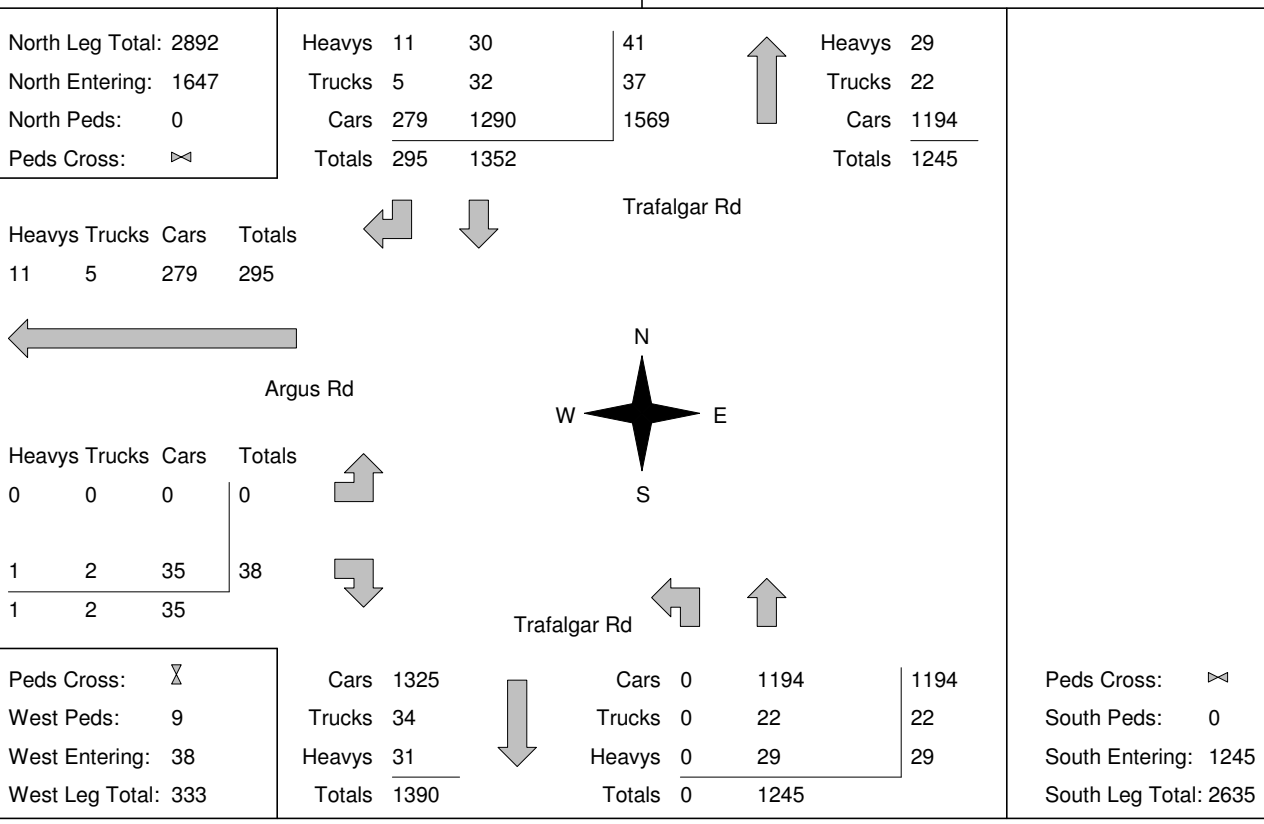
Municipality: Halton Region
Site #: 0000003013
Intersection: Trafalgar Rd & Argus Rd
TFR File #: 2
Count date: 15-May-2017

Weather conditions:
Sunny/Dry

Person(s) who counted:
Bronek
Radek

**** Non-Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Argus Rd

Afternoon Peak Diagram

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

One Hour Peak
From: 17:00:00
To: 18:00:00

Municipality: Halton Region
Site #: 0000003013
Intersection: Trafalgar Rd & Argus Rd
TFR File #: 2
Count date: 15-May-2017

Weather conditions:
Sunny/Dry

Person(s) who counted:
Bronek
Radek

**** Non-Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total: 3579
North Entering: 1674
North Peds: 0
Peds Cross: ⋈

Heavys	9	21	30
Trucks	1	8	9
Cars	330	1305	1635
Totals	340	1334	

Heavys	29
Trucks	8
Cars	1868
Totals	1905

Trafalgar Rd

Heavys	Trucks	Cars	Totals
9	1	330	340

Argus Rd

Heavys	Trucks	Cars	Totals
0	0	0	0
2	1	35	38
2	1	35	

N
W E
S

Trafalgar Rd

Peds Cross: ⧖
West Peds: 24
West Entering: 38
West Leg Total: 378

Cars	1340		
Trucks	9		
Heavys	23		
Totals	1372		

Cars	0	1868	1868
Trucks	0	8	8
Heavys	0	29	29
Totals	0	1905	

Peds Cross: ⋈
South Peds: 0
South Entering: 1905
South Leg Total: 3277

Comments

Trafalgar Rd @ Argus Rd

Total Count Diagram

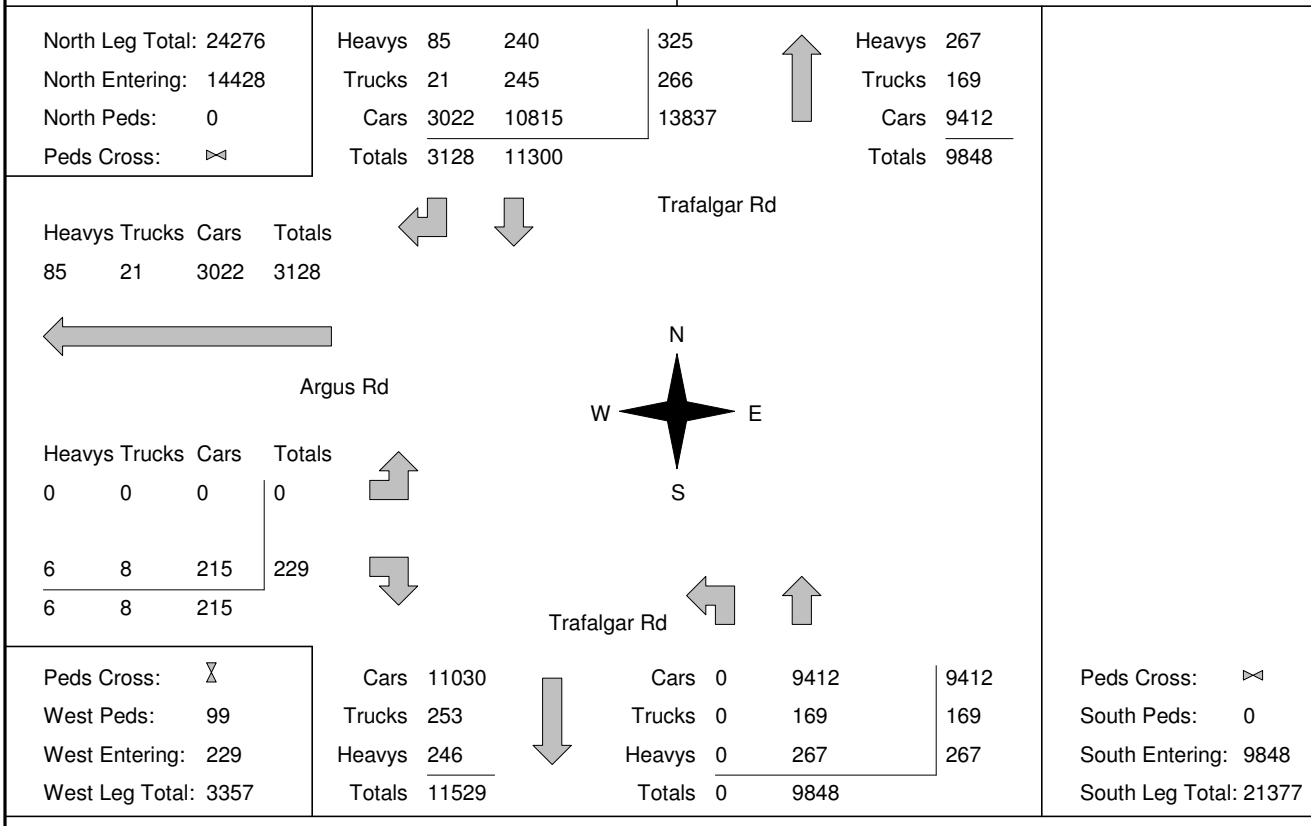
Municipality: Halton Region
Site #: 0000003013
Intersection: Trafalgar Rd & Argus Rd
TFR File #: 2
Count date: 15-May-2017

Weather conditions:
Sunny/Dry

Person(s) who counted:
Bronek
Radek

**** Non-Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ QEW EB Off Ramp

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

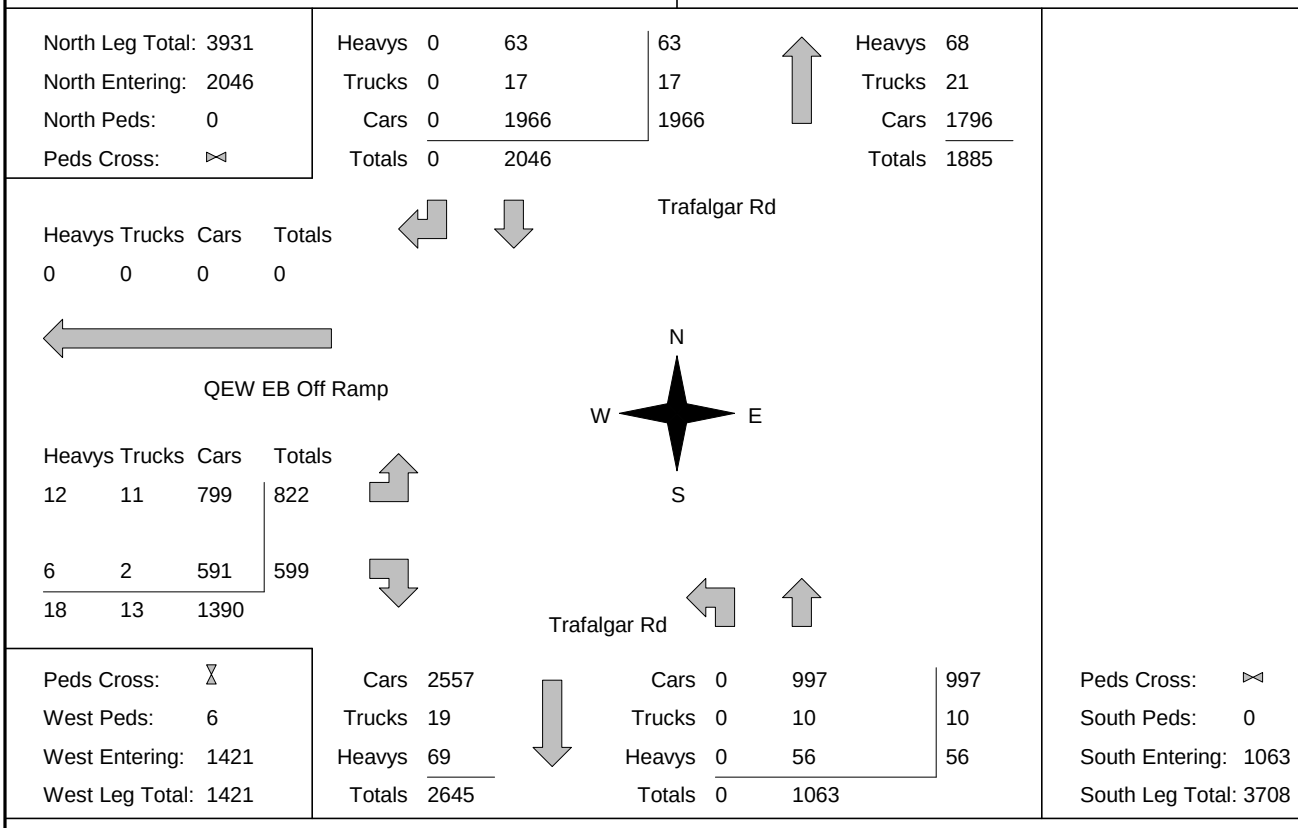
Municipality: Halton Region
Site #: 0000003014
Intersection: Trafalgar Rd & QEW EB Off Ramp
TFR File #: 6
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ QEW EB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Halton Region
Site #: 0000003014
Intersection: Trafalgar Rd & QEW EB Off Ramp
TFR File #: 6
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total: 3410
North Entering: 1392
North Peds: 0
Peds Cross: ⋈

Heavys	0	32	32
Trucks	0	13	13
Cars	0	1347	1347
Totals	0	1392	

Heavys	56
Trucks	25
Cars	1937
Totals	2018

Trafalgar Rd

Heavys	Trucks	Cars	Totals
0	0	0	0

QEW EB Off Ramp

Heavys	Trucks	Cars	Totals
21	8	644	673
6	9	421	436
27	17	1065	

N
W E
S

Trafalgar Rd

Peds Cross: ⋈
West Peds: 11
West Entering: 1109
West Leg Total: 1109

Cars	1768		
Trucks	22		
Heavys	38		
Totals	1828		

Cars	0	1293	1293
Trucks	0	17	17
Heavys	0	35	35
Totals	0	1345	

Peds Cross: ⋈
South Peds: 2
South Entering: 1345
South Leg Total: 3173

Comments

Trafalgar Rd @ QEW EB Off Ramp

Afternoon Peak Diagram

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

One Hour Peak
From: 17:00:00
To: 18:00:00

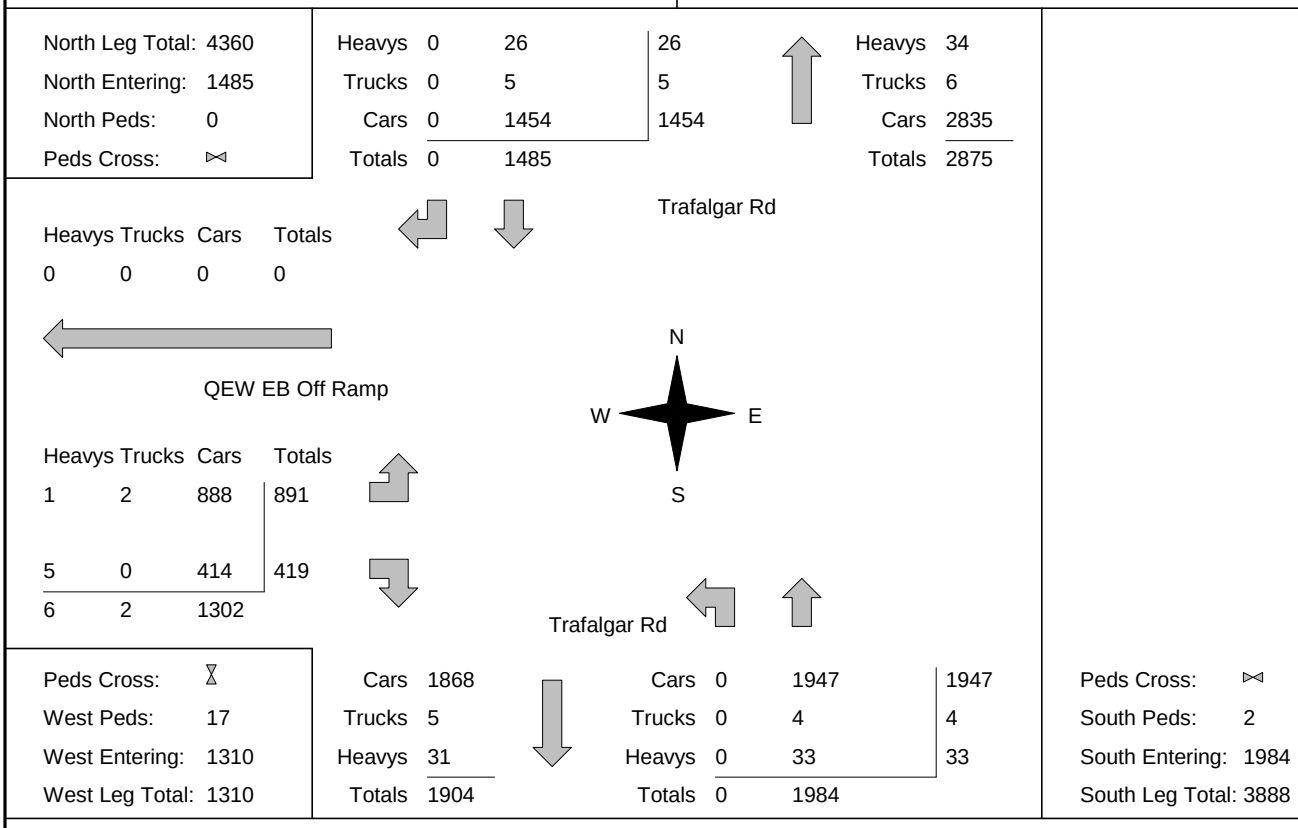
Municipality: Halton Region
Site #: 0000003014
Intersection: Trafalgar Rd & QEW EB Off Ramp
TFR File #: 6
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ QEW EB Off Ramp

Total Count Diagram

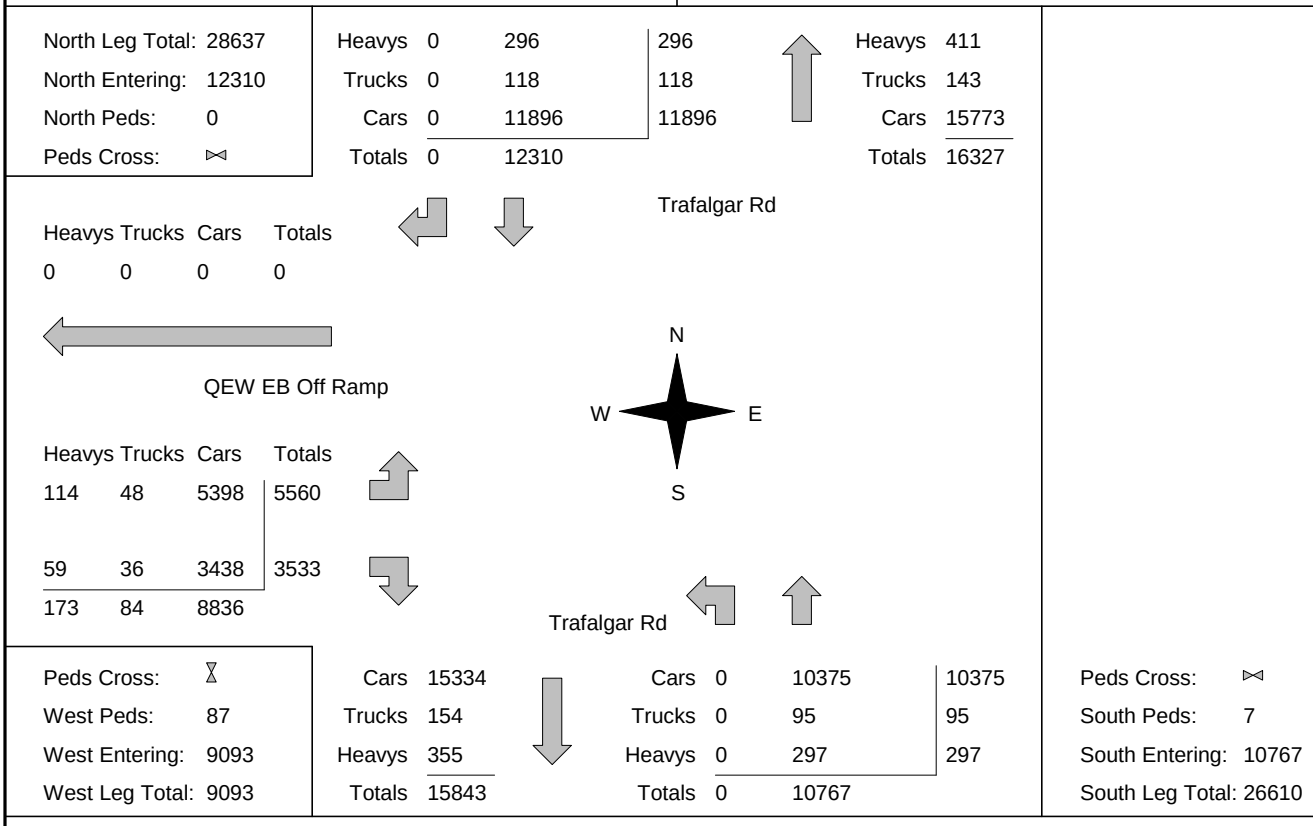
Municipality: Halton Region
Site #: 0000003014
Intersection: Trafalgar Rd & QEW EB Off Ramp
TFR File #: 6
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ North Service Rd E

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

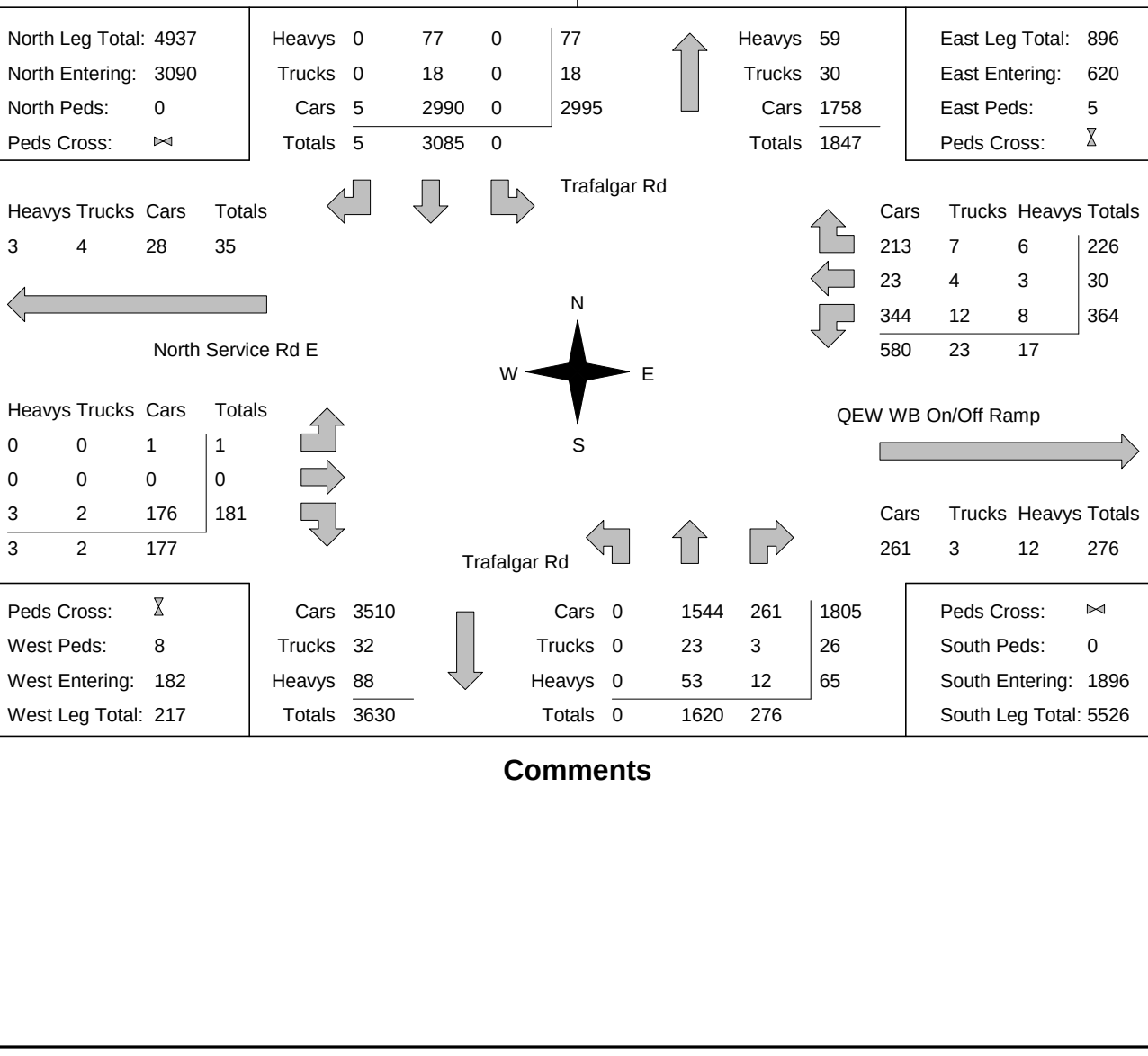
Municipality: Halton Region
Site #: 0000003015
Intersection: Trafalgar Rd & North Service Rd E
TFR File #: 7
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ North Service Rd E

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

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

Municipality: Halton Region
Site #: 0000003015
Intersection: Trafalgar Rd & North Service Rd E
TFR File #: 7
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S

North Leg Total:	3903
North Entering:	1954
North Peds:	3
Peds Cross:	⋈

Heavys	0	62	0	62
Trucks	0	27	0	27
Cars	10	1855	0	1865
Totals	10	1944	0	

Heavys	64
Trucks	63
Cars	1822
Totals	1949

East Leg Total:	1092
East Entering:	742
East Peds:	9
Peds Cross:	⧖

Trafalgar Rd

Heavys	Trucks	Cars	Totals
0	2	81	83

Cars	Trucks	Heavys	Totals
230	16	18	264
71	2	0	73
387	13	5	405
688	31	23	

North Service Rd E

N
W E
S

Heavys	Trucks	Cars	Totals
1	1	24	26
0	0	0	0
4	3	214	221
5	4	238	

QEW WB On/Off Ramp

Cars	Trucks	Heavys	Totals
331	11	8	350

Trafalgar Rd

Peds Cross:	⧖
West Peds:	15
West Entering:	247
West Leg Total:	330

Cars	2456			
Trucks	43			
Heavys	71			
Totals	2570			

Cars	0	1568	331	1899
Trucks	0	46	11	57
Heavys	0	45	8	53
Totals	0	1659	350	

Peds Cross:	⋈
South Peds:	3
South Entering:	2009
South Leg Total:	4579

Comments

Trafalgar Rd @ North Service Rd E

Afternoon Peak Diagram

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

One Hour Peak
From: 17:00:00
To: 18:00:00

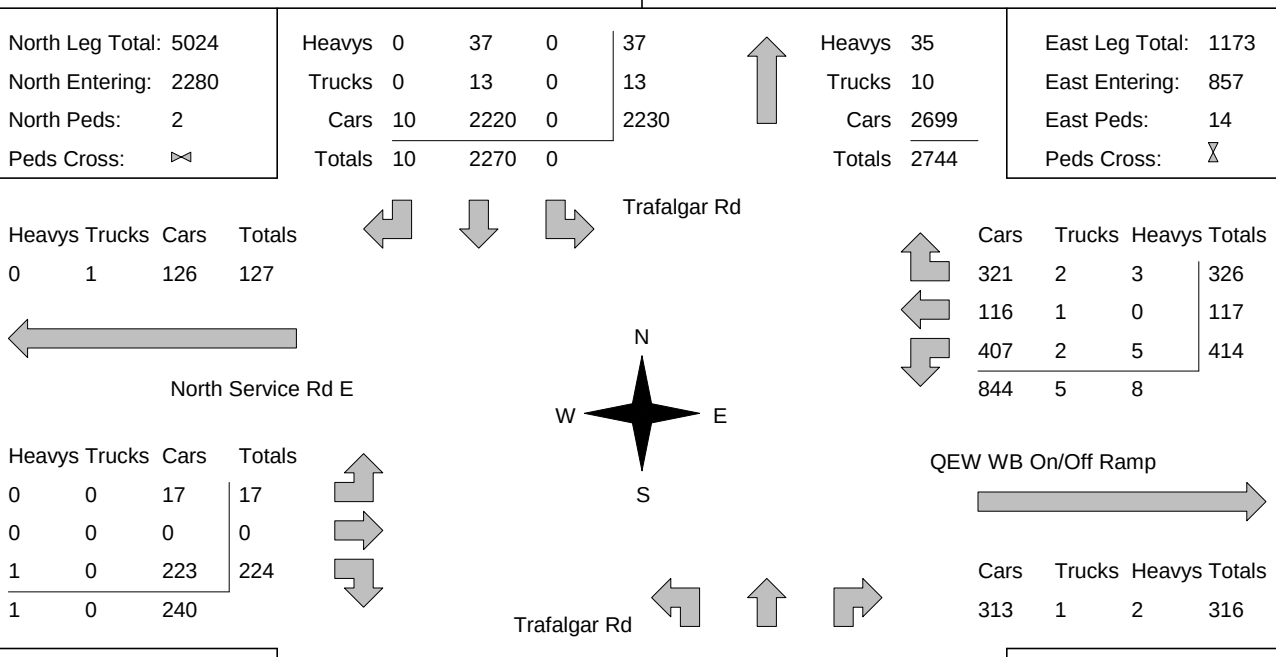
Municipality: Halton Region
Site #: 0000003015
Intersection: Trafalgar Rd & North Service Rd E
TFR File #: 7
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ North Service Rd E

Total Count Diagram

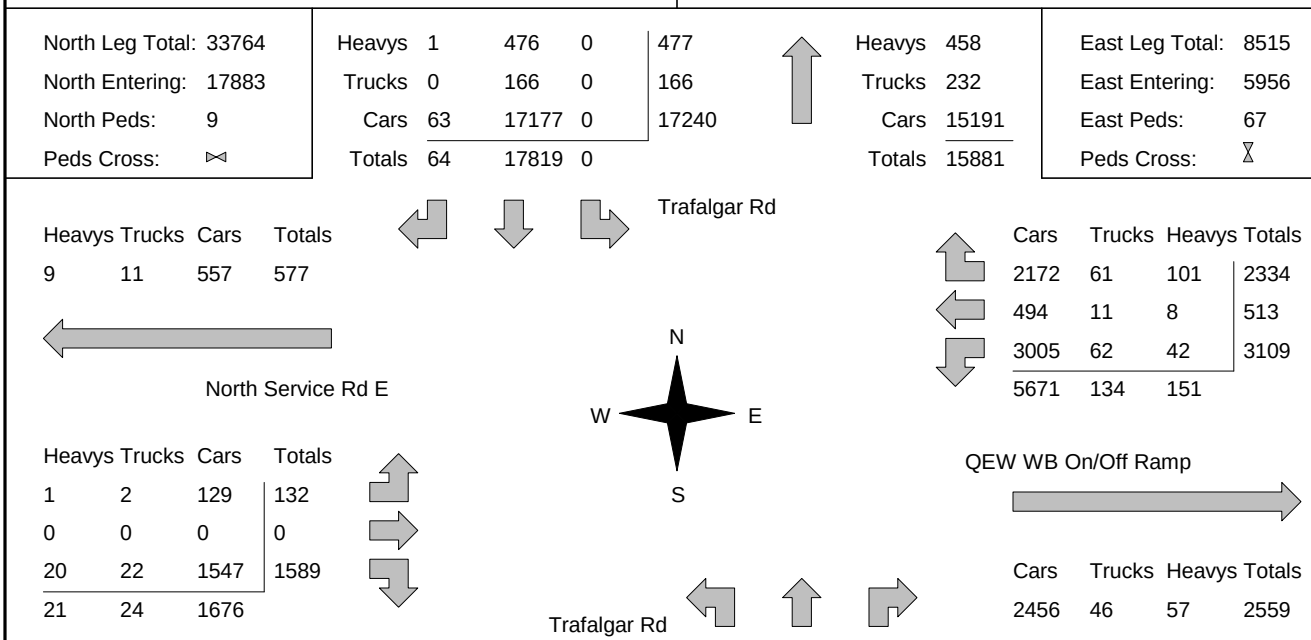
Municipality: Halton Region
Site #: 0000003015
Intersection: Trafalgar Rd & North Service Rd E
TFR File #: 7
Count date: 1-Jun-2017

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Trafalgar Rd runs N/S



Comments

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Argus Road & South Service Road
Site Code:
Start Date: 01/10/2019

Turning Movement Data

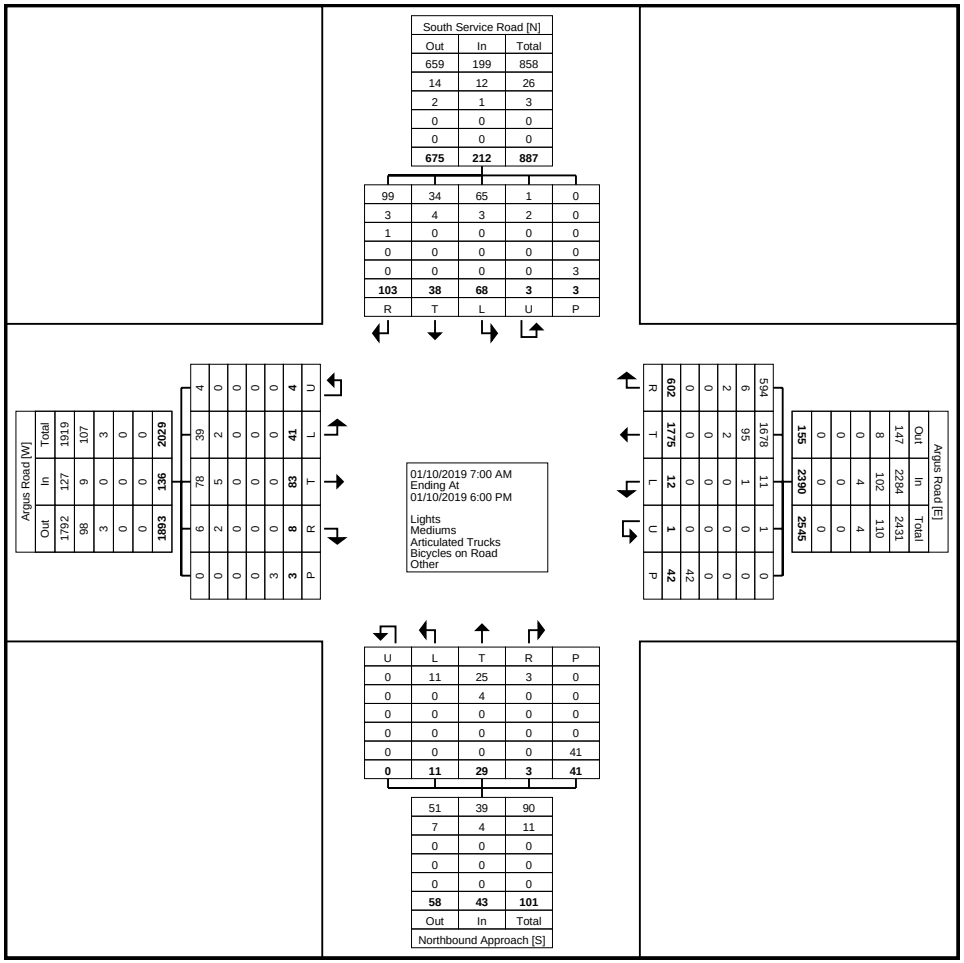
Start Time	Argus Road Eastbound						Argus Road Westbound						Northbound Approach Northbound						South Service Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	1	0	0	1	1	1	102	17	0	4	120	1	0	0	0	2	1	0	0	0	0	1	0	122
7:15 AM	0	0	0	0	0	0	0	128	17	0	2	145	0	0	0	0	1	0	0	0	0	0	0	0	145
7:30 AM	1	1	1	0	0	3	0	127	25	0	1	152	0	0	0	0	1	0	1	0	0	0	0	1	156
7:45 AM	0	0	0	0	0	0	2	157	28	0	2	187	0	1	0	0	2	1	0	0	1	0	1	1	189
Hourly Total	1	2	1	0	1	4	3	514	87	0	9	604	1	1	0	0	6	2	1	0	1	0	2	2	612
8:00 AM	0	1	1	0	0	2	1	130	21	0	1	152	0	0	0	0	2	0	2	2	2	1	0	7	161
8:15 AM	0	3	0	0	1	3	1	125	39	0	1	165	1	0	0	0	1	1	1	0	0	0	0	1	170
8:30 AM	2	2	0	0	0	4	0	60	27	0	0	87	1	1	0	0	1	2	0	1	2	0	0	3	96
8:45 AM	2	2	0	0	0	4	0	85	30	0	1	115	0	1	0	0	0	1	1	2	0	0	0	3	123
Hourly Total	4	8	1	0	1	13	2	400	117	0	3	519	2	2	0	0	4	4	4	5	4	1	0	14	550
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	5	1	1	0	9	0	30	18	0	0	48	1	3	0	0	1	4	4	3	3	1	0	11	72
11:15 AM	2	1	0	0	0	3	1	33	19	0	0	53	0	2	1	0	0	3	2	2	8	0	0	12	71
11:30 AM	4	4	0	0	0	8	1	32	25	0	3	58	0	1	0	0	2	1	2	1	3	0	0	6	73
11:45 AM	1	0	0	0	0	1	0	38	20	0	1	58	1	4	0	0	0	5	2	4	2	0	0	8	72
Hourly Total	9	10	1	1	0	21	2	133	82	0	4	217	2	10	1	0	3	13	10	10	16	1	0	37	288
12:00 PM	1	4	1	0	0	6	1	22	24	1	1	48	1	3	0	0	0	4	3	3	5	0	0	11	69
12:15 PM	0	0	0	0	0	0	1	32	15	0	1	48	0	1	0	0	0	1	2	3	3	0	0	8	57
12:30 PM	0	2	0	1	0	3	2	30	20	0	2	52	0	0	1	0	0	1	2	0	5	0	0	7	63
12:45 PM	1	6	1	0	0	8	0	37	20	0	0	57	0	1	0	0	0	1	1	0	3	0	0	4	70
Hourly Total	2	12	2	1	0	17	4	121	79	1	4	205	1	5	1	0	0	7	8	6	16	0	0	30	259
1:00 PM	1	2	0	0	0	3	0	32	24	0	2	56	0	0	0	0	3	0	0	0	5	0	0	5	64
1:15 PM	1	3	1	0	0	5	0	44	10	0	0	54	0	1	0	0	0	1	3	0	4	0	0	7	67
1:30 PM	1	2	0	1	0	4	0	30	27	0	4	57	1	0	0	0	5	1	2	1	2	0	0	5	67
1:45 PM	1	3	1	0	0	5	0	38	17	0	2	55	0	2	0	0	0	2	1	2	2	0	0	5	67
Hourly Total	4	10	2	1	0	17	0	144	78	0	8	222	1	3	0	0	8	4	6	3	13	0	0	22	265
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	5	3	0	0	1	8	0	36	16	0	4	52	1	0	0	0	5	1	3	2	5	0	0	10	71
3:15 PM	1	2	0	0	0	3	0	31	18	0	0	49	0	1	0	0	2	1	1	1	1	0	0	3	56
3:30 PM	1	7	1	0	0	9	0	31	6	0	1	37	0	2	1	0	3	3	4	2	4	0	0	10	59
3:45 PM	1	5	0	0	0	6	1	36	12	0	1	49	0	1	0	0	1	1	2	1	5	1	0	9	65
Hourly Total	8	17	1	0	1	26	1	134	52	0	6	187	1	4	1	0	11	6	10	6	15	1	0	32	251
4:00 PM	5	1	0	1	0	7	0	44	12	0	3	56	1	3	0	0	1	4	4	3	2	0	0	9	76
4:15 PM	0	3	0	0	0	3	0	46	19	0	1	65	1	0	0	0	2	1	3	0	2	0	0	5	74
4:30 PM	3	4	0	0	0	7	0	37	9	0	1	46	0	0	0	0	1	0	1	0	4	0	0	5	58
4:45 PM	1	0	0	0	0	1	0	51	12	0	0	63	1	0	0	0	1	1	4	2	5	0	0	11	76
Hourly Total	9	8	0	1	0	18	0	178	52	0	5	230	3	3	0	0	5	6	12	5	13	0	0	30	284

5:00 PM	2	5	0	0	0	7	0	27	16	0	0	43	0	1	0	0	0	1	10	1	13	0	1	24	75
5:15 PM	1	3	0	0	0	4	0	40	10	0	1	50	0	0	0	0	1	0	1	1	5	0	0	7	61
5:30 PM	0	4	0	0	0	4	0	36	15	0	1	51	0	0	0	0	2	0	1	1	2	0	0	4	59
5:45 PM	1	4	0	0	0	5	0	48	14	0	1	62	0	0	0	0	1	0	5	0	5	0	0	10	77
Hourly Total	4	16	0	0	0	20	0	151	55	0	3	206	0	1	0	0	4	1	17	3	25	0	1	45	272
Grand Total	41	83	8	4	3	136	12	1775	602	1	42	2390	11	29	3	0	41	43	68	38	103	3	3	212	2781
Approach %	30.1	61.0	5.9	2.9	-	-	0.5	74.3	25.2	0.0	-	-	25.6	67.4	7.0	0.0	-	-	32.1	17.9	48.6	1.4	-	-	-
Total %	1.5	3.0	0.3	0.1	-	4.9	0.4	63.8	21.6	0.0	-	85.9	0.4	1.0	0.1	0.0	-	1.5	2.4	1.4	3.7	0.1	-	7.6	-
Lights	39	78	6	4	-	127	11	1678	594	1	-	2284	11	25	3	0	-	39	65	34	99	1	-	199	2649
% Lights	95.1	94.0	75.0	100.0	-	93.4	91.7	94.5	98.7	100.0	-	95.6	100.0	86.2	100.0	-	-	90.7	95.6	89.5	96.1	33.3	-	93.9	95.3
Mediums	2	5	2	0	-	9	1	95	6	0	-	102	0	4	0	0	-	4	3	4	3	2	-	12	127
% Mediums	4.9	6.0	25.0	0.0	-	6.6	8.3	5.4	1.0	0.0	-	4.3	0.0	13.8	0.0	-	-	9.3	4.4	10.5	2.9	66.7	-	5.7	4.6
Articulated Trucks	0	0	0	0	-	0	0	2	2	0	-	4	0	0	0	0	-	0	0	0	1	0	-	1	5
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.3	0.0	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.0	0.0	-	0.5	0.2
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	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	-	-	-	-	3	-	-	-	-	-	42	-	-	-	-	-	41	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Argus Road & South Service Road
Site Code:
Start Date: 01/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Argus Road & South Service Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Argus Road Eastbound						Argus Road Westbound						Northbound Approach Northbound						South Service Road Southbound						
	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	Int. Total
7:30 AM	1	1	1	0	0	3	0	127	25	0	1	152	0	0	0	0	1	0	1	0	0	0	0	1	156
7:45 AM	0	0	0	0	0	0	2	157	28	0	2	187	0	1	0	0	2	1	0	0	1	0	1	1	189
8:00 AM	0	1	1	0	0	2	1	130	21	0	1	152	0	0	0	0	2	0	2	2	2	1	0	7	161
8:15 AM	0	3	0	0	1	3	1	125	39	0	1	165	1	0	0	0	1	1	1	0	0	0	0	1	170
Total	1	5	2	0	1	8	4	539	113	0	5	656	1	1	0	0	6	2	4	2	3	1	1	10	676
Approach %	12.5	62.5	25.0	0.0	-	-	0.6	82.2	17.2	0.0	-	-	50.0	50.0	0.0	0.0	-	-	40.0	20.0	30.0	10.0	-	-	-
Total %	0.1	0.7	0.3	0.0	-	1.2	0.6	79.7	16.7	0.0	-	97.0	0.1	0.1	0.0	0.0	-	0.3	0.6	0.3	0.4	0.1	-	1.5	-
PHF	0.250	0.417	0.500	0.000	-	0.667	0.500	0.858	0.724	0.000	-	0.877	0.250	0.250	0.000	0.000	-	0.500	0.500	0.250	0.375	0.250	-	0.357	0.894
Lights	0	5	2	0	-	7	4	524	113	0	-	641	1	1	0	0	-	2	4	2	3	1	-	10	660
% Lights	0.0	100.0	100.0	-	-	87.5	100.0	97.2	100.0	-	-	97.7	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	100.0	-	100.0	97.6
Mediums	1	0	0	0	-	1	0	15	0	0	-	15	0	0	0	0	-	0	0	0	0	0	-	0	16
% Mediums	100.0	0.0	0.0	-	-	12.5	0.0	2.8	0.0	-	-	2.3	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	2.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	0.0	-	-	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
% 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	-	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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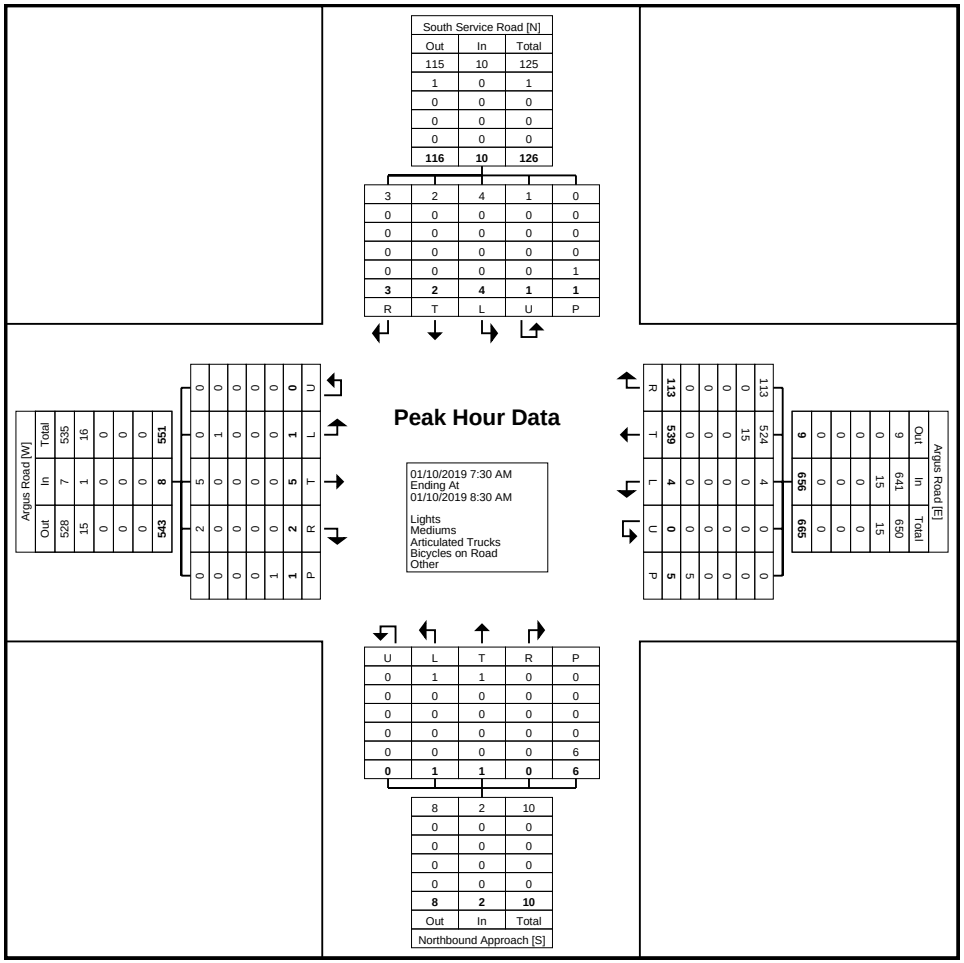

Turning Movement Peak Hour Data Plot (7:30 AM)

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Count Name: Argus Road & South Service Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Argus Road Eastbound						Argus Road Westbound						Northbound Approach Northbound						South Service Road Southbound						
	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	Int. Total
11:00 AM	2	5	1	1	0	9	0	30	18	0	0	48	1	3	0	0	1	4	4	3	3	1	0	11	72
11:15 AM	2	1	0	0	0	3	1	33	19	0	0	53	0	2	1	0	0	3	2	2	8	0	0	12	71
11:30 AM	4	4	0	0	0	8	1	32	25	0	3	58	0	1	0	0	2	1	2	1	3	0	0	6	73
11:45 AM	1	0	0	0	0	1	0	38	20	0	1	58	1	4	0	0	0	5	2	4	2	0	0	8	72
Total	9	10	1	1	0	21	2	133	82	0	4	217	2	10	1	0	3	13	10	10	16	1	0	37	288
Approach %	42.9	47.6	4.8	4.8	-	-	0.9	61.3	37.8	0.0	-	-	15.4	76.9	7.7	0.0	-	-	27.0	27.0	43.2	2.7	-	-	-
Total %	3.1	3.5	0.3	0.3	-	7.3	0.7	46.2	28.5	0.0	-	75.3	0.7	3.5	0.3	0.0	-	4.5	3.5	3.5	5.6	0.3	-	12.8	-
PHF	0.563	0.500	0.250	0.250	-	0.583	0.500	0.875	0.820	0.000	-	0.935	0.500	0.625	0.250	0.000	-	0.650	0.625	0.625	0.500	0.250	-	0.771	0.986
Lights	9	10	1	1	-	21	1	126	82	0	-	209	2	8	1	0	-	11	10	8	15	0	-	33	274
% Lights	100.0	100.0	100.0	100.0	-	100.0	50.0	94.7	100.0	-	-	96.3	100.0	80.0	100.0	-	-	84.6	100.0	80.0	93.8	0.0	-	89.2	95.1
Mediums	0	0	0	0	-	0	1	7	0	0	-	8	0	2	0	0	-	2	0	2	1	1	-	4	14
% Mediums	0.0	0.0	0.0	0.0	-	0.0	50.0	5.3	0.0	-	-	3.7	0.0	20.0	0.0	-	-	15.4	0.0	20.0	6.3	100.0	-	10.8	4.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	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 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	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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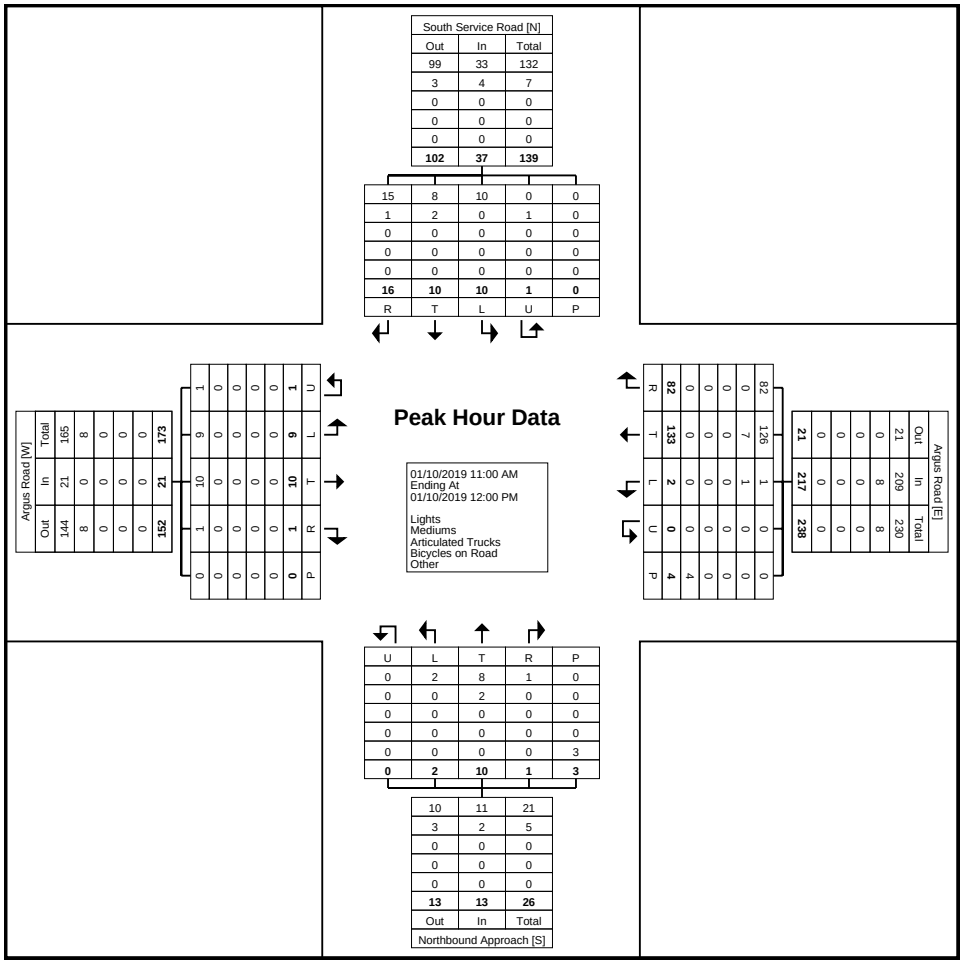

Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
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Count Name: Argus Road & South Service Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Argus Road Eastbound						Argus Road Westbound						Northbound Approach Northbound						South Service Road Southbound						
	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	Int. Total
4:00 PM	5	1	0	1	0	7	0	44	12	0	3	56	1	3	0	0	1	4	4	3	2	0	0	9	76
4:15 PM	0	3	0	0	0	3	0	46	19	0	1	65	1	0	0	0	2	1	3	0	2	0	0	5	74
4:30 PM	3	4	0	0	0	7	0	37	9	0	1	46	0	0	0	0	1	0	1	0	4	0	0	5	58
4:45 PM	1	0	0	0	0	1	0	51	12	0	0	63	1	0	0	0	1	1	4	2	5	0	0	11	76
Total	9	8	0	1	0	18	0	178	52	0	5	230	3	3	0	0	5	6	12	5	13	0	0	30	284
Approach %	50.0	44.4	0.0	5.6	-	-	0.0	77.4	22.6	0.0	-	-	50.0	50.0	0.0	0.0	-	-	40.0	16.7	43.3	0.0	-	-	-
Total %	3.2	2.8	0.0	0.4	-	6.3	0.0	62.7	18.3	0.0	-	81.0	1.1	1.1	0.0	0.0	-	2.1	4.2	1.8	4.6	0.0	-	10.6	-
PHF	0.450	0.500	0.000	0.250	-	0.643	0.000	0.873	0.684	0.000	-	0.885	0.750	0.250	0.000	0.000	-	0.375	0.750	0.417	0.650	0.000	-	0.682	0.934
Lights	9	7	0	1	-	17	0	160	52	0	-	212	3	3	0	0	-	6	12	5	13	0	-	30	265
% Lights	100.0	87.5	-	100.0	-	94.4	-	89.9	100.0	-	-	92.2	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	93.3
Mediums	0	1	0	0	-	1	0	18	0	0	-	18	0	0	0	0	-	0	0	0	0	0	-	0	19
% Mediums	0.0	12.5	-	0.0	-	5.6	-	10.1	0.0	-	-	7.8	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	6.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	-	-	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
% 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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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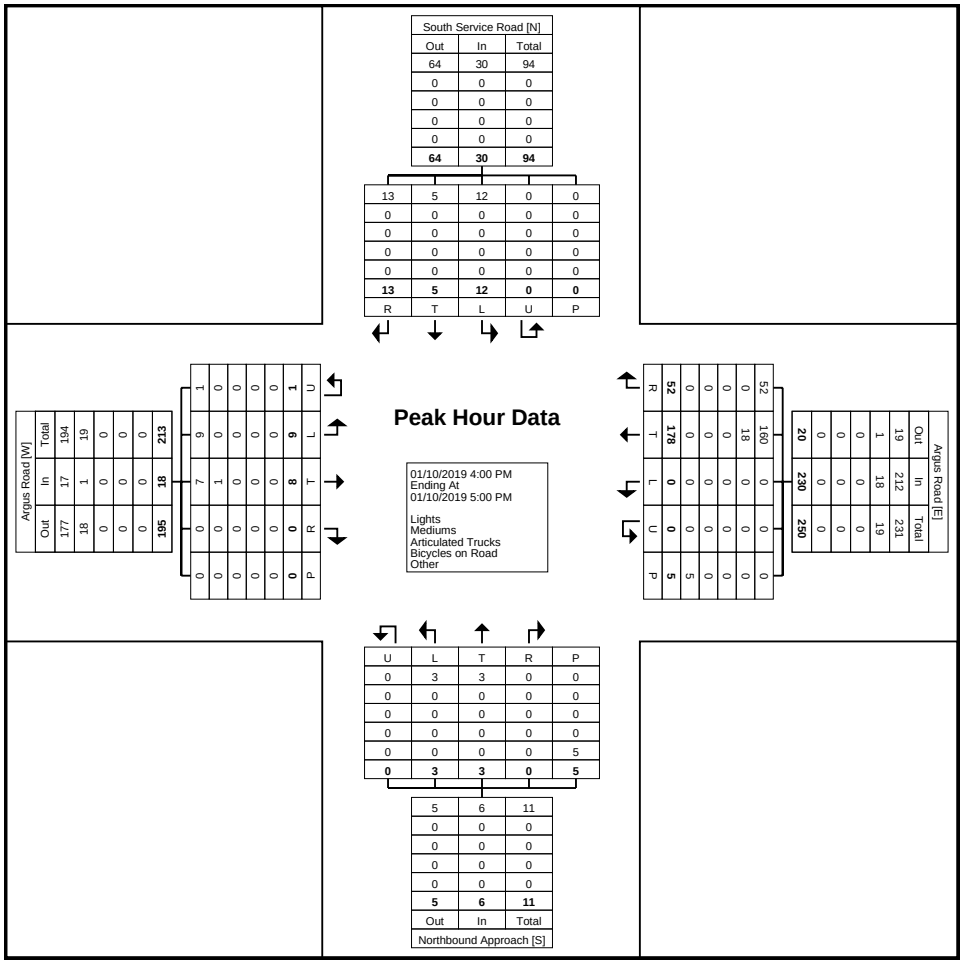

Turning Movement Peak Hour Data Plot (4:00 PM)

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Count Name: Argus Road & South Service Road
Site Code:
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519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019

Turning Movement Data

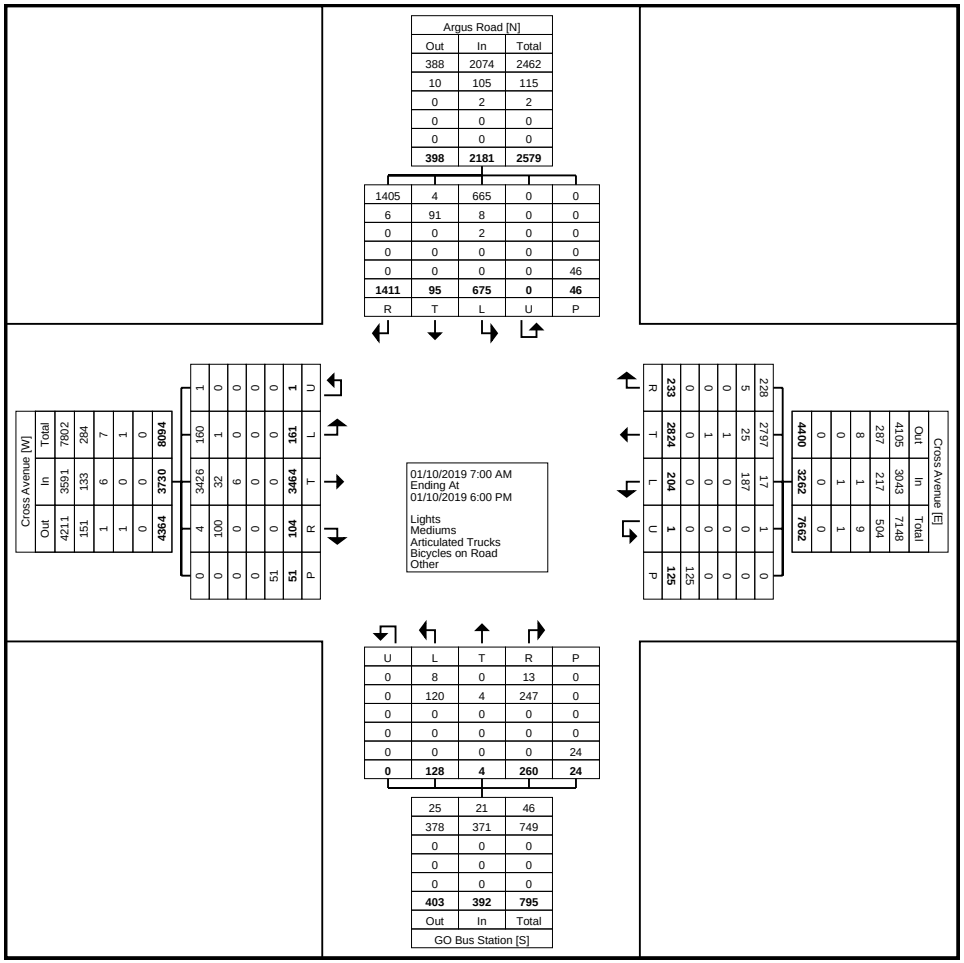
Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						GO Bus Station Northbound						Argus Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	2	75	5	0	1	82	12	134	0	0	1	146	7	0	14	0	0	21	5	2	85	0	1	92	341
7:15 AM	3	82	2	0	3	87	7	154	2	0	10	163	1	0	7	0	0	8	13	2	112	0	2	127	385
7:30 AM	2	90	5	0	1	97	9	131	5	0	8	145	6	0	14	0	1	20	11	3	103	0	0	117	379
7:45 AM	6	87	2	0	1	95	7	157	4	0	3	168	1	0	9	0	0	10	17	6	130	0	0	153	426
Hourly Total	13	334	14	0	6	361	35	576	11	0	22	622	15	0	44	0	1	59	46	13	430	0	3	489	1531
8:00 AM	7	76	5	0	0	88	11	118	7	0	5	136	9	0	16	0	2	25	11	4	110	0	1	125	374
8:15 AM	14	102	1	0	1	117	10	145	6	0	4	161	3	0	6	0	0	9	14	2	120	0	0	136	423
8:30 AM	10	88	6	0	1	104	10	96	6	0	2	112	9	0	13	0	0	22	17	2	39	0	0	58	296
8:45 AM	12	81	2	0	1	95	8	84	8	0	3	100	4	1	3	0	0	8	8	4	57	0	0	69	272
Hourly Total	43	347	14	0	3	404	39	443	27	0	14	509	25	1	38	0	2	64	50	12	326	0	1	388	1365
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	6	81	4	0	1	91	6	59	7	0	3	72	6	0	8	0	1	14	20	4	22	0	0	46	223
11:15 AM	4	73	2	0	2	79	2	66	10	0	1	78	0	0	3	0	0	3	20	0	30	0	0	50	210
11:30 AM	7	76	7	0	1	90	7	66	7	0	3	80	7	0	11	0	1	18	21	2	33	0	2	56	244
11:45 AM	3	94	1	0	1	98	1	67	8	1	1	77	0	0	3	0	0	3	28	2	24	0	1	54	232
Hourly Total	20	324	14	0	5	358	16	258	32	1	8	307	13	0	25	0	2	38	89	8	109	0	3	206	909
12:00 PM	3	77	4	0	4	84	7	73	6	0	4	86	3	0	4	0	1	7	31	3	20	0	1	54	231
12:15 PM	7	88	1	0	0	96	2	78	4	0	1	84	4	0	7	0	0	11	23	0	37	0	1	60	251
12:30 PM	1	97	4	0	3	102	7	76	9	0	4	92	4	0	8	0	0	12	25	3	19	0	0	47	253
12:45 PM	7	98	1	0	2	106	3	82	7	0	1	92	1	0	3	0	0	4	26	1	21	0	3	48	250
Hourly Total	18	360	10	0	9	388	19	309	26	0	10	354	12	0	22	0	1	34	105	7	97	0	5	209	985
1:00 PM	7	117	4	0	2	128	8	89	10	0	1	107	9	0	9	0	1	18	18	4	19	0	2	41	294
1:15 PM	4	99	1	0	0	104	3	76	9	0	3	88	1	0	2	0	0	3	18	0	25	0	2	43	238
1:30 PM	3	75	6	0	2	84	8	69	4	0	1	81	7	0	8	0	1	15	22	1	23	0	0	46	226
1:45 PM	5	84	1	0	1	90	1	82	13	0	4	96	0	0	4	0	1	4	17	1	18	0	2	36	226
Hourly Total	19	375	12	0	5	406	20	316	36	0	9	372	17	0	23	0	3	40	75	6	85	0	6	166	984
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	92	4	0	4	100	8	82	10	0	10	100	7	0	10	0	6	17	24	4	24	0	0	52	269
3:15 PM	6	108	1	0	0	115	3	83	9	0	6	95	3	0	2	0	0	5	22	4	27	0	1	53	268
3:30 PM	7	101	4	0	5	112	9	63	14	0	8	86	5	0	10	0	1	15	11	3	25	0	10	39	252
3:45 PM	4	84	1	0	1	89	1	87	4	0	2	92	3	0	2	0	0	5	19	3	27	0	3	49	235
Hourly Total	21	385	10	0	10	416	21	315	37	0	26	373	18	0	24	0	7	42	76	14	103	0	14	193	1024
4:00 PM	4	145	4	0	0	153	8	72	6	0	6	86	5	0	11	0	1	16	27	5	34	0	0	66	321
4:15 PM	5	90	2	0	0	97	4	72	4	0	3	80	2	1	7	0	2	10	23	3	33	0	1	59	246
4:30 PM	3	195	4	1	1	203	4	64	10	0	5	78	2	0	13	0	1	15	25	6	36	0	3	67	363
4:45 PM	2	122	5	0	0	129	4	72	5	0	2	81	5	0	10	0	0	15	25	3	37	0	1	65	290
Hourly Total	14	552	15	1	1	582	20	280	25	0	16	325	14	1	41	0	4	56	100	17	140	0	5	257	1220

5:00 PM	2	212	5	0	2	219	9	83	8	0	4	100	3	0	14	0	1	17	39	6	21	0	0	66	402
5:15 PM	4	108	3	0	6	115	8	82	12	0	8	102	4	0	8	0	2	12	32	2	30	0	2	64	293
5:30 PM	2	225	5	0	2	232	8	86	8	0	3	102	2	0	16	0	0	18	24	4	31	0	4	59	411
5:45 PM	5	242	2	0	2	249	9	76	11	0	5	96	5	2	5	0	1	12	39	6	39	0	3	84	441
Hourly Total	13	787	15	0	12	815	34	327	39	0	20	400	14	2	43	0	4	59	134	18	121	0	9	273	1547
Grand Total	161	3464	104	1	51	3730	204	2824	233	1	125	3262	128	4	260	0	24	392	675	95	1411	0	46	2181	9565
Approach %	4.3	92.9	2.8	0.0	-	-	6.3	86.6	7.1	0.0	-	-	32.7	1.0	66.3	0.0	-	-	30.9	4.4	64.7	0.0	-	-	-
Total %	1.7	36.2	1.1	0.0	-	39.0	2.1	29.5	2.4	0.0	-	34.1	1.3	0.0	2.7	0.0	-	4.1	7.1	1.0	14.8	0.0	-	22.8	-
Lights	160	3426	4	1	-	3591	17	2797	228	1	-	3043	8	0	13	0	-	21	665	4	1405	0	-	2074	8729
% Lights	99.4	98.9	3.8	100.0	-	96.3	8.3	99.0	97.9	100.0	-	93.3	6.3	0.0	5.0	-	-	5.4	98.5	4.2	99.6	-	-	95.1	91.3
Mediums	1	32	100	0	-	133	187	25	5	0	-	217	120	4	247	0	-	371	8	91	6	0	-	105	826
% Mediums	0.6	0.9	96.2	0.0	-	3.6	91.7	0.9	2.1	0.0	-	6.7	93.8	100.0	95.0	-	-	94.6	1.2	95.8	0.4	-	-	4.8	8.6
Articulated Trucks	0	6	0	0	-	6	0	1	0	0	-	1	0	0	0	0	-	0	2	0	0	0	-	2	9
% Articulated Trucks	0.0	0.2	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	-	0.1	0.1
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	0.0	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	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	6.5	-	-
Pedestrians	-	-	-	-	51	-	-	-	-	-	125	-	-	-	-	-	24	-	-	-	-	-	43	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	93.5	-	-

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						GO Bus Station Northbound						Argus 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	
7:30 AM	2	90	5	0	1	97	9	131	5	0	8	145	6	0	14	0	1	20	11	3	103	0	0	117	379
7:45 AM	6	87	2	0	1	95	7	157	4	0	3	168	1	0	9	0	0	10	17	6	130	0	0	153	426
8:00 AM	7	76	5	0	0	88	11	118	7	0	5	136	9	0	16	0	2	25	11	4	110	0	1	125	374
8:15 AM	14	102	1	0	1	117	10	145	6	0	4	161	3	0	6	0	0	9	14	2	120	0	0	136	423
Total	29	355	13	0	3	397	37	551	22	0	20	610	19	0	45	0	3	64	53	15	463	0	1	531	1602
Approach %	7.3	89.4	3.3	0.0	-	-	6.1	90.3	3.6	0.0	-	-	29.7	0.0	70.3	0.0	-	-	10.0	2.8	87.2	0.0	-	-	-
Total %	1.8	22.2	0.8	0.0	-	24.8	2.3	34.4	1.4	0.0	-	38.1	1.2	0.0	2.8	0.0	-	4.0	3.3	0.9	28.9	0.0	-	33.1	-
PHF	0.518	0.870	0.650	0.000	-	0.848	0.841	0.877	0.786	0.000	-	0.908	0.528	0.000	0.703	0.000	-	0.640	0.779	0.625	0.890	0.000	-	0.868	0.940
Lights	29	350	0	0	-	379	3	548	21	0	-	572	1	0	4	0	-	5	53	1	462	0	-	516	1472
% Lights	100.0	98.6	0.0	-	-	95.5	8.1	99.5	95.5	-	-	93.8	5.3	-	8.9	-	-	7.8	100.0	6.7	99.8	-	-	97.2	91.9
Mediums	0	3	13	0	-	16	34	3	1	0	-	38	18	0	41	0	-	59	0	14	1	0	-	15	128
% Mediums	0.0	0.8	100.0	-	-	4.0	91.9	0.5	4.5	-	-	6.2	94.7	-	91.1	-	-	92.2	0.0	93.3	0.2	-	-	2.8	8.0
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	20	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-

Paradigm Transportation Solutions Limited
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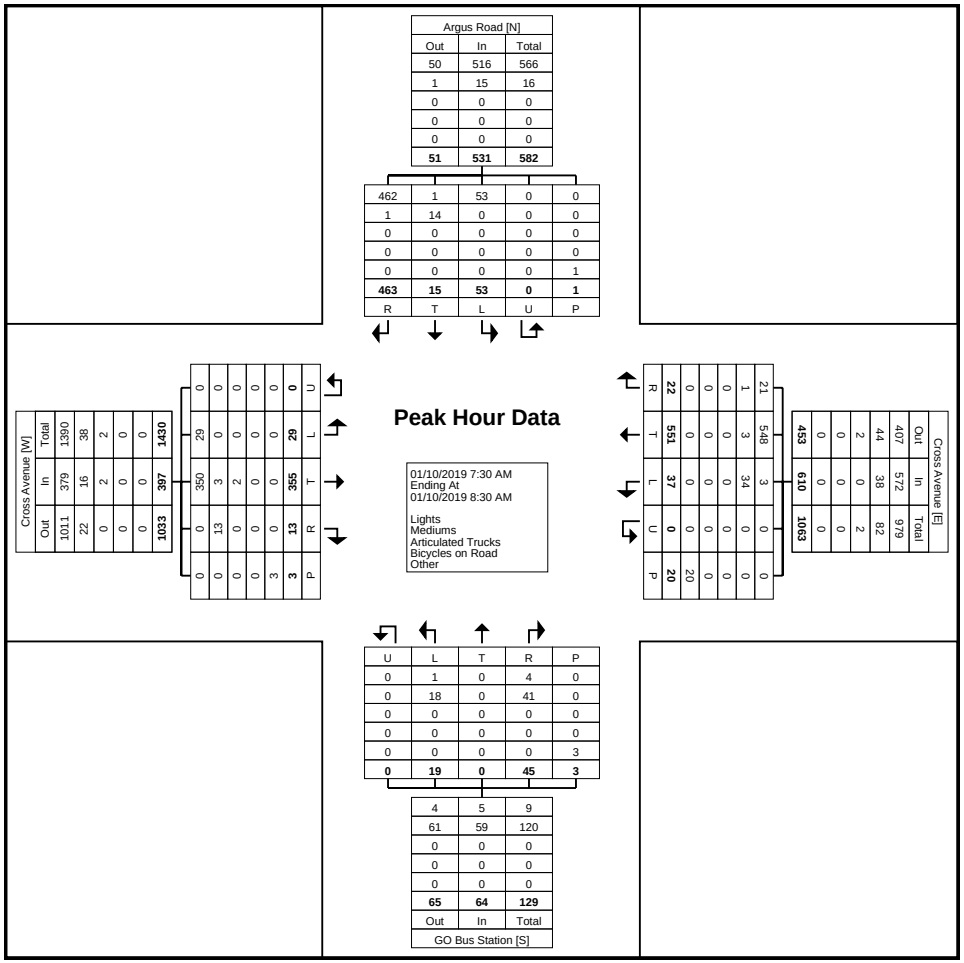
Site Code:
Start Date: 01/10/2019



Turning Movement Peak Hour Data Plot (7:30 AM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (12:15 PM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						GO Bus Station Northbound						Argus 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	
12:15 PM	7	88	1	0	0	96	2	78	4	0	1	84	4	0	7	0	0	11	23	0	37	0	1	60	251
12:30 PM	1	97	4	0	3	102	7	76	9	0	4	92	4	0	8	0	0	12	25	3	19	0	0	47	253
12:45 PM	7	98	1	0	2	106	3	82	7	0	1	92	1	0	3	0	0	4	26	1	21	0	3	48	250
1:00 PM	7	117	4	0	2	128	8	89	10	0	1	107	9	0	9	0	1	18	18	4	19	0	2	41	294
Total	22	400	10	0	7	432	20	325	30	0	7	375	18	0	27	0	1	45	92	8	96	0	6	196	1048
Approach %	5.1	92.6	2.3	0.0	-	-	5.3	86.7	8.0	0.0	-	-	40.0	0.0	60.0	0.0	-	-	46.9	4.1	49.0	0.0	-	-	-
Total %	2.1	38.2	1.0	0.0	-	41.2	1.9	31.0	2.9	0.0	-	35.8	1.7	0.0	2.6	0.0	-	4.3	8.8	0.8	9.2	0.0	-	18.7	-
PHF	0.786	0.855	0.625	0.000	-	0.844	0.625	0.913	0.750	0.000	-	0.876	0.500	0.000	0.750	0.000	-	0.625	0.885	0.500	0.649	0.000	-	0.817	0.891
Lights	22	397	0	0	-	419	2	318	30	0	-	350	4	0	0	0	-	4	89	1	96	0	-	186	959
% Lights	100.0	99.3	0.0	-	-	97.0	10.0	97.8	100.0	-	-	93.3	22.2	-	0.0	-	-	8.9	96.7	12.5	100.0	-	-	94.9	91.5
Mediums	0	3	10	0	-	13	18	7	0	0	-	25	14	0	27	0	-	41	2	7	0	0	-	9	88
% Mediums	0.0	0.8	100.0	-	-	3.0	90.0	2.2	0.0	-	-	6.7	77.8	-	100.0	-	-	91.1	2.2	87.5	0.0	-	-	4.6	8.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.1	0.0	0.0	-	-	0.5	0.1
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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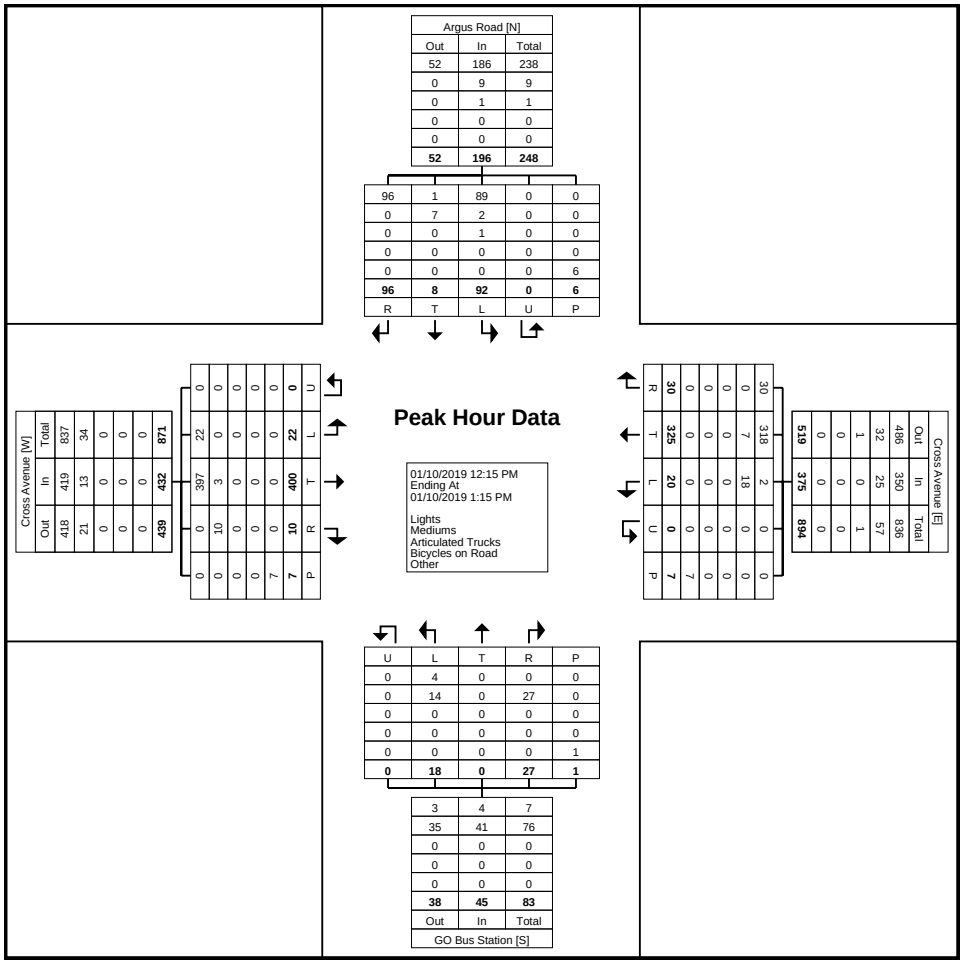
Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019



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

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						GO Bus Station Northbound						Argus 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	
5:00 PM	2	212	5	0	2	219	9	83	8	0	4	100	3	0	14	0	1	17	39	6	21	0	0	66	402
5:15 PM	4	108	3	0	6	115	8	82	12	0	8	102	4	0	8	0	2	12	32	2	30	0	2	64	293
5:30 PM	2	225	5	0	2	232	8	86	8	0	3	102	2	0	16	0	0	18	24	4	31	0	4	59	411
5:45 PM	5	242	2	0	2	249	9	76	11	0	5	96	5	2	5	0	1	12	39	6	39	0	3	84	441
Total	13	787	15	0	12	815	34	327	39	0	20	400	14	2	43	0	4	59	134	18	121	0	9	273	1547
Approach %	1.6	96.6	1.8	0.0	-	-	8.5	81.8	9.8	0.0	-	-	23.7	3.4	72.9	0.0	-	-	49.1	6.6	44.3	0.0	-	-	-
Total %	0.8	50.9	1.0	0.0	-	52.7	2.2	21.1	2.5	0.0	-	25.9	0.9	0.1	2.8	0.0	-	3.8	8.7	1.2	7.8	0.0	-	17.6	-
PHF	0.650	0.813	0.750	0.000	-	0.818	0.944	0.951	0.813	0.000	-	0.980	0.700	0.250	0.672	0.000	-	0.819	0.859	0.750	0.776	0.000	-	0.813	0.877
Lights	13	786	0	0	-	799	1	327	39	0	-	367	0	0	0	0	-	0	134	0	121	0	-	255	1421
% Lights	100.0	99.9	0.0	-	-	98.0	2.9	100.0	100.0	-	-	91.8	0.0	0.0	0.0	-	-	0.0	100.0	0.0	100.0	-	-	93.4	91.9
Mediums	0	1	15	0	-	16	33	0	0	0	-	33	14	2	43	0	-	59	0	18	0	0	-	18	126
% Mediums	0.0	0.1	100.0	-	-	2.0	97.1	0.0	0.0	-	-	8.3	100.0	100.0	100.0	-	-	100.0	0.0	100.0	0.0	-	-	6.6	8.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	0.0	-	-	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
% 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	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	-	12	-	-	-	-	-	20	-	-	-	-	-	4	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-

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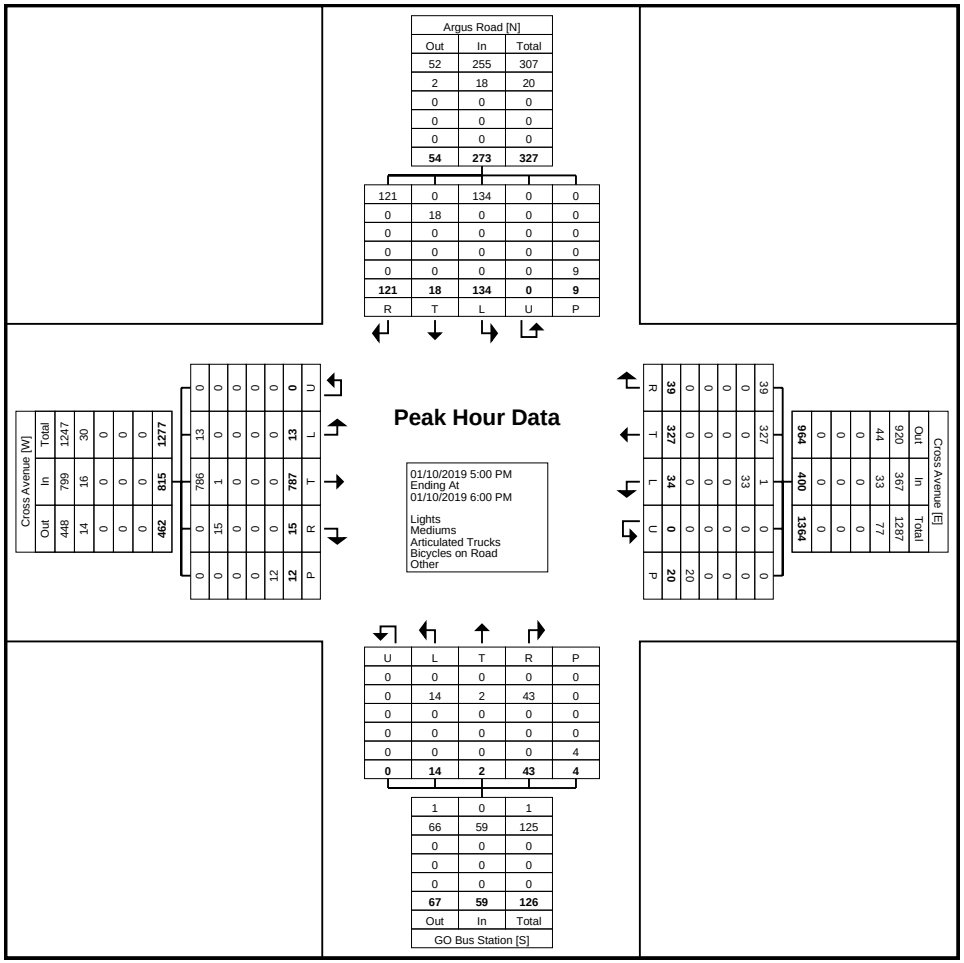


Turning Movement Peak Hour Data Plot (5:00 PM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Argus Road
Site Code:
Start Date: 01/10/2019

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Data

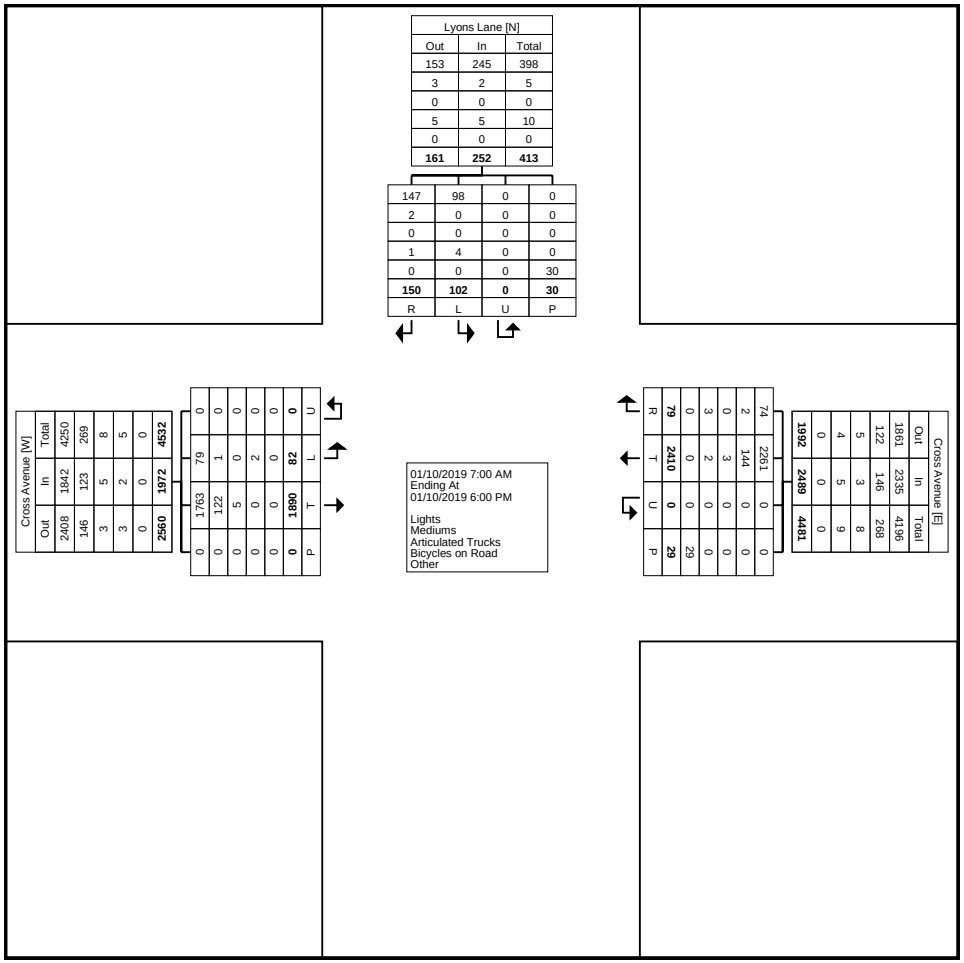
Start Time	Cross Avenue Eastbound					Cross Avenue Westbound					Lyons Lane Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	60	0	0	60	19	0	0	0	19	0	1	0	2	1	80
7:15 AM	4	99	0	0	103	22	3	0	1	25	2	1	0	0	3	131
7:30 AM	2	84	0	0	86	32	4	0	0	36	3	2	0	0	5	127
7:45 AM	2	111	0	0	113	36	0	0	3	36	2	2	0	2	4	153
Hourly Total	8	354	0	0	362	109	7	0	4	116	7	6	0	4	13	491
8:00 AM	8	84	0	0	92	43	3	0	1	46	2	0	0	0	2	140
8:15 AM	7	106	0	0	113	45	2	0	1	47	1	1	0	0	2	162
8:30 AM	5	80	0	0	85	49	1	0	2	50	0	1	0	2	1	136
8:45 AM	1	71	0	0	72	38	6	0	0	44	1	1	0	0	2	118
Hourly Total	21	341	0	0	362	175	12	0	4	187	4	3	0	2	7	556
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	1	54	0	0	55	61	1	0	0	62	3	8	0	2	11	128
11:15 AM	3	43	0	0	46	58	5	0	2	63	1	3	0	1	4	113
11:30 AM	4	50	0	0	54	72	3	0	0	75	7	5	0	0	12	141
11:45 AM	1	42	0	0	43	68	3	0	1	71	5	2	0	0	7	121
Hourly Total	9	189	0	0	198	259	12	0	3	271	16	18	0	3	34	503
12:00 PM	3	53	0	0	56	60	2	0	0	62	10	7	0	2	17	135
12:15 PM	0	55	0	0	55	76	3	0	0	79	0	9	0	1	9	143
12:30 PM	4	59	0	0	63	75	1	0	0	76	5	3	0	1	8	147
12:45 PM	3	47	0	0	50	55	2	0	0	57	3	2	0	0	5	112
Hourly Total	10	214	0	0	224	266	8	0	0	274	18	21	0	4	39	537
1:00 PM	5	50	0	0	55	67	5	0	1	72	4	5	0	1	9	136
1:15 PM	2	49	0	0	51	79	7	0	0	86	2	1	0	2	3	140
1:30 PM	5	53	0	0	58	72	1	0	0	73	1	4	0	2	5	136
1:45 PM	4	48	0	0	52	63	4	0	2	67	5	7	0	1	12	131
Hourly Total	16	200	0	0	216	281	17	0	3	298	12	17	0	6	29	543
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	58	0	0	59	84	3	0	1	87	3	4	0	0	7	153
3:15 PM	1	53	0	0	54	100	4	0	0	104	7	6	0	1	13	171
3:30 PM	1	57	0	0	58	64	2	0	2	66	4	2	0	2	6	130
3:45 PM	2	51	0	0	53	102	4	0	0	106	5	5	0	0	10	169
Hourly Total	5	219	0	0	224	350	13	0	3	363	19	17	0	3	36	623
4:00 PM	2	44	0	0	46	122	0	0	1	122	5	7	0	2	12	180
4:15 PM	3	37	0	0	40	75	1	0	0	76	2	9	0	2	11	127
4:30 PM	1	56	0	0	57	118	2	0	1	120	5	11	0	2	16	193
4:45 PM	1	66	0	0	67	102	0	0	1	102	0	15	0	1	15	184
Hourly Total	7	203	0	0	210	417	3	0	3	420	12	42	0	7	54	684
5:00 PM	3	43	0	0	46	164	2	0	1	166	4	16	0	1	20	232

5:15 PM	0	37	0	0	37	104	3	0	4	107	1	3	0	0	4	148
5:30 PM	1	46	0	0	47	140	2	0	1	142	8	4	0	0	12	201
5:45 PM	2	44	0	0	46	145	0	0	3	145	1	3	0	0	4	195
Hourly Total	6	170	0	0	176	553	7	0	9	560	14	26	0	1	40	776
Grand Total	82	1890	0	0	1972	2410	79	0	29	2489	102	150	0	30	252	4713
Approach %	4.2	95.8	0.0	-	-	96.8	3.2	0.0	-	-	40.5	59.5	0.0	-	-	-
Total %	1.7	40.1	0.0	-	41.8	51.1	1.7	0.0	-	52.8	2.2	3.2	0.0	-	5.3	-
Lights	79	1763	0	-	1842	2261	74	0	-	2335	98	147	0	-	245	4422
% Lights	96.3	93.3	-	-	93.4	93.8	93.7	-	-	93.8	96.1	98.0	-	-	97.2	93.8
Mediums	1	122	0	-	123	144	2	0	-	146	0	2	0	-	2	271
% Mediums	1.2	6.5	-	-	6.2	6.0	2.5	-	-	5.9	0.0	1.3	-	-	0.8	5.8
Articulated Trucks	0	5	0	-	5	3	0	0	-	3	0	0	0	-	0	8
% Articulated Trucks	0.0	0.3	-	-	0.3	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	2	0	0	-	2	2	3	0	-	5	4	1	0	-	5	12
% Bicycles on Road	2.4	0.0	-	-	0.1	0.1	3.8	-	-	0.2	3.9	0.7	-	-	2.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	10.3	-	-	-	-	3.3	-	-
Pedestrians	-	-	-	0	-	-	-	-	26	-	-	-	-	29	-	-
% Pedestrians	-	-	-	-	-	-	-	-	89.7	-	-	-	-	96.7	-	-

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Cross Avenue Eastbound					Cross Avenue Westbound					Lyons Lane Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:45 AM	2	111	0	0	113	36	0	0	3	36	2	2	0	2	4	153
8:00 AM	8	84	0	0	92	43	3	0	1	46	2	0	0	0	2	140
8:15 AM	7	106	0	0	113	45	2	0	1	47	1	1	0	0	2	162
8:30 AM	5	80	0	0	85	49	1	0	2	50	0	1	0	2	1	136
Total	22	381	0	0	403	173	6	0	7	179	5	4	0	4	9	591
Approach %	5.5	94.5	0.0	-	-	96.6	3.4	0.0	-	-	55.6	44.4	0.0	-	-	-
Total %	3.7	64.5	0.0	-	68.2	29.3	1.0	0.0	-	30.3	0.8	0.7	0.0	-	1.5	-
PHF	0.688	0.858	0.000	-	0.892	0.883	0.500	0.000	-	0.895	0.625	0.500	0.000	-	0.563	0.912
Lights	21	363	0	-	384	146	6	0	-	152	2	3	0	-	5	541
% Lights	95.5	95.3	-	-	95.3	84.4	100.0	-	-	84.9	40.0	75.0	-	-	55.6	91.5
Mediums	0	17	0	-	17	26	0	0	-	26	0	1	0	-	1	44
% Mediums	0.0	4.5	-	-	4.2	15.0	0.0	-	-	14.5	0.0	25.0	-	-	11.1	7.4
Articulated Trucks	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Articulated Trucks	0.0	0.3	-	-	0.2	0.6	0.0	-	-	0.6	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	1	0	0	-	1	0	0	0	-	0	3	0	0	-	3	4
% Bicycles on Road	4.5	0.0	-	-	0.2	0.0	0.0	-	-	0.0	60.0	0.0	-	-	33.3	0.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	7	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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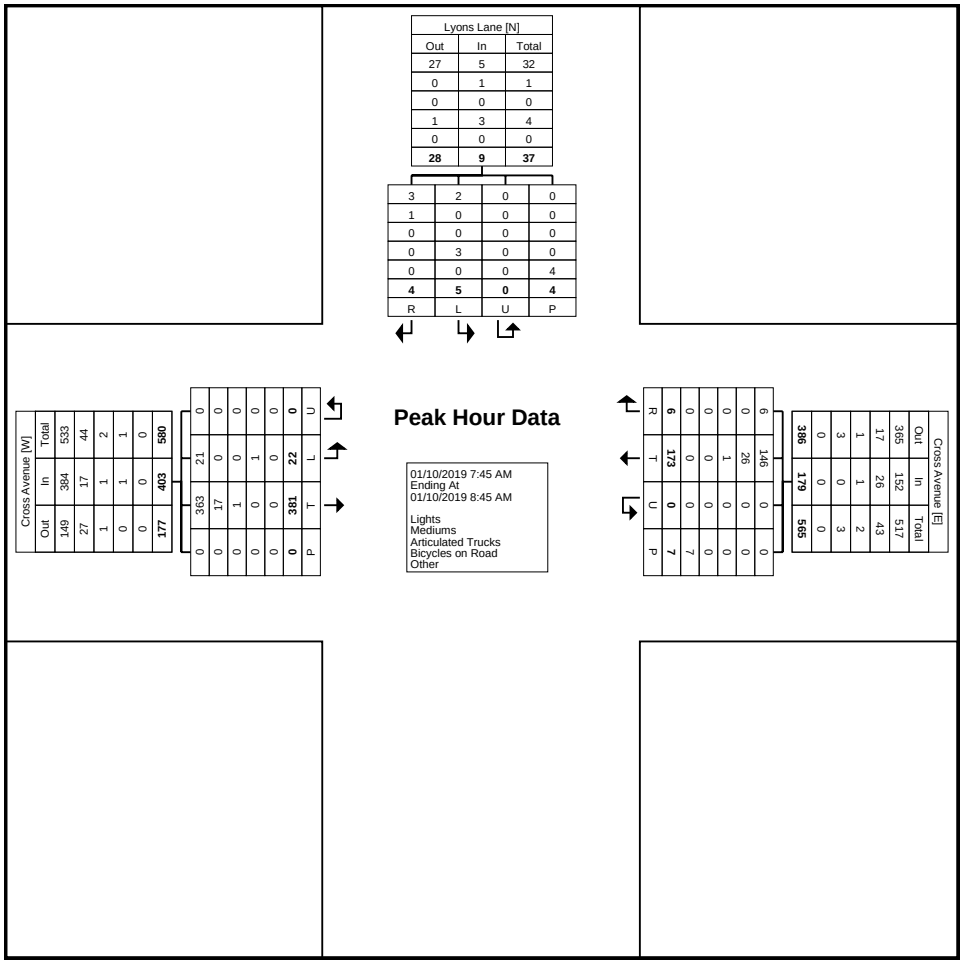
Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019



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

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Cross Avenue Eastbound					Cross Avenue Westbound					Lyons Lane Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:45 AM	1	42	0	0	43	68	3	0	1	71	5	2	0	0	7	121
12:00 PM	3	53	0	0	56	60	2	0	0	62	10	7	0	2	17	135
12:15 PM	0	55	0	0	55	76	3	0	0	79	0	9	0	1	9	143
12:30 PM	4	59	0	0	63	75	1	0	0	76	5	3	0	1	8	147
Total	8	209	0	0	217	279	9	0	1	288	20	21	0	4	41	546
Approach %	3.7	96.3	0.0	-	-	96.9	3.1	0.0	-	-	48.8	51.2	0.0	-	-	-
Total %	1.5	38.3	0.0	-	39.7	51.1	1.6	0.0	-	52.7	3.7	3.8	0.0	-	7.5	-
PHF	0.500	0.886	0.000	-	0.861	0.918	0.750	0.000	-	0.911	0.500	0.583	0.000	-	0.603	0.929
Lights	8	194	0	-	202	261	9	0	-	270	20	21	0	-	41	513
% Lights	100.0	92.8	-	-	93.1	93.5	100.0	-	-	93.8	100.0	100.0	-	-	100.0	94.0
Mediums	0	14	0	-	14	17	0	0	-	17	0	0	0	-	0	31
% Mediums	0.0	6.7	-	-	6.5	6.1	0.0	-	-	5.9	0.0	0.0	-	-	0.0	5.7
Articulated Trucks	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Articulated Trucks	0.0	0.5	-	-	0.5	0.4	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.4
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	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	75.0	-	-

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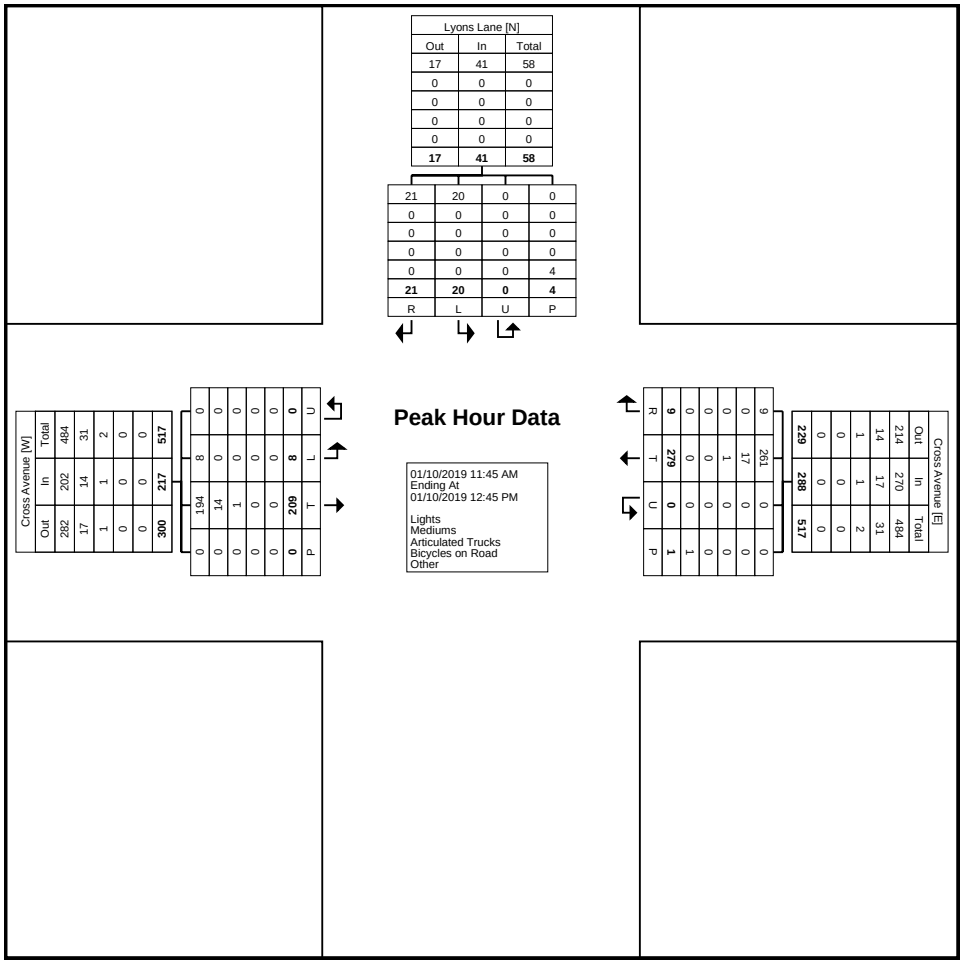
Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
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Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Cross Avenue Eastbound					Cross Avenue Westbound					Lyons Lane Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	3	43	0	0	46	164	2	0	1	166	4	16	0	1	20	232
5:15 PM	0	37	0	0	37	104	3	0	4	107	1	3	0	0	4	148
5:30 PM	1	46	0	0	47	140	2	0	1	142	8	4	0	0	12	201
5:45 PM	2	44	0	0	46	145	0	0	3	145	1	3	0	0	4	195
Total	6	170	0	0	176	553	7	0	9	560	14	26	0	1	40	776
Approach %	3.4	96.6	0.0	-	-	98.8	1.3	0.0	-	-	35.0	65.0	0.0	-	-	-
Total %	0.8	21.9	0.0	-	22.7	71.3	0.9	0.0	-	72.2	1.8	3.4	0.0	-	5.2	-
PHF	0.500	0.924	0.000	-	0.936	0.843	0.583	0.000	-	0.843	0.438	0.406	0.000	-	0.500	0.836
Lights	5	153	0	-	158	537	5	0	-	542	14	25	0	-	39	739
% Lights	83.3	90.0	-	-	89.8	97.1	71.4	-	-	96.8	100.0	96.2	-	-	97.5	95.2
Mediums	1	17	0	-	18	15	0	0	-	15	0	1	0	-	1	34
% Mediums	16.7	10.0	-	-	10.2	2.7	0.0	-	-	2.7	0.0	3.8	-	-	2.5	4.4
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.2	0.0	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	28.6	-	-	0.4	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	22.2	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	7	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	77.8	-	-	-	-	100.0	-	-

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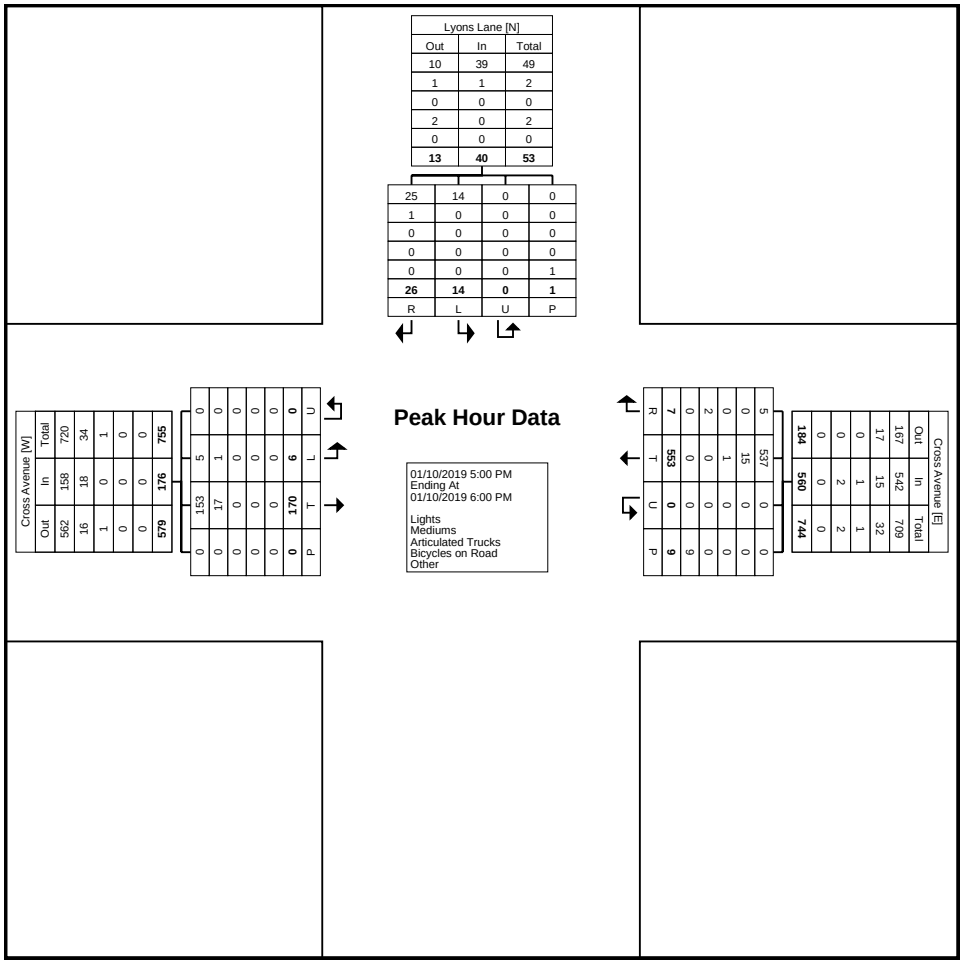
Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019



Turning Movement Peak Hour Data Plot (5:00 PM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane
Site Code:
Start Date: 01/10/2019

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019

Turning Movement Data

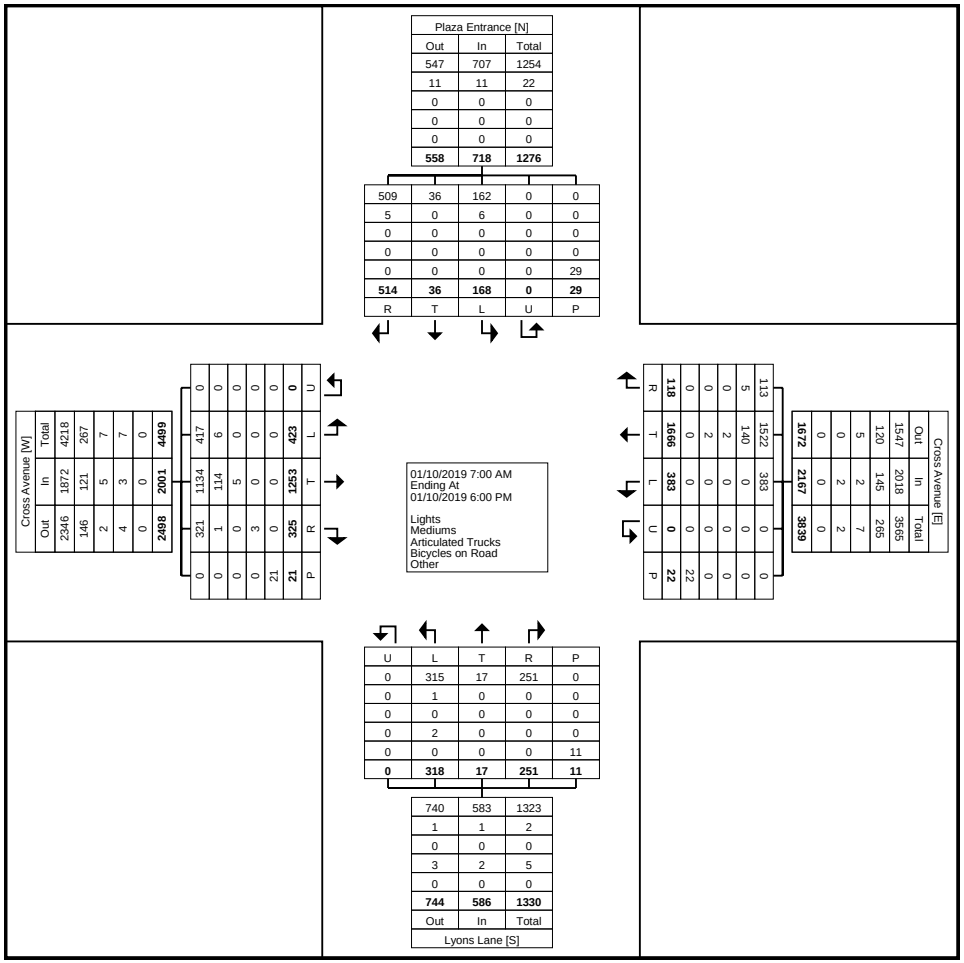
Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						Lyons Lane Northbound						Plaza Entrance Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	7	27	26	0	0	60	29	15	3	0	1	47	2	1	0	0	1	3	3	2	4	0	1	9	119
7:15 AM	5	50	46	0	2	101	64	20	1	0	1	85	2	0	8	0	0	10	3	2	6	0	2	11	207
7:30 AM	12	37	42	0	0	91	35	22	3	0	1	60	4	0	3	0	0	7	6	6	8	0	0	20	178
7:45 AM	8	34	62	0	2	104	46	21	1	0	1	68	2	1	2	0	0	5	1	6	11	0	5	18	195
Hourly Total	32	148	176	0	4	356	174	78	8	0	4	260	10	2	13	0	1	25	13	16	29	0	8	58	699
8:00 AM	16	39	43	0	0	98	45	34	1	0	1	80	5	1	2	0	1	8	6	5	9	0	0	20	206
8:15 AM	17	49	35	0	1	101	77	31	0	0	0	108	5	1	5	0	0	11	2	5	10	0	0	17	237
8:30 AM	17	41	22	0	2	80	28	35	3	0	0	66	2	1	2	0	0	5	12	4	11	0	1	27	178
8:45 AM	12	53	7	0	0	72	23	29	5	0	0	57	0	0	1	0	0	1	7	2	15	0	0	24	154
Hourly Total	62	182	107	0	3	351	173	129	9	0	1	311	12	3	10	0	1	25	27	16	45	0	1	88	775
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	19	33	2	0	1	54	0	38	3	0	0	41	0	0	0	0	0	0	8	1	21	0	2	30	125
11:15 AM	20	34	0	0	1	54	1	46	2	0	0	49	0	1	0	0	1	1	4	0	16	0	0	20	124
11:30 AM	14	38	1	0	0	53	2	59	7	0	1	68	1	0	1	0	1	2	5	0	23	0	0	28	151
11:45 AM	16	32	0	0	1	48	1	52	4	0	1	57	2	0	1	0	0	3	3	0	12	0	1	15	123
Hourly Total	69	137	3	0	3	209	4	195	16	0	2	215	3	1	2	0	2	6	20	1	72	0	3	93	523
12:00 PM	16	45	0	0	0	61	0	49	8	0	4	57	0	0	0	0	0	0	4	0	18	0	1	22	140
12:15 PM	17	39	1	0	0	57	0	56	10	0	0	66	3	0	3	0	0	6	9	0	13	0	1	22	151
12:30 PM	16	47	4	0	0	67	3	47	4	0	1	54	2	0	2	0	0	4	5	0	28	0	1	33	158
12:45 PM	16	30	0	0	0	46	0	41	6	0	0	47	1	0	3	0	0	4	9	1	18	0	0	28	125
Hourly Total	65	161	5	0	0	231	3	193	28	0	5	224	6	0	8	0	0	14	27	1	77	0	3	105	574
1:00 PM	19	33	1	0	1	53	0	51	7	0	1	58	0	1	0	0	0	1	7	0	23	0	0	30	142
1:15 PM	14	37	0	0	0	51	2	55	6	0	0	63	5	0	0	0	0	5	4	0	27	0	1	31	150
1:30 PM	12	43	0	0	1	55	1	56	2	0	0	59	0	1	2	0	1	3	7	0	17	0	1	24	141
1:45 PM	16	37	2	0	1	55	0	42	5	0	0	47	3	1	1	0	0	5	9	0	23	0	1	32	139
Hourly Total	61	150	3	0	3	214	3	204	20	0	1	227	8	3	3	0	1	14	27	0	90	0	3	117	572
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	15	43	1	0	1	59	0	72	4	0	0	76	0	0	1	0	0	1	6	0	20	0	0	26	162
3:15 PM	11	50	0	0	1	61	0	83	4	0	1	87	2	0	7	0	1	9	6	0	16	0	3	22	179
3:30 PM	15	42	2	0	1	59	0	53	2	0	0	55	0	0	2	0	1	2	2	0	17	0	0	19	135
3:45 PM	13	39	3	0	0	55	2	78	5	0	3	85	5	1	4	0	1	10	5	0	19	0	1	24	174
Hourly Total	54	174	6	0	3	234	2	286	15	0	4	303	7	1	14	0	3	22	19	0	72	0	4	91	650
4:00 PM	11	38	1	0	0	50	1	93	3	0	0	97	13	1	18	0	0	32	5	0	14	0	2	19	198
4:15 PM	8	33	2	0	0	43	3	59	1	0	0	63	6	1	5	0	0	12	5	0	14	0	1	19	137
4:30 PM	14	43	5	0	1	62	4	68	4	0	1	76	26	0	21	0	1	47	3	0	20	0	1	23	208
4:45 PM	12	46	5	0	3	63	3	72	3	0	0	78	11	1	11	0	1	23	8	0	23	0	0	31	195
Hourly Total	45	160	13	0	4	218	11	292	11	0	1	314	56	3	55	0	2	114	21	0	71	0	4	92	738

5:00 PM	9	41	0	0	0	50	1	76	2	0	0	79	73	0	32	0	1	105	5	0	24	0	0	29	263
5:15 PM	7	24	4	0	1	35	6	73	3	0	1	82	24	0	24	0	0	48	3	0	14	0	1	17	182
5:30 PM	15	42	4	0	0	61	2	66	5	0	1	73	59	1	46	0	0	106	4	1	10	0	1	15	255
5:45 PM	4	34	4	0	0	42	4	74	1	0	2	79	60	3	44	0	0	107	2	1	10	0	1	13	241
Hourly Total	35	141	12	0	1	188	13	289	11	0	4	313	216	4	146	0	1	366	14	2	58	0	3	74	941
Grand Total	423	1253	325	0	21	2001	383	1666	118	0	22	2167	318	17	251	0	11	586	168	36	514	0	29	718	5472
Approach %	21.1	62.6	16.2	0.0	-	-	17.7	76.9	5.4	0.0	-	-	54.3	2.9	42.8	0.0	-	-	23.4	5.0	71.6	0.0	-	-	-
Total %	7.7	22.9	5.9	0.0	-	36.6	7.0	30.4	2.2	0.0	-	39.6	5.8	0.3	4.6	0.0	-	10.7	3.1	0.7	9.4	0.0	-	13.1	-
Lights	417	1134	321	0	-	1872	383	1522	113	0	-	2018	315	17	251	0	-	583	162	36	509	0	-	707	5180
% Lights	98.6	90.5	98.8	-	-	93.6	100.0	91.4	95.8	-	-	93.1	99.1	100.0	100.0	-	-	99.5	96.4	100.0	99.0	-	-	98.5	94.7
Mediums	6	114	1	0	-	121	0	140	5	0	-	145	1	0	0	0	-	1	6	0	5	0	-	11	278
% Mediums	1.4	9.1	0.3	-	-	6.0	0.0	8.4	4.2	-	-	6.7	0.3	0.0	0.0	-	-	0.2	3.6	0.0	1.0	-	-	1.5	5.1
Articulated Trucks	0	5	0	0	-	5	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.4	0.0	-	-	0.2	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	3	0	-	3	0	2	0	0	-	2	2	0	0	0	-	2	0	0	0	0	-	0	7
% Bicycles on Road	0.0	0.0	0.9	-	-	0.1	0.0	0.1	0.0	-	-	0.1	0.6	0.0	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	10.3	-	-
Pedestrians	-	-	-	-	21	-	-	-	-	-	22	-	-	-	-	-	11	-	-	-	-	-	26	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	89.7	-	-

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						Lyons Lane Northbound						Plaza Entrance 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	
7:30 AM	12	37	42	0	0	91	35	22	3	0	1	60	4	0	3	0	0	7	6	6	8	0	0	20	178
7:45 AM	8	34	62	0	2	104	46	21	1	0	1	68	2	1	2	0	0	5	1	6	11	0	5	18	195
8:00 AM	16	39	43	0	0	98	45	34	1	0	1	80	5	1	2	0	1	8	6	5	9	0	0	20	206
8:15 AM	17	49	35	0	1	101	77	31	0	0	0	108	5	1	5	0	0	11	2	5	10	0	0	17	237
Total	53	159	182	0	3	394	203	108	5	0	3	316	16	3	12	0	1	31	15	22	38	0	5	75	816
Approach %	13.5	40.4	46.2	0.0	-	-	64.2	34.2	1.6	0.0	-	-	51.6	9.7	38.7	0.0	-	-	20.0	29.3	50.7	0.0	-	-	-
Total %	6.5	19.5	22.3	0.0	-	48.3	24.9	13.2	0.6	0.0	-	38.7	2.0	0.4	1.5	0.0	-	3.8	1.8	2.7	4.7	0.0	-	9.2	-
PHF	0.779	0.811	0.734	0.000	-	0.947	0.659	0.794	0.417	0.000	-	0.731	0.800	0.750	0.600	0.000	-	0.705	0.625	0.917	0.864	0.000	-	0.938	0.861
Lights	52	142	180	0	-	374	203	87	5	0	-	295	15	3	12	0	-	30	14	22	37	0	-	73	772
% Lights	98.1	89.3	98.9	-	-	94.9	100.0	80.6	100.0	-	-	93.4	93.8	100.0	100.0	-	-	96.8	93.3	100.0	97.4	-	-	97.3	94.6
Mediums	1	16	0	0	-	17	0	21	0	0	-	21	0	0	0	0	-	0	1	0	1	0	-	2	40
% Mediums	1.9	10.1	0.0	-	-	4.3	0.0	19.4	0.0	-	-	6.6	0.0	0.0	0.0	-	-	0.0	6.7	0.0	2.6	-	-	2.7	4.9
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.6	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	1.1	-	-	0.5	0.0	0.0	0.0	-	-	0.0	6.3	0.0	0.0	-	-	3.2	0.0	0.0	0.0	-	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-

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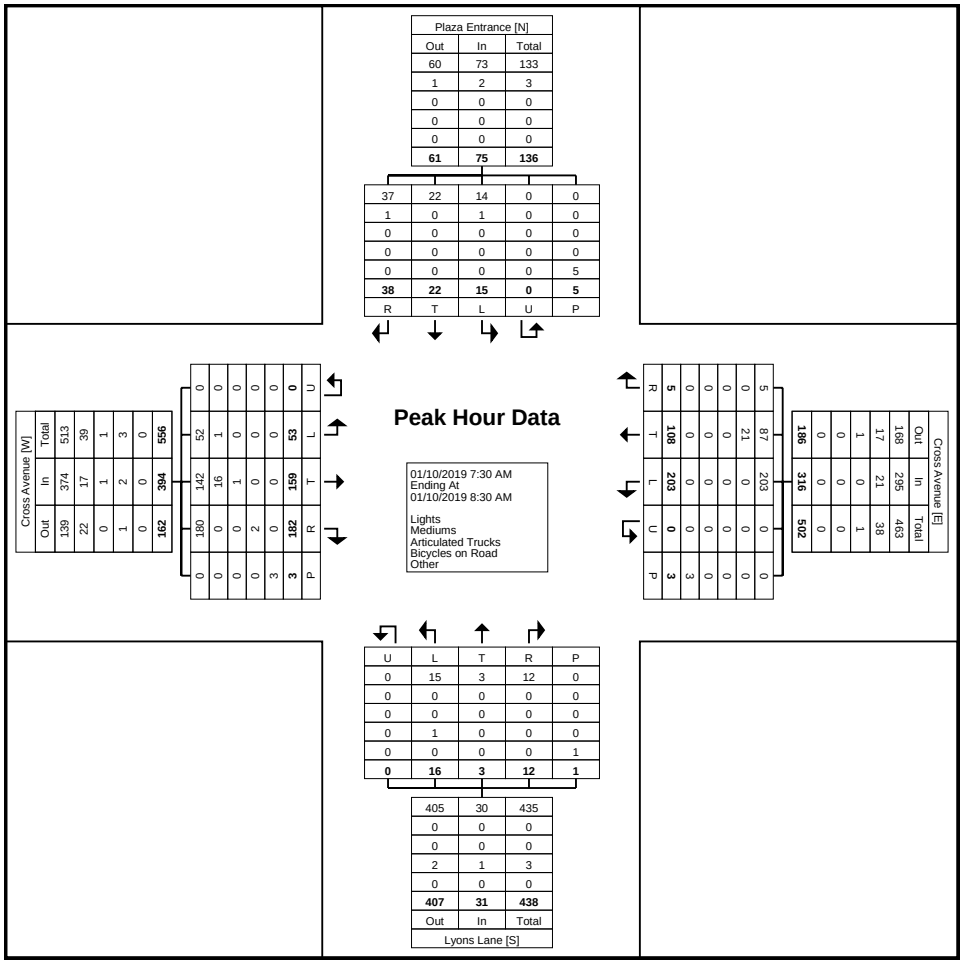
Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019



Turning Movement Peak Hour Data Plot (7:30 AM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (12:15 PM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						Lyons Lane Northbound						Plaza Entrance 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	17	39	1	0	0	57	0	56	10	0	0	66	3	0	3	0	0	6	9	0	13	0	1	22	151
12:30 PM	16	47	4	0	0	67	3	47	4	0	1	54	2	0	2	0	0	4	5	0	28	0	1	33	158
12:45 PM	16	30	0	0	0	46	0	41	6	0	0	47	1	0	3	0	0	4	9	1	18	0	0	28	125
1:00 PM	19	33	1	0	1	53	0	51	7	0	1	58	0	1	0	0	0	1	7	0	23	0	0	30	142
Total	68	149	6	0	1	223	3	195	27	0	2	225	6	1	8	0	0	15	30	1	82	0	2	113	576
Approach %	30.5	66.8	2.7	0.0	-	-	1.3	86.7	12.0	0.0	-	-	40.0	6.7	53.3	0.0	-	-	26.5	0.9	72.6	0.0	-	-	-
Total %	11.8	25.9	1.0	0.0	-	38.7	0.5	33.9	4.7	0.0	-	39.1	1.0	0.2	1.4	0.0	-	2.6	5.2	0.2	14.2	0.0	-	19.6	-
PHF	0.895	0.793	0.375	0.000	-	0.832	0.250	0.871	0.675	0.000	-	0.852	0.500	0.250	0.667	0.000	-	0.625	0.833	0.250	0.732	0.000	-	0.856	0.911
Lights	66	138	6	0	-	210	3	177	26	0	-	206	6	1	8	0	-	15	30	1	81	0	-	112	543
% Lights	97.1	92.6	100.0	-	-	94.2	100.0	90.8	96.3	-	-	91.6	100.0	100.0	100.0	-	-	100.0	100.0	100.0	98.8	-	-	99.1	94.3
Mediums	2	11	0	0	-	13	0	18	1	0	-	19	0	0	0	0	-	0	0	0	1	0	-	1	33
% Mediums	2.9	7.4	0.0	-	-	5.8	0.0	9.2	3.7	-	-	8.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.2	-	-	0.9	5.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	0.0	-	-	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
% 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	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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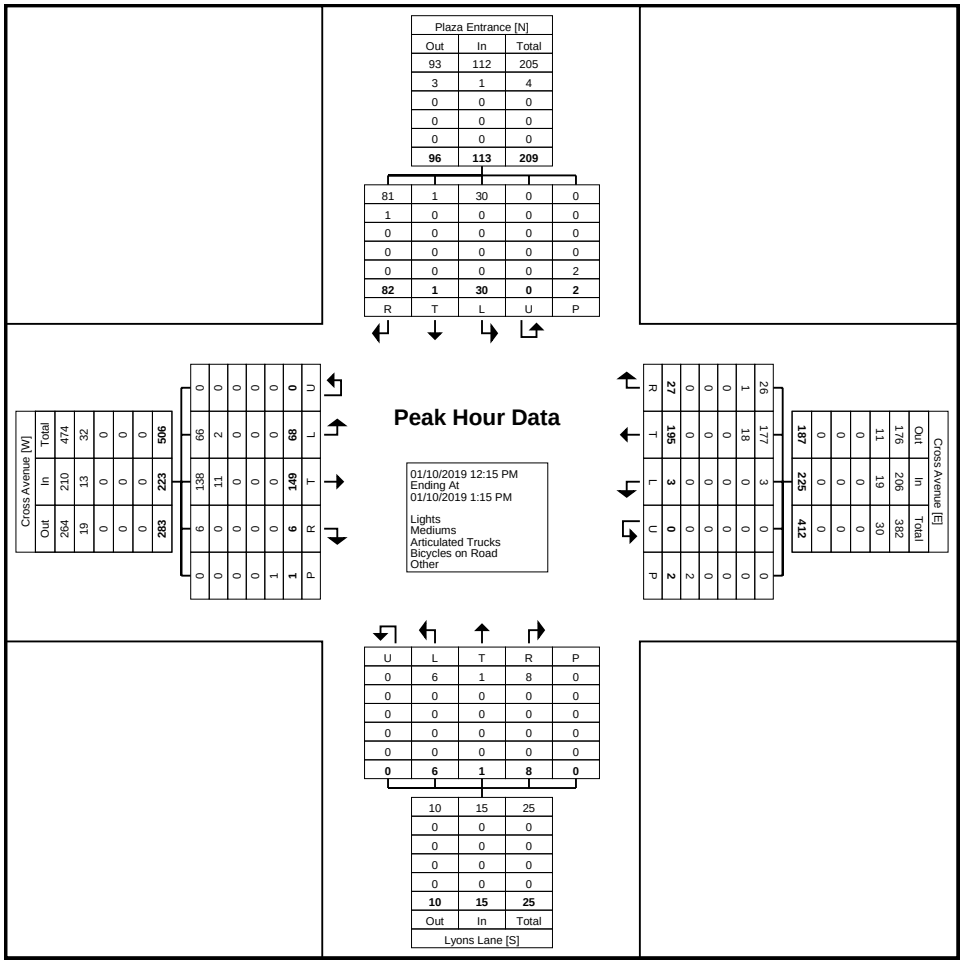
Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019



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

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Cross Avenue Eastbound						Cross Avenue Westbound						Lyons Lane Northbound						Plaza Entrance 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	
5:00 PM	9	41	0	0	0	50	1	76	2	0	0	79	73	0	32	0	1	105	5	0	24	0	0	29	263
5:15 PM	7	24	4	0	1	35	6	73	3	0	1	82	24	0	24	0	0	48	3	0	14	0	1	17	182
5:30 PM	15	42	4	0	0	61	2	66	5	0	1	73	59	1	46	0	0	106	4	1	10	0	1	15	255
5:45 PM	4	34	4	0	0	42	4	74	1	0	2	79	60	3	44	0	0	107	2	1	10	0	1	13	241
Total	35	141	12	0	1	188	13	289	11	0	4	313	216	4	146	0	1	366	14	2	58	0	3	74	941
Approach %	18.6	75.0	6.4	0.0	-	-	4.2	92.3	3.5	0.0	-	-	59.0	1.1	39.9	0.0	-	-	18.9	2.7	78.4	0.0	-	-	-
Total %	3.7	15.0	1.3	0.0	-	20.0	1.4	30.7	1.2	0.0	-	33.3	23.0	0.4	15.5	0.0	-	38.9	1.5	0.2	6.2	0.0	-	7.9	-
PHF	0.583	0.839	0.750	0.000	-	0.770	0.542	0.951	0.550	0.000	-	0.954	0.740	0.333	0.793	0.000	-	0.855	0.700	0.500	0.604	0.000	-	0.638	0.894
Lights	34	126	12	0	-	172	13	274	11	0	-	298	216	4	146	0	-	366	14	2	57	0	-	73	909
% Lights	97.1	89.4	100.0	-	-	91.5	100.0	94.8	100.0	-	-	95.2	100.0	100.0	100.0	-	-	100.0	100.0	100.0	98.3	-	-	98.6	96.6
Mediums	1	15	0	0	-	16	0	14	0	0	-	14	0	0	0	0	-	0	0	0	1	0	-	1	31
% Mediums	2.9	10.6	0.0	-	-	8.5	0.0	4.8	0.0	-	-	4.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.7	-	-	1.4	3.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	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	0.0	-	-	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	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	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-

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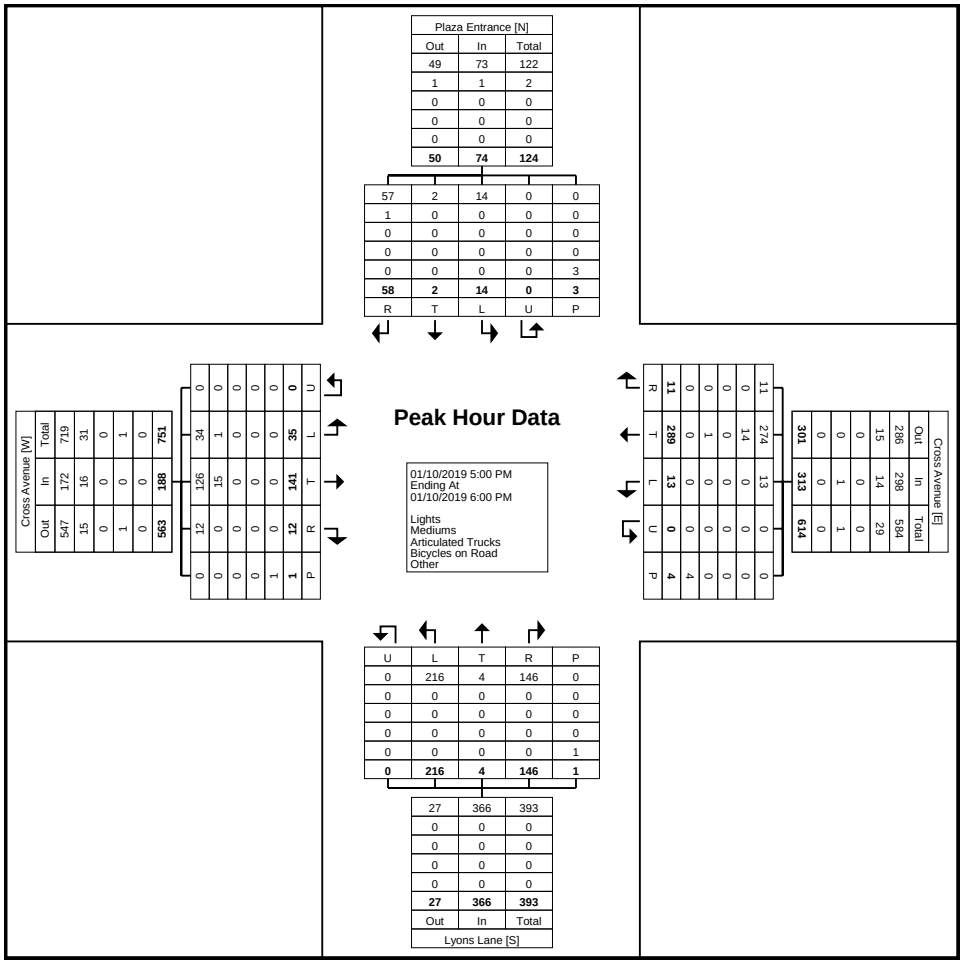


Turning Movement Peak Hour Data Plot (5:00 PM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: Cross Avenue & Lyons Lane/Commercial Plaza
Site Code:
Start Date: 01/10/2019

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Data

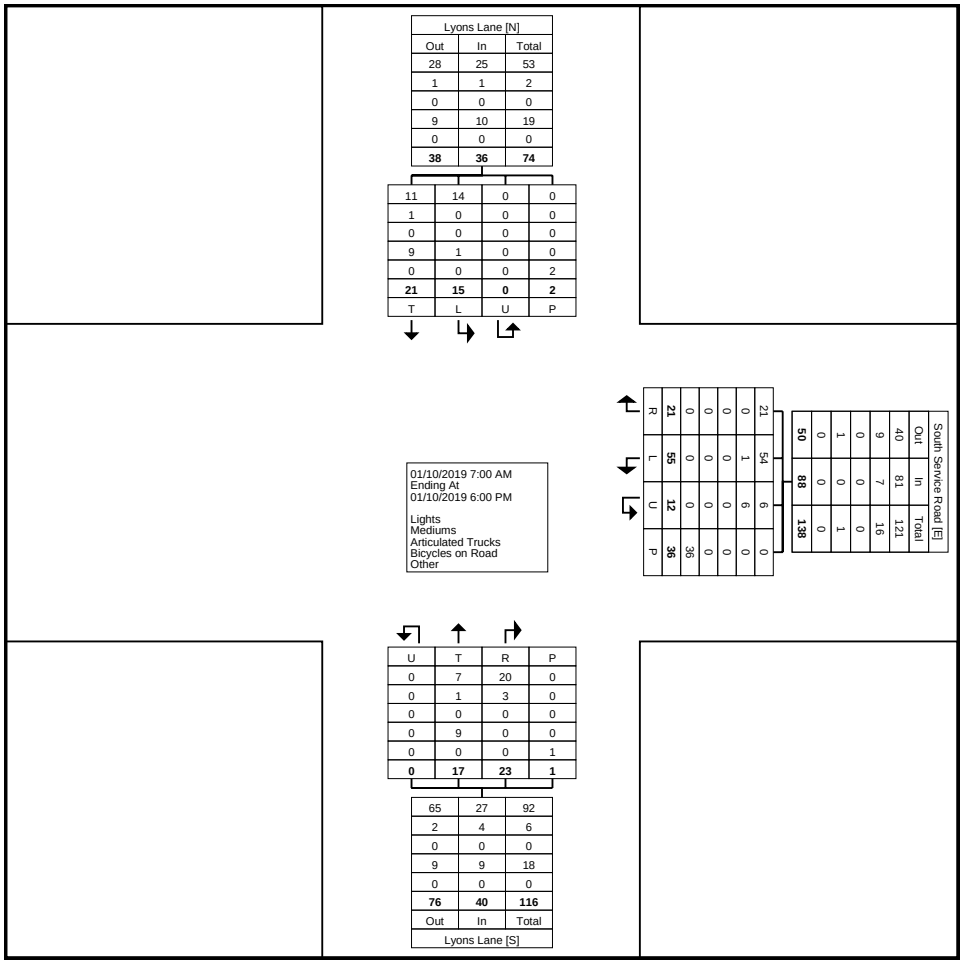
Start Time	South Service Road Westbound					Lyons Lane Northbound					Lyons Lane Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	
7:00 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	3
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
7:45 AM	2	0	0	3	2	1	0	0	0	1	0	2	0	0	2	5
Hourly Total	4	1	0	3	5	2	1	0	0	3	0	3	0	0	3	11
8:00 AM	1	0	2	2	3	1	1	0	0	2	0	1	0	0	1	6
8:15 AM	0	0	0	1	0	1	1	0	0	2	0	1	0	0	1	3
8:30 AM	0	1	0	0	1	0	1	0	1	1	0	0	0	0	0	2
8:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
Hourly Total	2	1	2	3	5	2	3	0	1	5	1	2	0	0	3	13
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	4	2	2	2	8	0	0	0	0	0	2	0	0	0	2	10
11:15 AM	1	0	2	2	3	0	1	0	0	1	0	0	0	0	0	4
11:30 AM	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2
11:45 AM	2	1	1	0	4	0	2	0	0	2	1	1	0	0	2	8
Hourly Total	9	3	5	5	17	0	3	0	0	3	3	1	0	0	4	24
12:00 PM	3	1	1	3	5	0	2	0	0	2	1	1	0	0	2	9
12:15 PM	3	1	1	0	5	1	0	0	0	1	1	0	0	0	1	7
12:30 PM	1	0	0	0	1	3	1	0	0	4	0	0	0	0	0	5
12:45 PM	2	2	0	0	4	1	1	0	0	2	2	2	0	0	4	10
Hourly Total	9	4	2	3	15	5	4	0	0	9	4	3	0	0	7	31
1:00 PM	2	0	0	1	2	0	3	0	0	3	0	1	0	0	1	6
1:15 PM	0	0	0	3	0	0	1	0	0	1	0	0	0	2	0	1
1:30 PM	1	0	0	1	1	1	1	0	0	2	0	0	0	0	0	3
1:45 PM	3	2	0	3	5	0	0	0	0	0	1	1	0	0	2	7
Hourly Total	6	2	0	8	8	1	5	0	0	6	1	2	0	2	3	17
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	1	0	0	2	2	0	0	0	2	0	1	0	0	1	5
3:15 PM	2	2	0	2	4	0	1	0	0	1	1	2	0	0	3	8
3:30 PM	2	0	1	3	3	0	1	0	0	1	0	1	0	0	1	5
3:45 PM	2	0	2	2	4	1	2	0	0	3	0	1	0	0	1	8
Hourly Total	7	3	3	7	13	3	4	0	0	7	1	5	0	0	6	26
4:00 PM	6	3	0	0	9	0	1	0	0	1	2	1	0	0	3	13
4:15 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	4	1	0	0	5	0	0	0	0	0	0	2	0	0	2	7
4:45 PM	2	0	0	4	2	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	15	4	0	4	19	0	1	0	0	1	2	3	0	0	5	25
5:00 PM	2	1	0	0	3	1	2	0	0	3	1	1	0	0	2	8

5:15 PM	1	2	0	0	3	1	0	0	0	1	2	0	0	0	2	6
5:30 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2
5:45 PM	0	0	0	3	0	1	0	0	0	1	0	0	0	0	0	1
Hourly Total	3	3	0	3	6	4	2	0	0	6	3	2	0	0	5	17
Grand Total	55	21	12	36	88	17	23	0	1	40	15	21	0	2	36	164
Approach %	62.5	23.9	13.6	-	-	42.5	57.5	0.0	-	-	41.7	58.3	0.0	-	-	-
Total %	33.5	12.8	7.3	-	53.7	10.4	14.0	0.0	-	24.4	9.1	12.8	0.0	-	22.0	-
Lights	54	21	6	-	81	7	20	0	-	27	14	11	0	-	25	133
% Lights	98.2	100.0	50.0	-	92.0	41.2	87.0	-	-	67.5	93.3	52.4	-	-	69.4	81.1
Mediums	1	0	6	-	7	1	3	0	-	4	0	1	0	-	1	12
% Mediums	1.8	0.0	50.0	-	8.0	5.9	13.0	-	-	10.0	0.0	4.8	-	-	2.8	7.3
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	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	9	0	0	-	9	1	9	0	-	10	19
% Bicycles on Road	0.0	0.0	0.0	-	0.0	52.9	0.0	-	-	22.5	6.7	42.9	-	-	27.8	11.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	36	-	-	-	-	1	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	South Service Road Westbound					Lyons Lane Northbound					Lyons Lane Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:45 AM	2	0	0	3	2	1	0	0	0	1	0	2	0	0	2	5
8:00 AM	1	0	2	2	3	1	1	0	0	2	0	1	0	0	1	6
8:15 AM	0	0	0	1	0	1	1	0	0	2	0	1	0	0	1	3
8:30 AM	0	1	0	0	1	0	1	0	1	1	0	0	0	0	0	2
Total	3	1	2	6	6	3	3	0	1	6	0	4	0	0	4	16
Approach %	50.0	16.7	33.3	-	-	50.0	50.0	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	18.8	6.3	12.5	-	37.5	18.8	18.8	0.0	-	37.5	0.0	25.0	0.0	-	25.0	-
PHF	0.375	0.250	0.250	-	0.500	0.750	0.750	0.000	-	0.750	0.000	0.500	0.000	-	0.500	0.667
Lights	2	1	2	-	5	2	3	0	-	5	0	1	0	-	1	11
% Lights	66.7	100.0	100.0	-	83.3	66.7	100.0	-	-	83.3	-	25.0	-	-	25.0	68.8
Mediums	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Mediums	33.3	0.0	0.0	-	16.7	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	6.3
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	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	3	0	-	3	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	33.3	0.0	-	-	16.7	-	75.0	-	-	75.0	25.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	6	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

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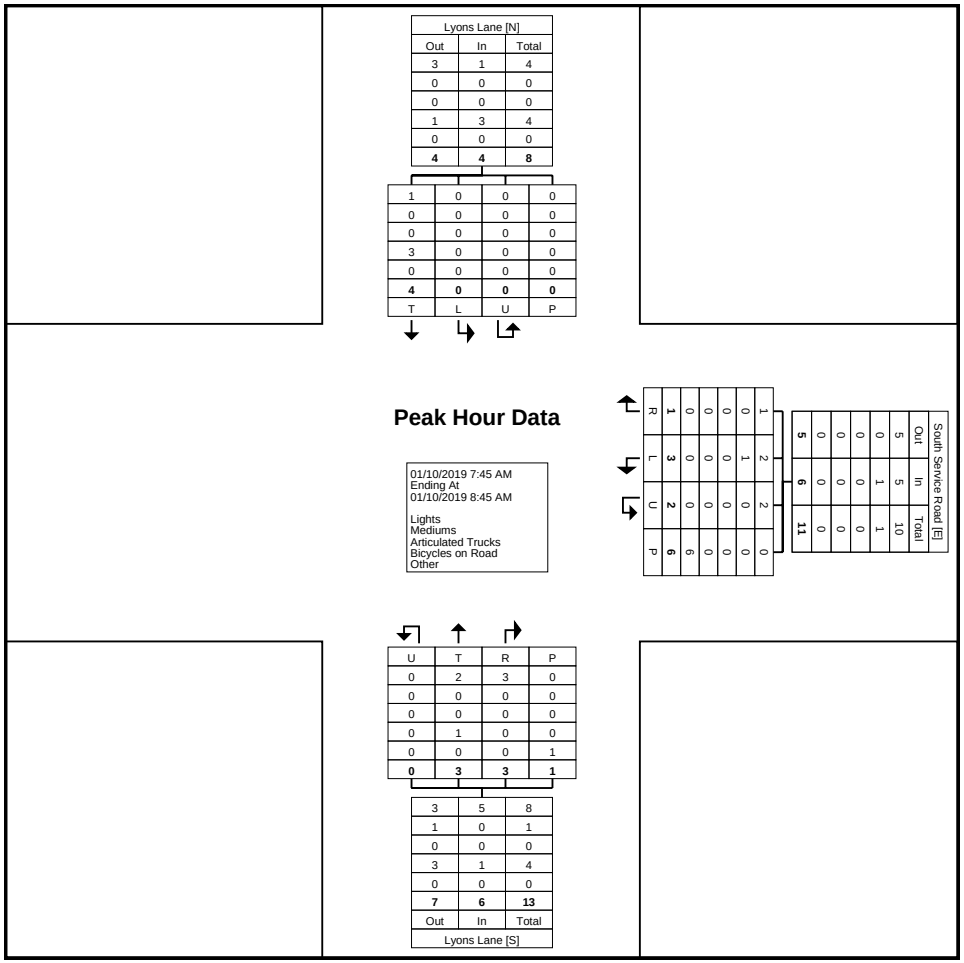
Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019



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

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (12:00 PM)

Start Time	South Service Road Westbound					Lyons Lane Northbound					Lyons Lane Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
12:00 PM	3	1	1	3	5	0	2	0	0	2	1	1	0	0	2	9
12:15 PM	3	1	1	0	5	1	0	0	0	1	1	0	0	0	1	7
12:30 PM	1	0	0	0	1	3	1	0	0	4	0	0	0	0	0	5
12:45 PM	2	2	0	0	4	1	1	0	0	2	2	2	0	0	4	10
Total	9	4	2	3	15	5	4	0	0	9	4	3	0	0	7	31
Approach %	60.0	26.7	13.3	-	-	55.6	44.4	0.0	-	-	57.1	42.9	0.0	-	-	-
Total %	29.0	12.9	6.5	-	48.4	16.1	12.9	0.0	-	29.0	12.9	9.7	0.0	-	22.6	-
PHF	0.750	0.500	0.500	-	0.750	0.417	0.500	0.000	-	0.563	0.500	0.375	0.000	-	0.438	0.775
Lights	9	4	1	-	14	3	4	0	-	7	4	1	0	-	5	26
% Lights	100.0	100.0	50.0	-	93.3	60.0	100.0	-	-	77.8	100.0	33.3	-	-	71.4	83.9
Mediums	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Mediums	0.0	0.0	50.0	-	6.7	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	3.2
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	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	2	0	0	-	2	0	2	0	-	2	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	40.0	0.0	-	-	22.2	0.0	66.7	-	-	28.6	12.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: South Service Road & Lyons Lane
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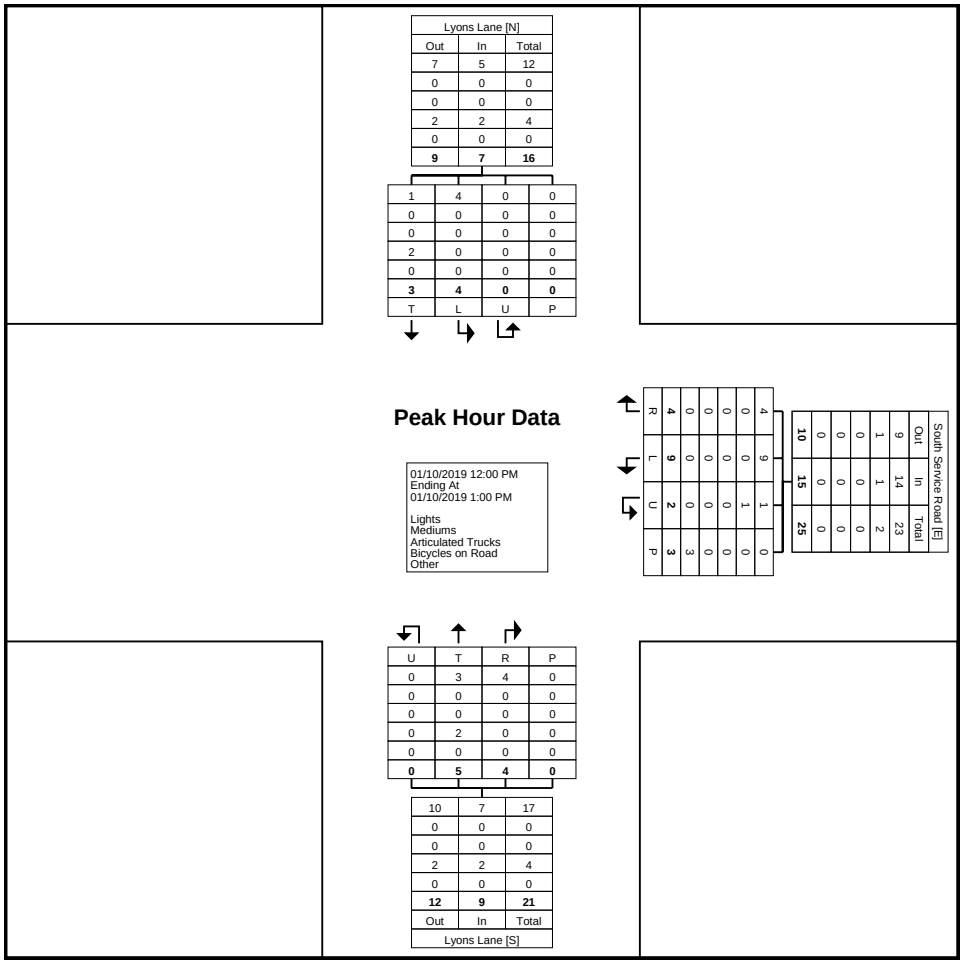
Start Date: 01/10/2019



Turning Movement Peak Hour Data Plot (12:00 PM)

Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019

Turning Movement Peak Hour Data (3:15 PM)

Start Time	South Service Road Westbound					Lyons Lane Northbound					Lyons Lane Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
3:15 PM	2	2	0	2	4	0	1	0	0	1	1	2	0	0	3	8
3:30 PM	2	0	1	3	3	0	1	0	0	1	0	1	0	0	1	5
3:45 PM	2	0	2	2	4	1	2	0	0	3	0	1	0	0	1	8
4:00 PM	6	3	0	0	9	0	1	0	0	1	2	1	0	0	3	13
Total	12	5	3	7	20	1	5	0	0	6	3	5	0	0	8	34
Approach %	60.0	25.0	15.0	-	-	16.7	83.3	0.0	-	-	37.5	62.5	0.0	-	-	-
Total %	35.3	14.7	8.8	-	58.8	2.9	14.7	0.0	-	17.6	8.8	14.7	0.0	-	23.5	-
PHF	0.500	0.417	0.375	-	0.556	0.250	0.625	0.000	-	0.500	0.375	0.625	0.000	-	0.667	0.654
Lights	12	5	1	-	18	1	4	0	-	5	2	4	0	-	6	29
% Lights	100.0	100.0	33.3	-	90.0	100.0	80.0	-	-	83.3	66.7	80.0	-	-	75.0	85.3
Mediums	0	0	2	-	2	0	1	0	-	1	0	0	0	-	0	3
% Mediums	0.0	0.0	66.7	-	10.0	0.0	20.0	-	-	16.7	0.0	0.0	-	-	0.0	8.8
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	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	1	0	-	2	2
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	33.3	20.0	-	-	25.0	5.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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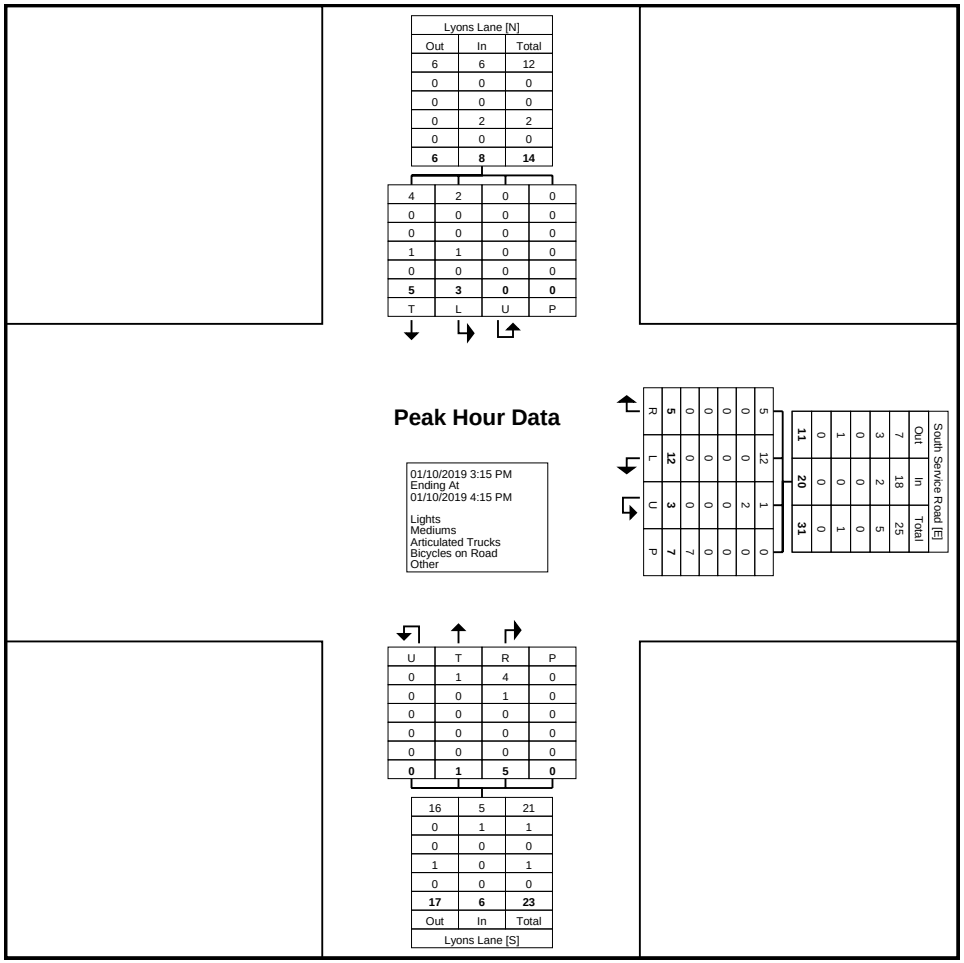


Turning Movement Peak Hour Data Plot (3:15 PM)

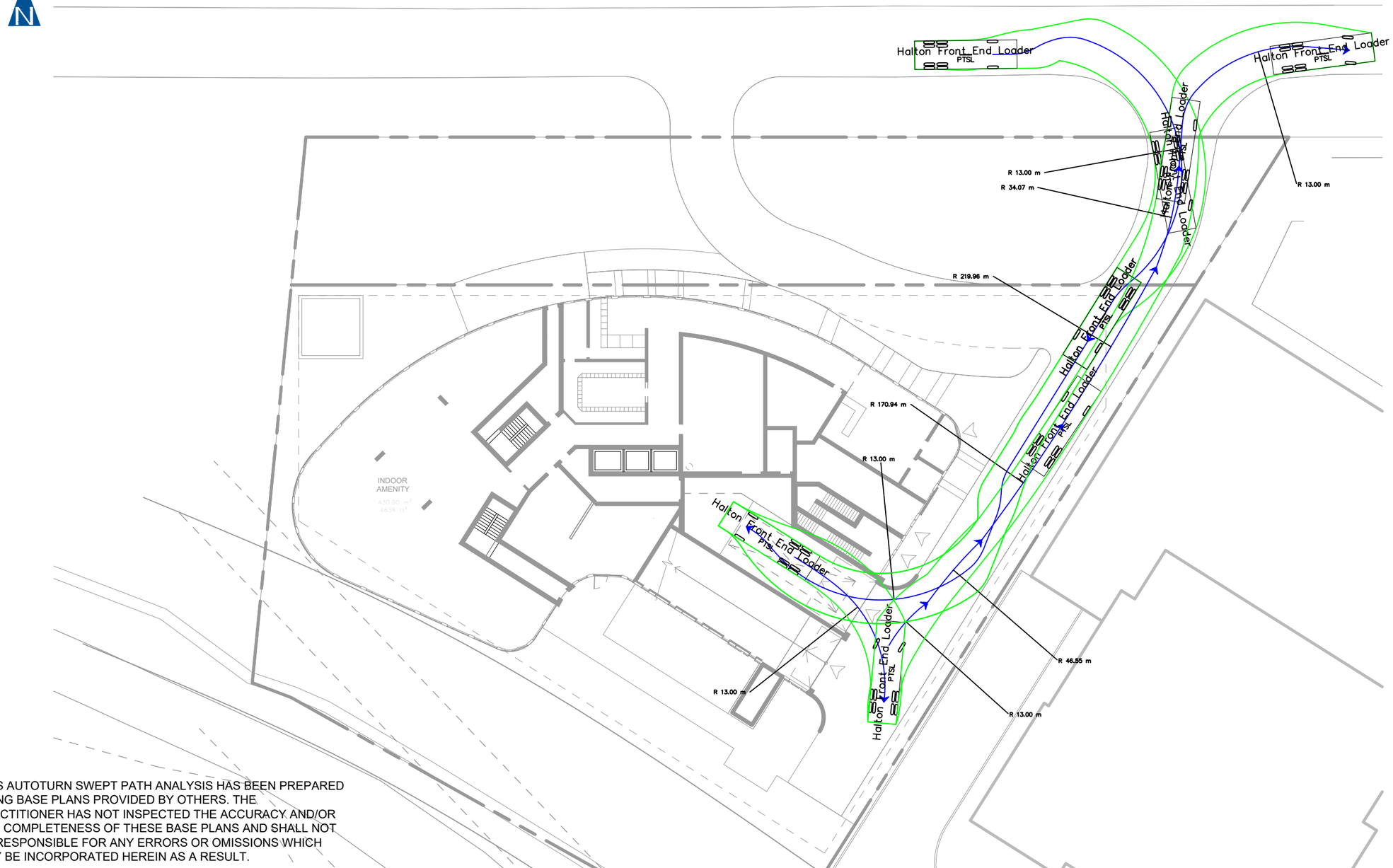
Paradigm Transportation Solutions Limited
22 King Street South, Suite 300

Waterloo, Ontario, Canada N2J 1N8
519-896-3163 cbowness@ptsl.com

Count Name: South Service Road & Lyons Lane
Site Code:
Start Date: 01/10/2019

Appendix D

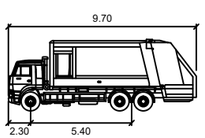
AutoTURN Assessment



THIS AUTOTURN SWEPT PATH ANALYSIS HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE



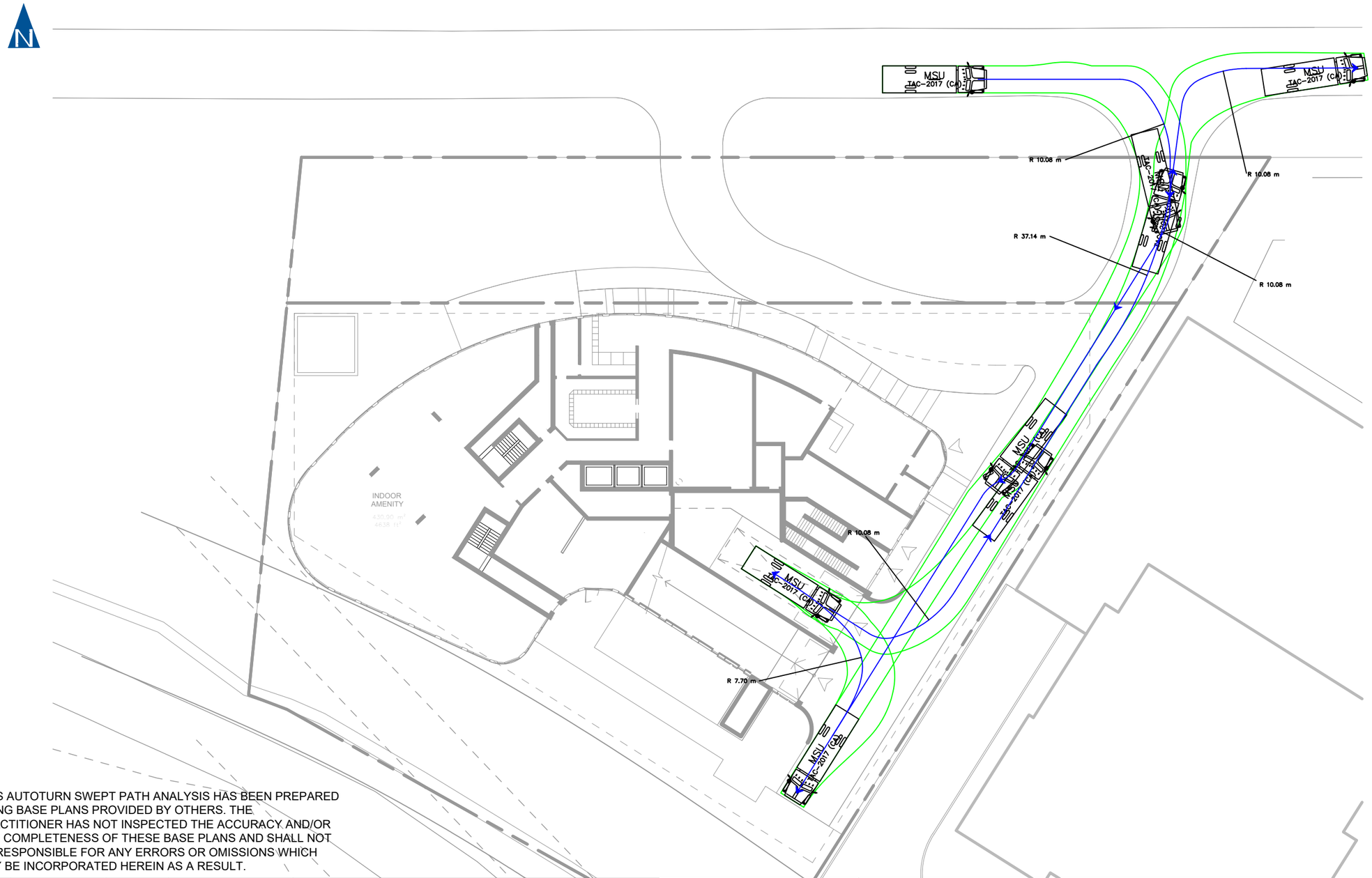
Halton Front End Loader

	meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 24.5

AUTOTURN ASSESSMENT
627 LYONS LANE, TOWN OF OAKVILLE

paradigm TRANSPORTATION SOLUTIONS LIMITED

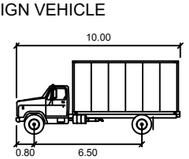
PROJECT NO.: 210060	DATE: MAY 2022	SCALE: 1:400	DRAWING NO.: 001
DRAWN: SC	DESIGN: SC	CHECK: AMa	



THIS AUTOTURN SWEPT PATH ANALYSIS HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

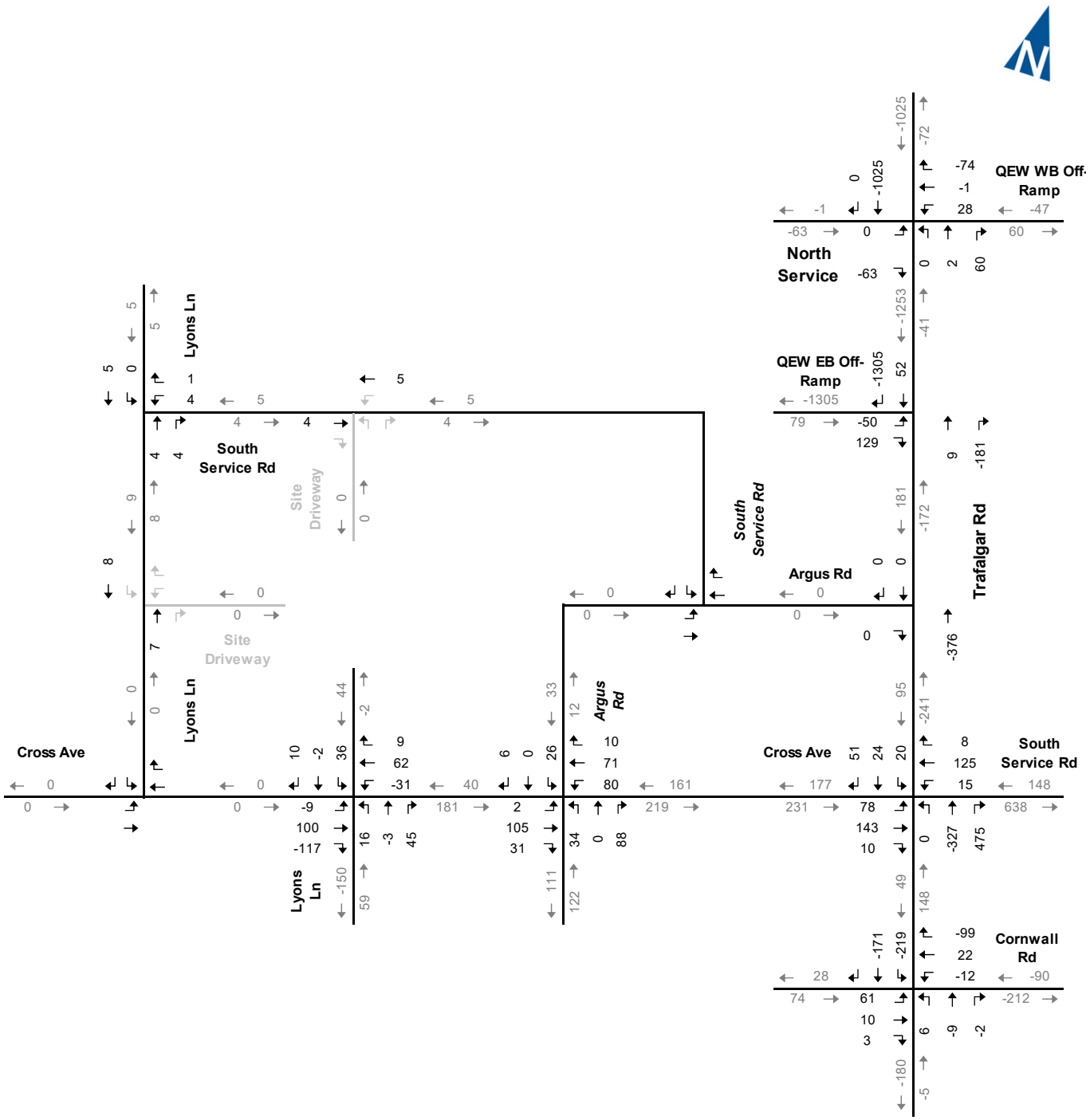
AUTOTURN ASSESSMENT
627 LYONS LANE, TOWN OF OAKVILLE

paradigm TRANSPORTATION SOLUTIONS LIMITED

PROJECT NO.: 210060	DATE: MAY 2022	SCALE: 1:400	DRAWING NO.: 001
DRAWN: SC	DESIGN: SC	CHECK: AMa	

Appendix E

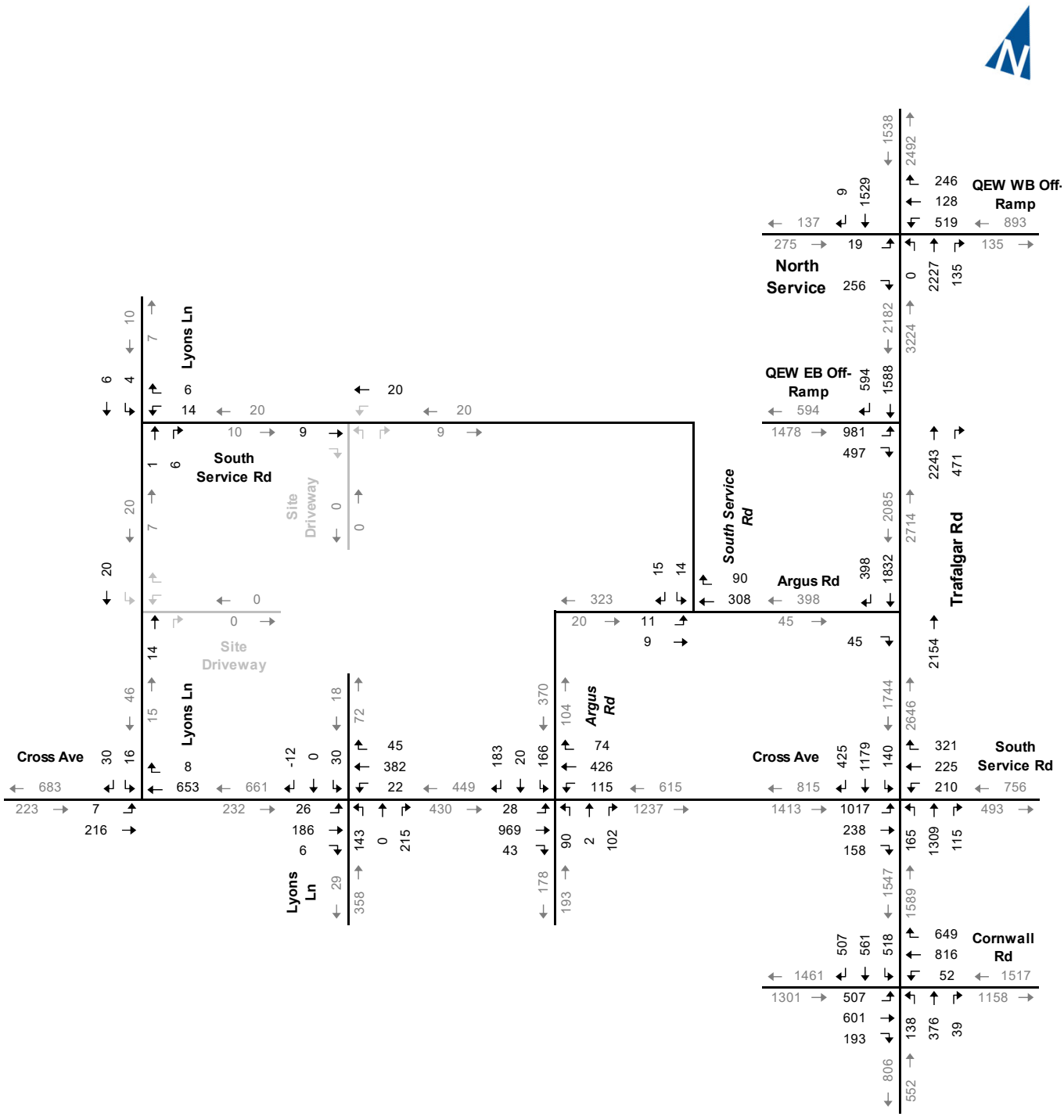
Site-Specific Projections



MOEA Traffic Volumes (20%) AM Peak Hour

627 Lyons Lane, Oakville
180307

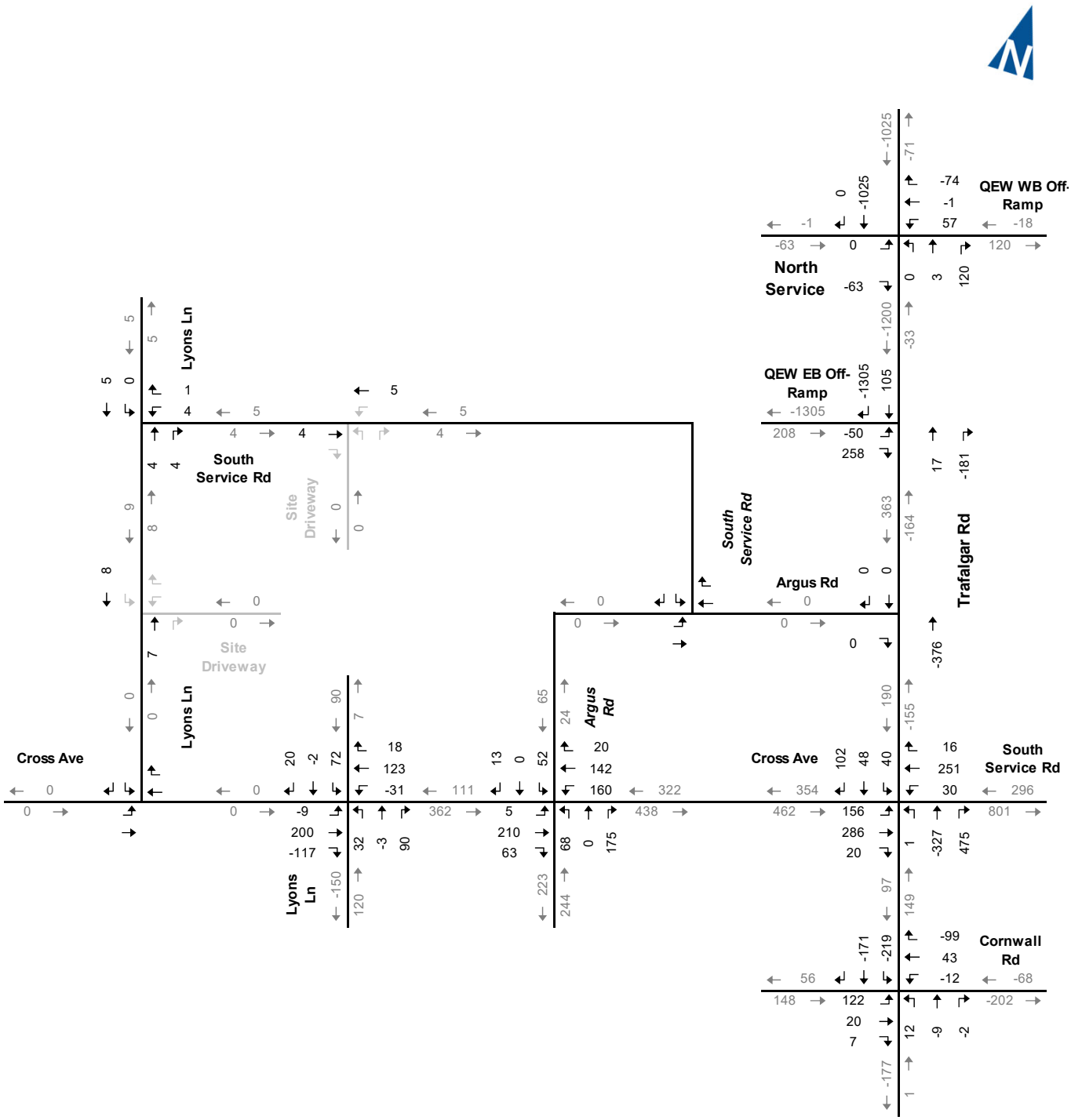
Figure C.1



MOEA Traffic Volumes (20%) PM Peak Hour

627 Lyons Lane, Oakville
180307

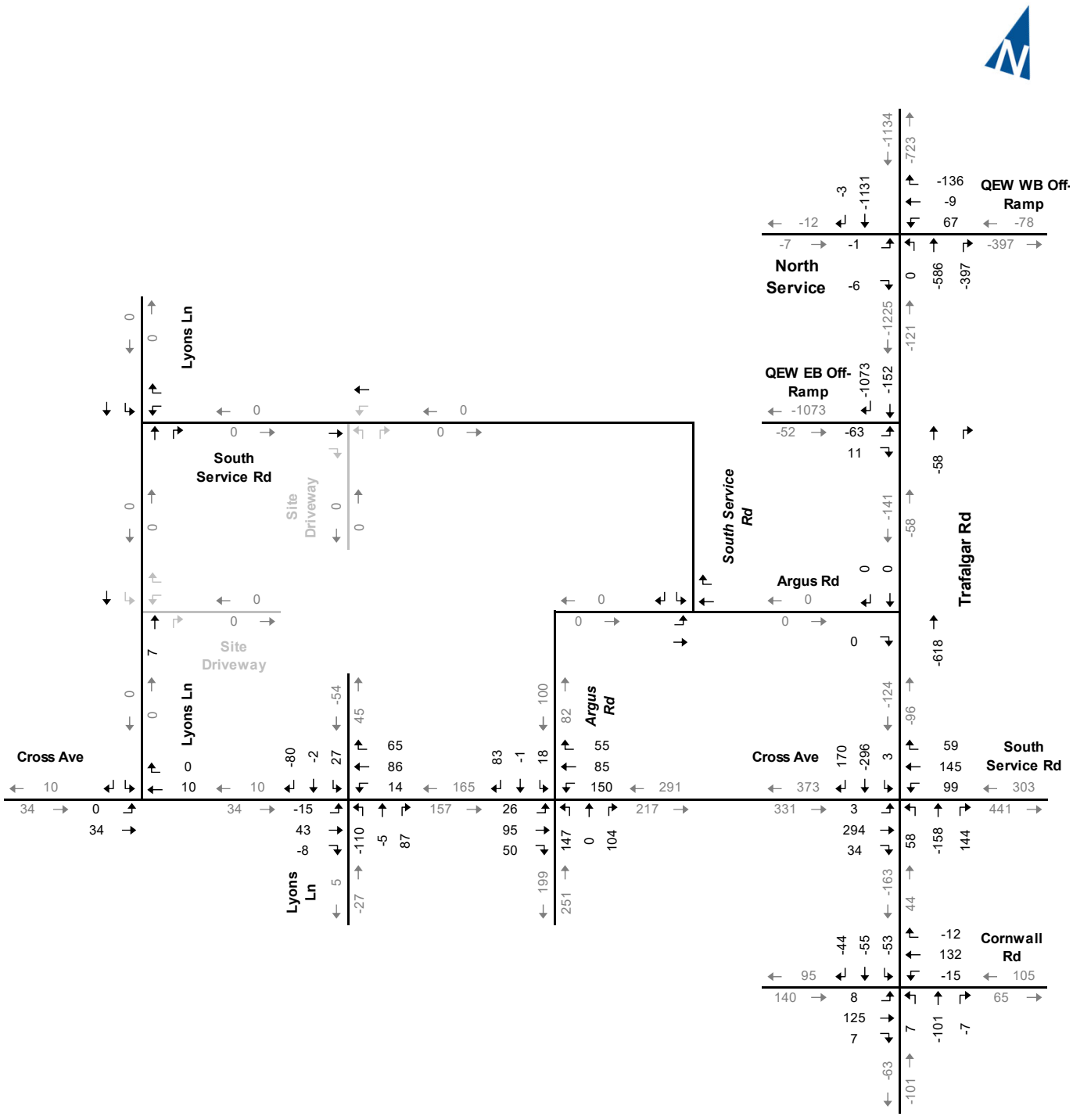
Figure C.2



MOEA Traffic Volumes (40%) AM Peak Hour

627 Lyons Lane, Oakville
180307

Figure C.3



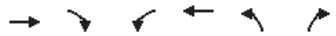
MOEA Traffic Volumes (40%) PM Peak Hour

627 Lyons Lane, Oakville
180307

Figure C.4

Appendix F

Operations Reports



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	22	45	23	4	39
Future Volume (Veh/h)	10	22	45	23	4	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	24	49	25	4	42
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			35		146	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			35		146	23
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	96
cM capacity (veh/h)			1576		820	1054

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	35	74	46
Volume Left	0	49	4
Volume Right	24	0	42
cSH	1700	1576	1028
Volume to Capacity	0.02	0.03	0.04
Queue Length 95th (m)	0.0	0.8	1.1
Control Delay (s)	0.0	5.0	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	5.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	20.4%	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)	1	0	200	402	33	250	0	1788	305	0	3406	6
Future Volume (vph)	1	0	200	402	33	250	0	1788	305	0	3406	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.959							
Satd. Flow (prot)	1805	0	1568	1633	1607	1524	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950	0.959							
Satd. Flow (perm)	1805	0	1568	1633	1607	1524	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			222			252			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	217	437	36	272	0	1943	332	0	3702	7
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	1	0	217	236	237	272	0	1943	332	0	3702	7
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0	38.0		79.0	79.0		79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%	27.1%		56.4%	56.4%		56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0	31.0		72.0	72.0		72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		31.6	29.3	29.3	29.3		100.4	100.4		100.4	100.4
Actuated g/C Ratio	0.05		0.23	0.21	0.21	0.21		0.72	0.72		0.72	0.72
v/c Ratio	0.01		0.58	0.69	0.71	0.55		0.55	0.29		1.02	0.01
Control Delay	64.0		45.5	61.1	62.1	14.1		10.5	3.4		42.3	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		45.5	61.1	62.1	14.1		10.5	3.4		42.3	0.0
LOS	E		D	E	E	B		B	A		D	A
Approach Delay		45.6			44.3			9.5			42.2	
Approach LOS		D			D			A			D	
Queue Length 50th (m)	0.3		49.5	67.3	67.8	12.0		70.9	2.1		~369.3	0.0
Queue Length 95th (m)	2.3		63.7	91.7	92.5	37.3		126.3	m15.8		#510.5	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		656	406	400	546		3544	1131		3613	1119
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.33	0.58	0.59	0.50		0.55	0.29		1.02	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 31.8		Intersection LOS: C	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	10	22	45	23	4	39
Future Volume (vph)	10	22	45	23	4	39
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	0.907				0.877	
Flt Protected				0.968	0.996	
Satd. Flow (prot)	1690	0	0	1803	1627	0
Flt Permitted				0.968	0.996	
Satd. Flow (perm)	1690	0	0	1803	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	110.8			715.0	42.7	
Travel Time (s)	8.0			51.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	24	49	25	4	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	74	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.4%		ICU Level of Service A	
Analysis Period (min) 15			

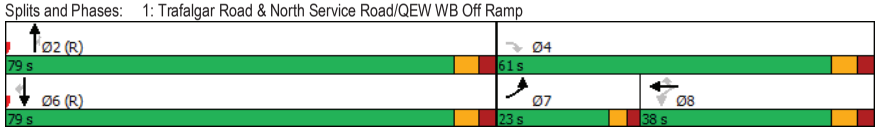
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	10	361	151	28	46
Future Volume (Veh/h)	13	10	361	151	28	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	29	20	415	222	37	71
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	637				609	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637				609	526
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	87
cM capacity (veh/h)	956				446	556

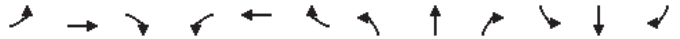
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	49	637	108
Volume Left	29	0	37
Volume Right	0	222	71
cSH	956	1700	512
Volume to Capacity	0.03	0.37	0.21
Queue Length 95th (m)	0.7	0.0	6.3
Control Delay (s)	5.4	0.0	13.9
Lane LOS	A		B
Approach Delay (s)	5.4	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 100.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp





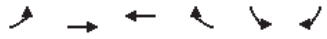
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	200	402	33	250	0	1788	305	0	3406	6
Future Volume (vph)	1	0	200	402	33	250	0	1788	305	0	3406	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1633	1607	1524		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1633	1607	1524		4940	1478		5036	1533
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)	1	0	217	437	36	272	0	1943	332	0	3702	7
RTOR Reduction (vph)	0	0	23	0	0	176	0	0	78	0	0	2
Lane Group Flow (vph)	1	0	194	236	237	96	0	1943	254	0	3702	5
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		32.5	26.3	26.3	26.3		93.5	93.5		93.5	93.5
Effective Green, g (s)	2.2		35.5	29.3	29.3	29.3		96.5	96.5		96.5	96.5
Actuated g/C Ratio	0.02		0.25	0.21	0.21	0.21		0.69	0.69		0.69	0.69
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		397	341	336	318		3405	1018		3471	1056
v/s Ratio Prot	0.00							0.39			c0.74	
v/s Ratio Perm			c0.12	0.14	0.15	0.06			0.17			0.00
v/c Ratio	0.04		0.49	0.69	0.71	0.30		0.57	0.25		1.07	0.00
Uniform Delay, d1	67.9		44.5	51.2	51.3	46.7		11.1	8.2		21.8	6.8
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.96	1.19		1.00	1.00
Incremental Delay, d2	0.5		0.9	6.0	6.6	0.5		0.3	0.3		36.7	0.0
Delay (s)	68.4		45.5	57.1	57.9	47.3		11.0	10.0		58.5	6.8
Level of Service	E		D	E	E	D		B	B		E	A
Approach Delay (s)		45.6			53.8			10.8			58.4	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	10	361	151	28	46
Future Volume (vph)	13	10	361	151	28	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.953		0.911	
Flt Protected		0.971			0.983	
Satd. Flow (prot)	0	1577	1530	0	1531	0
Flt Permitted		0.971			0.983	
Satd. Flow (perm)	0	1577	1530	0	1531	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	29	20	415	222	37	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	49	637	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	6	1	28	21	6
Future Volume (Veh/h)	4	6	1	28	21	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	11	10	4	45	42	14
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	56				66	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56				66	34
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	99
cM capacity (veh/h)	1553				933	1040

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	21	49	56
Volume Left	11	0	42
Volume Right	0	45	14
cSH	1553	1700	957
Volume to Capacity	0.01	0.03	0.06
Queue Length 95th (m)	0.2	0.0	1.5
Control Delay (s)	3.9	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization		15.4%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2081	2259	1749
Future Volume (vph)	0	0	0	2081	2259	1749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2262	2455	1901
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2262	2455	1901
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	111.6%	ICU Level of Service H	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2081	2259	1749
Future Volume (Veh/h)	0	0	0	2081	2259	1749
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	0	0	2262	2455	1901
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.60	0.42	0.42			
vC, conflicting volume	3209	818	2455			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	617	453	678			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	754	754	754	818	818	818	1901
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1901
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.44	0.44	0.44	0.48	0.48	0.48	1.12
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		111.6%	ICU Level of Service H
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	6	1	28	21	6
Future Volume (vph)	4	6	1	28	21	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.876		0.966	
Flt Protected		0.974			0.964	
Satd. Flow (prot)	0	1666	1246	0	1592	0
Flt Permitted		0.974			0.964	
Satd. Flow (perm)	0	1666	1246	0	1592	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	11	10	4	45	42	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	49	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%	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 (vph)	44	225	9	32	600	109	186	0	288	67	1	38
Future Volume (vph)	44	225	9	32	600	109	186	0	288	67	1	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00		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	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)	1388	2954	1425	1593	3154	1422	1593		1425	1609	1676	1398
Flt Permitted	0.25	1.00	1.00	0.60	1.00	1.00	0.76		1.00	0.76	1.00	1.00
Satd. Flow (perm)	369	2954	1425	1005	3154	1422	1269		1425	1282	1676	1398
Peak-hour factor, PHF	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Adj. Flow (vph)	88	245	10	35	714	188	202	0	313	152	1	93
RTOR Reduction (vph)	0	0	7	0	0	127	0	0	145	0	0	43
Lane Group Flow (vph)	88	245	3	35	714	61	202	0	168	152	1	50
Confl. Peds. (#/hr)	1					1				9		
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	20.9	20.9	20.9	20.9	20.9	20.9	34.7		34.7	34.7	34.7	34.7
Effective Green, g (s)	20.9	20.9	20.9	20.9	20.9	20.9	34.7		34.7	34.7	34.7	34.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.54		0.54	0.54	0.54	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	955	461	325	1020	460	681		765	688	900	750
v/s Ratio Prot		0.08			0.23						0.00	
v/s Ratio Perm	c0.24		0.00	0.03		0.04	c0.16		0.12	0.12		0.04
v/c Ratio	0.74	0.26	0.01	0.11	0.70	0.13	0.30		0.22	0.22	0.00	0.07
Uniform Delay, d1	19.4	16.1	14.8	15.3	19.1	15.4	8.2		7.8	7.9	6.9	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	21.2	0.1	0.0	0.1	2.1	0.1	1.1		0.7	0.7	0.0	0.2
Delay (s)	40.6	16.3	14.8	15.5	21.2	15.6	9.3		8.5	8.6	6.9	7.3
Level of Service	D	B	B	B	C	B	A		A	A	A	A
Approach Delay (s)		22.5			19.9			8.8			8.1	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	907	661	0	2259	1174	0
Future Volume (vph)	907	661	0	2259	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		52				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	986	718	0	2455	1276	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	986	718	0	2455	1276	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

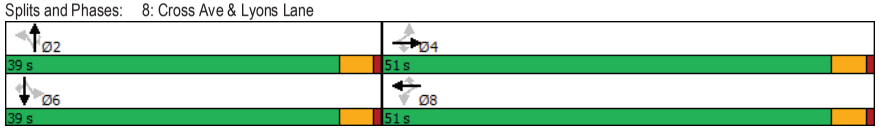
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	57.4	57.4		82.6	82.6	
Total Split (%)	41.0%	41.0%		59.0%	59.0%	
Maximum Green (s)	50.4	50.4		75.6	75.6	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
v/c Ratio	0.76	1.12		0.89	0.46	
Control Delay	42.4	110.1		42.4	15.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	42.4	110.1		42.4	15.2	
LOS	D	F		D	B	
Approach Delay	70.9			42.4	15.2	
Approach LOS	E			D	B	
Queue Length 50th (m)	128.2	~230.7		234.0	60.9	
Queue Length 95th (m)	154.9	#310.5		275.3	m50.8	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1296	642		2747	2800	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.76	1.12		0.89	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 44.9 Intersection LOS: D
Intersection Capacity Utilization 111.6% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane



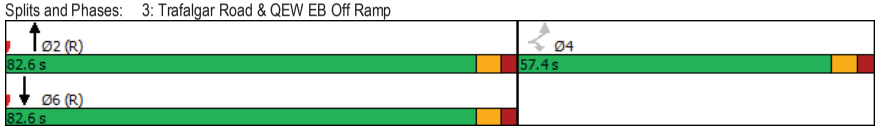
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	46.5	46.5	46.5	46.5	46.5	46.5	34.5	34.5	34.5	34.5	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	20.9	20.9	20.9	20.9	20.9	20.9	34.7		34.7	34.7	34.7	34.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.54		0.54	0.54	0.54	0.54
v/c Ratio	0.75	0.26	0.02	0.11	0.70	0.32	0.30		0.30	0.22	0.00	0.12
Control Delay	56.7	16.4	4.7	15.3	22.9	4.2	11.2		0.7	10.4	9.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	56.7	16.4	4.7	15.3	22.9	4.2	11.2		0.7	10.4	9.0	3.1
LOS	E	B	A	B	C	A	B		A	B	A	A
Approach Delay		26.4			18.9			4.8			7.6	
Approach LOS		C			B			A			A	
Queue Length 50th (m)	9.6	11.7	0.0	3.0	40.5	0.0	12.8		0.0	9.2	0.1	0.0
Queue Length 95th (m)	11.2	19.2	2.0	8.6	51.7	1.1	32.5		0.0	10.5	0.9	0.0
Internal Link Dist (m)		257.3			16.1			148.6			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	266	2137	1036	728	2282	1080	681		1040	685	899	793
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.33	0.11	0.01	0.05	0.31	0.17	0.30		0.30	0.22	0.00	0.12

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 64.7			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	907	661	0	2259	1174	0
Future Volume (vph)	907	661	0	2259	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	718	0	2455	1276	0
RTOR Reduction (vph)	0	32	0	0	0	0
Lane Group Flow (vph)	986	686	0	2455	1276	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	50.4	50.4		75.6	75.6	
Effective Green, g (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1296	609		2747	2800	
v/s Ratio Prot				c0.50	0.26	
v/s Ratio Perm	0.29	c0.43				
v/c Ratio	0.76	1.13		0.89	0.46	
Uniform Delay, d1	37.7	43.3		27.0	18.1	
Progression Factor	1.00	1.00		1.37	0.83	
Incremental Delay, d2	2.7	76.4		4.8	0.2	
Delay (s)	40.4	119.7		41.9	15.1	
Level of Service	D	F		D	B	
Approach Delay (s)	73.8			41.9	15.1	
Approach LOS	E			D	B	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
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)	44	225	9	32	600	109	186	0	288	67	1	38
Future Volume (vph)	44	225	9	32	600	109	186	0	288	67	1	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1388	2954	1425	1593	3154	1454	1593	1676	1425	1624	1676	1398
Flt Permitted	0.252			0.600			0.757			0.757		
Satd. Flow (perm)	368	2954	1425	1006	3154	1421	1269	1676	1425	1277	1676	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			188			595			93
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			172.6			41.7	
Travel Time (s)		20.3			2.9			12.4			3.0	
Confl. Peds. (#/hr)	1					1				9		
Peak Hour Factor	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	88	245	10	35	714	188	202	0	313	152	1	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	245	10	35	714	188	202	0	313	152	1	93
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1177	71	197	553	108	166	3	164	230	24	249
Future Volume (vph)	44	1177	71	197	553	108	166	3	164	230	24	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1558	3249	707	797	3249	1400	784	855	701	1534	1322	
Flt Permitted	0.43	1.00	1.00	0.10	1.00	1.00	0.24	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	710	3249	707	84	3249	1400	197	855	701	1211	1322	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	67	1453	95	210	582	133	237	12	245	267	32	319
RTOR Reduction (vph)	0	0	54	0	0	59	0	0	89	0	186	0
Lane Group Flow (vph)	67	1453	41	210	582	74	237	12	156	267	165	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	36.0	36.0	36.0	47.5	47.5	47.5	29.6	29.6	29.6	21.1	21.1	
Effective Green, g (s)	38.0	38.0	38.0	47.5	49.5	49.5	31.6	31.6	29.6	23.1	23.1	
Actuated g/C Ratio	0.43	0.43	0.43	0.53	0.56	0.56	0.35	0.35	0.33	0.26	0.26	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	302	1385	301	104	1805	777	109	303	232	313	342	
v/s Ratio Prot		0.45		c0.17	0.18		c0.15	0.01			0.12	
v/s Ratio Perm	0.09		0.06	c0.90		0.05	c0.62		0.22	0.22		
v/c Ratio	0.22	1.05	0.13	2.02	0.32	0.10	2.17	0.04	0.67	0.85	0.48	
Uniform Delay, d1	16.2	25.5	15.5	23.6	10.7	9.3	27.8	18.8	25.6	31.4	27.9	
Progression Factor	1.00	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	38.2	0.4	490.7	0.2	0.1	557.4	0.1	8.1	20.2	1.5	
Delay (s)	17.0	63.7	16.0	514.3	10.9	9.4	585.2	18.9	33.7	51.6	29.4	
Level of Service	B	E	B	F	B	A	F	B	C	D	C	
Approach Delay (s)		59.0			125.0			298.0			39.0	
Approach LOS		E			F			F			D	

Intersection Summary				
HCM 2000 Control Delay	104.6	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.16			
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	91.4%	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)	0	0	17	0	0	0	0	1174	587	0	2134	713
Future Volume (vph)	0	0	17	0	0	0	0	1174	587	0	2134	713
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.962	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4916	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4916	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	18	0	0	0	0	1276	638	0	2320	775
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	18	0	0	0	0	1276	638	0	3095	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	67.7%	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)	0	0	17	0	0	0	0	1174	587	0	2134	713
Future Volume (Veh/h)	0	0	17	0	0	0	0	1174	587	0	2134	713
Sign Control		Stop			Stop			Free			Free	
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)	0	0	18	0	0	0	0	1276	638	0	2320	775
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.91	0.91	0.85	0.91	0.91	0.89	0.85			0.89		
vC, conflicting volume	3157	4008	1185	2049	4395	425	3119			1276		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2172	3110	603	952	3536	0	2877			861		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	100	100			100		
cM capacity (veh/h)	23	10	356	184	5	967	109			699		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	18	425	425	425	638	928	928	1239
Volume Left	0	0	0	0	0	0	0	0
Volume Right	18	0	0	0	638	0	0	775
cSH	356	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.25	0.25	0.25	0.38	0.55	0.55	0.73
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C							
Approach Delay (s)	15.6	0.0				0.0		
Approach LOS	C							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	67.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection Capacity Utilization 91.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	38.0	38.0	38.0	49.5	49.5	49.5	33.1	31.6	29.6	23.1	23.1	
Actuated g/C Ratio	0.43	0.43	0.43	0.56	0.56	0.56	0.37	0.35	0.33	0.26	0.26	
v/c Ratio	0.22	1.05	0.25	1.98	0.32	0.16	2.12	0.04	0.76	0.85	0.66	
Control Delay	19.1	64.8	2.7	491.2	11.5	2.3	551.2	19.3	29.8	57.7	15.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.1	64.8	2.7	491.2	11.5	2.3	551.2	19.3	29.8	57.7	15.8	
LOS	B	E	A	F	B	A	F	B	C	E	B	
Approach Delay		59.3			119.1			279.6			33.9	
Approach LOS		E			F			F			C	
Queue Length 50th (m)	7.6	~154.4	0.0	~53.2	28.6	0.0	~69.0	1.4	17.8	45.7	14.4	
Queue Length 95th (m)	11.9	#163.6	0.8	#98.2	39.3	5.8	#84.7	1.4	24.4	#82.1	25.9	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	302	1386	381	106	1805	836	112	311	327	326	539	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.22	1.05	0.25	1.98	0.32	0.16	2.12	0.04	0.75	0.82	0.65	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 89.1			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.12			
Intersection Signal Delay: 99.9		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	85	118	44	88	126	118	1227	56	270	1401	434
Future Volume (vph)	408	85	118	44	88	126	118	1227	56	270	1401	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.99		0.99			0.99	
Frt		0.913				0.850		0.993			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	1565	0	1752	1759	1553	1641	4959	0	1752	4809	0
Flt Permitted	0.950			0.621			0.073			0.082		
Satd. Flow (perm)	3206	1565	0	1138	1759	1531	126	4959	0	151	4809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				183		5			72	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	443	92	128	48	96	137	128	1334	61	293	1523	472
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	220	0	48	96	137	128	1395	0	293	1995	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		12.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		17.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	33.0	41.0		17.0	25.0	25.0	15.2	54.0		28.0	66.8	
Total Split (%)	23.6%	29.3%		12.1%	17.9%	17.9%	10.9%	38.6%		20.0%	47.7%	
Maximum Green (s)	26.0	34.0		12.5	18.0	18.0	11.2	47.0		24.0	59.8	
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	26.4	33.5		33.8	16.3	16.3	69.6	58.9		85.3	70.6	
Actuated g/C Ratio	0.19	0.24		0.24	0.12	0.12	0.50	0.42		0.61	0.50	
v/c Ratio	0.73	0.54		0.14	0.47	0.40	0.72	0.67		0.84	0.81	
Control Delay	61.0	40.9		30.3	64.8	5.8	44.4	41.7		50.6	33.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	61.0	40.9		30.3	64.8	5.8	44.4	41.7		50.6	33.3	
LOS	E	D		C	E	A	D	D		D	C	
Approach Delay		54.3			30.1			41.9			35.5	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	62.7	44.9		9.2	26.7	0.0	24.9	106.9		51.4	186.9	
Queue Length 95th (m)	81.0	69.1		17.3	44.3	7.5	m34.8	m142.3		m#89.0	m205.6	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	665	453		347	263	385	192	2090		374	2459	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.67	0.49		0.14	0.37	0.36	0.67	0.67		0.78	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 39.9		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1177	71	197	553	108	166	3	164	230	24	249
Future Volume (vph)	44	1177	71	197	553	108	166	3	164	230	24	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.96	0.98	0.98	
Frt			0.850			0.850			0.850		0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3249	727	797	3249	1454	785	855	727	1570	1322	0
Flt Permitted	0.433			0.100			0.239			0.750		
Satd. Flow (perm)	710	3249	707	84	3249	1399	196	855	701	1211	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			133			133		251	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	67	1453	95	210	582	133	237	12	245	267	32	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	1453	95	210	582	133	237	12	245	267	351	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

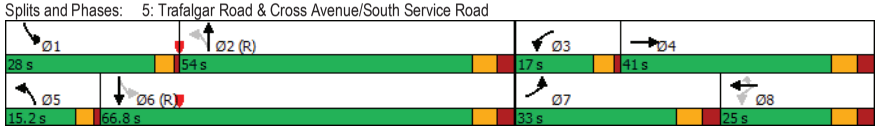
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	621	781	239	66	1047	804	170	486	49	650	701	627
Future Volume (vph)	621	781	239	66	1047	804	170	486	49	650	701	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3339		1805	3574	1503	1770	3610	1559	3433	1900	1503
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3339		241	3574	1503	219	3610	1559	3433	1900	1503
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)	675	849	260	72	1138	874	185	528	53	707	762	682
RTOR Reduction (vph)	0	20	0	0	0	216	0	0	39	0	0	186
Lane Group Flow (vph)	675	1089	0	72	1138	658	185	528	14	707	762	496
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Actuated Green, G (s)	21.0	57.4		45.6	40.0	40.0	40.0	33.0	33.0	22.0	48.0	48.0
Effective Green, g (s)	22.0	60.4		47.6	43.0	43.0	42.0	36.0	36.0	23.0	51.0	51.0
Actuated g/C Ratio	0.16	0.43		0.34	0.31	0.31	0.30	0.26	0.26	0.16	0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1440		155	1097	461	154	928	400	563	692	547
v/s Ratio Prot	c0.19	0.33		0.02	0.32		0.07	0.15		c0.21	c0.40	
v/s Ratio Perm				0.14		c0.44	0.29		0.01			0.33
v/c Ratio	1.24	0.76		0.46	1.04	1.43	1.20	0.57	0.03	1.26	1.10	0.91
Uniform Delay, d1	59.0	33.6		33.6	48.5	48.5	44.4	45.2	39.0	58.5	44.5	42.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.32	1.24	1.82
Incremental Delay, d2	123.3	2.3		2.2	37.3	204.4	136.8	2.5	0.2	120.4	53.9	9.3
Delay (s)	182.3	35.9		35.8	85.8	252.9	181.1	47.8	39.1	197.7	109.0	86.3
Level of Service	F	D		D	F	F	F	D	D	F	F	F
Approach Delay (s)		91.3			154.2			79.4			131.0	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	121.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	85	118	44	88	126	118	1227	56	270	1401	434
Future Volume (vph)	408	85	118	44	88	126	118	1227	56	270	1401	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3213	1564		1745	1759	1531	1641	4961		1752	4806	
Flt Permitted	0.95	1.00		0.62	1.00	1.00	0.07	1.00		0.08	1.00	
Satd. Flow (perm)	3213	1564		1140	1759	1531	125	4961		151	4806	
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)	443	92	128	48	96	137	128	1334	61	293	1523	472
RTOR Reduction (vph)	0	37	0	0	0	120	0	3	0	0	36	0
Lane Group Flow (vph)	443	183	0	48	96	17	128	1392	0	293	1959	0
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	23.4	30.5		23.8	14.2	14.2	65.8	55.1		81.4	66.7	
Effective Green, g (s)	26.4	33.5		29.8	17.2	17.2	65.8	58.1		81.4	69.7	
Actuated g/C Ratio	0.19	0.24		0.21	0.12	0.12	0.47	0.42		0.58	0.50	
Clearance Time (s)	7.0	7.0		4.5	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	605	374		297	216	188	174	2058		342	2392	
v/s Ratio Prot	c0.14	c0.12		0.01	0.05		0.06	0.28		c0.14	c0.41	
v/s Ratio Perm				0.02		0.01	0.29			0.36		
v/c Ratio	0.73	0.49		0.16	0.44	0.09	0.74	0.68		0.86	0.82	
Uniform Delay, d1	53.5	45.9		44.6	57.0	54.5	28.4	33.3		39.3	29.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.97	1.19		0.88	1.04	
Incremental Delay, d2	4.6	1.0		0.3	1.5	0.2	9.8	1.1		17.2	3.0	
Delay (s)	58.0	46.9		44.9	58.4	54.7	37.2	40.6		51.8	33.8	
Level of Service	E	D		D	E	D	D	D		D	C	
Approach Delay (s)		54.3			54.3			40.3			36.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

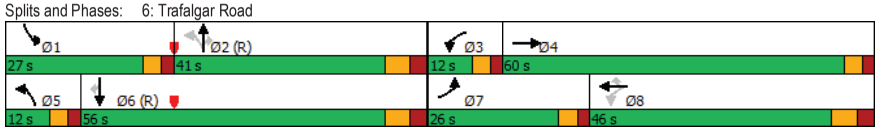
Intersection Capacity Utilization 106.3% ICU Level of Service G
Analysis Period (min) 15

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

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

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

Splits and Phases: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	26.0	60.0		12.0	46.0	46.0	12.0	41.0	41.0	27.0	56.0	56.0
Total Split (%)	18.6%	42.9%		8.6%	32.9%	32.9%	8.6%	29.3%	29.3%	19.3%	40.0%	40.0%
Maximum Green (s)	21.0	55.0		7.0	39.0	39.0	7.0	34.0	34.0	22.0	49.0	49.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	22.0	60.4		50.0	42.0	42.0	45.0	37.0	37.0	23.0	52.0	52.0
Actuated g/C Ratio	0.16	0.43		0.36	0.30	0.30	0.32	0.26	0.26	0.16	0.37	0.37
v/c Ratio	1.24	0.76		0.41	1.06	1.31	1.16	0.55	0.10	1.26	1.08	0.92
Control Delay	170.9	37.3		28.5	91.9	174.6	152.6	47.0	0.3	178.9	96.0	50.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.9	37.3		28.5	91.9	174.6	152.6	47.0	0.3	178.9	96.0	50.2
LOS	F	D		C	F	F	F	D	A	F	F	D
Approach Delay		87.9			124.4			69.3			108.7	
Approach LOS		F			F			E			F	
Queue Length 50th (m)	~125.4	142.6		11.0	~191.5	~260.0	~45.2	70.2	0.0	~136.2	~237.4	127.9
Queue Length 95th (m)	#165.3	171.8		20.4	#235.7	#342.8	#96.8	89.6	0.0	m#135.5	m#235.1	m123.7
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0			80.0		
Base Capacity (vph)	544	1460		175	1072	669	159	954	549	563	705	741
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.76		0.41	1.06	1.31	1.16	0.55	0.10	1.26	1.08	0.92

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 103.6		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	381	510	79	20	417	615	53	351	50	565	520	352
Future Volume (vph)	381	510	79	20	417	615	53	351	50	565	520	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.93	0.99	0.99		0.96		0.97
Frt			0.850			0.850		0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3471	1599	1703	3505	1568	1770	3488	0	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3326	3471	1524	1681	3505	1460	1753	3488	0	3238	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			473		11				343
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	414	554	86	22	453	668	58	382	54	614	565	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	554	86	22	453	668	58	436	0	614	565	383
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	22.4	49.0	49.0	12.6	39.2	39.2	12.6	40.6		37.8	65.8	65.8
Total Split (%)	16.0%	35.0%	35.0%	9.0%	28.0%	28.0%	9.0%	29.0%		27.0%	47.0%	47.0%
Maximum Green (s)	17.4	44.0	44.0	7.6	32.2	32.2	7.6	33.6		32.8	58.8	58.8
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	18.4	49.2	49.2	8.3	32.3	32.3	8.6	42.7		30.6	67.1	67.1
Actuated g/C Ratio	0.13	0.35	0.35	0.06	0.23	0.23	0.06	0.30		0.22	0.48	0.48
v/c Ratio	0.92	0.45	0.14	0.22	0.56	0.95	0.53	0.41		0.83	0.63	0.43
Control Delay	86.0	36.8	0.5	68.2	50.0	39.6	81.9	40.6		83.5	29.4	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	86.0	36.8	0.5	68.2	50.0	39.6	81.9	40.6		83.5	29.4	9.2
LOS	F	D	A	E	D	D	F	D		F	C	A
Approach Delay		53.2			44.3			45.4			45.7	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	62.3	66.7	0.0	6.2	60.1	67.5	16.7	54.0		98.0	74.6	13.6
Queue Length 95th (m)	#93.6	85.3	0.0	15.9	78.3	#153.8	#33.1	72.6		118.1	122.2	m45.4
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	451	1223	632	104	881	721	110	1071		812	893	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.92	0.45	0.14	0.21	0.51	0.93	0.53	0.41		0.76	0.63	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 47.1		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	621	781	239	66	1047	804	170	486	49	650	701	627
Future Volume (vph)	621	781	239	66	1047	804	170	486	49	650	701	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	0.98				0.94			0.97	0.98		0.95
Frt		0.965				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3339	0	1805	3574	1599	1770	3610	1615	3433	1900	1583
Flt Permitted	0.950			0.127			0.118			0.950		
Satd. Flow (perm)	3432	3339	0	241	3574	1503	220	3610	1559	3369	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				312			187			292
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	675	849	260	72	1138	874	185	528	53	707	762	682
Shared Lane Traffic (%)												
Lane Group Flow (vph)	675	1109	0	72	1138	874	185	528	53	707	762	682
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

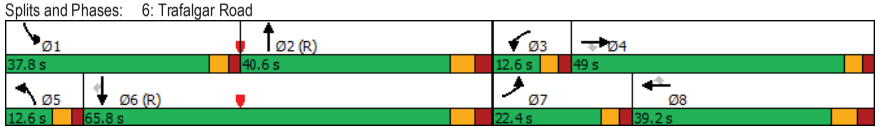
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1268	407	205	294	334	413	240	1474	197	172	1481	584
Future Volume (vph)	1268	407	205	294	334	413	240	1474	197	172	1481	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.95
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3343	1413	3433	3471	1599	1719	5136	1422	1805	5136	1485
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3400	3343	1413	3433	3471	1599	181	5136	1422	201	5136	1485
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)	1378	442	223	320	363	449	261	1602	214	187	1610	635
RTOR Reduction (vph)	0	0	124	0	0	93	0	0	85	0	0	236
Lane Group Flow (vph)	1378	442	99	320	363	356	261	1602	129	187	1610	399
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	46.0	48.8	48.8	17.6	17.4	28.9	53.8	40.1	57.7	49.4	37.9	37.9
Effective Green, g (s)	49.0	51.8	48.8	17.6	20.4	28.9	53.8	43.1	57.7	49.4	40.9	40.9
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.15	0.21	0.38	0.31	0.41	0.35	0.29	0.29
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1190	1236	492	431	505	330	220	1581	586	202	1500	433
v/s Ratio Prot	c0.41	0.13		0.09	0.10	c0.09	c0.12	0.31	0.03	0.08	0.31	
v/s Ratio Perm			0.07			0.13	c0.34		0.06	0.25		0.27
v/c Ratio	1.16	0.36	0.20	0.74	0.72	1.08	1.19	1.01	0.22	0.93	1.07	0.92
Uniform Delay, d1	45.5	32.0	32.0	59.0	57.1	55.5	40.8	48.4	26.6	37.3	49.5	48.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.34	1.06	2.18	1.05	0.74	0.47
Incremental Delay, d2	80.8	0.2	0.2	6.8	4.9	72.3	88.3	10.4	0.0	25.0	39.6	15.4
Delay (s)	126.3	32.2	32.2	65.8	61.9	127.9	143.2	62.0	58.1	64.0	76.2	37.9
Level of Service	F	C	C	E	E	F	F	E	E	E	E	D
Approach Delay (s)		95.7			89.2			71.8			65.2	
Approach LOS		F			F			E			E	

Intersection Summary				
HCM 2000 Control Delay	78.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.12			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	100.7%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	381	510	79	20	417	615	53	351	50	565	520	352
Future Volume (vph)	381	510	79	20	417	615	53	351	50	565	520	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	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	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3471	1524	1703	3505	1460	1770	3489		3367	1863	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3471	1524	1703	3505	1460	1770	3489		3367	1863	1474
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)	414	554	86	22	453	668	58	382	54	614	565	383
RTOR Reduction (vph)	0	0	56	0	0	357	0	8	0	0	0	186
Lane Group Flow (vph)	414	554	30	22	453	311	58	428	0	614	565	197
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	17.4	46.2	46.2	4.5	31.3	31.3	6.2	37.7		29.6	61.1	61.1
Effective Green, g (s)	18.4	49.2	49.2	5.5	34.3	34.3	7.2	40.7		30.6	64.1	64.1
Actuated g/C Ratio	0.13	0.35	0.35	0.04	0.24	0.24	0.05	0.29		0.22	0.46	0.46
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	451	1219	535	66	858	357	91	1014		735	852	674
v/s Ratio Prot	c0.12	0.16		0.01	0.13		0.03	0.12		c0.18	c0.30	
v/s Ratio Perm			0.02			c0.21						0.13
v/c Ratio	0.92	0.45	0.06	0.33	0.53	0.87	0.64	0.42		0.84	0.66	0.29
Uniform Delay, d1	60.1	35.0	30.0	65.5	45.8	50.7	65.1	40.1		52.3	29.5	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.47	0.92	2.14
Incremental Delay, d2	23.4	0.3	0.0	3.0	0.6	20.0	13.7	1.3		5.2	2.5	0.7
Delay (s)	83.5	35.3	30.1	68.4	46.4	70.7	78.8	41.4		82.1	29.6	51.5
Level of Service	F	D	C	E	D	E	E	D		F	C	D
Approach Delay (s)		53.8			61.1			45.8			55.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	55.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

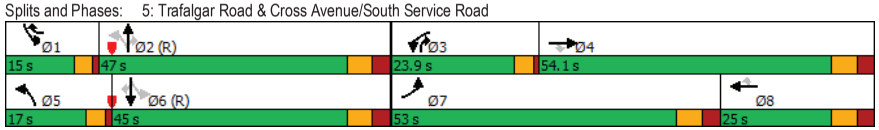
Intersection Capacity Utilization 100.7%	ICU Level of Service G
Analysis Period (min) 15	

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

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

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

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	5.0	10.0	7.0	7.0	27.0	5.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	9.5	25.0	11.5	11.5	34.0	9.5	11.5	34.0	34.0
Total Split (s)	53.0	54.1	54.1	23.9	25.0	15.0	17.0	47.0	23.9	15.0	45.0	45.0
Total Split (%)	37.9%	38.6%	38.6%	17.1%	17.9%	10.7%	12.1%	33.6%	17.1%	10.7%	32.1%	32.1%
Maximum Green (s)	46.0	47.1	47.1	19.9	18.0	11.0	13.0	40.0	19.9	11.0	38.0	38.0
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	49.0	51.8	48.8	17.6	20.3	35.9	56.8	43.1	60.7	52.5	41.0	41.0
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.14	0.26	0.41	0.31	0.43	0.38	0.29	0.29
v/c Ratio	1.16	0.36	0.36	0.74	0.72	0.90	1.17	1.01	0.31	0.90	1.07	0.95
Control Delay	121.8	33.3	8.7	69.9	65.9	59.8	122.2	60.9	16.5	58.1	74.2	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.8	33.3	8.7	69.9	65.9	59.8	122.2	60.9	16.5	58.1	74.2	26.2
LOS	F	C	A	E	E	E	F	E	B	E	E	C
Approach Delay		90.3			64.6			64.0			60.4	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	~244.0	49.0	6.4	46.8	53.5	98.4	~77.8	~183.5	18.5	33.6	~194.6	114.6
Queue Length 95th (m)	#287.9	65.2	27.2	62.9	71.8	#163.4	m#66.2	m123.3	m14.7	m#45.9	m#222.9	m#153.6
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	1190	1235	616	487	520	497	223	1581	721	207	1504	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.36	0.36	0.66	0.70	0.90	1.17	1.01	0.30	0.90	1.07	0.95

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 70.0	Intersection LOS: E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	377	14	39	585	23	20	0	48	56	16	491
Future Volume (vph)	31	377	14	39	585	23	20	0	48	56	16	491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.94		0.96	0.99	
Frt		0.993			0.994			0.850			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3046	0	818	3189	0	805	717	0	1570	1386	0
Flt Permitted	0.388			0.361			0.160			0.712		
Satd. Flow (perm)	641	3046	0	310	3189	0	136	717	0	1135	1386	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			9			407			277	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	60	433	22	46	665	29	38	0	69	72	26	552
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	455	0	46	694	0	38	69	0	72	578	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	48.4	48.4		12.6	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	53.8%	53.8%		14.0%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	42.4	42.4		8.6	55.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	24.3	24.3		36.4	36.4		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.35	0.35		0.52	0.52		0.36	0.36		0.36	0.36	
v/c Ratio	0.27	0.43		0.21	0.41		0.78	0.13		0.18	0.86	
Control Delay	20.2	18.4		10.7	10.8		107.2	0.5		16.9	25.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	18.4		10.7	10.8		107.2	0.5		16.9	25.5	
LOS	C	B		B	B		F	A		B	C	
Approach Delay		18.6			10.8			38.4			24.5	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	5.7	23.9		2.9	27.6		4.5	0.0		6.5	37.3	
Queue Length 95th (m)	7.9	35.0		7.3	38.1		#10.1	0.0		13.4	30.9	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	410	1952		225	2621		49	518		409	676	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.23		0.20	0.26		0.78	0.13		0.18	0.86	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 69.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 18.7		Intersection LOS: B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1268	407	205	294	334	413	240	1474	197	172	1481	584
Future Volume (vph)	1268	407	205	294	334	413	240	1474	197	172	1481	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor			0.95	0.98					0.83			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3343	1482	3433	3471	1599	1719	5136	1615	1805	5136	1568
Flt Permitted	0.950			0.950			0.100			0.106		
Satd. Flow (perm)	3400	3343	1413	3368	3471	1599	181	5136	1337	201	5136	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			117			145			333
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1378	442	223	320	363	449	261	1602	214	187	1610	635
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1378	442	223	320	363	449	261	1602	214	187	1610	635
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	65	0	0	0	0	2210	944	0	2165	530
Future Volume (Veh/h)	0	0	65	0	0	0	0	2210	944	0	2165	530
Sign Control		Stop			Stop			Free			Free	
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)	0	0	71	0	0	0	0	2402	1026	0	2353	576
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.72	0.72	0.59	0.72	0.72	0.75	0.59			0.75		
vC, conflicting volume	3466	5067	1096	3186	5355	801	2953			2402		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	735	2967	0	346	3368	0	1896			1714		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	89	100	100	100	100			100		
cM capacity (veh/h)	215	10	620	369	5	821	186			282		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	71	801	801	801	1026	941	941	1047
Volume Left	0	0	0	0	0	0	0	0
Volume Right	71	0	0	0	1026	0	0	576
cSH	620	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.11	0.47	0.47	0.47	0.60	0.55	0.55	0.62
Queue Length 95th (m)	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.6	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	64.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Intersection Capacity Utilization 77.7% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	377	14	39	585	23	20	0	48	56	16	491
Future Volume (vph)	31	377	14	39	585	23	20	0	48	56	16	491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.97	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1569	3045		817	3189		805	723		1527	1387	
Flt Permitted	0.39	1.00		0.36	1.00		0.16	1.00		0.71	1.00	
Satd. Flow (perm)	641	3045		310	3189		136	723		1145	1387	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	60	433	22	46	665	29	38	0	69	72	26	552
RTOR Reduction (vph)	0	5	0	0	4	0	0	44	0	0	177	0
Lane Group Flow (vph)	60	450	0	46	690	0	38	25	0	72	401	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.3	22.3		34.4	34.4		23.0	23.0		23.0	23.0	
Effective Green, g (s)	24.3	24.3		34.4	36.4		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.35	0.35		0.50	0.52		0.36	0.36		0.36	0.36	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	224	1066		212	1672		48	260		412	499	
v/s Ratio Prot		0.15		0.03	c0.22			0.03			c0.29	
v/s Ratio Perm	0.09			0.08			0.28			0.06		
v/c Ratio	0.27	0.42		0.22	0.41		0.79	0.10		0.17	0.80	
Uniform Delay, d1	16.2	17.2		9.7	10.0		19.9	14.7		15.2	20.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.6		0.4	0.3		61.0	0.2		0.3	9.6	
Delay (s)	17.5	17.8		10.1	10.4		80.8	14.9		15.4	29.6	
Level of Service	B	B		B	B		F	B		B	C	
Approach Delay (s)		17.7			10.3			38.3			28.0	
Approach LOS		B			B			D			C	

Intersection Summary				
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	69.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	77.7%	ICU Level of Service	D	
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)	0	0	65	0	0	0	0	2210	944	0	2165	530
Future Volume (vph)	0	0	65	0	0	0	0	2210	944	0	2165	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.971	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	71	0	0	0	0	2402	1026	0	2353	576
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	71	0	0	0	0	2402	1026	0	2929	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	623	0	2210	2072	0
Future Volume (vph)	1210	623	0	2210	2072	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1315	677	0	2402	2252	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1315	676	0	2402	2252	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	59.7	59.7		66.3	66.3	
Effective Green, g (s)	62.7	62.7		69.3	69.3	
Actuated g/C Ratio	0.45	0.45		0.49	0.49	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1568	704		2517	2517	
v/s Ratio Prot				c0.47	0.44	
v/s Ratio Perm	0.38	c0.43				
v/c Ratio	0.84	0.96		0.95	0.89	
Uniform Delay, d1	34.2	37.4		33.8	32.0	
Progression Factor	1.00	1.00		1.36	0.87	
Incremental Delay, d2	4.1	24.4		1.3	2.9	
Delay (s)	38.3	61.8		47.4	30.6	
Level of Service	D	E		D	C	
Approach Delay (s)	46.3			47.4	30.6	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	85.5%	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)	56	169	193	215	115	5	17	3	13	16	23	40
Future Volume (vph)	56	169	193	215	115	5	17	3	13	16	23	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.916			0.989			0.873			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1540	2803	0	1570	2727	0	1570	1473	0	1468	1497	0
Flt Permitted	0.652			0.416			0.710			0.740		
Satd. Flow (perm)	1048	2803	0	687	2727	0	1170	1473	0	1139	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		264			12			22			47	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Peak Hour Factor	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	72	209	264	326	146	12	21	4	22	26	25	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	473	0	326	158	0	21	26	0	26	72	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

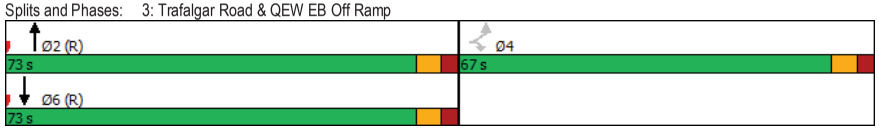
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	42.0	42.0		13.0	55.0		35.0	35.0		35.0	35.0	
Total Split (%)	46.7%	46.7%		14.4%	61.1%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	36.0	36.0		9.0	49.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		49.8	49.8		12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.53	0.53		0.71	0.71		0.17	0.17		0.17	0.17	
v/c Ratio	0.13	0.29		0.54	0.08		0.10	0.09		0.13	0.24	
Control Delay	9.3	4.4		7.4	3.0		25.9	13.4		26.4	14.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.3	4.4		7.4	3.0		25.9	13.4		26.4	14.7	
LOS	A	A		A	A		C	B		C	B	
Approach Delay		5.1			5.9			19.0			17.8	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	4.7	7.1		12.8	2.5		2.5	0.5		3.1	3.0	
Queue Length 95th (m)	9.5	12.0		15.1	4.3		7.3	5.1		6.4	13.5	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	569	1643		602	1991		518	664		504	689	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.29		0.54	0.08		0.04	0.04		0.05	0.10	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 70			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 7.0		Intersection LOS: A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	67.0	67.0		73.0	73.0	
Total Split (%)	47.9%	47.9%		52.1%	52.1%	
Maximum Green (s)	60.0	60.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	62.7	62.7		69.3	69.3	
Actuated g/C Ratio	0.45	0.45		0.50	0.50	
v/c Ratio	0.84	0.96		0.95	0.89	
Control Delay	40.1	63.1		47.2	31.0	
Queue Delay	0.0	0.0		8.2	0.0	
Total Delay	40.1	63.1		55.4	31.0	
LOS	D	E		E	C	
Approach Delay	47.9			55.4	31.0	
Approach LOS	D			E	C	
Queue Length 50th (m)	171.1	187.0		266.1	185.4	
Queue Length 95th (m)	202.5	#272.9		m247.2	228.1	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1575	708		2517	2517	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		133	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.83	0.96		1.01	0.89	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 44.9		Intersection LOS: D	
Intersection Capacity Utilization 85.5%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	169	193	215	115	5	17	3	13	16	23	40
Future Volume (vph)	56	169	193	215	115	5	17	3	13	16	23	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.87		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1530	2805		1570	2727		1566	1474		1464	1498	
Flt Permitted	0.65	1.00		0.42	1.00		0.71	1.00		0.74	1.00	
Satd. Flow (perm)	1050	2805		687	2727		1171	1474		1141	1498	
Peak-hour factor, PHF	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Adj. Flow (vph)	72	209	264	326	146	12	21	4	22	26	25	47
RTOR Reduction (vph)	0	124	0	0	3	0	0	18	0	0	39	0
Lane Group Flow (vph)	72	349	0	326	155	0	21	8	0	26	33	0
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.0	35.0		47.8	47.8		10.2	10.2		10.2	10.2	
Effective Green, g (s)	37.0	37.0		47.8	49.8		12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.53	0.53		0.68	0.71		0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	555	1482		580	1940		204	256		198	261	
v/s Ratio Prot		0.12		c0.07	0.06			0.01			0.02	
v/s Ratio Perm	0.07			c0.31			0.02			c0.02		
v/c Ratio	0.13	0.24		0.56	0.08		0.10	0.03		0.13	0.13	
Uniform Delay, d1	8.4	8.9		4.8	3.1		24.3	24.0		24.4	24.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		1.0	0.0		0.3	0.1		0.4	0.3	
Delay (s)	8.6	9.1		5.8	3.1		24.6	24.1		24.8	24.7	
Level of Service	A	A		A	A		C	C		C	C	
Approach Delay (s)		9.0			4.9			24.3			24.7	
Approach LOS		A			A			C			C	

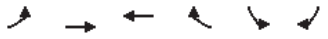
Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	623	0	2210	2072	0
Future Volume (vph)	1210	623	0	2210	2072	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1315	677	0	2402	2252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1315	677	0	2402	2252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3420	2072	959
Future Volume (Veh/h)	0	0	0	3420	2072	959
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	0	0	3717	2252	1042
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.25					
vC, conflicting volume	3491	751	2252			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	401	751	2252			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	142	353	225			

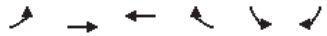
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1239	1239	1239	751	751	751	1042
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1042
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.73	0.73	0.73	0.44	0.44	0.44	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		85.5%	ICU Level of Service E
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	404	184	6	5	4
Future Volume (vph)	23	404	184	6	5	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.992		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1624	3094	2799	0	1383	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1624	3094	2799	0	1383	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	4			4	7	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Heavy Vehicles (%)	0%	5%	16%	0%	0%	25%
Adj. Flow (vph)	33	697	209	12	8	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	697	221	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary				
Area Type:	CBD			
Control Type: Unsignalized				
Intersection Capacity Utilization	23.5%		ICU Level of Service A	
Analysis Period (min)	15			



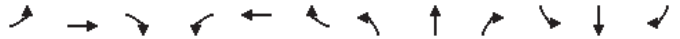
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	404	184	6	5	4
Future Volume (Veh/h)	23	404	184	6	5	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Hourly flow rate (vph)	33	697	209	12	8	8
Pedestrians			7		4	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked						
vC, conflicting volume	225				640	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225				640	114
tC, single (s)	4.1				6.8	7.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.5
p0 queue free %	98				98	99
cM capacity (veh/h)	1351				398	845

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	33	348	348	139	82	16
Volume Left	33	0	0	0	0	8
Volume Right	0	0	0	0	12	8
cSH	1351	1700	1700	1700	1700	541
Volume to Capacity	0.02	0.20	0.20	0.08	0.05	0.03
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	0.7
Control Delay (s)	7.7	0.0	0.0	0.0	0.0	11.9
Lane LOS	A					B
Approach Delay (s)	0.3			0.0		11.9
Approach LOS						B

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		23.5%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3420	2072	959
Future Volume (vph)	0	0	0	3420	2072	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3717	2252	1042
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3717	2252	1042
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

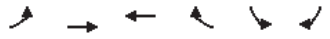
Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	85.5%		ICU Level of Service	E
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Future Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98		1.00	0.93		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1723	1557		5085	1482		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1723	1557		5085	1482		4217	1497
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)	26	0	345	722	172	359	0	3110	608	0	2228	12
RTOR Reduction (vph)	0	0	21	0	0	47	0	0	138	0	0	5
Lane Group Flow (vph)	26	0	324	440	454	312	0	3110	470	0	2228	7
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	3.0		44.3	36.8	36.8	36.8		81.7	81.7		81.7	81.7
Effective Green, g (s)	4.0		47.3	39.8	39.8	39.8		84.7	84.7		84.7	84.7
Actuated g/C Ratio	0.03		0.34	0.28	0.28	0.28		0.61	0.61		0.61	0.61
Clearance Time (s)	4.5		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51		545	477	489	442		3076	896		2551	905
v/s Ratio Prot	0.01							c0.61			0.53	
v/s Ratio Perm			c0.20	0.26	0.26	0.20			0.32			0.00
v/c Ratio	0.51		0.60	0.92	0.93	0.71		1.01	0.52		0.87	0.01
Uniform Delay, d1	67.0		38.4	48.6	48.7	44.9		27.6	16.0		23.2	11.0
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.63	0.60		1.00	1.00
Incremental Delay, d2	7.8		1.8	23.4	23.9	5.1		13.0	0.9		4.5	0.0
Delay (s)	74.8		40.2	72.0	72.6	49.9		30.4	10.5		27.7	11.0
Level of Service	E		D	E	E	D		C	B		C	B
Approach Delay (s)		42.6			65.9			27.1			27.6	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	3	3	3	1
Future Volume (vph)	0	4	3	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.932		0.955	
Flt Protected					0.968	
Satd. Flow (prot)	0	1710	1594	0	1296	0
Flt Permitted					0.968	
Satd. Flow (perm)	0	1710	1594	0	1296	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	8	4	4	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	8	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

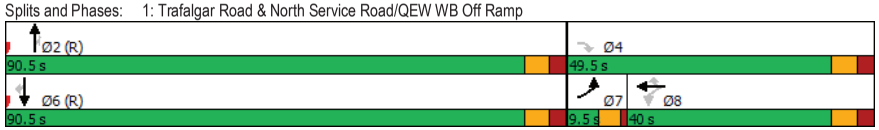
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	3	3	3	1
Future Volume (Veh/h)	0	4	3	3	3	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	8	4	4	8	4
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				21	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				21	12
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1609				916	1069

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	8	8	12
Volume Left	0	0	8
Volume Right	0	4	4
cSH	1609	1700	962
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 91.8% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp

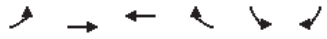


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	9.5		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	9.5		49.5	40.0	40.0	40.0		90.5	90.5		90.5	90.5
Total Split (%)	6.8%		35.4%	28.6%	28.6%	28.6%		64.6%	64.6%		64.6%	64.6%
Maximum Green (s)	5.0		42.5	33.0	33.0	33.0		83.5	83.5		83.5	83.5
Yellow Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.0		45.5	39.8	39.8	39.8		86.5	86.5		86.5	86.5
Actuated g/C Ratio	0.04		0.32	0.28	0.28	0.28		0.62	0.62		0.62	0.62
v/c Ratio	0.34		0.63	0.92	0.93	0.73		0.99	0.58		0.86	0.01
Control Delay	77.2		42.5	74.7	75.3	47.6		25.3	4.5		26.0	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		2.3	0.0		0.0	0.0
Total Delay	77.2		42.5	74.7	75.3	47.6		27.6	4.5		26.0	0.0
LOS	E		D	E	E	D		C	A		C	A
Approach Delay		44.9			67.1			23.8			25.8	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	7.5		78.0	~142.5	~148.0	81.8		210.5	22.5		182.8	0.0
Queue Length 95th (m)	18.3		113.6	#215.0	#221.1	#130.2		#362.0	m23.2		207.3	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	77		545	478	489	489		3141	1049		2605	950
Starvation Cap Reductn	0		0	0	0	0		35	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.34		0.63	0.92	0.93	0.73		1.00	0.58		0.86	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 32.6		Intersection LOS: C	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	572	120	4	3
Future Volume (vph)	1	5	572	120	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.973		0.942	
Flt Protected		0.988			0.972	
Satd. Flow (prot)	0	1352	1625	0	1566	0
Flt Permitted		0.988			0.972	
Satd. Flow (perm)	0	1352	1625	0	1566	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	12	665	167	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	832	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

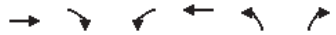


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	572	120	4	3
Future Volume (Veh/h)	1	5	572	120	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	12	665	167	16	12
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	833				774	750
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	833				774	750
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				96	97
cM capacity (veh/h)	500				365	414

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	832	28
Volume Left	4	0	16
Volume Right	0	167	12
cSH	500	1700	384
Volume to Capacity	0.01	0.49	0.07
Queue Length 95th (m)	0.2	0.0	1.9
Control Delay (s)	3.1	0.0	15.1
Lane LOS	A		C
Approach Delay (s)	3.1	0.0	15.1
Approach LOS			C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	51.9%	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)	24	0	317	664	158	330	0	2861	559	0	2050	11
Future Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.93			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.970							
Satd. Flow (prot)	1805	0	1615	1681	1723	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.970							
Satd. Flow (perm)	1801	0	1615	1681	1723	1557	0	5085	1482	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			66			350			66
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	26	0	345	722	172	359	0	3110	608	0	2228	12
Shared Lane Traffic (%)				39%								
Lane Group Flow (vph)	26	0	345	440	454	359	0	3110	608	0	2228	12
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	8	18	10	8	78
Future Volume (Veh/h)	8	8	18	10	8	78
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	9	20	11	9	85
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			18		64	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		64	14
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	92
cM capacity (veh/h)			1599		929	1067

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	18	31	94
Volume Left	0	20	9
Volume Right	9	0	85
cSH	1700	1599	1052
Volume to Capacity	0.01	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.3
Control Delay (s)	0.0	4.7	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	4.7	8.8
Approach LOS			A

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	20.1%	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)	19	0	247	457	129	360	0	2651	501	0	2506	11
Future Volume (vph)	19	0	247	457	129	360	0	2651	501	0	2506	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.99			0.97			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.972							
Satd. Flow (prot)	1805	0	1615	1681	1727	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.972							
Satd. Flow (perm)	1800	0	1615	1681	1727	1563	0	5085	1556	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			341			129			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	21	0	268	497	140	391	0	2882	545	0	2724	12
Shared Lane Traffic (%)				37%								
Lane Group Flow (vph)	21	0	268	313	324	391	0	2882	545	0	2724	12
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Detector Phase	7		4	8	8			2			6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0			5.0			5.0	5.0
Minimum Split (s)	23.0		38.0	38.0	38.0			35.0			35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0			79.0			79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%			56.4%			56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0			72.0			72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0			4.0			4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0			3.0			3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0			-3.0			-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0			4.0			4.0	4.0
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
Recall Mode	None		None	None	None			C-Max			C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)			0	0	0			0			0	0
Act Effct Green (s)	8.2		42.4	34.5	34.5	140.0		89.6	140.0		89.6	89.6
Actuated g/C Ratio	0.06		0.30	0.25	0.25	1.00		0.64	1.00		0.64	0.64
v/c Ratio	0.20		0.53	0.76	0.76	0.25		0.89	0.35		1.01	0.01
Control Delay	66.5		37.4	60.3	60.4	0.4		19.5	0.4		45.6	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	66.5		37.4	60.3	60.4	0.4		19.5	0.4		45.6	0.0
LOS	E		D	E	E	A		B	A		D	A
Approach Delay		39.5			37.6			16.5			45.4	
Approach LOS		D			D			B			D	
Queue Length 50th (m)	6.0		54.7	89.4	92.7	0.0		150.4	0.0		~318.4	0.0
Queue Length 95th (m)	15.0		73.3	117.6	121.2	0.0		#360.3	m0.0		#379.5	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		675	442	454	1563		3255	1556		2700	983
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09		0.40	0.71	0.71	0.25		0.89	0.35		1.01	0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 30.8	Intersection LOS: C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	8	18	10	8	78
Future Volume (vph)	8	8	18	10	8	78
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	0.932				0.878	
Flt Protected				0.969	0.995	
Satd. Flow (prot)	1736	0	0	1805	1627	0
Flt Permitted				0.969	0.995	
Satd. Flow (perm)	1736	0	0	1805	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	103.3			722.4	44.4	
Travel Time (s)	7.4			52.0	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	9	20	11	9	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	31	94	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		ICU Level of Service A	
Analysis Period (min) 15			

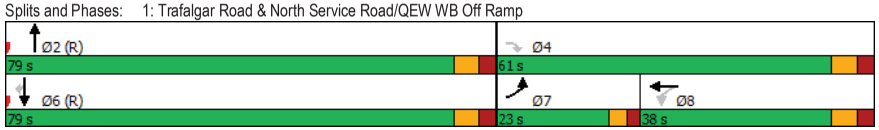
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	6	740	173	19	59
Future Volume (Veh/h)	1	6	740	173	19	59
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	14	860	240	76	236
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	1101				1008	982
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1101				1008	982
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				71	22
cM capacity (veh/h)	377				265	304

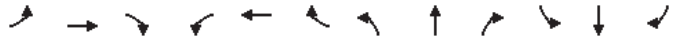
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	1100	312
Volume Left	4	0	76
Volume Right	0	240	236
cSH	377	1700	294
Volume to Capacity	0.01	0.65	1.06
Queue Length 95th (m)	0.3	0.0	96.2
Control Delay (s)	3.4	0.0	109.1
Lane LOS	A		F
Approach Delay (s)	3.4	0.0	109.1
Approach LOS			F

Intersection Summary			
Average Delay	23.8		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection Capacity Utilization 89.8% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp





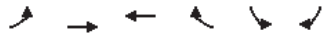
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	247	457	129	360	0	2651	501	0	2506	11
Future Volume (vph)	19	0	247	457	129	360	0	2651	501	0	2506	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	1.0		4.0	1.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99		1.00	0.97		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1728	1563		5085	1556		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1728	1563		5085	1556		4217	1497
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)	21	0	268	497	140	391	0	2882	545	0	2724	12
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	21	0	247	313	324	391	0	2882	545	0	2724	8
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Actuated Green, G (s)	4.9		41.4	31.5	31.5	140.0		84.6	140.0		84.6	84.6
Effective Green, g (s)	5.9		44.4	34.5	34.5	140.0		87.6	140.0		87.6	87.6
Actuated g/C Ratio	0.04		0.32	0.25	0.25	1.00		0.63	1.00		0.63	0.63
Clearance Time (s)	5.0		7.0	7.0	7.0			7.0			7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	76		512	414	425	1563		3181	1556		2638	936
v/s Ratio Prot	0.01							0.57			c0.65	
v/s Ratio Perm			c0.15	0.19	0.19	0.25			0.35			0.01
v/c Ratio	0.28		0.48	0.76	0.76	0.25		0.91	0.35		1.03	0.01
Uniform Delay, d1	65.0		38.5	48.9	48.9	0.0		22.6	0.0		26.2	9.9
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.71	1.00		1.00	1.00
Incremental Delay, d2	2.0		0.7	7.7	7.9	0.4		2.9	0.4		26.6	0.0
Delay (s)	67.0		39.2	56.5	56.8	0.4		18.9	0.4		52.8	9.9
Level of Service	E		D	E	E	A		B	A		D	A
Approach Delay (s)		41.3			35.3			15.9			52.6	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	6	740	173	19	59
Future Volume (vph)	1	6	740	173	19	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.971		0.898	
Flt Protected		0.989			0.988	
Satd. Flow (prot)	0	1384	1622	0	1517	0
Flt Permitted		0.989			0.988	
Satd. Flow (perm)	0	1384	1622	0	1517	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	14	860	240	76	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	1100	0	312	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	8	16	16	2
Future Volume (Veh/h)	0	10	8	16	16	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	20	11	21	42	8
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	38				48	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38				48	28
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1577				883	1048

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	32	50
Volume Left	0	0	42
Volume Right	0	21	8
cSH	1577	1700	906
Volume to Capacity	0.00	0.02	0.06
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		4.5	
Intersection Capacity Utilization		15.1%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3152	3152	1571
Future Volume (vph)	0	0	0	3152	3152	1571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3426	3426	1708
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3426	3426	1708
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	100.6%	ICU Level of Service G	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3152	3152	1571
Future Volume (Veh/h)	0	0	0	3152	3152	1571
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	0	0	3426	3426	1708
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.39					
vC, conflicting volume	4568	1142	3426			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4674	1142	3426			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	0	194	76			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1142	1142	1142	1142	1142	1142	1708
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1708
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.67	0.67	0.67	0.67	0.67	0.67	1.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		100.6%	ICU Level of Service G
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	8	16	16	2
Future Volume (vph)	0	10	8	16	16	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.911		0.978	
Flt Protected					0.960	
Satd. Flow (prot)	0	1710	1558	0	1257	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1710	1558	0	1257	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	20	11	21	42	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	32	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%		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 (vph)	94	327	133	247	112	39	54	0	107	103	28	81
Future Volume (vph)	94	327	133	247	112	39	54	0	107	103	28	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	3094	1425	1593	2801	1413	1593		1425	1611	1676	1163
Flt Permitted	0.67	1.00	1.00	0.24	1.00	1.00	0.74		1.00	0.76	1.00	1.00
Satd. Flow (perm)	1140	3094	1425	410	2801	1413	1237		1425	1284	1676	1163
Peak-hour factor, PHF	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Adj. Flow (vph)	136	564	145	268	127	78	59	0	116	166	30	162
RTOR Reduction (vph)	0	0	107	0	0	39	0	0	72	0	0	101
Lane Group Flow (vph)	136	564	38	268	127	39	59	0	44	166	30	61
Confl. Peds. (#/hr)	4					4				7		
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	19.5	19.5	36.8	36.8	36.8	27.8		27.8	27.8	27.8	27.8
Effective Green, g (s)	19.5	19.5	19.5	36.8	36.8	36.8	27.8		27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.26	0.26	0.26	0.50	0.50	0.50	0.38		0.38	0.38	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	302	819	377	410	1400	706	467		538	484	633	439
v/s Ratio Prot		0.18		c0.11	0.05						0.02	
v/s Ratio Perm	0.12		0.03	c0.21		0.03	0.05		0.03	c0.13		0.05
v/c Ratio	0.45	0.69	0.10	0.65	0.09	0.06	0.13		0.08	0.34	0.05	0.14
Uniform Delay, d1	22.6	24.3	20.4	12.3	9.6	9.5	15.0		14.7	16.4	14.5	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	2.4	0.1	3.7	0.0	0.0	0.6		0.3	1.9	0.1	0.7
Delay (s)	23.6	26.7	20.6	16.0	9.7	9.5	15.5		15.0	18.3	14.7	15.7
Level of Service	C	C	C	B	A	A	B		B	B	B	B
Approach Delay (s)		25.2			13.2			15.2			16.8	
Approach LOS		C			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	49.5%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	984	463	0	2168	1639	0
Future Volume (vph)	984	463	0	2168	1639	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		15				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1070	503	0	2357	1782	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1070	503	0	2357	1782	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	56.0	56.0		84.0	84.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	49.0	49.0		77.0	77.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	50.1	50.1		81.9	81.9	
Actuated g/C Ratio	0.36	0.36		0.58	0.58	
v/c Ratio	0.85	0.88		0.79	0.60	
Control Delay	49.3	58.5		33.0	17.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	49.3	58.5		33.0	17.1	
LOS	D	E		C	B	
Approach Delay	52.2			33.0	17.1	
Approach LOS	D			C	B	
Queue Length 50th (m)	144.8	130.5		212.4	92.8	
Queue Length 95th (m)	173.4	#193.3		m218.4	m95.0	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1300	593		2975	2975	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.82	0.85		0.79	0.60	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 33.4		Intersection LOS: C	
Intersection Capacity Utilization 100.6%		ICU Level of Service G	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

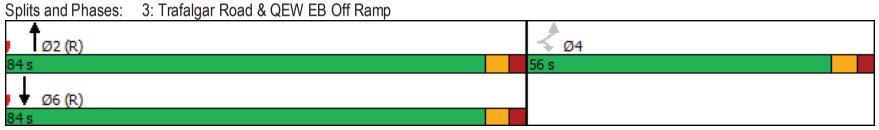
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	35.6%	35.6%	35.6%	28.9%	64.4%	64.4%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	27.5	27.5	27.5	21.5	53.5	53.5	27.5	27.5	27.5	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	19.4	19.4	19.4	36.8	36.8	36.8	27.8		27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.26	0.26	0.26	0.50	0.50	0.50	0.38		0.38	0.38	0.38	0.38
v/c Ratio	0.46	0.69	0.30	0.65	0.09	0.11	0.13		0.13	0.34	0.05	0.30
Control Delay	28.4	29.5	5.9	18.7	9.2	2.6	19.0		0.3	21.5	18.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	28.4	29.5	5.9	18.7	9.2	2.6	19.0		0.3	21.5	18.2	5.4
LOS	C	C	A	B	A	A	B		A	C	B	A
Approach Delay		25.3			13.5			6.6			13.9	
Approach LOS		C			B			A			B	
Queue Length 50th (m)	16.4	38.5	0.0	21.8	4.7	0.0	5.4		0.0	16.7	2.7	0.0
Queue Length 95th (m)	24.9	34.3	12.8	36.0	8.4	0.6	16.6		0.0	25.8	9.7	0.0
Internal Link Dist (m)		257.3			16.1			125.2			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	429	1168	628	553	2058	1056	467		868	483	632	540
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.32	0.48	0.23	0.48	0.06	0.07	0.13		0.13	0.34	0.05	0.30

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 73.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	984	463	0	2168	1639	0
Future Volume (vph)	984	463	0	2168	1639	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1070	503	0	2357	1782	0
RTOR Reduction (vph)	0	10	0	0	0	0
Lane Group Flow (vph)	1070	493	0	2357	1782	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	47.1	47.1		78.9	78.9	
Effective Green, g (s)	50.1	50.1		81.9	81.9	
Actuated g/C Ratio	0.36	0.36		0.59	0.59	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1253	562		2974	2974	
v/s Ratio Prot				c0.46	0.35	
v/s Ratio Perm	0.31	c0.31				
v/c Ratio	0.85	0.88		0.79	0.60	
Uniform Delay, d1	41.6	42.1		22.5	18.6	
Progression Factor	1.00	1.00		1.40	0.86	
Incremental Delay, d2	5.9	14.4		0.6	0.7	
Delay (s)	47.4	56.5		32.2	16.7	
Level of Service	D	E		C	B	
Approach Delay (s)	50.3			32.2	16.7	
Approach LOS	D			C	B	

Intersection Summary				
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	100.6%	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)	94	327	133	247	112	39	54	0	107	103	28	81
Future Volume (vph)	94	327	133	247	112	39	54	0	107	103	28	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3094	1425	1593	2801	1454	1593	1676	1425	1624	1676	1163
Flt Permitted	0.671			0.244			0.738			0.757		
Satd. Flow (perm)	1138	3094	1425	409	2801	1410	1237	1676	1425	1281	1676	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			78			531			162
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			149.2			41.7	
Travel Time (s)		20.3			2.9			10.7			3.0	
Confl. Peds. (#/hr)	4					4				7		
Peak Hour Factor	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	136	564	145	268	127	78	59	0	116	166	30	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	564	145	268	127	78	59	0	116	166	30	162
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	702	81	210	906	50	94	0	237	183	21	648
Future Volume (vph)	45	702	81	210	906	50	94	0	237	183	21	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5		6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00		0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.86	
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)	1570	3217	708	818	3217	1354	805		735	1536	1386	
Flt Permitted	0.26	1.00	1.00	0.19	1.00	1.00	0.15		1.00	0.76	1.00	
Satd. Flow (perm)	431	3217	708	160	3217	1354	127		735	1224	1386	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	87	807	125	250	1030	63	177	0	339	235	34	728
RTOR Reduction (vph)	0	0	77	0	0	30	0	0	128	0	68	0
Lane Group Flow (vph)	87	807	48	250	1030	33	177	0	211	235	694	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	30.6	30.6	30.6	42.1	42.1	42.1	30.6		30.6	22.1	22.1	
Effective Green, g (s)	32.6	32.6	32.6	42.1	44.1	44.1	32.6		30.6	24.1	24.1	
Actuated g/C Ratio	0.38	0.38	0.38	0.50	0.52	0.52	0.38		0.36	0.28	0.28	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5		6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	165	1238	272	137	1674	704	96		265	348	394	
v/s Ratio Prot		0.25		c0.16	0.32		c0.13				0.50	
v/s Ratio Perm	0.20		0.07	c0.74		0.02	c0.57		0.29	0.19		
v/c Ratio	0.53	0.65	0.18	1.82	0.62	0.05	1.84		0.79	0.68	1.76	
Uniform Delay, d1	20.1	21.4	17.2	17.7	14.3	10.0	23.9		24.2	26.8	30.3	
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	5.7	1.7	0.7	398.3	1.0	0.1	417.0		15.9	5.6	352.9	
Delay (s)	25.8	23.1	17.8	415.9	15.3	10.0	440.9		40.1	32.4	383.2	
Level of Service	C	C	B	F	B	B	F		D	C	F	
Approach Delay (s)		22.7			89.6			177.6			300.5	
Approach LOS		C			F			F			F	

Intersection Summary				
HCM 2000 Control Delay	138.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.91			
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	111.4%	ICU Level of Service	H	
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)	0	0	42	0	0	0	0	2168	444	0	1727	375
Future Volume (vph)	0	0	42	0	0	0	0	2168	444	0	1727	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.973	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4965	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4965	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	46	0	0	0	0	2357	483	0	1877	408
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	46	0	0	0	0	2357	483	0	2285	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.1%	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)	0	0	42	0	0	0	0	2168	444	0	1727	375
Future Volume (Veh/h)	0	0	42	0	0	0	0	2168	444	0	1727	375
Sign Control		Stop			Stop			Free			Free	
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)	0	0	46	0	0	0	0	2357	483	0	1877	408
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.88	0.88	0.78	0.88	0.88	0.79	0.78			0.79		
vC, conflicting volume	2891	4462	854	2983	4666	786	2309			2357		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1059	2844	0	1163	3076	0	1673			1786		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	100	100			100		
cM capacity (veh/h)	154	15	809	124	10	861	295			278		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	46	786	786	786	483	751	751	783
Volume Left	0	0	0	0	0	0	0	0
Volume Right	46	0	0	0	483	0	0	408
cSH	809	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.46	0.46	0.46	0.28	0.44	0.44	0.46
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.7	0.0				0.0		
Approach LOS	A							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection Capacity Utilization 111.4% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	32.6	32.6	32.6	44.1	44.1	44.1	34.2		30.6	24.1	24.1	
Actuated g/C Ratio	0.38	0.38	0.38	0.52	0.52	0.52	0.40		0.36	0.28	0.28	
v/c Ratio	0.53	0.65	0.35	1.77	0.62	0.08	1.79		0.86	0.68	1.65	
Control Delay	33.1	24.1	5.4	393.1	16.0	1.3	413.6		35.1	40.0	325.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	33.1	24.1	5.4	393.1	16.0	1.3	413.6		35.1	40.0	325.5	
LOS	C	C	A	F	B	A	F		D	D	F	
Approach Delay		22.5			85.5			164.9			258.2	
Approach LOS		C			F			F			F	
Queue Length 50th (m)	11.2	58.0	0.0	~53.1	61.1	0.0	~39.9		23.5	36.5	~185.7	
Queue Length 95th (m)	12.6	73.7	1.9	#105.8	77.2	1.9	#38.8		35.9	54.7	#152.5	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	193	1447	395	141	1886	831	99		393	347	462	
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	0.45	0.56	0.32	1.77	0.55	0.08	1.79		0.86	0.68	1.65	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 84.8			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.79			
Intersection Signal Delay: 124.0		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	956	86	132	151	144	274	128	1382	41	131	1390	320
Future Volume (vph)	956	86	132	151	144	274	128	1382	41	131	1390	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.97		0.97				0.99			0.99	
Frt		0.909				0.850		0.996			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1546	0	1770	1827	1599	1719	5074	0	1805	4924	0
Flt Permitted	0.950			0.612			0.068			0.070		
Satd. Flow (perm)	3400	1546	0	1111	1827	1599	123	5074	0	133	4924	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64				236		3			49	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1039	93	143	164	157	298	139	1502	45	142	1511	348
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1039	236	0	164	157	298	139	1547	0	142	1859	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		10.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		25.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	33.0	58.0		25.0	25.0	25.0	15.2	54.0		28.0	66.8	
Total Split (%)	23.6%	41.4%		17.9%	17.9%	17.9%	10.9%	38.6%		20.0%	47.7%	
Maximum Green (s)	26.0	51.0		18.0	18.0	18.0	11.2	47.0		24.0	59.8	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0		0			0	
Act Effct Green (s)	29.0	54.0		21.0	21.0	21.0	72.6	62.2		75.0	63.6	
Actuated g/C Ratio	0.21	0.39		0.15	0.15	0.15	0.52	0.44		0.54	0.45	
v/c Ratio	1.48	0.37		0.99	0.57	0.68	0.76	0.69		0.67	0.82	
Control Delay	260.4	23.9		125.4	64.5	21.6	39.7	40.2		38.9	30.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	260.4	23.9		125.4	64.5	21.6	39.7	40.2		38.9	30.6	
LOS	F	C		F	E	C	D	D		D	C	
Approach Delay		216.6			60.0			40.2			31.2	
Approach LOS		F			E			D			C	
Queue Length 50th (m)	~214.0	35.1		48.4	43.1	16.2	31.2	115.0		16.9	174.5	
Queue Length 95th (m)	#257.1	58.5		#97.2	68.1	50.0	m33.0	m106.3		m33.8	191.3	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	704	635		166	274	440	192	2255		360	2263	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	5	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.48	0.37		0.99	0.57	0.68	0.72	0.69		0.39	0.82	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 79.4	Intersection LOS: E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	702	81	210	906	50	94	0	237	183	21	648
Future Volume (vph)	45	702	81	210	906	50	94	0	237	183	21	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98			0.96	0.98	0.99	
Frt			0.850			0.850			0.850		0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3217	727	818	3217	1384	805	1710	761	1570	1386	0
Flt Permitted	0.261			0.186			0.150			0.757		
Satd. Flow (perm)	431	3217	708	160	3217	1354	127	1710	734	1222	1386	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			91			201		95	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	87	807	125	250	1030	63	177	0	339	235	34	728
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	807	125	250	1030	63	177	0	339	235	762	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Future Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
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)	668	739	118	15	633	762	88	486	68	571	552	495
RTOR Reduction (vph)	0	8	0	0	0	181	0	0	53	0	0	237
Lane Group Flow (vph)	668	849	0	15	633	581	88	486	15	571	552	258
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	23.0	66.2		2.8	44.0	44.0	7.0	30.0	30.0	19.0	42.0	42.0
Effective Green, g (s)	24.0	69.2		3.8	47.0	47.0	8.0	33.0	30.0	20.0	45.0	45.0
Actuated g/C Ratio	0.17	0.49		0.03	0.34	0.34	0.06	0.24	0.21	0.14	0.32	0.32
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	588	1676		46	1176	490	101	842	327	481	598	473
v/s Ratio Prot	c0.19	0.25		0.01	0.18		0.05	0.14		c0.17	c0.30	
v/s Ratio Perm						c0.40			0.01			0.18
v/c Ratio	1.14	0.51		0.33	0.54	1.19	0.87	0.58	0.04	1.19	0.92	0.55
Uniform Delay, d1	58.0	23.9		66.8	37.7	46.5	65.5	47.3	43.6	60.0	45.8	39.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.62	0.45	0.65
Incremental Delay, d2	80.6	0.2		4.1	0.5	102.4	50.9	2.9	0.3	99.8	18.4	3.5
Delay (s)	138.6	24.1		71.0	38.2	148.9	116.4	50.2	43.9	197.1	38.8	29.0
Level of Service	F	C		E	D	F	F	D	D	F	D	C
Approach Delay (s)		74.3			98.4			58.6			91.7	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	84.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

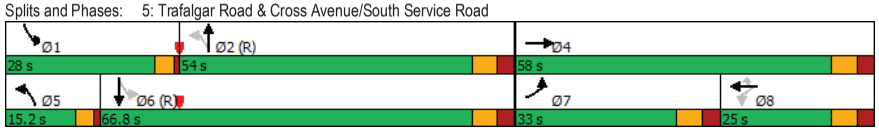
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

~ 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.

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

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	956	86	132	151	144	274	128	1382	41	131	1390	320
Future Volume (vph)	956	86	132	151	144	274	128	1382	41	131	1390	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.97	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1546		1725	1827	1599	1719	5072		1805	4924	
Flt Permitted	0.95	1.00		0.61	1.00	1.00	0.07	1.00		0.07	1.00	
Satd. Flow (perm)	3400	1546		1111	1827	1599	122	5072		133	4924	
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)	1039	93	143	164	157	298	139	1502	45	142	1511	348
RTOR Reduction (vph)	0	39	0	0	0	201	0	2	0	0	27	0
Lane Group Flow (vph)	1039	197	0	164	157	97	139	1545	0	142	1832	0
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	26.0	51.0		18.0	18.0	18.0	69.6	59.2		72.4	60.6	
Effective Green, g (s)	29.0	54.0		21.0	21.0	21.0	69.6	62.2		72.4	63.6	
Actuated g/C Ratio	0.21	0.39		0.15	0.15	0.15	0.50	0.44		0.52	0.45	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	704	596		166	274	239	179	2253		209	2236	
v/s Ratio Prot	c0.31	0.13			0.09		c0.06	0.30		0.06	c0.37	
v/s Ratio Perm				c0.15		0.06	0.33			0.29		
v/c Ratio	1.48	0.33		0.99	0.57	0.41	0.78	0.69		0.68	0.82	
Uniform Delay, d1	55.5	30.3		59.4	55.3	53.9	32.3	31.1		27.3	33.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.28	1.26		1.06	0.85	
Incremental Delay, d2	221.8	0.3		65.7	2.9	1.1	2.0	0.2		6.8	2.8	
Delay (s)	277.3	30.6		125.0	58.2	55.0	43.3	39.4		35.6	30.9	
Level of Service	F	C		F	E	E	D	D		D	C	
Approach Delay (s)		231.6			74.4			39.7			31.3	
Approach LOS		F			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	84.4	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	90.4%	ICU Level of Service	E	
Analysis Period (min)	15			

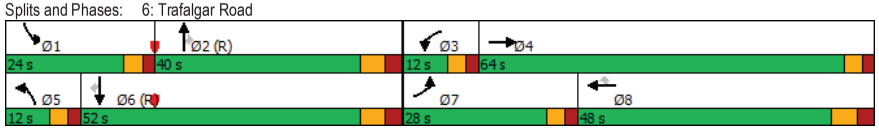
c Critical Lane Group

Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	28.0	64.0		12.0	48.0	48.0	12.0	40.0	40.0	24.0	52.0	52.0
Total Split (%)	20.0%	45.7%		8.6%	34.3%	34.3%	8.6%	28.6%	28.6%	17.1%	37.1%	37.1%
Maximum Green (s)	23.0	59.0		7.0	41.0	41.0	7.0	33.0	33.0	19.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	0.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	69.2		8.0	44.0	44.0	8.0	36.0	33.0	20.0	48.0	48.0
Actuated g/C Ratio	0.17	0.49		0.06	0.31	0.31	0.06	0.26	0.24	0.14	0.34	0.34
v/c Ratio	1.14	0.51		0.15	0.57	1.18	0.87	0.53	0.14	1.19	0.87	0.67
Control Delay	131.7	25.6		66.6	42.7	123.8	124.2	47.2	0.6	175.8	32.0	11.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.7	25.6		66.6	42.7	123.8	124.2	47.2	0.6	175.8	32.0	11.1
LOS	F	C		E	D	F	F	D	A	F	C	B
Approach Delay		72.1			86.8			52.8			76.4	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~116.4	78.8		4.3	81.3	~208.2	26.0	64.4	0.0	~105.9	37.4	8.7
Queue Length 95th (m)	#156.3	116.0		12.1	101.9	#288.6	#59.5	83.2	0.0	#145.0	#204.7	44.4
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0		60.0	80.0		
Base Capacity (vph)	588	1683		97	1101	646	101	919	503	481	638	734
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.51		0.15	0.57	1.18	0.87	0.53	0.14	1.19	0.87	0.67

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 75.0	Intersection LOS: E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	474	507	179	63	707	623	126	449	43	538	581	519
Future Volume (vph)	474	507	179	63	707	623	126	449	43	538	581	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.98		0.93	0.97		0.94	0.98	1.00		0.98		0.95
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3505	1599	1805	3574	1599	1770	3552	0	3433	1900	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3409	3505	1482	1759	3574	1503	1740	3552	0	3370	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			427		7				215
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	515	551	195	68	768	677	137	488	47	585	632	564
Shared Lane Traffic (%)												
Lane Group Flow (vph)	515	551	195	68	768	677	137	535	0	585	632	564
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	14.0	39.2	39.2	25.2	50.4	50.4	14.0	42.0		33.6	61.6	61.6
Total Split (%)	10.0%	28.0%	28.0%	18.0%	36.0%	36.0%	10.0%	30.0%		24.0%	44.0%	44.0%
Maximum Green (s)	9.0	34.2	34.2	20.2	43.4	43.4	9.0	35.0		28.6	54.6	54.6
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	0.0	-1.0	-3.0	0.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	10.0	44.8	41.8	11.7	42.1	39.1	13.8	43.9		28.0	58.1	58.1
Actuated g/C Ratio	0.07	0.32	0.30	0.08	0.30	0.28	0.10	0.31		0.20	0.42	0.42
v/c Ratio	2.09	0.49	0.34	0.45	0.72	0.93	0.79	0.48		0.85	0.80	0.75
Control Delay	531.8	40.5	7.5	69.9	47.3	37.8	90.7	41.4		78.7	36.5	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	531.8	40.5	7.5	69.9	47.3	37.8	90.7	41.4		78.7	36.5	22.5
LOS	F	D	A	E	D	D	F	D		E	D	C
Approach Delay		236.1			44.1			51.5			45.9	
Approach LOS		F			D			D			D	
Queue Length 50th (m)	~121.9	66.6	1.6	19.2	100.3	81.3	~44.6	69.7		92.2	97.6	47.2
Queue Length 95th (m)	#159.0	88.7	21.0	34.7	123.1	#165.6	#90.0	89.1		m111.7	m131.5	m79.1
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	247	1120	573	273	1184	760	174	1118		725	788	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	2	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	2.09	0.49	0.34	0.25	0.65	0.89	0.79	0.48		0.81	0.80	0.75

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.09			
Intersection Signal Delay: 92.0		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Future Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		60.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99		0.93	0.99		0.95	0.96		0.97
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3390	0	1703	3505	1568	1770	3574	1615	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3350	3390	0	1689	3505	1460	1752	3574	1529	3247	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				273			187			349
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	668	739	118	15	633	762	88	486	68	571	552	495
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	857	0	15	633	762	88	486	68	571	552	495
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	743	400	173	87	366	179	160	1062	547	389	1244	663
Future Volume (vph)	743	400	173	87	366	179	160	1062	547	389	1244	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.92	1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3406	1411	3400	3343	1545	1641	5036	1485	1752	5036	1499
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3213	3406	1411	3400	3343	1545	219	5036	1485	195	5036	1499
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)	808	435	188	95	398	195	174	1154	595	423	1352	721
RTOR Reduction (vph)	0	0	140	0	0	41	0	0	57	0	0	314
Lane Group Flow (vph)	808	435	48	95	398	154	174	1154	538	423	1352	407
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	33.0	32.6	32.6	21.1	17.7	48.1	47.0	33.9	55.0	68.3	51.2	51.2
Effective Green, g (s)	36.0	35.6	35.6	21.1	20.7	48.1	47.0	36.9	55.0	68.3	54.2	54.2
Actuated g/C Ratio	0.26	0.25	0.25	0.15	0.15	0.34	0.34	0.26	0.39	0.49	0.39	0.39
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	826	866	358	512	494	530	206	1327	583	433	1949	580
v/s Ratio Prot	c0.25	0.13		0.03	c0.12	0.06	0.08	0.23	0.14	c0.21	0.27	
v/s Ratio Perm			0.03			0.04	0.20		0.22	c0.26		0.27
v/c Ratio	0.98	0.50	0.13	0.19	0.81	0.29	0.84	0.87	0.92	0.98	0.69	0.70
Uniform Delay, d1	51.6	44.6	40.3	51.9	57.7	33.5	35.5	49.3	40.5	43.2	35.9	36.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.05	1.24	0.99	0.69	0.35
Incremental Delay, d2	25.7	0.5	0.2	0.2	9.3	0.3	7.5	2.0	6.3	8.4	0.2	0.7
Delay (s)	77.3	45.1	40.5	52.1	67.0	33.8	40.4	53.8	56.4	51.2	24.9	13.2
Level of Service	E	D	D	D	E	C	D	D	E	D	C	B
Approach Delay (s)		62.7			55.5			53.4			26.0	
Approach LOS		E			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	88.9%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

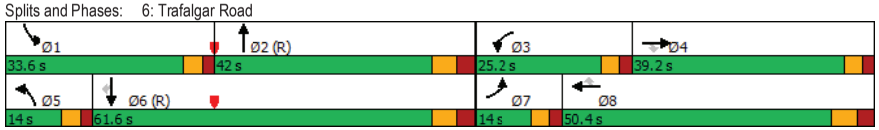
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15

~ 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.

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

Splits and Phases: 6: Trafalgar Road



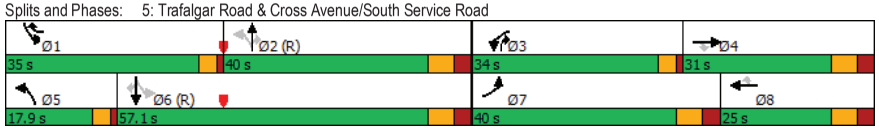
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	474	507	179	63	707	623	126	449	43	538	581	519
Future Volume (vph)	474	507	179	63	707	623	126	449	43	538	581	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	1.00	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3505	1482	1805	3574	1503	1770	3552		3433	1900	1503
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3505	1482	1805	3574	1503	1770	3552		3433	1900	1503
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)	515	551	195	68	768	677	137	488	47	585	632	564
RTOR Reduction (vph)	0	0	131	0	0	305	0	5	0	0	0	127
Lane Group Flow (vph)	515	551	64	68	768	372	137	530	0	585	632	437
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	9.0	41.8	41.8	9.3	40.1	40.1	12.8	39.9		27.0	54.1	54.1
Effective Green, g (s)	10.0	44.8	41.8	10.3	43.1	40.1	13.8	42.9		28.0	57.1	57.1
Actuated g/C Ratio	0.07	0.32	0.30	0.07	0.31	0.29	0.10	0.31		0.20	0.41	0.41
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	1121	442	132	1100	430	174	1088		686	774	613
v/s Ratio Prot	c0.15	0.16		0.04	0.21		0.08	0.15		c0.17	c0.33	
v/s Ratio Perm			0.04			c0.25						0.29
v/c Ratio	2.09	0.49	0.14	0.52	0.70	0.87	0.79	0.49		0.85	0.82	0.71
Uniform Delay, d1	65.0	38.4	36.0	62.4	42.7	47.4	61.7	39.6		54.0	36.8	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.32	0.85	0.86
Incremental Delay, d2	501.9	0.3	0.2	3.4	2.0	16.5	20.6	1.6		6.1	5.6	4.0
Delay (s)	566.9	38.8	36.1	65.8	44.7	63.9	82.2	41.1		77.2	36.9	33.7
Level of Service	F	D	D	E	D	E	F	D		E	D	C
Approach Delay (s)		254.0			54.2			49.5			49.1	
Approach LOS		F			D			D			D	

Intersection Summary				
HCM 2000 Control Delay	100.1	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	84.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Intersection Capacity Utilization 88.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	12.0	10.0	7.0	7.0	27.0	12.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	17.0	25.0	11.5	11.5	34.0	17.0	11.5	34.0	34.0
Total Split (s)	40.0	31.0	31.0	34.0	25.0	35.0	17.9	40.0	34.0	35.0	57.1	57.1
Total Split (%)	28.6%	22.1%	22.1%	24.3%	17.9%	25.0%	12.8%	28.6%	24.3%	25.0%	40.8%	40.8%
Maximum Green (s)	33.0	24.0	24.0	30.0	18.0	31.0	13.9	33.0	30.0	31.0	50.1	50.1
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	36.0	35.6	35.6	21.1	20.7	51.1	50.0	36.9	58.0	71.3	54.1	54.1
Actuated g/C Ratio	0.26	0.25	0.25	0.15	0.15	0.36	0.36	0.26	0.41	0.51	0.39	0.39
v/c Ratio	0.98	0.50	0.38	0.19	0.80	0.32	0.82	0.87	0.89	0.97	0.69	0.81
Control Delay	77.8	48.5	8.6	50.4	70.9	20.9	39.8	54.1	42.1	47.2	25.2	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	48.5	8.6	50.4	70.9	20.9	39.8	54.1	42.1	47.2	25.2	4.7
LOS	E	D	A	D	E	C	D	D	D	D	C	A
Approach Delay		59.8			53.9			49.1			23.0	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	121.1	57.7	0.0	12.5	59.6	25.5	36.5	100.1	148.5	92.7	117.6	41.7
Queue Length 95th (m)	#164.5	81.7	21.7	19.7	#80.4	45.1	m37.5	m98.6	m77.9	m59.6	m79.5	m13.4
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	826	866	499	728	501	609	220	1326	764	443	1947	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	1	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.50	0.38	0.13	0.79	0.32	0.79	0.87	0.78	0.95	0.69	0.81

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 42.0	Intersection LOS: D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	835	16	36	347	41	15	2	46	142	19	128
Future Volume (vph)	14	835	16	36	347	41	15	2	46	142	19	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00	1.00		0.99	0.95		0.96	0.98	
Frt		0.997			0.982			0.866			0.870	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3174	0	797	3176	0	785	702	0	1570	1284	0
Flt Permitted	0.508			0.149			0.549			0.707		
Satd. Flow (perm)	831	3174	0	125	3176	0	449	702	0	1128	1284	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			33			69			164	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	21	1031	21	38	365	51	21	8	69	165	25	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	1052	0	38	416	0	21	77	0	165	189	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	48.4	48.4		12.6	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	53.8%	53.8%		14.0%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	42.4	42.4		8.6	55.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	36.3	36.3		48.7	48.7		18.9	18.9		18.9	18.9	
Actuated g/C Ratio	0.48	0.48		0.64	0.64		0.25	0.25		0.25	0.25	
v/c Ratio	0.05	0.69		0.25	0.20		0.19	0.34		0.59	0.43	
Control Delay	11.9	18.5		9.9	5.8		29.3	12.6		36.0	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.9	18.5		9.9	5.8		29.3	12.6		36.0	9.6	
LOS	B	B		A	A		C	B		D	A	
Approach Delay		18.4			6.1			16.2			21.9	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.6	61.4		1.9	10.9		2.5	0.9		22.2	2.9	
Queue Length 95th (m)	4.3	80.4		6.2	20.2		7.1	0.0		43.7	12.0	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	500	1913		158	2459		152	283		382	544	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.55		0.24	0.17		0.14	0.27		0.43	0.35	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 75.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 16.1		Intersection LOS: B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	743	400	173	87	366	179	160	1062	547	389	1244	663
Future Volume (vph)	743	400	173	87	366	179	160	1062	547	389	1244	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.87			0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	3406	1442	3400	3343	1553	1641	5036	1615	1752	5036	1553
Flt Permitted	0.950			0.950			0.127			0.106		
Satd. Flow (perm)	3208	3406	1411	3382	3343	1531	219	5036	1404	196	5036	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			62			94			513
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	808	435	188	95	398	195	174	1154	595	423	1352	721
Shared Lane Traffic (%)												
Lane Group Flow (vph)	808	435	188	95	398	195	174	1154	595	423	1352	721
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	41	0	0	0	0	1401	584	0	2273	940
Future Volume (Veh/h)	0	0	41	0	0	0	0	1401	584	0	2273	940
Sign Control		Stop			Stop			Free			Free	
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)	0	0	45	0	0	0	0	1523	635	0	2471	1022
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.71	0.71	0.63	0.71	0.71	0.85	0.63			0.85		
vC, conflicting volume	3514	4529	1359	2347	5040	508	3517			1523		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1645	3075	0	1	3795	0	2946			981		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	93	100	100	100	100			100		
cM capacity (veh/h)	46	9	660	669	3	923	76			602		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	45	508	508	508	635	988	988	1516
Volume Left	0	0	0	0	0	0	0	0
Volume Right	45	0	0	0	635	0	0	1022
cSH	660	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.30	0.30	0.30	0.37	0.58	0.58	0.89
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.8	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	835	16	36	347	41	15	2	46	142	19	128
Future Volume (vph)	14	835	16	36	347	41	15	2	46	142	19	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1557	3174		797	3176		778	705		1524	1287	
Flt Permitted	0.51	1.00		0.15	1.00		0.55	1.00		0.71	1.00	
Satd. Flow (perm)	833	3174		125	3176		450	705		1134	1287	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	21	1031	21	38	365	51	21	8	69	165	25	164
RTOR Reduction (vph)	0	2	0	0	12	0	0	52	0	0	123	0
Lane Group Flow (vph)	21	1050	0	38	404	0	21	25	0	165	66	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	34.4	34.4		46.7	46.7		16.9	16.9		16.9	16.9	
Effective Green, g (s)	36.4	36.4		46.7	48.7		18.9	18.9		18.9	18.9	
Actuated g/C Ratio	0.48	0.48		0.62	0.64		0.25	0.25		0.25	0.25	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	401	1528		150	2045		112	176		283	321	
v/s Ratio Prot		c0.33		c0.03	0.13			0.04			0.05	
v/s Ratio Perm	0.03			0.13			0.05			c0.15		
v/c Ratio	0.05	0.69		0.25	0.20		0.19	0.14		0.58	0.21	
Uniform Delay, d1	10.4	15.2		8.2	5.5		22.3	22.1		24.9	22.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.7		0.7	0.1		1.1	0.5		3.6	0.4	
Delay (s)	10.5	16.9		8.9	5.6		23.4	22.6		28.5	22.8	
Level of Service	B	B		A	A		C	C		C	C	
Approach Delay (s)		16.7			5.9			22.7			25.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
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)	0	0	41	0	0	0	0	1401	584	0	2273	940
Future Volume (vph)	0	0	41	0	0	0	0	1401	584	0	2273	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.956	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4890	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4890	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	45	0	0	0	0	1523	635	0	2471	1022
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	45	0	0	0	0	1523	635	0	3493	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1119	0	1401	2093	0
Future Volume (vph)	1123	1119	0	1401	2093	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1221	1216	0	1523	2275	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1221	1216	0	1523	2275	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	77.0	77.0		49.0	49.0	
Effective Green, g (s)	80.0	80.0		52.0	52.0	
Actuated g/C Ratio	0.57	0.57		0.37	0.37	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1942	913		1817	1852	
v/s Ratio Prot				0.31	c0.46	
v/s Ratio Perm	0.36	c0.76				
v/c Ratio	0.63	1.33		0.84	1.23	
Uniform Delay, d1	20.1	30.0		40.2	44.0	
Progression Factor	1.00	1.00		1.21	1.08	
Incremental Delay, d2	0.6	156.9		2.4	104.1	
Delay (s)	20.7	186.9		51.1	151.5	
Level of Service	C	F		D	F	
Approach Delay (s)	103.6			51.1	151.5	
Approach LOS	F			D	F	

Intersection Summary			
HCM 2000 Control Delay	108.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
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)	37	150	13	14	307	12	229	4	155	15	2	62
Future Volume (vph)	37	150	13	14	307	12	229	4	155	15	2	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Frt		0.987			0.990			0.859			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1525	2908	0	1570	3068	0	1570	1446	0	1570	1418	0
Flt Permitted	0.545			0.564			0.688			0.550		
Satd. Flow (perm)	871	2908	0	931	3068	0	1136	1446	0	906	1418	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			13			196			103	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Peak Hour Factor	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	64	179	17	26	323	22	309	12	196	21	4	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	196	0	26	345	0	309	208	0	21	107	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

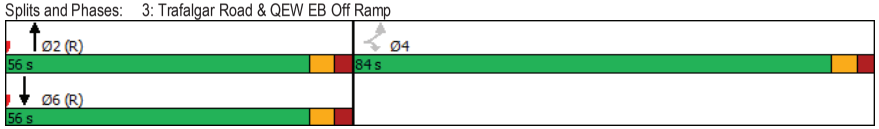
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	42.0	42.0		13.0	55.0		35.0	35.0		35.0	35.0	
Total Split (%)	46.7%	46.7%		14.4%	61.1%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	36.0	36.0		9.0	49.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.1	37.1		49.1	49.1		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.44	0.44		0.58	0.58		0.33	0.33		0.33	0.33	
v/c Ratio	0.17	0.15		0.04	0.19		0.83	0.34		0.07	0.20	
Control Delay	17.4	14.6		9.0	9.1		46.3	5.5		19.9	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.4	14.6		9.0	9.1		46.3	5.5		19.9	5.7	
LOS	B	B		A	A		D	A		B	A	
Approach Delay		15.3			9.1			29.8			8.0	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	6.9	10.2		2.0	14.4		48.1	1.4		2.5	0.5	
Queue Length 95th (m)	9.6	15.9		3.2	21.6		61.2	0.0		5.8	0.6	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	389	1308		604	1847		414	652		330	582	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.15		0.04	0.19		0.75	0.32		0.06	0.18	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 85.2			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.7		Intersection LOS: B	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	84.0	84.0		56.0	56.0	
Total Split (%)	60.0%	60.0%		40.0%	40.0%	
Maximum Green (s)	77.0	77.0		49.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	80.0	80.0		52.0	52.0	
Actuated g/C Ratio	0.57	0.57		0.37	0.37	
v/c Ratio	0.63	1.33		0.84	1.23	
Control Delay	21.9	185.0		51.5	144.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	21.9	185.0		51.5	144.6	
LOS	C	F		D	F	
Approach Delay	103.3			51.5	144.6	
Approach LOS	F			D	F	
Queue Length 50th (m)	117.8	~459.0		172.0	~295.4	
Queue Length 95th (m)	140.4	#543.7		m183.6	m#268.4	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1942	913		1817	1852	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.63	1.33		0.84	1.23	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 105.7 Intersection LOS: F
Intersection Capacity Utilization 116.4% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	150	13	14	307	12	229	4	155	15	2	62
Future Volume (vph)	37	150	13	14	307	12	229	4	155	15	2	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1519	2908		1569	3069		1569	1445		1565	1417	
Flt Permitted	0.54	1.00		0.56	1.00		0.69	1.00		0.55	1.00	
Satd. Flow (perm)	871	2908		932	3069		1136	1445		906	1417	
Peak-hour factor, PHF	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Adj. Flow (vph)	64	179	17	26	323	22	309	12	196	21	4	103
RTOR Reduction (vph)	0	8	0	0	5	0	0	132	0	0	69	0
Lane Group Flow (vph)	64	188	0	26	340	0	309	76	0	21	38	0
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		47.1	47.1		26.0	26.0		26.0	26.0	
Effective Green, g (s)	37.1	37.1		47.1	49.1		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.44	0.44		0.55	0.58		0.33	0.33		0.33	0.33	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	379	1267		575	1770		373	475		298	466	
v/s Ratio Prot		0.06		0.00	c0.11			0.05			0.03	
v/s Ratio Perm	0.07			0.02			c0.27			0.02		
v/c Ratio	0.17	0.15		0.05	0.19		0.83	0.16		0.07	0.08	
Uniform Delay, d1	14.6	14.5		8.7	8.6		26.3	20.2		19.6	19.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.1		0.0	0.1		14.6	0.2		0.1	0.1	
Delay (s)	15.1	14.6		8.7	8.7		41.0	20.4		19.7	19.8	
Level of Service	B	B		A	A		D	C		B	B	
Approach Delay (s)		14.7			8.7			32.7			19.8	
Approach LOS		B			A			C			B	

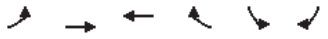
Intersection Summary				
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	85.1	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1119	0	1401	2093	0
Future Volume (vph)	1123	1119	0	1401	2093	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1221	1216	0	1523	2275	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1221	1216	0	1523	2275	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2524	2093	958
Future Volume (Veh/h)	0	0	0	2524	2093	958
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	0	0	2743	2275	1041
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.73	0.61	0.61			
vC, conflicting volume	3189	758	2275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	824			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	748	656	485			

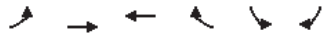
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	914	914	914	758	758	758	1041
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1041
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.54	0.54	0.54	0.45	0.45	0.45	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		116.4%	ICU Level of Service H
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	180	587	7	15	28
Future Volume (vph)	6	180	587	7	15	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.997		0.910	
Flt Protected	0.950				0.984	
Satd. Flow (prot)	1388	2954	3146	0	1491	0
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	1388	2954	3146	0	1491	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	1			1	9	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Heavy Vehicles (%)	17%	10%	3%	0%	0%	4%
Adj. Flow (vph)	12	196	699	12	34	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	196	711	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.3%	ICU Level of Service A	
Analysis Period (min)	15		



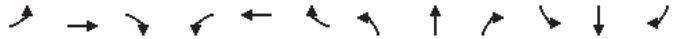
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	180	587	7	15	28
Future Volume (Veh/h)	6	180	587	7	15	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Hourly flow rate (vph)	12	196	699	12	34	68
Pedestrians			9		1	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	712				837	356
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	615				745	244
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	99				90	91
cM capacity (veh/h)	829				332	719

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	12	98	98	466	245	102
Volume Left	12	0	0	0	0	34
Volume Right	0	0	0	0	12	68
cSH	829	1700	1700	1700	1700	518
Volume to Capacity	0.01	0.06	0.06	0.27	0.14	0.20
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	5.8
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	13.7
Lane LOS	A					B
Approach Delay (s)	0.5			0.0		13.7
Approach LOS						B

Intersection Summary				
Average Delay		1.5		
Intersection Capacity Utilization		28.3%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2524	2093	958
Future Volume (vph)	0	0	0	2524	2093	958
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2743	2275	1041
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2743	2275	1041
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	116.4%		ICU Level of Service	H
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Future Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	0.95	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	0.89	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1719	1454	1447		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1719	1454	1447		4940	1478		5036	1533
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)	1	0	213	629	46	271	0	2162	582	0	2474	9
RTOR Reduction (vph)	0	0	15	0	51	80	0	0	192	0	0	5
Lane Group Flow (vph)	1	0	198	629	112	74	0	2162	390	0	2474	4
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		70.4	64.2	64.2	64.2		55.6	55.6		55.6	55.6
Effective Green, g (s)	2.2		73.4	67.2	67.2	67.2		58.6	58.6		58.6	58.6
Actuated g/C Ratio	0.02		0.52	0.48	0.48	0.48		0.42	0.42		0.42	0.42
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		822	825	697	694		2067	618		2107	641
v/s Ratio Prot	0.00				0.08			0.44			c0.49	
v/s Ratio Perm			c0.13	c0.37		0.05			0.26			0.00
v/c Ratio	0.04		0.24	0.76	0.16	0.11		1.05	0.63		1.17	0.01
Uniform Delay, d1	67.9		18.1	29.9	20.5	19.9		40.7	32.1		40.7	23.7
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.74	0.80		1.00	1.00
Incremental Delay, d2	0.5		0.2	4.2	0.1	0.1		29.6	3.2		83.8	0.0
Delay (s)	68.4		18.3	34.1	20.6	20.0		59.9	28.8		124.5	23.7
Level of Service	E		B	C	C	C		E	C		F	C
Approach Delay (s)		18.5			29.5			53.3			124.1	
Approach LOS		B			C			D			F	

Intersection Summary				
HCM 2000 Control Delay	76.1	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	98.2%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	5	1	5	13	5
Future Volume (vph)	3	5	1	5	13	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.910		0.957	
Flt Protected		0.976			0.967	
Satd. Flow (prot)	0	1669	1357	0	1582	0
Flt Permitted		0.976			0.967	
Satd. Flow (perm)	0	1669	1357	0	1582	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	8	8	4	8	26	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	12	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	5	1	5	13	5
Future Volume (Veh/h)	3	5	1	5	13	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	8	8	4	8	26	12
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	19				39	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	19				39	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1601				967	1064

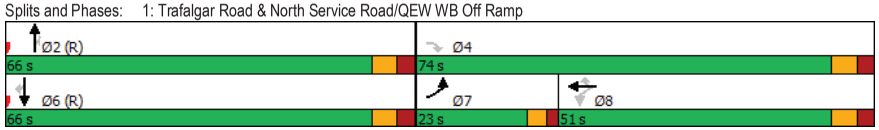
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	12	38
Volume Left	8	0	26
Volume Right	0	8	12
cSH	1601	1700	996
Volume to Capacity	0.00	0.01	0.04
Queue Length 95th (m)	0.1	0.0	1.0
Control Delay (s)	3.6	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 98.2%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp

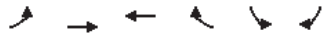


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		74.0	51.0	51.0	51.0		66.0	66.0		66.0	66.0
Total Split (%)	16.4%		52.9%	36.4%	36.4%	36.4%		47.1%	47.1%		47.1%	47.1%
Maximum Green (s)	18.0		67.0	44.0	44.0	44.0		59.0	59.0		59.0	59.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		69.4	67.2	67.2	67.2		62.6	62.6		62.6	62.6
Actuated g/C Ratio	0.05		0.50	0.48	0.48	0.48		0.45	0.45		0.45	0.45
v/c Ratio	0.01		0.27	0.76	0.22	0.20		0.98	0.69		1.10	0.01
Control Delay	64.0		18.4	38.0	10.0	4.0		40.0	13.1		88.9	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		18.4	38.0	10.0	4.0		40.0	13.1		88.9	0.0
LOS	E		B	D	B	A		D	B		F	A
Approach Delay		18.6			27.6			34.3			88.6	
Approach LOS		B			C			C			F	
Queue Length 50th (m)	0.3		30.3	144.9	10.4	0.0		126.7	31.1		~294.2	0.0
Queue Length 95th (m)	2.3		47.2	#237.3	28.7	14.5		#262.8	m66.5		#328.9	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		799	824	748	774		2208	843		2252	724
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.27	0.76	0.22	0.20		0.98	0.69		1.10	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 53.9		Intersection LOS: D	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	8	279	82	13	14
Future Volume (vph)	10	8	279	82	13	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.924	
Flt Protected		0.972			0.979	
Satd. Flow (prot)	0	1576	1535	0	1547	0
Flt Permitted		0.972			0.979	
Satd. Flow (perm)	0	1576	1535	0	1547	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	22	16	321	121	17	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	38	442	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.9%		ICU Level of Service A	
Analysis Period (min) 15			

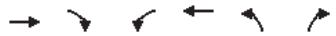


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	8	279	82	13	14
Future Volume (Veh/h)	10	8	279	82	13	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	22	16	321	121	17	22
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	442				446	382
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442				446	382
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	97
cM capacity (veh/h)	1129				560	670

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	38	442	39
Volume Left	22	0	17
Volume Right	0	121	22
cSH	1129	1700	617
Volume to Capacity	0.02	0.26	0.06
Queue Length 95th (m)	0.5	0.0	1.6
Control Delay (s)	4.8	0.0	11.2
Lane LOS	A		B
Approach Delay (s)	4.8	0.0	11.2
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	31.9%	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)	1	0	196	579	42	249	0	1989	535	0	2276	8
Future Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850		0.892	0.850			0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1805	0	1568	1719	1453	1447	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1805	0	1568	1719	1453	1447	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		98	154			331			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	213	629	46	271	0	2162	582	0	2474	9
Shared Lane Traffic (%)						43%						
Lane Group Flow (vph)	1	0	213	629	163	154	0	2162	582	0	2474	9
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	22	45	21	4	39
Future Volume (Veh/h)	10	22	45	21	4	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	24	49	23	4	42
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			35		144	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			35		144	23
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	96
cM capacity (veh/h)			1576		822	1054

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	35	72	46
Volume Left	0	49	4
Volume Right	24	0	42
cSH	1700	1576	1029
Volume to Capacity	0.02	0.03	0.04
Queue Length 95th (m)	0.0	0.8	1.1
Control Delay (s)	0.0	5.1	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	5.1	8.7
Approach LOS			A

Intersection Summary			
Average Delay		5.0	
Intersection Capacity Utilization		20.3%	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)	1	0	212	427	35	265	0	1897	324	0	3614	6
Future Volume (vph)	1	0	212	427	35	265	0	1897	324	0	3614	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.959							
Satd. Flow (prot)	1805	0	1568	1633	1607	1524	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950	0.959							
Satd. Flow (perm)	1805	0	1568	1633	1607	1524	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			220			252			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	230	464	38	288	0	2062	352	0	3928	7
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	1	0	230	251	251	288	0	2062	352	0	3928	7
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0	38.0		79.0	79.0		79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%	27.1%		56.4%	56.4%		56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0	31.0		72.0	72.0		72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		32.7	30.5	30.5	30.5		99.3	99.3		99.3	99.3
Actuated g/C Ratio	0.05		0.23	0.22	0.22	0.22		0.71	0.71		0.71	0.71
v/c Ratio	0.01		0.59	0.71	0.72	0.57		0.59	0.31		1.10	0.01
Control Delay	64.0		45.7	61.0	61.9	16.1		6.1	2.2		71.4	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		45.7	61.0	61.9	16.1		6.1	2.2		71.4	0.0
LOS	E		D	E	E	B		A	A		E	A
Approach Delay		45.8			44.9			5.5			71.3	
Approach LOS		D			D			A			E	
Queue Length 50th (m)	0.3		53.0	71.5	71.8	16.3		62.3	6.5		~466.8	0.0
Queue Length 95th (m)	2.3		66.9	96.5	96.9	43.0		98.6	24.3		#563.8	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		656	410	403	547		3504	1121		3572	1107
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.35	0.61	0.62	0.53		0.59	0.31		1.10	0.01

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 46.1 Intersection LOS: D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	10	22	45	21	4	39
Future Volume (vph)	10	22	45	21	4	39
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	0.907				0.877	
Flt Protected				0.967	0.996	
Satd. Flow (prot)	1690	0	0	1801	1627	0
Flt Permitted				0.967	0.996	
Satd. Flow (perm)	1690	0	0	1801	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	128.8			697.0	50.6	
Travel Time (s)	9.3			50.2	3.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	24	49	23	4	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	72	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 20.3% ICU Level of Service A
Analysis Period (min) 15

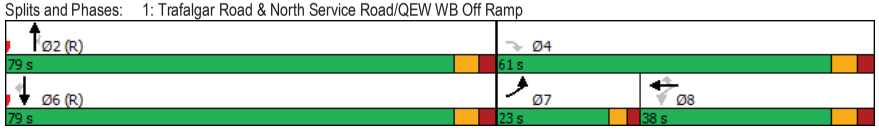
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	9	327	141	26	44
Future Volume (Veh/h)	12	9	327	141	26	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	27	18	376	207	35	68
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	583				556	480
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	583				556	480
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	88
cM capacity (veh/h)	1001				480	590

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	45	583	103
Volume Left	27	0	35
Volume Right	0	207	68
cSH	1001	1700	547
Volume to Capacity	0.03	0.34	0.19
Queue Length 95th (m)	0.7	0.0	5.5
Control Delay (s)	5.3	0.0	13.1
Lane LOS	A		B
Approach Delay (s)	5.3	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 105.7% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



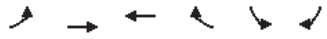
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	212	427	35	265	0	1897	324	0	3614	6
Future Volume (vph)	1	0	212	427	35	265	0	1897	324	0	3614	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1633	1607	1524		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1633	1607	1524		4940	1478		5036	1533
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)	1	0	230	464	38	288	0	2062	352	0	3928	7
RTOR Reduction (vph)	0	0	23	0	0	172	0	0	80	0	0	2
Lane Group Flow (vph)	1	0	207	251	251	116	0	2062	272	0	3928	5
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		33.7	27.5	27.5	27.5		92.3	92.3		92.3	92.3
Effective Green, g (s)	2.2		36.7	30.5	30.5	30.5		95.3	95.3		95.3	95.3
Actuated g/C Ratio	0.02		0.26	0.22	0.22	0.22		0.68	0.68		0.68	0.68
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		411	355	350	332		3362	1006		3428	1043
v/s Ratio Prot	0.00							0.42			c0.78	
v/s Ratio Perm			c0.13	0.15	0.16	0.08			0.18			0.00
v/c Ratio	0.04		0.50	0.71	0.72	0.35		0.61	0.27		1.15	0.00
Uniform Delay, d1	67.9		43.9	50.6	50.8	46.3		12.3	8.7		22.4	7.2
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.47	0.54		1.00	1.00
Incremental Delay, d2	0.5		1.0	6.3	6.9	0.6		0.7	0.5		69.5	0.0
Delay (s)	68.4		44.9	56.9	57.6	47.0		6.4	5.2		91.9	7.2
Level of Service	E		D	E	E	D		A	A		F	A
Approach Delay (s)		45.0			53.5			6.2			91.7	
Approach LOS		D			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	9	327	141	26	44
Future Volume (vph)	12	9	327	141	26	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.952		0.911	
Flt Protected		0.971			0.983	
Satd. Flow (prot)	0	1578	1529	0	1531	0
Flt Permitted		0.971			0.983	
Satd. Flow (perm)	0	1578	1529	0	1531	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	27	18	376	207	35	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	45	583	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	6	1	28	19	6
Future Volume (Veh/h)	4	6	1	28	19	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	11	10	4	45	38	14
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	56				66	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56				66	34
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	99
cM capacity (veh/h)	1553				933	1040

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	21	49	52
Volume Left	11	0	38
Volume Right	0	45	14
cSH	1553	1700	959
Volume to Capacity	0.01	0.03	0.05
Queue Length 95th (m)	0.2	0.0	1.4
Control Delay (s)	3.9	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	3.9	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		4.5	
Intersection Capacity Utilization		15.4%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2221	2397	1856
Future Volume (vph)	0	0	0	2221	2397	1856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2414	2605	2017
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2414	2605	2017
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	118.3%	ICU Level of Service H	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2221	2397	1856
Future Volume (Veh/h)	0	0	0	2221	2397	1856
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	0	0	2414	2605	2017
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.56	0.38	0.38			
vC, conflicting volume	3410	868	2605			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	576	408	609			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	805	805	805	868	868	868	2017
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	2017
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.47	0.47	0.51	0.51	0.51	1.19
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		118.3%	ICU Level of Service H
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	6	1	28	19	6
Future Volume (vph)	4	6	1	28	19	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.876		0.964	
Flt Protected		0.974			0.965	
Satd. Flow (prot)	0	1666	1246	0	1591	0
Flt Permitted		0.974			0.965	
Satd. Flow (perm)	0	1666	1246	0	1591	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	11	10	4	45	38	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	49	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%		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 (vph)	38	193	7	23	542	73	158	0	226	52	0	28
Future Volume (vph)	38	193	7	23	542	73	158	0	226	52	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00	1.00	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	0.99		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
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)	1388	2954	1425	1593	3154	1422	1593		1425	1609		1398
Flt Permitted	0.28	1.00	1.00	0.62	1.00	1.00	0.76		1.00	0.76		1.00
Satd. Flow (perm)	405	2954	1425	1040	3154	1422	1269		1425	1283		1398
Peak-hour factor, PHF	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Adj. Flow (vph)	76	210	8	25	645	126	172	0	246	118	0	68
RTOR Reduction (vph)	0	0	6	0	0	89	0	0	107	0	0	30
Lane Group Flow (vph)	76	210	2	25	645	37	172	0	139	118	0	38
Confl. Peds. (#/hr)	1					1				9		
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.5	18.5	18.5	18.5	18.5	18.5	35.7		35.7	35.7		35.7
Effective Green, g (s)	18.5	18.5	18.5	18.5	18.5	18.5	35.7		35.7	35.7		35.7
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.56		0.56	0.56		0.56
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5
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)	118	864	417	304	923	416	716		804	724		789
v/s Ratio Prot		0.07			c0.20							
v/s Ratio Perm	0.19		0.00	0.02		0.03	c0.14		0.10	0.09		0.03
v/c Ratio	0.64	0.24	0.01	0.08	0.70	0.09	0.24		0.17	0.16		0.05
Uniform Delay, d1	19.5	17.0	15.8	16.2	19.9	16.2	6.9		6.6	6.6		6.2
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	11.4	0.1	0.0	0.1	2.3	0.1	0.8		0.5	0.5		0.1
Delay (s)	30.9	17.2	15.8	16.3	22.2	16.3	7.7		7.1	7.1		6.3
Level of Service	C	B	B	B	C	B	A		A	A		A
Approach Delay (s)		20.7			21.1			7.4			6.8	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	907	661	0	1314	2397	0
Future Volume (vph)	907	661	0	1314	2397	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	986	718	0	1428	2605	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	986	718	0	1428	2605	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

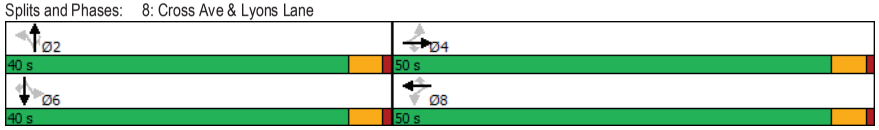
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	66.0	66.0		74.0	74.0	
Total Split (%)	47.1%	47.1%		52.9%	52.9%	
Maximum Green (s)	59.0	59.0		67.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	62.0	62.0		70.0	70.0	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
v/c Ratio	0.66	1.01		0.58	1.04	
Control Delay	33.2	76.0		46.4	52.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	33.2	76.0		46.4	52.4	
LOS	C	E		D	D	
Approach Delay	51.2			46.4	52.4	
Approach LOS	D			D	D	
Queue Length 50th (m)	114.5	~213.6		158.3	~300.0	
Queue Length 95th (m)	138.3	#299.6		174.9	m196.4	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1505	708		2446	2494	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.66	1.01		0.58	1.04	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 50.6 Intersection LOS: D
Intersection Capacity Utilization 118.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane



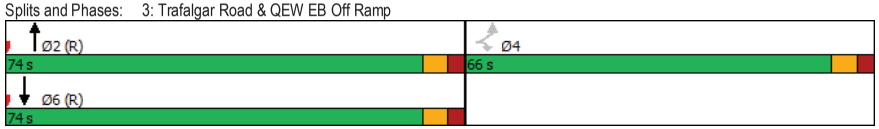
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Maximum Green (s)	45.5	45.5	45.5	45.5	45.5	45.5	35.5	35.5	35.5	35.5	35.5	35.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	18.5	35.7		35.7	35.7		35.7
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.56		0.56	0.56		0.56
v/c Ratio	0.64	0.24	0.02	0.08	0.70	0.25	0.24		0.23	0.16		0.08
Control Delay	46.0	17.3	4.1	16.1	24.1	4.9	9.2		0.5	8.6		0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	46.0	17.3	4.1	16.1	24.1	4.9	9.2		0.5	8.6		0.2
LOS	D	B	A	B	C	A	A		A	A		A
Approach Delay		24.4			20.8			4.1			5.5	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	8.0	10.2	0.0	2.2	36.5	0.0	9.6		0.0	6.2		0.0
Queue Length 95th (m)	9.9	17.5	1.7	7.0	47.8	2.1	23.6		0.0	7.4		0.0
Internal Link Dist (m)		257.3			16.1			148.6			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	292	2136	1035	751	2280	1062	716		1083	720		877
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	0.26	0.10	0.01	0.03	0.28	0.12	0.24		0.23	0.16		0.08

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 63.2			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 48.5%		ICU Level of Service A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	907	661	0	1314	2397	0
Future Volume (vph)	907	661	0	1314	2397	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	718	0	1428	2605	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	986	717	0	1428	2605	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	59.0	59.0		67.0	67.0	
Effective Green, g (s)	62.0	62.0		70.0	70.0	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1505	708		2446	2494	
v/s Ratio Prot				0.29	c0.52	
v/s Ratio Perm	0.29	c0.45				
v/c Ratio	0.66	1.01		0.58	1.04	
Uniform Delay, d1	30.6	39.0		24.7	35.0	
Progression Factor	1.00	1.00		1.84	0.89	
Incremental Delay, d2	1.0	37.2		0.7	21.5	
Delay (s)	31.6	76.2		46.1	52.5	
Level of Service	C	E		D	D	
Approach Delay (s)	50.4			46.1	52.5	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	118.3%	ICU Level of Service	H
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)	38	193	7	23	542	73	158	0	226	52	0	28
Future Volume (vph)	38	193	7	23	542	73	158	0	226	52	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1388	2954	1425	1593	3154	1454	1593	1676	1425	1624	1676	1398
Flt Permitted	0.277			0.620			0.757			0.757		
Satd. Flow (perm)	405	2954	1425	1039	3154	1421	1269	1676	1425	1277	1676	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			126			642			204
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			172.6			41.7	
Travel Time (s)		20.3			2.9			12.4			3.0	
Confl. Peds. (#/hr)	1					1				9		
Peak Hour Factor	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	76	210	8	25	645	126	172	0	246	118	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	210	8	25	645	126	172	0	246	118	0	68
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1027	44	117	469	76	92	2	106	203	21	191
Future Volume (vph)	29	1027	44	117	469	76	92	2	106	203	21	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1554	3249	706	797	3249	1395	783	855	699	1528	1308	
Flt Permitted	0.47	1.00	1.00	0.09	1.00	1.00	0.30	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	771	3249	706	75	3249	1395	250	855	699	1210	1308	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	44	1268	59	124	494	94	131	8	158	236	28	245
RTOR Reduction (vph)	0	0	35	0	0	40	0	0	105	0	189	0
Lane Group Flow (vph)	44	1268	24	124	494	54	131	8	53	236	84	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	40.5	40.5	40.5	57.5	57.5	57.5	35.0	35.0	35.0	22.0	22.0	
Effective Green, g (s)	42.5	42.5	42.5	57.5	59.5	59.5	37.0	37.0	35.0	24.0	24.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.55	0.57	0.57	0.35	0.35	0.33	0.23	0.23	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	313	1321	287	131	1849	794	142	302	234	277	300	
v/s Ratio Prot		c0.39		c0.12	0.15		c0.09	0.01			0.06	
v/s Ratio Perm	0.06		0.03	0.40		0.04	c0.23		0.08	0.20		
v/c Ratio	0.14	0.96	0.08	0.95	0.27	0.07	0.92	0.03	0.23	0.85	0.28	
Uniform Delay, d1	19.5	30.2	19.0	30.5	11.4	10.1	30.0	22.0	25.0	38.5	33.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	16.3	0.3	61.7	0.2	0.1	52.5	0.0	0.7	22.2	0.7	
Delay (s)	19.9	46.5	19.3	92.2	11.6	10.2	82.5	22.1	25.7	60.7	33.8	
Level of Service	B	D	B	F	B	B	F	C	C	E	C	
Approach Delay (s)		44.4			25.4			50.7			46.3	
Approach LOS		D			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	104.5	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	78.2%	ICU Level of Service	D	
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)	0	0	18	0	0	0	0	1314	623	0	2301	757
Future Volume (vph)	0	0	18	0	0	0	0	1314	623	0	2301	757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.963	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4921	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4921	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	20	0	0	0	0	1428	677	0	2501	823
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	20	0	0	0	0	1428	677	0	3324	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.9%	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)	0	0	18	0	0	0	0	1314	623	0	2301	757
Future Volume (Veh/h)	0	0	18	0	0	0	0	1314	623	0	2301	757
Sign Control		Stop			Stop			Free			Free	
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)	0	0	20	0	0	0	0	1428	677	0	2501	823
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.58	0.58	0.50	0.58	0.58	0.86	0.50			0.86		
vC, conflicting volume	3412	4364	1269	2262	4776	476	3348			1428		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	923	2575	0	0	3289	0	2215			910		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	100	100	100	100			100		
cM capacity (veh/h)	127	15	526	561	5	934	118			648		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	20	476	476	476	677	1000	1000	1323
Volume Left	0	0	0	0	0	0	0	0
Volume Right	20	0	0	0	677	0	0	823
cSH	526	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.28	0.28	0.28	0.40	0.59	0.59	0.78
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	12.1	0.0				0.0		
Approach LOS	B							

Intersection Summary					
Average Delay		0.0			
Intersection Capacity Utilization	71.9%	ICU Level of Service		C	
Analysis Period (min)	15				

Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	46.5	46.5	46.5	17.0	63.5	63.5	13.0	42.0	42.0	29.0	29.0	
Total Split (%)	44.1%	44.1%	44.1%	16.1%	60.2%	60.2%	12.3%	39.8%	39.8%	27.5%	27.5%	
Maximum Green (s)	40.5	40.5	40.5	13.0	57.5	57.5	8.5	36.0	36.0	23.0	23.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	42.5	42.5	42.5	59.5	59.5	59.5	38.5	37.0	35.0	24.0	24.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.57	0.57	0.57	0.37	0.35	0.33	0.23	0.23	
v/c Ratio	0.14	0.96	0.17	0.94	0.27	0.11	0.90	0.03	0.47	0.85	0.56	
Control Delay	21.6	47.9	1.0	92.2	12.1	2.6	83.4	22.5	9.1	66.7	11.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.6	47.9	1.0	92.2	12.1	2.6	83.4	22.5	9.1	66.7	11.2	
LOS	C	D	A	F	B	A	F	C	A	E	B	
Approach Delay		45.0			24.8			42.2			36.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	5.9	138.7	0.0	18.9	27.2	0.0	21.0	1.1	0.0	48.6	4.7	
Queue Length 95th (m)	9.9	145.2	0.0	#57.0	37.1	5.3	#34.8	1.3	4.3	#84.3	13.9	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	313	1321	357	132	1851	835	145	310	344	289	499	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.96	0.17	0.94	0.27	0.11	0.90	0.03	0.46	0.82	0.55	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 105.5			
Actuated Cycle Length: 104.5			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 38.3		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	433	90	125	47	93	134	125	1302	59	287	1487	461
Future Volume (vph)	433	90	125	47	93	134	125	1302	59	287	1487	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.99		0.99			0.99	
Frt		0.913				0.850		0.994			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	1565	0	1752	1759	1553	1641	4965	0	1752	4809	0
Flt Permitted	0.950			0.613			0.072			0.069		
Satd. Flow (perm)	3206	1565	0	1123	1759	1531	124	4965	0	127	4809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				183		6			76	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	471	98	136	51	101	146	136	1415	64	312	1616	501
Shared Lane Traffic (%)												
Lane Group Flow (vph)	471	234	0	51	101	146	136	1479	0	312	2117	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		12.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		17.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	28.0	36.0		17.0	25.0	25.0	16.6	56.8		30.2	70.4	
Total Split (%)	20.0%	25.7%		12.1%	17.9%	17.9%	11.9%	40.6%		21.6%	50.3%	
Maximum Green (s)	21.0	29.0		12.5	18.0	18.0	12.6	49.8		26.2	63.4	
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	23.8	31.2		34.1	16.6	16.6	71.1	59.7		87.6	72.2	
Actuated g/C Ratio	0.17	0.22		0.24	0.12	0.12	0.51	0.43		0.63	0.52	
v/c Ratio	0.86	0.61		0.15	0.49	0.43	0.73	0.70		0.88	0.84	
Control Delay	72.9	47.1		32.5	65.1	6.9	41.3	42.5		49.2	18.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	72.9	47.1		32.5	65.1	6.9	41.3	42.5		49.2	18.7	
LOS	E	D		C	E	A	D	D		D	B	
Approach Delay		64.3			31.0			42.4			22.7	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	69.5	51.5		10.2	28.0	0.0	24.9	115.4		62.9	45.3	
Queue Length 95th (m)	#97.1	79.0		19.4	46.3	10.1	m33.4	m143.6		m59.9	m39.9	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	550	412		346	263	385	206	2120		389	2517	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.86	0.57		0.15	0.38	0.38	0.66	0.70		0.80	0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 35.3	Intersection LOS: D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1027	44	117	469	76	92	2	106	203	21	191
Future Volume (vph)	29	1027	44	117	469	76	92	2	106	203	21	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.96	0.97	0.97	
Frt			0.850			0.850			0.850		0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3249	727	797	3249	1454	785	855	727	1570	1308	0
Flt Permitted	0.471			0.090			0.304			0.752		
Satd. Flow (perm)	770	3249	706	76	3249	1395	249	855	698	1209	1308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			94			158		245	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	44	1268	59	124	494	94	131	8	158	236	28	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	1268	59	124	494	94	131	8	158	236	273	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	559	657	213	59	894	728	152	488	43	584	687	564
Future Volume (vph)	559	657	213	59	894	728	152	488	43	584	687	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3331		1802	3574	1503	1770	3610	1559	3433	1900	1503
Flt Permitted	0.95	1.00		0.21	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3331		391	3574	1503	219	3610	1559	3433	1900	1503
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)	608	714	232	64	972	791	165	530	47	635	747	613
RTOR Reduction (vph)	0	22	0	0	0	216	0	0	35	0	0	190
Lane Group Flow (vph)	608	924	0	64	972	575	165	530	12	635	747	423
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Actuated Green, G (s)	21.0	57.4		45.6	40.0	40.0	40.0	33.0	33.0	22.0	48.0	48.0
Effective Green, g (s)	22.0	60.4		47.6	43.0	43.0	42.0	36.0	36.0	23.0	51.0	51.0
Actuated g/C Ratio	0.16	0.43		0.34	0.31	0.31	0.30	0.26	0.26	0.16	0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1437		199	1097	461	154	928	400	563	692	547
v/s Ratio Prot	c0.18	0.28		0.02	0.27		0.06	0.15		c0.18	c0.39	
v/s Ratio Perm				0.09		c0.38	0.26		0.01			0.28
v/c Ratio	1.12	0.64		0.32	0.89	1.25	1.07	0.57	0.03	1.13	1.08	0.77
Uniform Delay, d1	59.0	31.3		32.3	46.2	48.5	44.4	45.3	38.9	58.5	44.5	39.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.32	1.08	1.55
Incremental Delay, d2	75.1	1.0		0.9	8.8	128.2	92.8	2.5	0.1	74.7	54.2	8.2
Delay (s)	134.1	32.3		33.2	55.0	176.7	137.2	47.8	39.1	151.8	102.1	69.2
Level of Service	F	C		C	D	F	F	D	D	F	F	E
Approach Delay (s)		72.1			106.9			67.1			107.8	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	93.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road

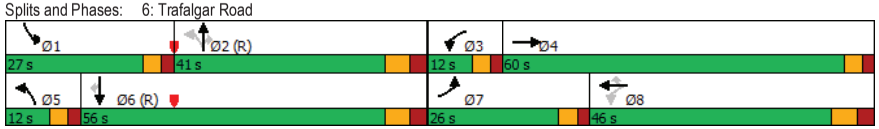
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	433	90	125	47	93	134	125	1302	59	287	1487	461
Future Volume (vph)	433	90	125	47	93	134	125	1302	59	287	1487	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3213	1565		1745	1759	1531	1641	4962		1752	4806	
Flt Permitted	0.95	1.00		0.61	1.00	1.00	0.07	1.00		0.07	1.00	
Satd. Flow (perm)	3213	1565		1126	1759	1531	124	4962		127	4806	
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)	471	98	136	51	101	146	136	1415	64	312	1616	501
RTOR Reduction (vph)	0	36	0	0	0	128	0	3	0	0	37	0
Lane Group Flow (vph)	471	198	0	51	101	18	136	1476	0	312	2080	0
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	20.8	28.2		24.1	14.5	14.5	67.2	55.8		83.7	68.3	
Effective Green, g (s)	23.8	31.2		30.1	17.5	17.5	67.2	58.8		83.7	71.3	
Actuated g/C Ratio	0.17	0.22		0.22	0.12	0.12	0.48	0.42		0.60	0.51	
Clearance Time (s)	7.0	7.0		4.5	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	546	348		297	219	191	183	2084		353	2447	
v/s Ratio Prot	c0.15	c0.13		0.02	0.06		0.06	0.30		c0.15	c0.43	
v/s Ratio Perm				0.02		0.01	0.30			0.38		
v/c Ratio	0.86	0.57		0.17	0.46	0.10	0.74	0.71		0.88	0.85	
Uniform Delay, d1	56.5	48.4		44.4	56.9	54.2	30.9	33.5		42.7	29.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.88	1.22		1.21	0.63	
Incremental Delay, d2	13.2	2.1		0.3	1.5	0.2	8.6	1.1		2.7	0.4	
Delay (s)	69.7	50.6		44.7	58.4	54.5	35.8	41.9		54.3	19.0	
Level of Service	E	D		D	E	D	D	D		D	B	
Approach Delay (s)		63.4			54.1			41.4			23.6	
Approach LOS		E			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.85			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Intersection Capacity Utilization 98.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	26.0	60.0		12.0	46.0	46.0	12.0	41.0	41.0	27.0	56.0	56.0
Total Split (%)	18.6%	42.9%		8.6%	32.9%	32.9%	8.6%	29.3%	29.3%	19.3%	40.0%	40.0%
Maximum Green (s)	21.0	55.0		7.0	39.0	39.0	7.0	34.0	34.0	22.0	49.0	49.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	22.0	60.4		50.0	42.0	42.0	45.0	37.0	37.0	23.0	52.0	52.0
Actuated g/C Ratio	0.16	0.43		0.36	0.30	0.30	0.32	0.26	0.26	0.16	0.37	0.37
v/c Ratio	1.12	0.65		0.29	0.91	1.18	1.04	0.56	0.09	1.13	1.06	0.82
Control Delay	127.7	33.2		24.3	59.9	123.3	114.0	47.1	0.3	140.5	92.2	39.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	127.7	33.2		24.3	59.9	123.3	114.0	47.1	0.3	140.5	92.2	39.2
LOS	F	C		C	E	F	F	D	A	F	F	D
Approach Delay		70.2			86.1			59.0			91.3	
Approach LOS		E			F			E			F	
Queue Length 50th (m)	~104.5	112.3		9.7	143.7	~209.1	~33.4	70.5	0.0	~112.5	~227.0	89.5
Queue Length 95th (m)	#143.5	137.2		18.5	#182.3	#290.0	#82.7	90.0	0.0	#152.7	#307.8	128.0
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0			80.0		
Base Capacity (vph)	544	1458		219	1072	669	159	954	549	563	705	746
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	9
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.65		0.29	0.91	1.18	1.04	0.56	0.09	1.13	1.06	0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 80.5		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	541	84	21	443	653	56	372	53	600	552	374
Future Volume (vph)	404	541	84	21	443	653	56	372	53	600	552	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.93	0.99	0.99		0.96		0.97
Frt			0.850			0.850		0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3471	1599	1703	3505	1568	1770	3487	0	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3331	3471	1524	1682	3505	1460	1753	3487	0	3243	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			409		11				324
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	439	588	91	23	482	710	61	404	58	652	600	407
Shared Lane Traffic (%)												
Lane Group Flow (vph)	439	588	91	23	482	710	61	462	0	652	600	407
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	23.0	55.0	55.0	12.0	44.0	44.0	12.0	41.0		32.0	61.0	61.0
Total Split (%)	16.4%	39.3%	39.3%	8.6%	31.4%	31.4%	8.6%	29.3%		22.9%	43.6%	43.6%
Maximum Green (s)	18.0	50.0	50.0	7.0	37.0	37.0	7.0	34.0		27.0	54.0	54.0
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	19.0	57.8	57.8	8.0	40.0	40.0	8.0	37.0		28.0	59.4	59.4
Actuated g/C Ratio	0.14	0.41	0.41	0.06	0.29	0.29	0.06	0.26		0.20	0.42	0.42
v/c Ratio	0.94	0.41	0.13	0.24	0.48	1.00	0.60	0.50		0.97	0.76	0.50
Control Delay	89.5	31.1	0.7	69.4	43.4	55.4	88.8	44.7		99.1	36.8	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	89.5	31.1	0.7	69.4	43.4	55.4	88.8	44.7		99.1	36.8	11.7
LOS	F	C	A	E	D	E	F	D		F	D	B
Approach Delay		51.5			50.9			49.8			55.1	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	66.2	67.1	0.0	6.5	61.4	~112.5	17.7	58.8		104.4	86.6	24.8
Queue Length 95th (m)	#99.7	84.7	1.1	16.5	79.4	#203.1	#37.8	76.8		m#140.8	m129.2	m48.7
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	465	1433	715	97	1001	709	101	929		673	790	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.94	0.41	0.13	0.24	0.48	1.00	0.60	0.50		0.97	0.76	0.50

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 52.5		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	559	657	213	59	894	728	152	488	43	584	687	564
Future Volume (vph)	559	657	213	59	894	728	152	488	43	584	687	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99		0.94			0.97	0.98		0.95
Frt		0.963				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3330	0	1805	3574	1599	1770	3610	1615	3433	1900	1583
Flt Permitted	0.950			0.206			0.118			0.950		
Satd. Flow (perm)	3423	3330	0	388	3574	1503	220	3610	1559	3369	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38				312			187			299
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	608	714	232	64	972	791	165	530	47	635	747	613
Shared Lane Traffic (%)												
Lane Group Flow (vph)	608	946	0	64	972	791	165	530	47	635	747	613
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1150	250	172	226	245	351	195	1461	120	154	1140	460
Future Volume (vph)	1150	250	172	226	245	351	195	1461	120	154	1140	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.95
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3343	1413	3433	3471	1599	1719	5136	1409	1805	5136	1485
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	3343	1413	3433	3471	1599	173	5136	1409	199	5136	1485
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)	1250	272	187	246	266	382	212	1588	130	167	1239	500
RTOR Reduction (vph)	0	0	120	0	0	94	0	0	70	0	0	239
Lane Group Flow (vph)	1250	272	67	246	266	288	212	1588	60	167	1239	261
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	46.0	50.0	50.0	14.6	15.6	27.2	57.0	41.8	56.4	49.8	38.2	38.2
Effective Green, g (s)	49.0	53.0	50.0	14.6	18.6	27.2	57.0	44.8	56.4	49.8	41.2	41.2
Actuated g/C Ratio	0.35	0.38	0.36	0.10	0.13	0.19	0.41	0.32	0.40	0.36	0.29	0.29
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1190	1265	504	358	461	310	238	1643	567	203	1511	437
v/s Ratio Prot	c0.37	0.08		0.07	0.08	c0.08	c0.10	c0.31	0.01	0.07	0.24	
v/s Ratio Perm			0.05			0.10	0.27		0.03	0.22		0.18
v/c Ratio	1.05	0.22	0.13	0.69	0.58	0.93	0.89	0.97	0.11	0.82	0.82	0.60
Uniform Delay, d1	45.5	29.4	30.4	60.5	57.0	55.4	38.4	46.9	26.1	36.6	46.0	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.39	1.04	2.85	1.03	0.76	0.60
Incremental Delay, d2	40.4	0.1	0.1	5.4	1.8	32.6	10.4	5.7	0.0	14.6	3.1	3.5
Delay (s)	85.9	29.5	30.5	65.9	58.8	88.0	63.6	54.4	74.5	52.5	38.1	29.0
Level of Service	F	C	C	E	E	F	E	D	E	D	D	C
Approach Delay (s)		70.9			73.2			56.7			37.0	
Approach LOS		E			E			E			D	

Intersection Summary				
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	92.8%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

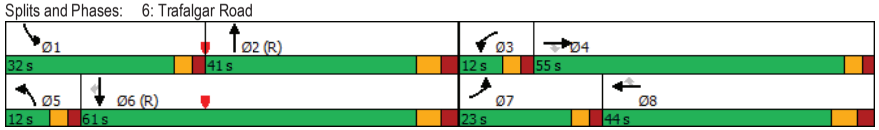
Intersection Capacity Utilization 81.0% ICU Level of Service D
Analysis Period (min) 15

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

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

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

Splits and Phases: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	541	84	21	443	653	56	372	53	600	552	374
Future Volume (vph)	404	541	84	21	443	653	56	372	53	600	552	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	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	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3471	1524	1703	3505	1460	1770	3488		3367	1863	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3471	1524	1703	3505	1460	1770	3488		3367	1863	1474
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)	439	588	91	23	482	710	61	404	58	652	600	407
RTOR Reduction (vph)	0	0	53	0	0	286	0	8	0	0	0	193
Lane Group Flow (vph)	439	588	38	23	482	424	61	454	0	652	600	214
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	18.0	54.8	54.8	4.2	39.0	39.0	5.6	32.0		27.0	53.4	53.4
Effective Green, g (s)	19.0	57.8	57.8	5.2	42.0	42.0	6.6	35.0		28.0	56.4	56.4
Actuated g/C Ratio	0.14	0.41	0.41	0.04	0.30	0.30	0.05	0.25		0.20	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	465	1433	629	63	1051	438	83	872		673	750	593
v/s Ratio Prot	c0.13	0.17		0.01	0.14		0.03	0.13		c0.19	c0.32	
v/s Ratio Perm			0.02			c0.29						0.14
v/c Ratio	0.94	0.41	0.06	0.37	0.46	0.97	0.73	0.52		0.97	0.80	0.36
Uniform Delay, d1	60.0	29.1	24.7	65.8	39.8	48.3	65.8	45.3		55.6	36.8	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.47	0.92	1.61
Incremental Delay, d2	28.0	0.2	0.0	3.6	0.3	34.2	28.3	2.2		18.9	5.2	1.0
Delay (s)	88.0	29.2	24.8	69.4	40.1	82.6	94.1	47.5		100.4	38.9	47.9
Level of Service	F	C	C	E	D	F	F	D		F	D	D
Approach Delay (s)		51.9			65.5			52.9			65.2	
Approach LOS		D			E			D			E	

Intersection Summary				
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

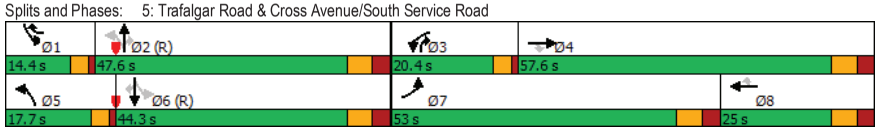
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

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

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

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

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	5.0	10.0	7.0	7.0	27.0	5.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	9.5	25.0	11.5	11.5	34.0	9.5	11.5	34.0	34.0
Total Split (s)	53.0	57.6	57.6	20.4	25.0	14.4	17.7	47.6	20.4	14.4	44.3	44.3
Total Split (%)	37.9%	41.1%	41.1%	14.6%	17.9%	10.3%	12.6%	34.0%	14.6%	10.3%	31.6%	31.6%
Maximum Green (s)	46.0	50.6	50.6	16.4	18.0	10.4	13.7	40.6	16.4	10.4	37.3	37.3
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	49.0	53.0	50.0	14.6	18.6	34.2	60.0	44.8	59.4	52.8	41.2	41.2
Actuated g/C Ratio	0.35	0.38	0.36	0.10	0.13	0.24	0.43	0.32	0.42	0.38	0.29	0.29
v/c Ratio	1.05	0.22	0.30	0.69	0.58	0.80	0.88	0.97	0.20	0.80	0.82	0.74
Control Delay	84.2	29.9	5.3	70.8	62.0	47.3	56.3	54.2	13.9	49.5	38.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	29.9	5.3	70.8	62.0	47.3	56.3	54.2	13.9	49.5	38.5	13.0
LOS	F	C	A	E	E	D	E	D	B	D	D	B
Approach Delay		66.9			58.2			51.7			32.8	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	~204.1	28.1	0.0	36.0	38.7	74.2	55.2	154.9	7.0	25.7	125.5	66.0
Queue Length 95th (m)	#248.0	39.0	16.6	50.6	53.4	116.1	m56.4	m133.0	m8.2	m#48.1	148.0	m100.7
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	1190	1279	630	402	520	478	242	1644	683	208	1511	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.21	0.30	0.61	0.51	0.80	0.88	0.97	0.19	0.80	0.82	0.74

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 51.0		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	400	15	41	621	24	21	0	51	59	17	521
Future Volume (vph)	33	400	15	41	621	24	21	0	51	59	17	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.94		0.96	0.99	
Frt		0.993			0.994			0.850			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3048	0	818	3190	0	805	717	0	1570	1387	0
Flt Permitted	0.372			0.334			0.143			0.709		
Satd. Flow (perm)	614	3048	0	287	3190	0	121	717	0	1131	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			368			234	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	63	460	23	49	706	30	40	0	73	76	27	585
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	483	0	49	736	0	40	73	0	76	612	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	45.4	45.4		12.6	58.0		32.0	32.0		32.0	32.0	
Total Split (%)	50.4%	50.4%		14.0%	64.4%		35.6%	35.6%		35.6%	35.6%	
Maximum Green (s)	39.4	39.4		8.6	52.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	24.6	24.6		36.8	36.8		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.34	0.34		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.30	0.47		0.24	0.46		0.87	0.15		0.18	0.90	
Control Delay	22.7	20.4		12.5	12.5		130.2	0.6		16.6	33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.7	20.4		12.5	12.5		130.2	0.6		16.6	33.0	
LOS	C	C		B	B		F	A		B	C	
Approach Delay		20.7			12.5			46.5			31.2	
Approach LOS		C			B			D			C	
Queue Length 50th (m)	6.6	27.7		3.5	33.1		5.1	0.0		6.9	51.6	
Queue Length 95th (m)	8.7	39.5		8.3	44.8		#11.7	0.0		14.4	44.0	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	349	1736		207	2369		46	502		434	677	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.28		0.24	0.31		0.87	0.15		0.18	0.90	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 22.4		Intersection LOS: C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1150	250	172	226	245	351	195	1461	120	154	1140	460
Future Volume (vph)	1150	250	172	226	245	351	195	1461	120	154	1140	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor			0.95	0.98					0.83			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3343	1482	3433	3471	1599	1719	5136	1615	1805	5136	1568
Flt Permitted	0.950			0.950			0.096			0.105		
Satd. Flow (perm)	3400	3343	1413	3351	3471	1599	174	5136	1337	200	5136	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			117			117			338
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1250	272	187	246	266	382	212	1588	130	167	1239	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1250	272	187	246	266	382	212	1588	130	167	1239	500
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	60	0	0	0	0	2037	924	0	1984	484
Future Volume (Veh/h)	0	0	60	0	0	0	0	2037	924	0	1984	484
Sign Control		Stop			Stop			Free			Free	
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)	0	0	65	0	0	0	0	2214	1004	0	2157	526
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.78	0.78	0.66	0.78	0.78	0.76	0.66			0.76		
vC, conflicting volume	3182	4658	1006	2933	4921	738	2707			2214		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	741	2633	0	421	2970	0	1785			1496		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	100	100	100	100			100		
cM capacity (veh/h)	232	18	689	362	11	830	228			346		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	65	738	738	738	1004	863	863	957
Volume Left	0	0	0	0	0	0	0	0
Volume Right	65	0	0	0	1004	0	0	526
cSH	689	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.43	0.43	0.43	0.59	0.51	0.51	0.56
Queue Length 95th (m)	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.8	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	60.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection Capacity Utilization 81.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	400	15	41	621	24	21	0	51	59	17	521
Future Volume (vph)	33	400	15	41	621	24	21	0	51	59	17	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.97	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1569	3048		817	3189		805	722		1525	1387	
Flt Permitted	0.37	1.00		0.33	1.00		0.14	1.00		0.71	1.00	
Satd. Flow (perm)	615	3048		288	3189		121	722		1139	1387	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	63	460	23	49	706	30	40	0	73	76	27	585
RTOR Reduction (vph)	0	5	0	0	4	0	0	45	0	0	144	0
Lane Group Flow (vph)	63	478	0	49	732	0	40	28	0	76	468	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.6	22.6		34.8	34.8		26.0	26.0		26.0	26.0	
Effective Green, g (s)	24.6	24.6		34.8	36.8		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.34	0.34		0.48	0.51		0.38	0.38		0.38	0.38	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	207	1029		197	1612		46	277		438	533	
v/s Ratio Prot		0.16		0.03	c0.23			0.04			c0.34	
v/s Ratio Perm	0.10			0.09			0.33			0.07		
v/c Ratio	0.30	0.46		0.25	0.45		0.87	0.10		0.17	0.88	
Uniform Delay, d1	17.8	18.9		11.0	11.6		20.7	14.3		14.8	20.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.7		0.5	0.4		85.4	0.2		0.3	15.5	
Delay (s)	19.5	19.6		11.5	12.0		106.1	14.6		15.0	36.3	
Level of Service	B	B		B	B		F	B		B	D	
Approach Delay (s)		19.6			12.0			47.0			34.0	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
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)	0	0	60	0	0	0	0	2037	924	0	1984	484
Future Volume (vph)	0	0	60	0	0	0	0	2037	924	0	1984	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.971	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	65	0	0	0	0	2214	1004	0	2157	526
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	65	0	0	0	0	2214	1004	0	2683	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1090	561	0	2037	1907	0
Future Volume (vph)	1090	561	0	2037	1907	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	610	0	2214	2073	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	1185	608	0	2214	2073	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	57.5	57.5		68.5	68.5	
Effective Green, g (s)	60.5	60.5		71.5	71.5	
Actuated g/C Ratio	0.43	0.43		0.51	0.51	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1513	679		2596	2596	
v/s Ratio Prot				c0.44	0.41	
v/s Ratio Perm	0.34	c0.39				
v/c Ratio	0.78	0.90		0.85	0.80	
Uniform Delay, d1	34.1	36.8		29.7	28.3	
Progression Factor	1.00	1.00		1.48	0.80	
Incremental Delay, d2	2.7	14.4		1.1	1.8	
Delay (s)	36.8	51.2		44.9	24.3	
Level of Service	D	D		D	C	
Approach Delay (s)	41.7			44.9	24.3	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
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)	59	179	205	228	122	5	18	3	14	17	24	42
Future Volume (vph)	59	179	205	228	122	5	18	3	14	17	24	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.916			0.989			0.872			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1540	2804	0	1570	2726	0	1570	1471	0	1468	1497	0
Flt Permitted	0.647			0.395			0.708			0.740		
Satd. Flow (perm)	1040	2804	0	652	2726	0	1166	1471	0	1139	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		281			12			23			49	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Peak Hour Factor	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	76	221	281	345	154	12	23	4	23	27	26	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	502	0	345	166	0	23	27	0	27	75	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

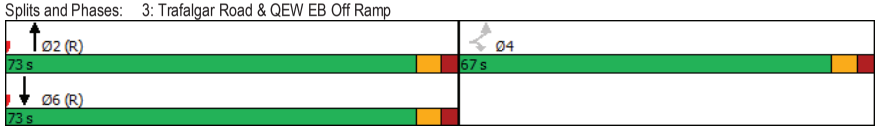
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	41.0	41.0		21.0	62.0		28.0	28.0		28.0	28.0	
Total Split (%)	45.6%	45.6%		23.3%	68.9%		31.1%	31.1%		31.1%	31.1%	
Maximum Green (s)	35.0	35.0		17.0	56.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		51.9	51.9		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.51	0.51		0.72	0.72		0.17	0.17		0.17	0.17	
v/c Ratio	0.14	0.32		0.57	0.08		0.12	0.10		0.14	0.25	
Control Delay	11.1	5.2		7.6	2.9		28.1	14.1		28.5	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.1	5.2		7.6	2.9		28.1	14.1		28.5	15.6	
LOS	B	A		A	A		C	B		C	B	
Approach Delay		5.9			6.1			20.5			19.0	
Approach LOS		A			A			C			B	
Queue Length 50th (m)	5.2	8.0		13.8	2.6		2.8	0.5		3.3	3.2	
Queue Length 95th (m)	12.0	15.0		16.4	4.6		8.4	5.4		7.2	14.7	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	533	1575		685	2194		387	504		378	530	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.32		0.50	0.08		0.06	0.05		0.07	0.14	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.2			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 7.7		Intersection LOS: A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	67.0	67.0		73.0	73.0	
Total Split (%)	47.9%	47.9%		52.1%	52.1%	
Maximum Green (s)	60.0	60.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	60.5	60.5		71.5	71.5	
Actuated g/C Ratio	0.43	0.43		0.51	0.51	
v/c Ratio	0.78	0.90		0.85	0.80	
Control Delay	38.2	53.6		46.1	24.9	
Queue Delay	0.0	0.0		0.3	0.0	
Total Delay	38.2	53.6		46.4	24.9	
LOS	D	D		D	C	
Approach Delay	43.5			46.4	24.9	
Approach LOS	D			D	C	
Queue Length 50th (m)	145.7	156.5		246.1	127.4	
Queue Length 95th (m)	173.4	#229.0		m242.3	179.3	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1575	709		2597	2597	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		64	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.75	0.86		0.87	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 38.2		Intersection LOS: D	
Intersection Capacity Utilization 78.5%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	179	205	228	122	5	18	3	14	17	24	42
Future Volume (vph)	59	179	205	228	122	5	18	3	14	17	24	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.87		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1530	2804		1570	2727		1566	1473		1463	1498	
Flt Permitted	0.65	1.00		0.40	1.00		0.71	1.00		0.74	1.00	
Satd. Flow (perm)	1042	2804		653	2727		1168	1473		1139	1498	
Peak-hour factor, PHF	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Adj. Flow (vph)	76	221	281	345	154	12	22	4	23	27	26	49
RTOR Reduction (vph)	0	137	0	0	3	0	0	19	0	0	41	0
Lane Group Flow (vph)	76	365	0	345	163	0	23	8	0	27	34	0
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		50.0	50.0		10.3	10.3		10.3	10.3	
Effective Green, g (s)	37.1	37.1		50.0	52.0		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.51	0.51		0.69	0.72		0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	534	1438		589	1961		198	250		193	254	
v/s Ratio Prot		0.13		c0.09	0.06			0.01			0.02	
v/s Ratio Perm	0.07			c0.32			0.02			c0.02		
v/c Ratio	0.14	0.25		0.59	0.08		0.12	0.03		0.14	0.14	
Uniform Delay, d1	9.2	9.9		4.9	3.0		25.4	25.0		25.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2		1.2	0.0		0.4	0.1		0.5	0.3	
Delay (s)	9.5	10.0		6.1	3.1		25.8	25.1		26.0	25.8	
Level of Service	A	B		A	A		C	C		C	C	
Approach Delay (s)		10.0			5.1			25.4			25.9	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	77.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1090	561	0	2037	1907	0
Future Volume (vph)	1090	561	0	2037	1907	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1185	610	0	2214	2073	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1185	610	0	2214	2073	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

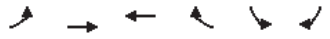
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3127	1907	768
Future Volume (Veh/h)	0	0	0	3127	1907	768
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3399	2073	835
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.46	0.81	0.81			
vC, conflicting volume	3206	691	2073			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	1515			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	473	882	355			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1133	1133	1133	691	691	691	835
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	835
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.67	0.67	0.67	0.41	0.41	0.41	0.49
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		78.5%	ICU Level of Service D
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	429	195	6	5	4
Future Volume (vph)	24	429	195	6	5	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.992		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1624	3094	2798	0	1383	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1624	3094	2798	0	1383	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	4			4	7	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Heavy Vehicles (%)	0%	5%	16%	0%	0%	25%
Adj. Flow (vph)	35	740	222	12	8	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	740	234	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	23.8%	ICU Level of Service A	
Analysis Period (min)	15		



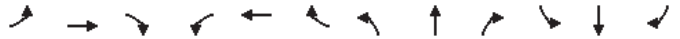
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	429	195	6	5	4
Future Volume (Veh/h)	24	429	195	6	5	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Hourly flow rate (vph)	35	740	222	12	8	8
Pedestrians			7		4	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked						
vC, conflicting volume	238				679	121
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238				679	121
tC, single (s)	4.1				6.8	7.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.5
p0 queue free %	97				98	99
cM capacity (veh/h)	1336				376	836

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	35	370	370	148	86	16
Volume Left	35	0	0	0	0	8
Volume Right	0	0	0	0	12	8
cSH	1336	1700	1700	1700	1700	519
Volume to Capacity	0.03	0.22	0.22	0.09	0.05	0.03
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	0.8
Control Delay (s)	7.8	0.0	0.0	0.0	0.0	12.2
Lane LOS	A					B
Approach Delay (s)	0.4			0.0		12.2
Approach LOS						B

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		23.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3127	1907	768
Future Volume (vph)	0	0	0	3127	1907	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3399	2073	835
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3399	2073	835
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	78.5%		ICU Level of Service	D
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	286	575	142	286	0	2629	498	0	1814	10
Future Volume (vph)	21	0	286	575	142	286	0	2629	498	0	1814	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98		1.00	0.93		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1724	1557		5085	1482		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1724	1557		5085	1482		4217	1497
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)	23	0	311	625	154	311	0	2858	541	0	1972	11
RTOR Reduction (vph)	0	0	21	0	0	49	0	0	122	0	0	4
Lane Group Flow (vph)	23	0	290	387	392	262	0	2858	419	0	1972	7
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	3.0		41.4	33.9	33.9	33.9		84.6	84.6		84.6	84.6
Effective Green, g (s)	4.0		44.4	36.9	36.9	36.9		87.6	87.6		87.6	87.6
Actuated g/C Ratio	0.03		0.32	0.26	0.26	0.26		0.63	0.63		0.63	0.63
Clearance Time (s)	4.5		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51		512	443	454	410		3181	927		2638	936
v/s Ratio Prot	0.01							c0.56			0.47	
v/s Ratio Perm			c0.18	c0.23	0.23	0.17			0.28			0.00
v/c Ratio	0.45		0.57	0.87	0.86	0.64		0.90	0.45		0.75	0.01
Uniform Delay, d1	66.9		39.8	49.3	49.1	45.7		22.4	13.7		18.4	9.9
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.60	0.65		1.00	1.00
Incremental Delay, d2	6.2		1.4	17.1	15.5	3.3		2.6	0.9		2.0	0.0
Delay (s)	73.1		41.2	66.4	64.7	48.9		16.0	9.8		20.4	9.9
Level of Service	E		D	E	E	D		B	A		C	A
Approach Delay (s)		43.4			60.8			15.0			20.4	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	3	3	3	1
Future Volume (vph)	0	4	3	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.932		0.955	
Flt Protected					0.968	
Satd. Flow (prot)	0	1710	1594	0	1296	0
Flt Permitted					0.968	
Satd. Flow (perm)	0	1710	1594	0	1296	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	8	4	4	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	8	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

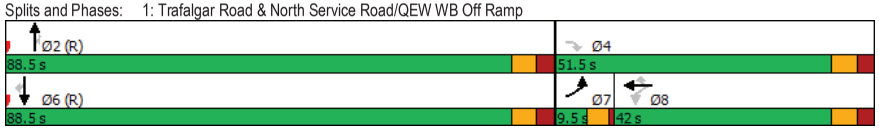
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	3	3	3	1
Future Volume (Veh/h)	0	4	3	3	3	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	8	4	4	8	4
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	14				21	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	14				21	12
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1609				916	1069

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	8	8	12
Volume Left	0	0	8
Volume Right	0	4	4
cSH	1609	1700	962
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp

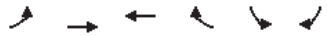


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	9.5		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	9.5		51.5	42.0	42.0	42.0		88.5	88.5		88.5	88.5
Total Split (%)	6.8%		36.8%	30.0%	30.0%	30.0%		63.2%	63.2%		63.2%	63.2%
Maximum Green (s)	5.0		44.5	35.0	35.0	35.0		81.5	81.5		81.5	81.5
Yellow Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.0		42.6	36.9	36.9	36.9		89.4	89.4		89.4	89.4
Actuated g/C Ratio	0.04		0.30	0.26	0.26	0.26		0.64	0.64		0.64	0.64
v/c Ratio	0.30		0.61	0.88	0.86	0.68		0.88	0.51		0.73	0.01
Control Delay	75.2		41.8	70.2	68.4	44.1		15.8	4.4		20.2	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.1	0.0		0.0	0.0
Total Delay	75.2		41.8	70.2	68.4	44.1		15.8	4.4		20.2	0.0
LOS	E		D	E	E	D		B	A		C	A
Approach Delay		44.1			62.1			14.0			20.1	
Approach LOS		D			E			B			C	
Queue Length 50th (m)	6.6		66.2	112.9	114.0	64.2		115.0	20.2		149.3	0.0
Queue Length 95th (m)	16.7		97.8	#170.5	#169.8	99.2		218.4	m34.8		169.9	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	77		568	457	469	471		3248	1064		2693	979
Starvation Cap Reductn	0		0	0	0	0		22	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.30		0.55	0.85	0.84	0.66		0.89	0.51		0.73	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.0		Intersection LOS: C	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	607	127	4	3
Future Volume (vph)	1	5	607	127	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.973		0.942	
Flt Protected		0.988			0.972	
Satd. Flow (prot)	0	1352	1625	0	1566	0
Flt Permitted		0.988			0.972	
Satd. Flow (perm)	0	1352	1625	0	1566	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	12	706	176	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	882	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

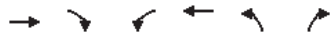


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	607	127	4	3
Future Volume (Veh/h)	1	5	607	127	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	12	706	176	16	12
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	883				820	796
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	883				820	796
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				95	97
cM capacity (veh/h)	474				343	390

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	882	28
Volume Left	4	0	16
Volume Right	0	176	12
cSH	474	1700	361
Volume to Capacity	0.01	0.52	0.08
Queue Length 95th (m)	0.2	0.0	2.0
Control Delay (s)	3.2	0.0	15.8
Lane LOS	A		C
Approach Delay (s)	3.2	0.0	15.8
Approach LOS			C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	54.4%	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)	21	0	286	575	142	286	0	2629	498	0	1814	10
Future Volume (vph)	21	0	286	575	142	286	0	2629	498	0	1814	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.93			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.971							
Satd. Flow (prot)	1805	0	1615	1681	1725	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.971							
Satd. Flow (perm)	1800	0	1615	1681	1725	1557	0	5085	1482	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			66			327			66
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	23	0	311	625	154	311	0	2858	541	0	1972	11
Shared Lane Traffic (%)				38%								
Lane Group Flow (vph)	23	0	311	387	392	311	0	2858	541	0	1972	11
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	8	18	10	8	78
Future Volume (Veh/h)	8	8	18	10	8	78
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	9	20	11	9	85
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			18		64	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		64	14
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	92
cM capacity (veh/h)			1599		929	1067

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	18	31	94
Volume Left	0	20	9
Volume Right	9	0	85
cSH	1700	1599	1052
Volume to Capacity	0.01	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.3
Control Delay (s)	0.0	4.7	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	4.7	8.8
Approach LOS			A

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	20.1%	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)	20	0	262	485	137	382	0	2813	532	0	2659	12
Future Volume (vph)	20	0	262	485	137	382	0	2813	532	0	2659	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.99			0.97			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.972							
Satd. Flow (prot)	1805	0	1615	1681	1727	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.972							
Satd. Flow (perm)	1800	0	1615	1681	1727	1563	0	5085	1556	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			341			129			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	22	0	285	527	149	415	0	3058	578	0	2890	13
Shared Lane Traffic (%)				37%								
Lane Group Flow (vph)	22	0	285	332	344	415	0	3058	578	0	2890	13
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Detector Phase	7		4	8	8			2			6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0			5.0			5.0	5.0
Minimum Split (s)	23.0		38.0	38.0	38.0			35.0			35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0			79.0			79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%			56.4%			56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0			72.0			72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0			4.0			4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0			3.0			3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0			-3.0			-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0			4.0			4.0	4.0
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
Recall Mode	None		None	None	None			C-Max			C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)			0	0	0			0			0	0
Act Effct Green (s)	8.2		44.0	36.1	36.1	140.0		88.0	140.0		88.0	88.0
Actuated g/C Ratio	0.06		0.31	0.26	0.26	1.00		0.63	1.00		0.63	0.63
v/c Ratio	0.21		0.54	0.77	0.77	0.27		0.96	0.37		1.09	0.01
Control Delay	66.7		37.1	59.7	59.8	0.4		25.2	0.3		74.3	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	66.7		37.1	59.7	59.8	0.4		25.2	0.3		74.3	0.0
LOS	E		D	E	E	A		C	A		E	A
Approach Delay		39.2			37.2			21.3			73.9	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	6.2		57.5	93.5	97.1	0.0		~295.8	0.0		~364.5	0.0
Queue Length 95th (m)	15.6		78.4	125.8	129.7	0.0		#398.9	m0.0		#415.1	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		675	452	465	1563		3194	1556		2649	966
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09		0.42	0.73	0.74	0.27		0.96	0.37		1.09	0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 43.4	Intersection LOS: D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	8	18	10	8	78
Future Volume (vph)	8	8	18	10	8	78
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	0.932				0.878	
Flt Protected				0.969	0.995	
Satd. Flow (prot)	1736	0	0	1805	1627	0
Flt Permitted				0.969	0.995	
Satd. Flow (perm)	1736	0	0	1805	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	129.7			696.1	54.3	
Travel Time (s)	9.3			50.1	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	9	20	11	9	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	31	94	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		ICU Level of Service A	
Analysis Period (min) 15			

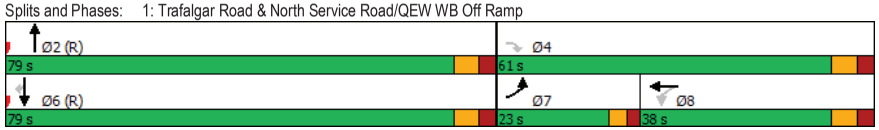
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	6	670	159	19	59
Future Volume (Veh/h)	1	6	670	159	19	59
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	14	779	221	76	236
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	1001				918	892
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1001				918	892
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				75	31
cM capacity (veh/h)	419				300	343

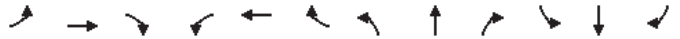
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	1000	312
Volume Left	4	0	76
Volume Right	0	221	236
cSH	419	1700	332
Volume to Capacity	0.01	0.59	0.94
Queue Length 95th (m)	0.2	0.0	77.3
Control Delay (s)	3.1	0.0	71.6
Lane LOS	A		F
Approach Delay (s)	3.1	0.0	71.6
Approach LOS			F

Intersection Summary			
Average Delay	16.8		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection Capacity Utilization 94.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp





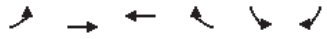
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	262	485	137	382	0	2813	532	0	2659	12
Future Volume (vph)	20	0	262	485	137	382	0	2813	532	0	2659	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	1.0		4.0	1.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99		1.00	0.97		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1728	1563		5085	1556		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1728	1563		5085	1556		4217	1497
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)	22	0	285	527	149	415	0	3058	578	0	2890	13
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	22	0	264	332	344	415	0	3058	578	0	2890	8
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Actuated Green, G (s)	4.9		43.0	33.1	33.1	140.0		83.0	140.0		83.0	83.0
Effective Green, g (s)	5.9		46.0	36.1	36.1	140.0		86.0	140.0		86.0	86.0
Actuated g/C Ratio	0.04		0.33	0.26	0.26	1.00		0.61	1.00		0.61	0.61
Clearance Time (s)	5.0		7.0	7.0	7.0			7.0			7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	76		530	433	445	1563		3123	1556		2590	919
v/s Ratio Prot	0.01							0.60			c0.69	
v/s Ratio Perm			c0.16	0.20	0.20	0.27			0.37			0.01
v/c Ratio	0.29		0.50	0.77	0.77	0.27		0.98	0.37		1.12	0.01
Uniform Delay, d1	65.0		37.7	48.1	48.2	0.0		26.1	0.0		27.0	10.5
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.74	1.00		1.00	1.00
Incremental Delay, d2	2.1		0.7	7.9	8.1	0.4		7.4	0.3		58.1	0.0
Delay (s)	67.1		38.5	56.0	56.3	0.4		26.8	0.3		85.1	10.5
Level of Service	E		D	E	E	A		C	A		F	B
Approach Delay (s)		40.5			34.9			22.6			84.8	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	47.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	6	670	159	19	59
Future Volume (vph)	1	6	670	159	19	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.970		0.898	
Flt Protected		0.989			0.988	
Satd. Flow (prot)	0	1384	1621	0	1517	0
Flt Permitted		0.989			0.988	
Satd. Flow (perm)	0	1384	1621	0	1517	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	14	779	221	76	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	1000	0	312	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	8	19	16	2
Future Volume (Veh/h)	0	10	8	19	16	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	20	11	25	42	8
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	42				50	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				50	30
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1572				881	1046

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	36	50
Volume Left	0	0	42
Volume Right	0	25	8
cSH	1572	1700	904
Volume to Capacity	0.00	0.02	0.06
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		4.3	
Intersection Capacity Utilization		15.1%	ICU Level of Service A
Analysis Period (min)		15	

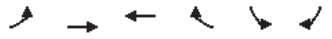
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3345	1739	1667
Future Volume (vph)	0	0	0	3345	1739	1667
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3636	1890	1812
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3636	1890	1812
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	106.6%	ICU Level of Service G	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3345	1739	1667
Future Volume (Veh/h)	0	0	0	3345	1739	1667
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	0	0	3636	1890	1812
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.31					
vC, conflicting volume	3102	630	1890			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	50	630	1890			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	299	424	312			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1212	1212	1212	630	630	630	1812
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1812
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.71	0.71	0.37	0.37	0.37	1.07
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		106.6%	ICU Level of Service G
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	8	19	16	2
Future Volume (vph)	0	10	8	19	16	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.906		0.978	
Flt Protected					0.960	
Satd. Flow (prot)	0	1710	1549	0	1257	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1710	1549	0	1257	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	20	11	25	42	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	36	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%		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 (vph)	85	307	109	207	123	29	36	1	60	65	25	66
Future Volume (vph)	85	307	109	207	123	29	36	1	60	65	25	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	3094	1425	1593	2801	1414	1593	1676	1425	1612	1676	1163
Flt Permitted	0.66	1.00	1.00	0.26	1.00	1.00	0.74	1.00	1.00	0.76	1.00	1.00
Satd. Flow (perm)	1127	3094	1425	439	2801	1414	1240	1676	1425	1285	1676	1163
Peak-hour factor, PHF	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Adj. Flow (vph)	123	529	118	225	140	58	39	1	65	105	27	132
RTOR Reduction (vph)	0	0	88	0	0	30	0	0	40	0	0	82
Lane Group Flow (vph)	123	529	30	225	140	28	39	1	25	105	27	50
Confl. Peds. (#/hr)	4					4				7		
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.2	17.2	17.2	32.8	32.8	32.8	25.8	25.8	25.8	25.8	25.8	25.8
Effective Green, g (s)	17.2	17.2	17.2	32.8	32.8	32.8	25.8	25.8	25.8	25.8	25.8	25.8
Actuated g/C Ratio	0.25	0.25	0.25	0.49	0.49	0.49	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	787	362	402	1359	686	473	639	543	490	639	443
v/s Ratio Prot		c0.17		c0.09	0.05			0.00			0.02	
v/s Ratio Perm	0.11		0.02	0.18		0.02	0.03		0.02	c0.08		0.04
v/c Ratio	0.43	0.67	0.08	0.56	0.10	0.04	0.08	0.00	0.05	0.21	0.04	0.11
Uniform Delay, d1	21.1	22.7	19.2	11.3	9.4	9.1	13.3	12.9	13.2	14.1	13.1	13.5
Progression 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
Incremental Delay, d2	1.0	2.3	0.1	1.7	0.0	0.0	0.3	0.0	0.2	1.0	0.1	0.5
Delay (s)	22.1	24.9	19.3	13.0	9.5	9.2	13.7	12.9	13.3	15.1	13.3	14.0
Level of Service	C	C	B	B	A	A	B	B	B	B	B	B
Approach Delay (s)		23.6			11.3			13.4			14.4	
Approach LOS		C			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	44.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1044	491	0	2301	1739	0
Future Volume (vph)	1044	491	0	2301	1739	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		12				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1135	534	0	2501	1890	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1135	534	0	2501	1890	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	56.0	56.0		84.0	84.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	49.0	49.0		77.0	77.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	51.0	51.0		81.0	81.0	
Actuated g/C Ratio	0.36	0.36		0.58	0.58	
v/c Ratio	0.89	0.92		0.85	0.64	
Control Delay	51.6	64.0		43.7	16.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	51.6	64.0		43.8	16.2	
LOS	D	E		D	B	
Approach Delay	55.6			43.8	16.2	
Approach LOS	E			D	B	
Queue Length 50th (m)	157.6	143.8		275.7	84.9	
Queue Length 95th (m)	188.1	#214.7		m278.2	m82.7	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1300	591		2941	2941	
Starvation Cap Reductn	0	0		9	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.87	0.90		0.85	0.64	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 106.6% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

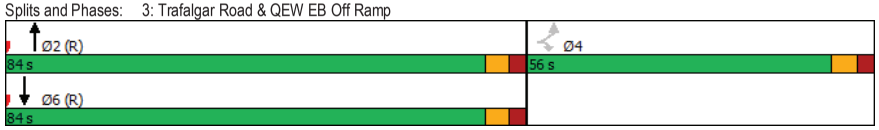
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	60.0	60.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	29.5	29.5	29.5	21.5	55.5	55.5	25.5	25.5	25.5	25.5	25.5	25.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	17.2	17.2	17.2	32.8	32.8	32.8	25.8	25.8	25.8	25.8	25.8	25.8
Actuated g/C Ratio	0.25	0.25	0.25	0.48	0.48	0.48	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.43	0.67	0.26	0.56	0.10	0.08	0.08	0.00	0.11	0.22	0.04	0.25
Control Delay	26.6	27.5	6.1	15.6	9.1	2.8	16.9	17.0	4.9	18.2	16.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	27.5	6.1	15.6	9.1	2.8	16.9	17.0	4.9	18.2	16.4	5.3
LOS	C	C	A	B	A	A	B	B	A	B	B	A
Approach Delay		24.1			11.7			9.5			11.5	
Approach LOS		C			B			A			B	
Queue Length 50th (m)	13.6	32.9	0.0	16.6	4.9	0.0	3.2	0.1	0.0	9.1	2.2	0.0
Queue Length 95th (m)	21.4	30.0	11.1	28.7	8.7	0.9	11.1	1.2	7.4	15.9	8.4	0.0
Internal Link Dist (m)		257.3			16.1			125.2			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	494	1362	693	583	2320	1177	472	637	587	487	637	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.39	0.17	0.39	0.06	0.05	0.08	0.00	0.11	0.22	0.04	0.25

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 67.7			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1044	491	0	2301	1739	0
Future Volume (vph)	1044	491	0	2301	1739	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1135	534	0	2501	1890	0
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	1135	526	0	2501	1890	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	48.0	48.0		78.0	78.0	
Effective Green, g (s)	51.0	51.0		81.0	81.0	
Actuated g/C Ratio	0.36	0.36		0.58	0.58	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1275	573		2942	2942	
v/s Ratio Prot				c0.49	0.37	
v/s Ratio Perm	0.32	c0.33				
v/c Ratio	0.89	0.92		0.85	0.64	
Uniform Delay, d1	41.9	42.5		24.5	19.8	
Progression Factor	1.00	1.00		1.70	0.79	
Incremental Delay, d2	8.1	19.7		1.1	0.3	
Delay (s)	50.0	62.2		42.7	15.9	
Level of Service	D	E		D	B	
Approach Delay (s)	53.9			42.7	15.9	
Approach LOS	D			D	B	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	106.6%	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)	85	307	109	207	123	29	36	1	60	65	25	66
Future Volume (vph)	85	307	109	207	123	29	36	1	60	65	25	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3094	1425	1593	2801	1454	1593	1676	1425	1624	1676	1163
Flt Permitted	0.663			0.262			0.740			0.757		
Satd. Flow (perm)	1124	3094	1425	439	2801	1410	1241	1676	1425	1281	1676	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			58			73			132
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			149.2			41.7	
Travel Time (s)		20.3			2.9			10.7			3.0	
Confl. Peds. (#/hr)	4					4				7		
Peak Hour Factor	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	123	529	118	225	140	58	39	1	65	105	27	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	529	118	225	140	58	39	1	65	105	27	132
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	551	47	126	763	37	57	0	144	151	19	581
Future Volume (vph)	38	551	47	126	763	37	57	0	144	151	19	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5		6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00		0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.86	
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)	1570	3217	708	818	3217	1354	805		736	1538	1386	
Flt Permitted	0.33	1.00	1.00	0.25	1.00	1.00	0.15		1.00	0.76	1.00	
Satd. Flow (perm)	540	3217	708	215	3217	1354	127		736	1226	1386	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	73	633	72	150	867	47	108	0	206	194	31	653
RTOR Reduction (vph)	0	0	47	0	0	24	0	0	127	0	106	0
Lane Group Flow (vph)	73	633	25	150	867	23	108	0	79	194	578	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	26.0	26.0	26.0	37.5	37.5	37.5	30.6		30.6	22.1	22.1	
Effective Green, g (s)	28.0	28.0	28.0	37.5	39.5	39.5	32.6		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.47	0.49	0.49	0.41		0.38	0.30	0.30	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5		6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	188	1124	247	157	1586	667	102		281	368	417	
v/s Ratio Prot		0.20		c0.09	0.27		c0.08				c0.42	
v/s Ratio Perm	0.14		0.04	c0.36		0.02	0.35		0.11	0.16		
v/c Ratio	0.39	0.56	0.10	0.96	0.55	0.03	1.06		0.28	0.53	1.39	
Uniform Delay, d1	19.6	21.1	17.6	18.0	14.1	10.5	21.7		17.1	23.3	28.0	
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	2.8	1.1	0.4	58.1	0.7	0.0	105.9		0.7	1.8	187.8	
Delay (s)	22.4	22.2	17.9	76.1	14.8	10.5	127.6		17.9	25.0	215.8	
Level of Service	C	C	B	E	B	B	F		B	C	F	
Approach Delay (s)		21.8			23.2			55.6			173.6	
Approach LOS		C			C			E			F	

Intersection Summary				
HCM 2000 Control Delay	69.7	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	100.6%	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)	0	0	45	0	0	0	0	2301	471	0	1832	398
Future Volume (vph)	0	0	45	0	0	0	0	2301	471	0	1832	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.973	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4965	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4965	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	49	0	0	0	0	2501	512	0	1991	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	49	0	0	0	0	2501	512	0	2424	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.7%	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)	0	0	45	0	0	0	0	2301	471	0	1832	398
Future Volume (Veh/h)	0	0	45	0	0	0	0	2301	471	0	1832	398
Sign Control		Stop			Stop			Free			Free	
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)	0	0	49	0	0	0	0	2501	512	0	1991	433
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.86	0.86	0.75	0.86	0.86	0.73	0.75			0.73		
vC, conflicting volume	3065	4732	904	3165	4949	834	2448			2501		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	2794	0	963	3046	0	1761			1765		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	94	100	100	100	100			100		
cM capacity (veh/h)	214	16	782	168	10	797	264			262		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	49	834	834	834	512	796	796	831
Volume Left	0	0	0	0	0	0	0	0
Volume Right	49	0	0	0	512	0	0	433
cSH	782	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.49	0.49	0.49	0.30	0.47	0.47	0.49
Queue Length 95th (m)	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.9	0.0				0.0		
Approach LOS	A							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	54.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection Capacity Utilization 100.6% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	27.9	27.9	27.9	39.5	39.5	39.5	34.1		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.49	0.49	0.49	0.43		0.38	0.30	0.30	
v/c Ratio	0.39	0.56	0.21	0.93	0.55	0.07	1.03		0.47	0.53	1.31	
Control Delay	26.3	23.1	1.5	74.3	15.5	0.6	124.2		5.2	30.8	175.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	26.3	23.1	1.5	74.3	15.5	0.6	124.2		5.2	30.8	175.7	
LOS	C	C	A	E	B	A	F		A	C	F	
Approach Delay		21.4			23.1			46.1			143.7	
Approach LOS		C			C			D			F	
Queue Length 50th (m)	8.6	42.3	0.0	14.1	47.8	0.0	~10.8		0.0	24.8	~121.5	
Queue Length 95th (m)	10.3	55.4	0.0	#40.9	61.6	0.3	#17.5		0.0	44.1	#111.2	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	257	1530	409	162	1994	873	105		437	367	522	
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	0.28	0.41	0.18	0.93	0.43	0.05	1.03		0.47	0.53	1.31	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 80.1			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 59.9		Intersection LOS: E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1015	91	140	160	153	291	136	1467	44	139	1475	340
Future Volume (vph)	1015	91	140	160	153	291	136	1467	44	139	1475	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.97		0.98				0.99			0.99	
Frt		0.909				0.850		0.996			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1546	0	1770	1827	1599	1719	5074	0	1805	4924	0
Flt Permitted	0.950			0.603			0.082			0.081		
Satd. Flow (perm)	3400	1546	0	1095	1827	1599	148	5074	0	154	4924	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76				117		4			43	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1103	99	152	174	166	316	148	1595	48	151	1603	370
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1103	251	0	174	166	316	148	1643	0	151	1973	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		10.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		25.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	46.0	71.0		25.0	25.0	25.0	12.4	55.8		13.2	56.6	
Total Split (%)	32.9%	50.7%		17.9%	17.9%	17.9%	8.9%	39.9%		9.4%	40.4%	
Maximum Green (s)	39.0	64.0		18.0	18.0	18.0	8.4	48.8		9.2	49.6	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0		0			0	
Act Effct Green (s)	42.0	67.0		21.0	21.0	21.0	60.2	51.8		61.8	52.6	
Actuated g/C Ratio	0.30	0.48		0.15	0.15	0.15	0.43	0.37		0.44	0.38	
v/c Ratio	1.08	0.32		1.06	0.61	0.93	0.94	0.87		0.86	1.05	
Control Delay	98.8	16.5		142.9	65.9	71.1	73.7	50.0		56.3	70.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	98.8	16.5		142.9	65.9	71.1	73.7	50.0		56.3	70.7	
LOS	F	B		F	E	E	E	D		E	E	
Approach Delay		83.5			88.8			51.9			69.7	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	~184.8	29.9		~55.6	45.8	60.3	33.3	165.8		23.4	~231.2	
Queue Length 95th (m)	#228.1	50.3		#105.1	71.4	#119.9	m#41.3	m147.1		m#58.8	#262.1	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	1020	779		164	274	339	157	1879		176	1876	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.08	0.32		1.06	0.61	0.93	0.94	0.87		0.86	1.05	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 69.6		Intersection LOS: E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	551	47	126	763	37	57	0	144	151	19	581
Future Volume (vph)	38	551	47	126	763	37	57	0	144	151	19	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98			0.96	0.98	0.99	
Frt			0.850			0.850			0.850		0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3217	727	818	3217	1384	805	1710	761	1570	1385	0
Flt Permitted	0.327			0.249			0.150			0.757		
Satd. Flow (perm)	540	3217	708	214	3217	1354	127	1710	734	1222	1385	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			91			254		152	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	73	633	72	150	867	47	108	0	206	194	31	653
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	633	72	150	867	47	108	0	206	194	684	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	608	96	11	511	626	68	486	57	456	444	379
Future Volume (vph)	507	608	96	11	511	626	68	486	57	456	444	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3392		1703	3505	1460	1770	3574	1529	3367	1863	1474
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3392		1703	3505	1460	1770	3574	1529	3367	1863	1474
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)	551	661	104	12	555	680	74	528	62	496	483	412
RTOR Reduction (vph)	0	8	0	0	0	187	0	0	49	0	0	243
Lane Group Flow (vph)	551	757	0	12	555	493	74	528	13	496	483	169
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	22.0	66.2		2.8	45.0	45.0	7.0	29.0	29.0	20.0	42.0	42.0
Effective Green, g (s)	23.0	69.2		3.8	48.0	48.0	8.0	32.0	29.0	21.0	45.0	45.0
Actuated g/C Ratio	0.16	0.49		0.03	0.34	0.34	0.06	0.23	0.21	0.15	0.32	0.32
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	563	1676		46	1201	500	101	816	316	505	598	473
v/s Ratio Prot	c0.16	0.22		0.01	0.16		0.04	0.15		c0.15	c0.26	
v/s Ratio Perm						c0.34			0.01			0.11
v/c Ratio	0.98	0.45		0.26	0.46	0.99	0.73	0.65	0.04	0.98	0.81	0.36
Uniform Delay, d1	58.3	23.0		66.7	35.9	45.7	64.9	48.9	44.4	59.3	43.5	36.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.47	0.47	0.24
Incremental Delay, d2	32.1	0.2		3.0	0.3	36.2	23.7	3.9	0.2	34.2	10.6	2.0
Delay (s)	90.4	23.2		69.7	36.2	81.8	88.7	52.8	44.6	121.5	31.2	10.8
Level of Service	F	C		E	D	F	F	D	D	F	C	B
Approach Delay (s)		51.4			61.4			56.1			57.4	
Approach LOS		D			E			E			E	

Intersection Summary				
HCM 2000 Control Delay	56.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.2%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

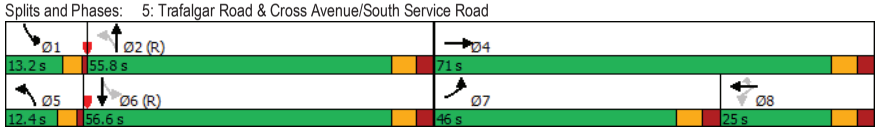
Intersection Capacity Utilization 94.6% ICU Level of Service F
Analysis Period (min) 15

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

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

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

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1015	91	140	160	153	291	136	1467	44	139	1475	340
Future Volume (vph)	1015	91	140	160	153	291	136	1467	44	139	1475	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1546		1726	1827	1599	1719	5072		1805	4923	
Flt Permitted	0.95	1.00		0.60	1.00	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	3400	1546		1096	1827	1599	148	5072		153	4923	
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)	1103	99	152	174	166	316	148	1595	48	151	1603	370
RTOR Reduction (vph)	0	40	0	0	0	99	0	3	0	0	27	0
Lane Group Flow (vph)	1103	211	0	174	166	217	148	1640	0	151	1946	0
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	39.0	64.0		18.0	18.0	18.0	57.2	48.8		58.8	49.6	
Effective Green, g (s)	42.0	67.0		21.0	21.0	21.0	57.2	51.8		58.8	52.6	
Actuated g/C Ratio	0.30	0.48		0.15	0.15	0.15	0.41	0.37		0.42	0.38	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1020	739		164	274	239	154	1876		172	1849	
v/s Ratio Prot	c0.32	0.14			0.09		0.06	0.32		c0.06	c0.40	
v/s Ratio Perm				c0.16		0.14	0.33			0.31		
v/c Ratio	1.08	0.29		1.06	0.61	0.91	0.96	0.87		0.88	1.05	
Uniform Delay, d1	49.0	22.1		59.5	55.6	58.5	34.6	41.1		33.0	43.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.49	1.15		0.83	0.89	
Incremental Delay, d2	52.9	0.2		87.4	3.8	33.9	34.2	2.4		29.2	33.9	
Delay (s)	101.9	22.3		146.9	59.4	92.4	85.9	49.8		56.4	72.9	
Level of Service	F	C		F	E	F	F	D		E	E	
Approach Delay (s)		87.1			98.5			52.8			71.7	
Approach LOS		F			F			D			E	

Intersection Summary				
HCM 2000 Control Delay	72.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.06			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	94.6%	ICU Level of Service	F	
Analysis Period (min)	15			

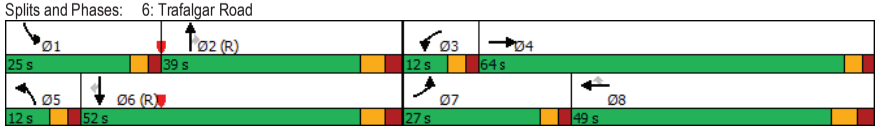
c Critical Lane Group

Intersection Capacity Utilization 82.2% 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: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	27.0	64.0		12.0	49.0	49.0	12.0	39.0	39.0	25.0	52.0	52.0
Total Split (%)	19.3%	45.7%		8.6%	35.0%	35.0%	8.6%	27.9%	27.9%	17.9%	37.1%	37.1%
Maximum Green (s)	22.0	59.0		7.0	42.0	42.0	7.0	32.0	32.0	20.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	0.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	23.0	69.2		8.0	45.0	45.0	8.0	35.0	32.0	21.0	48.0	48.0
Actuated g/C Ratio	0.16	0.49		0.06	0.32	0.32	0.06	0.25	0.23	0.15	0.34	0.34
v/c Ratio	0.98	0.45		0.12	0.49	1.03	0.73	0.59	0.13	0.98	0.76	0.56
Control Delay	90.8	24.5		65.7	40.1	69.2	102.1	49.4	0.5	119.3	27.4	4.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.8	24.5		65.7	40.1	69.2	102.1	49.4	0.5	119.3	27.4	4.3
LOS	F	C		E	D	E	F	D	A	F	C	A
Approach Delay		52.3			56.2			50.7			53.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	83.4	67.7		3.4	68.6	~150.8	21.6	71.7	0.0	78.6	40.0	4.1
Queue Length 95th (m)	#121.5	100.5		10.6	87.3	#229.3	#48.6	91.6	0.0	#115.1	65.4	9.9
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0		60.0	80.0		
Base Capacity (vph)	563	1684		97	1126	662	101	893	493	505	638	740
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.45		0.12	0.49	1.03	0.73	0.59	0.13	0.98	0.76	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 53.4		Intersection LOS: D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	503	538	190	67	750	661	134	476	46	571	617	551
Future Volume (vph)	503	538	190	67	750	661	134	476	46	571	617	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.98	1.00		0.98		0.95
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3505	1599	1805	3574	1599	1770	3552	0	3433	1900	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3412	3505	1482	1761	3574	1503	1742	3552	0	3372	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			341		7				296
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	547	585	207	73	815	718	146	517	50	621	671	599
Shared Lane Traffic (%)												
Lane Group Flow (vph)	547	585	207	73	815	718	146	567	0	621	671	599
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	26.0	56.0	56.0	16.0	46.0	46.0	16.0	39.0		29.0	52.0	52.0
Total Split (%)	18.6%	40.0%	40.0%	11.4%	32.9%	32.9%	11.4%	27.9%		20.7%	37.1%	37.1%
Maximum Green (s)	21.0	51.0	51.0	11.0	39.0	39.0	11.0	32.0		24.0	45.0	45.0
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	0.0	-1.0	-3.0	0.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	22.0	57.6	54.6	10.8	42.0	39.0	12.0	35.0		25.0	48.0	48.0
Actuated g/C Ratio	0.16	0.41	0.39	0.08	0.30	0.28	0.09	0.25		0.18	0.34	0.34
v/c Ratio	1.01	0.41	0.31	0.53	0.76	1.08	0.97	0.63		1.01	1.03	0.84
Control Delay	98.1	31.1	11.0	75.5	49.9	84.0	127.8	50.0		89.5	80.5	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	98.1	31.1	11.0	75.5	49.9	84.0	127.8	50.0		89.5	80.5	37.2
LOS	F	C	B	E	D	F	F	D		F	F	D
Approach Delay		55.3			66.3			65.9			69.7	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	~83.7	65.7	11.4	20.6	113.6	~157.1	43.2	77.1		~99.0	~171.8	89.8
Queue Length 95th (m)	#123.2	83.0	31.2	38.0	138.8	#236.9	#88.4	98.0		m93.1	m149.7	m86.3
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	544	1440	667	154	1072	664	151	893		613	651	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.01	0.41	0.31	0.47	0.76	1.08	0.97	0.63		1.01	1.03	0.84

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 64.8		Intersection LOS: E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	608	96	11	511	626	68	486	57	456	444	379
Future Volume (vph)	507	608	96	11	511	626	68	486	57	456	444	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		60.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.97	0.99		0.99		0.93	0.99		0.95	0.97		0.97
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3393	0	1703	3505	1568	1770	3574	1615	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3340	3393	0	1687	3505	1460	1751	3574	1529	3254	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				285			187			358
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	551	661	104	12	555	680	74	528	62	496	483	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	551	765	0	12	555	680	74	528	62	496	483	412
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	247	148	67	229	156	144	941	541	336	912	560
Future Volume (vph)	615	247	148	67	229	156	144	941	541	336	912	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3406	1411	3400	3343	1545	1639	5036	1471	1752	5036	1499
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.27	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	3213	3406	1411	3400	3343	1545	470	5036	1471	220	5036	1499
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)	668	268	161	73	249	170	157	1023	588	365	991	609
RTOR Reduction (vph)	0	0	123	0	0	43	0	0	87	0	0	342
Lane Group Flow (vph)	668	268	38	73	249	127	157	1023	501	365	991	267
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	30.9	29.7	29.7	19.5	15.3	42.8	53.2	41.3	60.8	72.8	56.9	56.9
Effective Green, g (s)	33.9	32.7	32.7	19.5	18.3	42.8	53.2	44.3	60.8	72.8	59.9	59.9
Actuated g/C Ratio	0.24	0.23	0.23	0.14	0.13	0.31	0.38	0.32	0.43	0.52	0.43	0.43
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	778	795	329	473	436	472	277	1593	638	415	2154	641
v/s Ratio Prot	c0.21	0.08		0.02	c0.07	0.05	0.05	0.20	0.11	c0.17	0.20	
v/s Ratio Perm			0.03			0.03	0.17		0.23	c0.28		0.18
v/c Ratio	0.86	0.34	0.11	0.15	0.57	0.27	0.57	0.64	0.79	0.88	0.46	0.42
Uniform Delay, d1	50.8	44.6	42.2	53.0	57.2	36.8	29.8	41.1	34.0	37.0	28.5	27.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.11	1.07	1.17	1.02	0.79	0.50
Incremental Delay, d2	9.3	0.3	0.2	0.2	1.8	0.3	1.2	0.9	3.0	6.4	0.2	0.6
Delay (s)	60.1	44.9	42.4	53.2	59.0	37.1	34.3	45.0	42.8	44.0	22.7	14.6
Level of Service	E	D	D	D	E	D	C	D	D	D	C	B
Approach Delay (s)		53.8			50.5			43.3			24.1	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	80.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

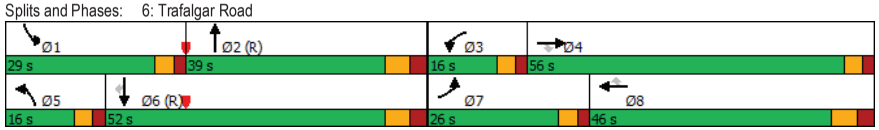
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15

~ 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.

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

Splits and Phases: 6: Trafalgar Road



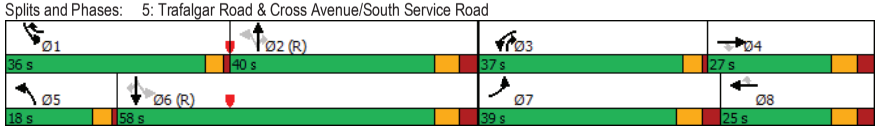
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	503	538	190	67	750	661	134	476	46	571	617	551
Future Volume (vph)	503	538	190	67	750	661	134	476	46	571	617	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	1.00	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3505	1482	1805	3574	1503	1770	3551		3433	1900	1503
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3505	1482	1805	3574	1503	1770	3551		3433	1900	1503
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)	547	585	207	73	815	718	146	517	50	621	671	599
RTOR Reduction (vph)	0	0	90	0	0	244	0	5	0	0	0	197
Lane Group Flow (vph)	547	585	117	73	815	474	146	562	0	621	671	402
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	21.0	54.6	54.6	8.4	40.0	40.0	11.0	31.0		24.0	44.0	44.0
Effective Green, g (s)	22.0	57.6	54.6	9.4	43.0	40.0	12.0	34.0		25.0	47.0	47.0
Actuated g/C Ratio	0.16	0.41	0.39	0.07	0.31	0.29	0.09	0.24		0.18	0.34	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	544	1442	577	121	1097	429	151	862		613	637	504
v/s Ratio Prot	c0.16	0.17		0.04	0.23		0.08	0.16		c0.18	c0.35	
v/s Ratio Perm			0.08			c0.32						0.27
v/c Ratio	1.01	0.41	0.20	0.60	0.74	1.11	0.97	0.65		1.01	1.05	0.80
Uniform Delay, d1	59.0	29.1	28.3	63.5	43.5	50.0	63.8	47.7		57.5	46.5	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.24	1.26	1.62
Incremental Delay, d2	40.0	0.2	0.2	8.2	2.8	75.4	62.6	3.8		20.9	33.4	3.2
Delay (s)	99.0	29.3	28.5	71.7	46.3	125.4	126.4	51.5		92.1	91.8	71.7
Level of Service	F	C	C	E	D	F	F	D		F	F	E
Approach Delay (s)		57.6			82.8			66.8			85.5	
Approach LOS		E			F			E			F	

Intersection Summary					
HCM 2000 Control Delay	75.6	HCM 2000 Level of Service		E	
HCM 2000 Volume to Capacity ratio	1.05				
Actuated Cycle Length (s)	140.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	88.3%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Intersection Capacity Utilization 80.5% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	12.0	10.0	7.0	7.0	27.0	12.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	17.0	25.0	11.5	11.5	34.0	17.0	11.5	34.0	34.0
Total Split (s)	39.0	27.0	27.0	37.0	25.0	36.0	18.0	40.0	37.0	36.0	58.0	58.0
Total Split (%)	27.9%	19.3%	19.3%	26.4%	17.9%	25.7%	12.9%	28.6%	26.4%	25.7%	41.4%	41.4%
Maximum Green (s)	32.0	20.0	20.0	33.0	18.0	32.0	14.0	33.0	33.0	32.0	51.0	51.0
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	33.9	32.7	32.7	19.5	18.3	45.9	56.1	44.2	63.7	75.7	59.8	59.8
Actuated g/C Ratio	0.24	0.23	0.23	0.14	0.13	0.33	0.40	0.32	0.46	0.54	0.43	0.43
v/c Ratio	0.86	0.34	0.36	0.15	0.57	0.31	0.55	0.64	0.78	0.87	0.46	0.62
Control Delay	62.6	47.1	9.3	50.8	62.2	20.2	25.5	47.1	30.4	41.0	23.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	47.1	9.3	50.8	62.2	20.2	25.5	47.1	30.4	41.0	23.5	2.2
LOS	E	D	A	D	E	C	C	D	C	D	C	A
Approach Delay		51.0			46.0			39.6			20.1	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	95.6	33.1	0.0	10.0	36.2	21.2	26.2	84.6	93.1	65.9	73.0	5.1
Queue Length 95th (m)	120.0	52.5	20.7	15.8	50.5	37.6	m34.7	m95.4	m63.8	m88.6	m71.2	m7.0
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	803	796	453	801	501	596	312	1589	892	470	2152	982
Starvation Cap Reductn	0	0	0	0	0	0	0	0	2	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.34	0.36	0.09	0.50	0.29	0.50	0.64	0.66	0.78	0.46	0.62

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 35.4	Intersection LOS: D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	886	17	38	368	44	16	2	49	151	20	136
Future Volume (vph)	15	886	17	38	368	44	16	2	49	151	20	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00		0.99	0.95		0.97	0.98	
Frt		0.997			0.982			0.865			0.870	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3172	0	797	3176	0	785	701	0	1570	1282	0
Flt Permitted	0.496			0.129			0.526			0.704		
Satd. Flow (perm)	812	3172	0	108	3176	0	431	701	0	1123	1282	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			33			73			174	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	23	1094	23	40	387	54	23	8	73	176	27	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	1117	0	40	441	0	23	81	0	176	201	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	46.0	46.0		15.0	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	51.1%	51.1%		16.7%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	40.0	40.0		11.0	55.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.4	37.4		49.8	49.8		19.6	19.6		19.6	19.6	
Actuated g/C Ratio	0.48	0.48		0.64	0.64		0.25	0.25		0.25	0.25	
v/c Ratio	0.06	0.73		0.28	0.22		0.21	0.35		0.62	0.44	
Control Delay	12.5	20.0		11.2	6.0		29.6	12.3		37.3	9.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.5	20.0		11.2	6.0		29.6	12.3		37.3	9.4	
LOS	B	B		B	A		C	B		D	A	
Approach Delay		19.8			6.5			16.1			22.4	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.8	70.0		2.1	12.4		3.0	1.0		25.6	3.4	
Queue Length 95th (m)	4.6	89.3		6.5	21.6		7.4	0.0		45.5	12.2	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	449	1756		169	2393		142	280		369	538	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.64		0.24	0.18		0.16	0.29		0.48	0.37	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 77.6			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 17.1		Intersection LOS: B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	247	148	67	229	156	144	941	541	336	912	560
Future Volume (vph)	615	247	148	67	229	156	144	941	541	336	912	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	0.99		0.87			0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	3406	1442	3400	3343	1553	1641	5036	1615	1752	5036	1553
Flt Permitted	0.950			0.950			0.273			0.119		
Satd. Flow (perm)	3207	3406	1411	3378	3343	1531	469	5036	1404	220	5036	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161			62			154			597
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	668	268	161	73	249	170	157	1023	588	365	991	609
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	268	161	73	249	170	157	1023	588	365	991	609
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	39	0	0	0	0	1201	513	0	1783	853
Future Volume (Veh/h)	0	0	39	0	0	0	0	1201	513	0	1783	853
Sign Control		Stop			Stop			Free			Free	
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)	0	0	42	0	0	0	0	1305	558	0	1938	927
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.79	0.79	0.73	0.79	0.79	0.89	0.73			0.89		
vC, conflicting volume	2860	3730	1134	1951	4194	435	2889			1305		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1505	2609	0	350	3197	0	2306			923		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	100	100			100		
cM capacity (veh/h)	65	19	767	429	8	975	159			668		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	42	435	435	435	558	775	775	1315
Volume Left	0	0	0	0	0	0	0	0
Volume Right	42	0	0	0	558	0	0	927
cSH	767	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.26	0.26	0.26	0.33	0.46	0.46	0.77
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	10.0	0.0				0.0		
Approach LOS	A							

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization			64.3%	ICU Level of Service	C
Analysis Period (min)			15		

Intersection Capacity Utilization 58.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	886	17	38	368	44	16	2	49	151	20	136
Future Volume (vph)	15	886	17	38	368	44	16	2	49	151	20	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1557	3172		797	3176		778	704		1523	1285	
Flt Permitted	0.50	1.00		0.13	1.00		0.53	1.00		0.70	1.00	
Satd. Flow (perm)	814	3172		109	3176		431	704		1129	1285	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	23	1094	23	40	387	54	23	8	73	176	27	174
RTOR Reduction (vph)	0	2	0	0	12	0	0	55	0	0	130	0
Lane Group Flow (vph)	23	1115	0	40	429	0	23	26	0	176	71	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.4	35.4		47.8	47.8		17.6	17.6		17.6	17.6	
Effective Green, g (s)	37.4	37.4		47.8	49.8		19.6	19.6		19.6	19.6	
Actuated g/C Ratio	0.48	0.48		0.62	0.64		0.25	0.25		0.25	0.25	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	393	1532		141	2043		109	178		285	325	
v/s Ratio Prot		c0.35		c0.03	0.14			0.04			0.06	
v/s Ratio Perm	0.03			0.14			0.05			c0.16		
v/c Ratio	0.06	0.73		0.28	0.21		0.21	0.15		0.62	0.22	
Uniform Delay, d1	10.6	15.9		8.9	5.7		22.8	22.4		25.6	22.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.2		0.8	0.1		1.3	0.5		4.5	0.5	
Delay (s)	10.8	18.1		9.8	5.8		24.1	23.0		30.1	23.3	
Level of Service	B	B		A	A		C	C		C	C	
Approach Delay (s)		18.0			6.1			23.2			26.5	
Approach LOS		B			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	58.8%	ICU Level of Service	B	
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)	0	0	39	0	0	0	0	1201	513	0	1783	853
Future Volume (vph)	0	0	39	0	0	0	0	1201	513	0	1783	853
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.951	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4867	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4867	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	42	0	0	0	0	1305	558	0	1938	927
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	42	0	0	0	0	1305	558	0	2865	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.3%	ICU Level of Service C	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1013	909	0	1201	1727	0
Future Volume (vph)	1013	909	0	1201	1727	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1101	988	0	1305	1877	0
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	1101	981	0	1305	1877	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	50.4	50.4		75.6	75.6	
Effective Green, g (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1296	609		2747	2800	
v/s Ratio Prot				0.27	c0.38	
v/s Ratio Perm	0.32	c0.61				
v/c Ratio	0.85	1.61		0.48	0.67	
Uniform Delay, d1	39.6	43.3		18.4	21.6	
Progression Factor	1.00	1.00		1.88	0.68	
Incremental Delay, d2	5.4	282.6		0.4	0.9	
Delay (s)	45.0	325.9		34.9	15.5	
Level of Service	D	F		C	B	
Approach Delay (s)	177.9			34.9	15.5	
Approach LOS	F			C	B	

Intersection Summary			
HCM 2000 Control Delay	84.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

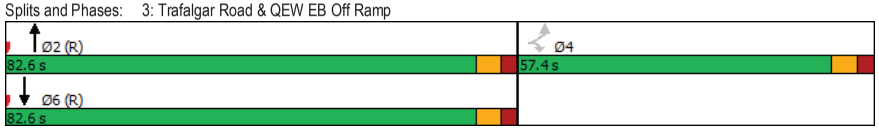
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	159	14	15	326	13	243	4	164	16	2	66
Future Volume (vph)	39	159	14	15	326	13	243	4	164	16	2	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Frt		0.986			0.990			0.858			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1525	2907	0	1570	3068	0	1570	1444	0	1570	1416	0
Flt Permitted	0.533			0.558			0.684			0.537		
Satd. Flow (perm)	852	2907	0	921	3068	0	1129	1444	0	885	1416	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			13			208			110	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Peak Hour Factor	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	67	189	19	28	343	24	328	12	208	23	4	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	208	0	28	367	0	328	220	0	23	114	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	41.5	41.5		12.5	54.0		36.0	36.0		36.0	36.0	
Total Split (%)	46.1%	46.1%		13.9%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	35.5	35.5		8.5	48.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.1	37.1		49.1	49.1		29.5	29.5		29.5	29.5	
Actuated g/C Ratio	0.43	0.43		0.57	0.57		0.34	0.34		0.34	0.34	
v/c Ratio	0.18	0.17		0.05	0.21		0.86	0.35		0.08	0.21	
Control Delay	18.2	15.2		9.4	9.7		49.1	5.3		19.8	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.2	15.2		9.4	9.7		49.1	5.3		19.8	5.5	
LOS	B	B		A	A		D	A		B	A	
Approach Delay		16.0			9.7			31.5			7.9	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	7.4	11.2		2.2	15.9		52.5	1.4		2.7	0.5	
Queue Length 95th (m)	10.2	17.2		3.5	23.5		65.7	0.0		6.1	0.4	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	369	1269		586	1781		417	666		328	593	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.16		0.05	0.21		0.79	0.33		0.07	0.19	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 86.6			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 19.6		Intersection LOS: B	

Queue shown is maximum after two cycles.

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	57.4	57.4		82.6	82.6	
Total Split (%)	41.0%	41.0%		59.0%	59.0%	
Maximum Green (s)	50.4	50.4		75.6	75.6	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
v/c Ratio	0.85	1.60		0.48	0.67	
Control Delay	47.2	309.9		35.1	15.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.2	309.9		35.1	15.7	
LOS	D	F		D	B	
Approach Delay	171.4			35.1	15.7	
Approach LOS	F			D	B	
Queue Length 50th (m)	150.4	~412.1		127.3	108.3	
Queue Length 95th (m)	180.3	#496.2		157.9	69.9	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1296	616		2747	2800	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.85	1.60		0.48	0.67	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 82.2 Intersection LOS: F
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.

Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	159	14	15	326	13	243	4	164	16	2	66
Future Volume (vph)	39	159	14	15	326	13	243	4	164	16	2	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1519	2907		1569	3068		1569	1444		1565	1417	
Flt Permitted	0.53	1.00		0.56	1.00		0.68	1.00		0.54	1.00	
Satd. Flow (perm)	853	2907		921	3068		1129	1444		885	1417	
Peak-hour factor, PHF	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Adj. Flow (vph)	67	189	19	28	343	24	328	12	208	23	4	110
RTOR Reduction (vph)	0	8	0	0	6	0	0	137	0	0	73	0
Lane Group Flow (vph)	67	200	0	28	361	0	328	83	0	23	41	0
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		47.1	47.1		27.4	27.4		27.4	27.4	
Effective Green, g (s)	37.1	37.1		47.1	49.1		29.4	29.4		29.4	29.4	
Actuated g/C Ratio	0.43	0.43		0.54	0.57		0.34	0.34		0.34	0.34	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	365	1246		561	1741		383	490		300	481	
v/s Ratio Prot		0.07		0.00	c0.12			0.06			0.03	
v/s Ratio Perm	0.08			0.02			c0.29			0.03		
v/c Ratio	0.18	0.16		0.05	0.21		0.86	0.17		0.08	0.09	
Uniform Delay, d1	15.3	15.1		9.2	9.2		26.6	20.0		19.4	19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.0	0.1		17.4	0.2		0.1	0.1	
Delay (s)	15.8	15.3		9.3	9.3		44.0	20.2		19.5	19.5	
Level of Service	B	B		A	A		D	C		B	B	
Approach Delay (s)		15.4			9.3			34.5			19.5	
Approach LOS		B			A			C			B	

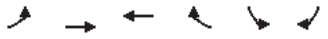
Intersection Summary				
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	64.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1013	909	0	1201	1727	0
Future Volume (vph)	1013	909	0	1201	1727	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1101	988	0	1305	1877	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1101	988	0	1305	1877	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2214	1727	744
Future Volume (Veh/h)	0	0	0	2214	1727	744
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	0	0	2407	1877	809
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.74	0.73	0.73			
vC, conflicting volume	2679	626	1877			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	921			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	755	795	540			

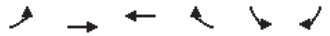
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	802	802	802	626	626	626	809
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	809
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.47	0.47	0.37	0.37	0.37	0.48
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		96.3%	ICU Level of Service F
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	191	623	7	16	30
Future Volume (vph)	6	191	623	7	16	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.910	
Flt Protected	0.950				0.984	
Satd. Flow (prot)	1388	2954	3150	0	1491	0
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	1388	2954	3150	0	1491	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	1			1	9	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Heavy Vehicles (%)	17%	10%	3%	0%	0%	4%
Adj. Flow (vph)	12	208	742	12	36	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	208	754	0	109	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	29.4%	ICU Level of Service A	
Analysis Period (min)	15		



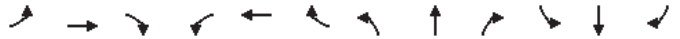
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	191	623	7	16	30
Future Volume (Veh/h)	6	191	623	7	16	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Hourly flow rate (vph)	12	208	742	12	36	73
Pedestrians			9		1	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	755				886	378
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	646				784	251
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	99				88	90
cM capacity (veh/h)	801				312	708

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	12	104	104	495	259	109
Volume Left	12	0	0	0	0	36
Volume Right	0	0	0	0	12	73
cSH	801	1700	1700	1700	1700	498
Volume to Capacity	0.01	0.06	0.06	0.29	0.15	0.22
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	6.6
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	14.2
Lane LOS	A					B
Approach Delay (s)	0.5			0.0		14.2
Approach LOS						B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2214	1727	744
Future Volume (vph)	0	0	0	2214	1727	744
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2407	1877	809
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2407	1877	809
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	171	501	38	219	0	1777	437	0	1799	7
Future Volume (vph)	1	0	171	501	38	219	0	1777	437	0	1799	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	0.95	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	0.89	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1719	1454	1447		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1719	1454	1447		4940	1478		5036	1533
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)	1	0	186	545	41	238	0	1932	475	0	1955	8
RTOR Reduction (vph)	0	0	18	0	62	85	0	0	140	0	0	4
Lane Group Flow (vph)	1	0	168	545	81	51	0	1932	335	0	1955	4
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		56.2	50.0	50.0	50.0		69.8	69.8		69.8	69.8
Effective Green, g (s)	2.2		59.2	53.0	53.0	53.0		72.8	72.8		72.8	72.8
Actuated g/C Ratio	0.02		0.42	0.38	0.38	0.38		0.52	0.52		0.52	0.52
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		663	650	550	547		2568	768		2618	797
v/s Ratio Prot	0.00				0.06			c0.39			0.39	
v/s Ratio Perm			c0.11	c0.32		0.04			0.23			0.00
v/c Ratio	0.04		0.25	0.84	0.15	0.09		0.75	0.44		0.75	0.01
Uniform Delay, d1	67.9		26.1	39.6	28.6	28.0		26.5	20.9		26.4	16.2
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.45	0.33		1.00	1.00
Incremental Delay, d2	0.5		0.2	9.3	0.1	0.1		1.6	1.4		2.0	0.0
Delay (s)	68.4		26.3	48.9	28.7	28.1		13.5	8.2		28.4	16.2
Level of Service	E		C	D	C	C		B	A		C	B
Approach Delay (s)		26.5			42.0			12.4			28.3	
Approach LOS		C			D			B			C	

Intersection Summary				
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	83.1%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	5	1	5	14	5
Future Volume (vph)	3	5	1	5	14	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.910		0.959	
Flt Protected		0.976			0.966	
Satd. Flow (prot)	0	1669	1357	0	1584	0
Flt Permitted		0.976			0.966	
Satd. Flow (perm)	0	1669	1357	0	1584	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	8	8	4	8	28	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	12	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%	ICU Level of Service A	
Analysis Period (min)	15		

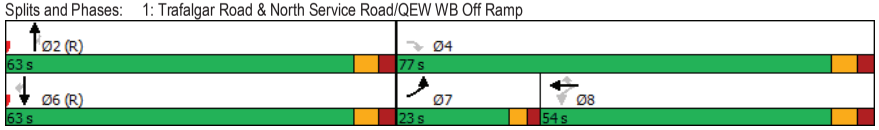
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	5	1	5	14	5
Future Volume (Veh/h)	3	5	1	5	14	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	8	8	4	8	28	12
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	19				39	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	19				39	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1601				967	1064

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	12	40
Volume Left	8	0	28
Volume Right	0	8	12
cSH	1601	1700	995
Volume to Capacity	0.00	0.01	0.04
Queue Length 95th (m)	0.1	0.0	1.0
Control Delay (s)	3.6	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	3.6	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 83.1% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp

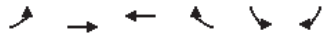


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		77.0	54.0	54.0	54.0		63.0	63.0		63.0	63.0
Total Split (%)	16.4%		55.0%	38.6%	38.6%	38.6%		45.0%	45.0%		45.0%	45.0%
Maximum Green (s)	18.0		70.0	47.0	47.0	47.0		56.0	56.0		56.0	56.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		55.2	53.0	53.0	53.0		76.8	76.8		76.8	76.8
Actuated g/C Ratio	0.05		0.39	0.38	0.38	0.38		0.55	0.55		0.55	0.55
v/c Ratio	0.01		0.29	0.84	0.23	0.22		0.71	0.50		0.71	0.01
Control Delay	64.0		23.4	51.4	9.8	4.5		13.1	4.3		26.8	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		23.4	51.4	9.8	4.5		13.1	4.3		26.8	0.0
LOS	E		C	D	A	A		B	A		C	A
Approach Delay		23.6			36.4			11.3			26.7	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	0.3		30.9	142.4	8.3	0.0		78.5	12.7		144.9	0.0
Queue Length 95th (m)	2.3		38.7	174.3	22.0	13.1		170.0	m38.8		218.5	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		832	669	627	646		2709	941		2762	872
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.22	0.81	0.23	0.21		0.71	0.50		0.71	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 21.2		Intersection LOS: C	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	8	296	87	14	15
Future Volume (vph)	11	8	296	87	14	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.926	
Flt Protected		0.971			0.978	
Satd. Flow (prot)	0	1578	1535	0	1549	0
Flt Permitted		0.971			0.978	
Satd. Flow (perm)	0	1578	1535	0	1549	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	24	16	340	128	19	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	40	468	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

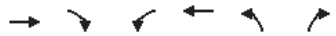


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	296	87	14	15
Future Volume (Veh/h)	11	8	296	87	14	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	24	16	340	128	19	23
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	468				473	404
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	468				473	404
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				96	96
cM capacity (veh/h)	1104				539	651

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	468	42
Volume Left	24	0	19
Volume Right	0	128	23
cSH	1104	1700	595
Volume to Capacity	0.02	0.28	0.07
Queue Length 95th (m)	0.5	0.0	1.8
Control Delay (s)	5.1	0.0	11.5
Lane LOS	A		B
Approach Delay (s)	5.1	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	33.2%	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)	1	0	171	501	38	219	0	1777	437	0	1799	7
Future Volume (vph)	1	0	171	501	38	219	0	1777	437	0	1799	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850		0.893	0.850			0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1805	0	1568	1719	1454	1447	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1805	0	1568	1719	1454	1447	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		100	136			291			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	186	545	41	238	0	1932	475	0	1955	8
Shared Lane Traffic (%)						43%						
Lane Group Flow (vph)	1	0	186	545	143	136	0	1932	475	0	1955	8
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	22	45	19	4	39
Future Volume (Veh/h)	8	22	45	19	4	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	24	49	21	4	42
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			33		140	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		140	21
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	96
cM capacity (veh/h)			1579		827	1056

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	33	70	46
Volume Left	0	49	4
Volume Right	24	0	42
cSH	1700	1579	1032
Volume to Capacity	0.02	0.03	0.04
Queue Length 95th (m)	0.0	0.8	1.1
Control Delay (s)	0.0	5.2	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	5.2	8.7
Approach LOS			A

Intersection Summary			
Average Delay		5.1	
Intersection Capacity Utilization		20.2%	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)	1	0	171	499	38	219	0	1744	417	0	1789	7
Future Volume (vph)	1	0	171	499	38	219	0	1744	417	0	1789	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850		0.893	0.850			0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1805	0	1568	1719	1454	1447	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1805	0	1568	1719	1454	1447	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		100	136			282			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	186	542	41	238	0	1896	453	0	1945	8
Shared Lane Traffic (%)						43%						
Lane Group Flow (vph)	1	0	186	542	143	136	0	1896	453	0	1945	8
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		77.0	54.0	54.0	54.0		63.0	63.0		63.0	63.0
Total Split (%)	16.4%		55.0%	38.6%	38.6%	38.6%		45.0%	45.0%		45.0%	45.0%
Maximum Green (s)	18.0		70.0	47.0	47.0	47.0		56.0	56.0		56.0	56.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		55.0	52.8	52.8	52.8		77.0	77.0		77.0	77.0
Actuated g/C Ratio	0.05		0.39	0.38	0.38	0.38		0.55	0.55		0.55	0.55
v/c Ratio	0.01		0.29	0.84	0.23	0.22		0.70	0.48		0.70	0.01
Control Delay	64.0		23.5	51.5	9.8	4.5		12.9	4.4		26.6	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		23.5	51.5	9.8	4.5		12.9	4.4		26.6	0.0
LOS	E		C	D	A	A		B	A		C	A
Approach Delay		23.7			36.4			11.2			26.4	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	0.3		31.1	141.8	8.3	0.0		97.9	16.9		143.0	0.0
Queue Length 95th (m)	2.3		38.7	172.7	22.0	13.1		154.7	m38.1		216.6	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		832	667	626	645		2717	940		2770	874
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.22	0.81	0.23	0.21		0.70	0.48		0.70	0.01

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 21.2 Intersection LOS: C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	22	45	19	4	39
Future Volume (vph)	8	22	45	19	4	39
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				0.877	
Flt Protected				0.966	0.996	
Satd. Flow (prot)	1680	0	0	1799	1627	0
Flt Permitted				0.966	0.996	
Satd. Flow (perm)	1680	0	0	1799	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	145.1			680.7	65.9	
Travel Time (s)	10.4			49.0	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	24	49	21	4	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	0	70	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 20.2% ICU Level of Service A
Analysis Period (min) 15

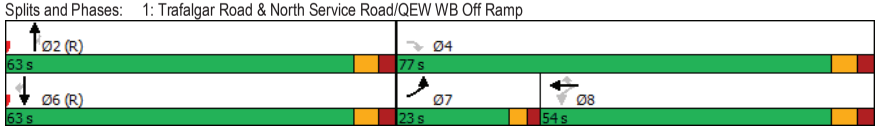
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	296	132	25	43
Future Volume (Veh/h)	11	8	296	132	25	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	24	16	340	194	33	66
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	534				506	437
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	534				506	437
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	89
cM capacity (veh/h)	1044				515	624

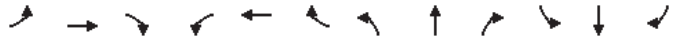
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	534	99
Volume Left	24	0	33
Volume Right	0	194	66
cSH	1044	1700	583
Volume to Capacity	0.02	0.31	0.17
Queue Length 95th (m)	0.6	0.0	4.9
Control Delay (s)	5.2	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	5.2	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp





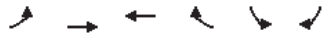
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	171	499	38	219	0	1744	417	0	1789	7
Future Volume (vph)	1	0	171	499	38	219	0	1744	417	0	1789	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	0.95	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	0.89	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1719	1454	1447		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1719	1454	1447		4940	1478		5036	1533
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)	1	0	186	542	41	238	0	1896	453	0	1945	8
RTOR Reduction (vph)	0	0	18	0	62	85	0	0	135	0	0	4
Lane Group Flow (vph)	1	0	168	542	81	51	0	1896	318	0	1945	4
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		56.0	49.8	49.8	49.8		70.0	70.0		70.0	70.0
Effective Green, g (s)	2.2		59.0	52.8	52.8	52.8		73.0	73.0		73.0	73.0
Actuated g/C Ratio	0.02		0.42	0.38	0.38	0.38		0.52	0.52		0.52	0.52
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		660	648	548	545		2575	770		2625	799
v/s Ratio Prot	0.00				0.06			0.38			c0.39	
v/s Ratio Perm			c0.11	c0.32		0.04			0.22			0.00
v/c Ratio	0.04		0.25	0.84	0.15	0.09		0.74	0.41		0.74	0.01
Uniform Delay, d1	67.9		26.2	39.7	28.8	28.2		26.0	20.4		26.1	16.1
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.46	0.37		1.00	1.00
Incremental Delay, d2	0.5		0.2	9.2	0.1	0.1		1.5	1.3		1.9	0.0
Delay (s)	68.4		26.5	48.9	28.9	28.2		13.3	8.9		28.1	16.1
Level of Service	E		C	D	C	C		B	A		C	B
Approach Delay (s)		26.7			42.0			12.5			28.0	
Approach LOS		C			D			B			C	

Intersection Summary				
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	82.8%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	8	296	132	25	43
Future Volume (vph)	11	8	296	132	25	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.951		0.910	
Flt Protected		0.971			0.984	
Satd. Flow (prot)	0	1578	1529	0	1531	0
Flt Permitted		0.971			0.984	
Satd. Flow (perm)	0	1578	1529	0	1531	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	24	16	340	194	33	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	40	534	0	99	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	5	1	27	18	5
Future Volume (Veh/h)	3	5	1	27	18	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	8	8	4	44	36	12
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	55				57	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55				57	33
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	99
cM capacity (veh/h)	1554				945	1040

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	48	48
Volume Left	8	0	36
Volume Right	0	44	12
cSH	1554	1700	967
Volume to Capacity	0.01	0.03	0.05
Queue Length 95th (m)	0.1	0.0	1.3
Control Delay (s)	3.7	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	3.7	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay		4.3	
Intersection Capacity Utilization		15.4%	ICU Level of Service A
Analysis Period (min)		15	

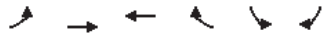
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2161	1756	744
Future Volume (vph)	0	0	0	2161	1756	744
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2349	1909	809
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2349	1909	809
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	96.5%		ICU Level of Service F
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2161	1756	744
Future Volume (Veh/h)	0	0	0	2161	1756	744
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	0	0	2349	1909	809
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.75	0.74	0.74			
vC, conflicting volume	2692	636	1909			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	977			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	764	797	516			

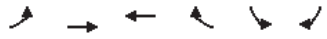
Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	783	783	783	636	636	636	809
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	809
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.46	0.46	0.46	0.37	0.37	0.37	0.48
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		96.5%	ICU Level of Service F
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	5	1	27	18	5
Future Volume (vph)	3	5	1	27	18	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.876		0.966	
Flt Protected		0.976			0.964	
Satd. Flow (prot)	0	1669	1247	0	1592	0
Flt Permitted		0.976			0.964	
Satd. Flow (perm)	0	1669	1247	0	1592	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	8	8	4	44	36	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	48	0	48	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%	ICU Level of Service A	
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	191	623	26	18	32
Future Volume (Veh/h)	9	191	623	26	18	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Hourly flow rate (vph)	18	208	742	45	41	78
Pedestrians			9		1	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	788				914	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	669				802	254
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	98				86	89
cM capacity (veh/h)	780				299	701

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	18	104	104	495	292	119
Volume Left	18	0	0	0	0	41
Volume Right	0	0	0	0	45	78
cSH	780	1700	1700	1700	1700	479
Volume to Capacity	0.02	0.06	0.06	0.29	0.17	0.25
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	7.8
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	15.0
Lane LOS	A					B
Approach Delay (s)	0.8			0.0		15.0
Approach LOS						B

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	30.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1013	903	0	1148	1756	0
Future Volume (vph)	1013	903	0	1148	1756	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		10				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1101	982	0	1248	1909	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1101	982	0	1248	1909	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	57.4	57.4		82.6	82.6	
Total Split (%)	41.0%	41.0%		59.0%	59.0%	
Maximum Green (s)	50.4	50.4		75.6	75.6	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
v/c Ratio	0.85	1.59		0.45	0.68	
Control Delay	47.2	305.8		32.7	16.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	47.2	305.8		32.7	16.2	
LOS	D	F		C	B	
Approach Delay	169.1			32.7	16.2	
Approach LOS	F			C	B	
Queue Length 50th (m)	150.4	~408.8		109.2	119.8	
Queue Length 95th (m)	180.3	#492.8		151.3	72.1	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1296	616		2747	2800	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.85	1.59		0.45	0.68	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.59
Intersection Signal Delay: 80.9 Intersection LOS: F
Intersection Capacity Utilization 96.5% ICU Level of Service F
Analysis Period (min) 15

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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	191	623	26	18	32
Future Volume (vph)	9	191	623	26	18	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991		0.912	
Flt Protected	0.950				0.983	
Satd. Flow (prot)	1388	2954	3131	0	1494	0
Flt Permitted	0.950				0.983	
Satd. Flow (perm)	1388	2954	3131	0	1494	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	1			1	9	
Peak Hour Factor	0.50	0.92	0.84	0.58	0.44	0.41
Heavy Vehicles (%)	17%	10%	3%	0%	0%	4%
Adj. Flow (vph)	18	208	742	45	41	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	208	787	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary

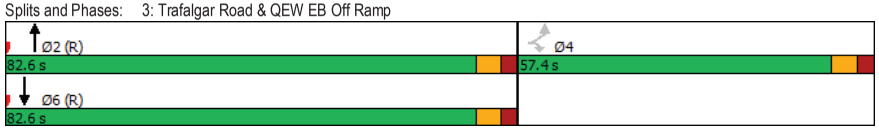
Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 30.1% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	161	14	15	345	13	243	4	164	16	2	66
Future Volume (vph)	39	161	14	15	345	13	243	4	164	16	2	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1519	2908		1569	3070		1569	1444		1565	1417	
Flt Permitted	0.52	1.00		0.56	1.00		0.68	1.00		0.54	1.00	
Satd. Flow (perm)	836	2908		919	3070		1129	1444		885	1417	
Peak-hour factor, PHF	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Adj. Flow (vph)	67	192	19	28	363	24	328	12	208	23	4	110
RTOR Reduction (vph)	0	8	0	0	5	0	0	137	0	0	73	0
Lane Group Flow (vph)	67	203	0	28	382	0	328	83	0	23	41	0
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		47.1	47.1		27.4	27.4		27.4	27.4	
Effective Green, g (s)	37.1	37.1		47.1	49.1		29.4	29.4		29.4	29.4	
Actuated g/C Ratio	0.43	0.43		0.54	0.57		0.34	0.34		0.34	0.34	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	358	1247		560	1742		383	490		300	481	
v/s Ratio Prot		0.07		0.00	c0.12			0.06			0.03	
v/s Ratio Perm	0.08			0.02			c0.29			0.03		
v/c Ratio	0.19	0.16		0.05	0.22		0.86	0.17		0.08	0.09	
Uniform Delay, d1	15.3	15.2		9.2	9.2		26.6	20.0		19.4	19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.0	0.1		17.4	0.2		0.1	0.1	
Delay (s)	15.9	15.3		9.3	9.4		44.0	20.2		19.5	19.5	
Level of Service	B	B		A	A		D	C		B	B	
Approach Delay (s)		15.4			9.4			34.5			19.5	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Queue shown is maximum after two cycles.

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1013	903	0	1148	1756	0
Future Volume (vph)	1013	903	0	1148	1756	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1101	982	0	1248	1909	0
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	1101	976	0	1248	1909	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	50.4	50.4		75.6	75.6	
Effective Green, g (s)	53.4	53.4		78.6	78.6	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1296	609		2747	2800	
v/s Ratio Prot				0.26	c0.38	
v/s Ratio Perm	0.32	c0.61				
v/c Ratio	0.85	1.60		0.45	0.68	
Uniform Delay, d1	39.6	43.3		18.1	21.8	
Progression Factor	1.00	1.00		1.77	0.69	
Incremental Delay, d2	5.4	278.7		0.4	1.0	
Delay (s)	45.0	322.0		32.5	16.1	
Level of Service	D	F		C	B	
Approach Delay (s)	175.6			32.5	16.1	
Approach LOS	F			C	B	

Intersection Summary			
HCM 2000 Control Delay	83.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	41.5	41.5		12.5	54.0		36.0	36.0		36.0	36.0	
Total Split (%)	46.1%	46.1%		13.9%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	35.5	35.5		8.5	48.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.1	37.1		49.1	49.1		29.5	29.5		29.5	29.5	
Actuated g/C Ratio	0.43	0.43		0.57	0.57		0.34	0.34		0.34	0.34	
v/c Ratio	0.19	0.17		0.05	0.22		0.86	0.35		0.08	0.21	
Control Delay	18.3	15.3		9.4	9.8		49.1	5.3		19.8	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.3	15.3		9.4	9.8		49.1	5.3		19.8	5.5	
LOS	B	B		A	A		D	A		B	A	
Approach Delay		16.0			9.8			31.5			7.9	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	7.5	11.3		2.2	17.0		52.5	1.4		2.7	0.5	
Queue Length 95th (m)	10.2	17.4		3.5	25.1		65.7	0.0		6.1	0.4	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	363	1269		584	1782		417	666		328	593	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.17		0.05	0.22		0.79	0.33		0.07	0.19	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 86.6			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 19.5		Intersection LOS: B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	20	0	0	0	0	1148	507	0	1824	835
Future Volume (vph)	0	0	20	0	0	0	0	1148	507	0	1824	835
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.953	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4876	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4876	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	22	0	0	0	0	1248	551	0	1983	908
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	22	0	0	0	0	1248	551	0	2891	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.6%		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)	0	0	20	0	0	0	0	1148	507	0	1824	835
Future Volume (Veh/h)	0	0	20	0	0	0	0	1148	507	0	1824	835
Sign Control		Stop			Stop			Free			Free	
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)	0	0	22	0	0	0	0	1248	551	0	1983	908
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.78	0.78	0.73	0.78	0.78	0.90	0.73			0.90		
vC, conflicting volume	2877	3709	1139	1909	4163	416	2915			1248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1547	2618	0	300	3203	0	2320			889		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	100	100			100		
cM capacity (veh/h)	59	19	759	471	7	983	155			694		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	22	416	416	416	551	793	793	1305
Volume Left	0	0	0	0	0	0	0	0
Volume Right	22	0	0	0	551	0	0	908
cSH	759	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.24	0.24	0.24	0.32	0.47	0.47	0.77
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.9	0.0				0.0		
Approach LOS	A							

Intersection Summary					
Average Delay			0.0		
Intersection Capacity Utilization			64.6%	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)	39	161	14	15	345	13	243	4	164	16	2	66
Future Volume (vph)	39	161	14	15	345	13	243	4	164	16	2	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Frt		0.986			0.991			0.858			0.855	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1525	2906	0	1570	3071	0	1570	1444	0	1570	1416	0
Flt Permitted	0.523			0.556			0.684			0.537		
Satd. Flow (perm)	836	2906	0	918	3071	0	1129	1444	0	885	1416	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			12			208			110	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	3		1	1		3	1		4	4		1
Peak Hour Factor	0.58	0.84	0.75	0.54	0.95	0.55	0.74	0.33	0.79	0.70	0.50	0.60
Heavy Vehicles (%)	3%	11%	0%	0%	5%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	67	192	19	28	363	24	328	12	208	23	4	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	211	0	28	387	0	328	220	0	23	114	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	888	17	38	387	44	16	2	49	179	20	136
Future Volume (vph)	15	888	17	38	387	44	16	2	49	179	20	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.99	1.00		0.97	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1557	3172		797	3179		778	704		1522	1284	
Flt Permitted	0.49	1.00		0.13	1.00		0.53	1.00		0.70	1.00	
Satd. Flow (perm)	798	3172		105	3179		436	704		1128	1284	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	23	1096	23	40	407	54	23	8	73	208	27	174
RTOR Reduction (vph)	0	2	0	0	11	0	0	54	0	0	128	0
Lane Group Flow (vph)	23	1117	0	40	450	0	23	27	0	208	73	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.9	35.9		48.3	48.3		19.2	19.2		19.2	19.2	
Effective Green, g (s)	37.9	37.9		48.3	50.3		21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.48	0.48		0.61	0.63		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	380	1512		136	2011		116	187		300	342	
v/s Ratio Prot		c0.35		c0.03	0.14			0.04			0.06	
v/s Ratio Perm	0.03			0.15			0.05			c0.18		
v/c Ratio	0.06	0.74		0.29	0.22		0.20	0.15		0.69	0.21	
Uniform Delay, d1	11.2	16.8		9.6	6.2		22.6	22.2		26.2	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.3		0.9	0.1		1.1	0.5		7.3	0.4	
Delay (s)	11.3	19.2		10.5	6.4		23.7	22.7		33.5	23.1	
Level of Service	B	B		B	A		C	C		C	C	
Approach Delay (s)		19.0			6.7			23.0			28.4	
Approach LOS		B			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.67			
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
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)	556	243	148	67	228	156	138	941	541	336	893	560
Future Volume (vph)	556	243	148	67	228	156	138	941	541	336	893	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	0.99		0.87			0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	3406	1442	3400	3343	1553	1641	5036	1615	1752	5036	1553
Flt Permitted	0.950			0.950			0.283			0.131		
Satd. Flow (perm)	3207	3406	1411	3378	3343	1531	486	5036	1404	242	5036	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161			86			162			609
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	604	264	161	73	248	170	150	1023	588	365	971	609
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	264	161	73	248	170	150	1023	588	365	971	609
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	12.0	10.0	7.0	7.0	27.0	12.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	17.0	25.0	11.5	11.5	34.0	17.0	11.5	34.0	34.0
Total Split (s)	36.0	25.0	25.0	37.0	26.0	38.0	18.6	40.0	37.0	38.0	59.4	59.4
Total Split (%)	25.7%	17.9%	17.9%	26.4%	18.6%	27.1%	13.3%	28.6%	26.4%	27.1%	42.4%	42.4%
Maximum Green (s)	29.0	18.0	18.0	33.0	19.0	34.0	14.6	33.0	33.0	34.0	52.4	52.4
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	31.1	30.2	30.2	19.4	18.5	46.1	58.3	46.8	66.1	78.4	62.8	62.8
Actuated g/C Ratio	0.22	0.22	0.22	0.14	0.13	0.33	0.42	0.33	0.47	0.56	0.45	0.45
v/c Ratio	0.85	0.36	0.37	0.16	0.56	0.30	0.50	0.61	0.76	0.84	0.43	0.60
Control Delay	64.1	49.3	9.8	51.0	61.7	15.1	23.5	45.1	28.1	38.0	21.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	49.3	9.8	51.0	61.7	15.1	23.5	45.1	28.1	38.0	21.0	1.6
LOS	E	D	A	D	E	B	C	D	C	D	C	A
Approach Delay		51.8			44.0			37.6			18.1	
Approach LOS		D			D			D			B	
Queue Length 50th (m)	86.9	33.4	0.0	10.0	36.1	16.4	24.0	83.9	91.8	61.7	61.9	0.0
Queue Length 95th (m)	110.0	52.6	21.1	15.8	49.7	31.1	m32.4	m95.7	m63.2	m80.8	m69.1	m5.3
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	734	735	431	801	525	632	333	1682	919	502	2260	1008
Starvation Cap Reductn	0	0	0	0	0	0	0	0	1	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.36	0.37	0.09	0.47	0.27	0.45	0.61	0.64	0.73	0.43	0.60

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 33.7 Intersection LOS: C

Intersection Capacity Utilization 59.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

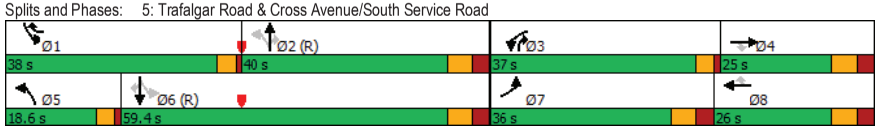
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	46.0	46.0		15.0	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	51.1%	51.1%		16.7%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	40.0	40.0		11.0	55.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.9	37.9		50.3	50.3		21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.48	0.48		0.63	0.63		0.27	0.27		0.27	0.27	
v/c Ratio	0.06	0.74		0.29	0.23		0.20	0.34		0.70	0.43	
Control Delay	12.7	20.9		11.8	6.5		28.9	11.9		41.0	9.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.7	20.9		11.8	6.5		28.9	11.9		41.0	9.1	
LOS	B	C		B	A		C	B		D	A	
Approach Delay		20.7			7.0			15.7			25.3	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	2.0	76.4		2.4	15.0		3.0	1.0		31.8	3.5	
Queue Length 95th (m)	4.6	89.5		6.5	22.7		7.3	0.0		54.4	12.2	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	428	1703		163	2322		139	273		358	528	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.66		0.25	0.20		0.17	0.30		0.58	0.38	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 79.7
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.2 Intersection LOS: B

Intersection Capacity Utilization 78.9% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	556	243	148	67	228	156	138	941	541	336	893	560
Future Volume (vph)	556	243	148	67	228	156	138	941	541	336	893	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3406	1411	3400	3343	1545	1638	5036	1468	1752	5036	1499
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.28	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	3213	3406	1411	3400	3343	1545	488	5036	1468	241	5036	1499
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)	604	264	161	73	248	170	150	1023	588	365	971	609
RTOR Reduction (vph)	0	0	126	0	0	60	0	0	89	0	0	336
Lane Group Flow (vph)	604	264	35	73	248	110	150	1023	499	365	971	273
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	28.1	27.2	27.2	19.4	15.5	43.1	55.4	43.8	63.2	75.4	59.8	59.8
Effective Green, g (s)	31.1	30.2	30.2	19.4	18.5	43.1	55.4	46.8	63.2	75.4	62.8	62.8
Actuated g/C Ratio	0.22	0.22	0.22	0.14	0.13	0.31	0.40	0.33	0.45	0.54	0.45	0.45
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	713	734	304	471	441	475	288	1683	662	427	2259	672
v/s Ratio Prot	c0.19	0.08		0.02	c0.07	0.05	0.04	0.20	0.10	c0.17	0.19	
v/s Ratio Perm			0.02			0.03	0.16		0.24	c0.29		0.18
v/c Ratio	0.85	0.36	0.11	0.15	0.56	0.23	0.52	0.61	0.75	0.85	0.43	0.41
Uniform Delay, d1	52.2	46.7	44.1	53.1	57.0	36.1	28.1	38.9	31.9	34.1	26.4	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.11	1.08	1.19	1.09	0.76	0.39
Incremental Delay, d2	9.2	0.3	0.2	0.2	1.6	0.3	0.8	0.8	2.3	4.6	0.2	0.5
Delay (s)	61.4	47.0	44.3	53.2	58.6	36.4	32.1	42.9	40.2	41.8	20.2	10.7
Level of Service	E	D	D	D	E	D	C	D	D	D	C	B
Approach Delay (s)		55.0			50.1			41.1			21.3	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
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)	15	888	17	38	387	44	16	2	49	179	20	136
Future Volume (vph)	15	888	17	38	387	44	16	2	49	179	20	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00			1.00		0.99	0.95		0.97	0.98	
Frt		0.997			0.982			0.865			0.870	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3172	0	797	3177	0	785	701	0	1570	1282	0
Flt Permitted	0.487			0.125			0.532			0.704		
Satd. Flow (perm)	798	3172	0	105	3177	0	435	701	0	1123	1282	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			31			73			174	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	23	1096	23	40	407	54	23	8	73	208	27	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	1119	0	40	461	0	23	81	0	208	201	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	503	538	190	67	750	671	134	482	46	578	621	551
Future Volume (vph)	503	538	190	67	750	671	134	482	46	578	621	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	1.00	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	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3467	3505	1482	1805	3574	1503	1770	3552		3433	1900	1503
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3467	3505	1482	1805	3574	1503	1770	3552		3433	1900	1503
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)	547	585	207	73	815	729	146	524	50	628	675	599
RTOR Reduction (vph)	0	0	90	0	0	243	0	5	0	0	0	197
Lane Group Flow (vph)	547	585	117	73	815	486	146	569	0	628	675	402
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	21.0	54.6	54.6	8.4	40.0	40.0	11.0	31.0		24.0	44.0	44.0
Effective Green, g (s)	22.0	57.6	54.6	9.4	43.0	40.0	12.0	34.0		25.0	47.0	47.0
Actuated g/C Ratio	0.16	0.41	0.39	0.07	0.31	0.29	0.09	0.24		0.18	0.34	0.34
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	544	1442	577	121	1097	429	151	862		613	637	504
v/s Ratio Prot	c0.16	0.17		0.04	0.23		0.08	0.16		c0.18	c0.36	
v/s Ratio Perm			0.08			c0.32						0.27
v/c Ratio	1.01	0.41	0.20	0.60	0.74	1.13	0.97	0.66		1.02	1.06	0.80
Uniform Delay, d1	59.0	29.1	28.3	63.5	43.5	50.0	63.8	47.8		57.5	46.5	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.24	1.27	1.68
Incremental Delay, d2	40.0	0.2	0.2	8.2	2.8	85.1	62.6	3.9		17.8	30.8	1.3
Delay (s)	99.0	29.3	28.5	71.7	46.3	135.1	126.4	51.7		89.0	89.9	72.2
Level of Service	F	C	C	E	D	F	F	D		F	F	E
Approach Delay (s)		57.6			87.5			66.9			84.0	
Approach LOS		E			F			E			F	

Intersection Summary				
HCM 2000 Control Delay	76.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.06			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	88.5%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

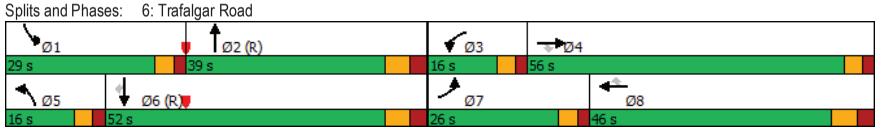
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	608	96	11	511	622	68	484	57	443	438	379
Future Volume (vph)	507	608	96	11	511	622	68	484	57	443	438	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		60.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.97	0.99		0.99		0.93	0.99		0.95	0.97		0.97
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3393	0	1703	3505	1568	1770	3574	1615	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3340	3393	0	1687	3505	1460	1750	3574	1529	3254	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				285			187			358
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	551	661	104	12	555	676	74	526	62	482	476	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	551	765	0	12	555	676	74	526	62	482	476	412
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	27.0	64.0		12.0	49.0	49.0	12.0	39.0	39.0	25.0	52.0	52.0
Total Split (%)	19.3%	45.7%		8.6%	35.0%	35.0%	8.6%	27.9%	27.9%	17.9%	37.1%	37.1%
Maximum Green (s)	22.0	59.0		7.0	42.0	42.0	7.0	32.0	32.0	20.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	0.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	23.0	69.2		8.0	45.0	45.0	8.0	35.0	32.0	21.0	48.0	48.0
Actuated g/C Ratio	0.16	0.49		0.06	0.32	0.32	0.06	0.25	0.23	0.15	0.34	0.34
v/c Ratio	0.98	0.45		0.12	0.49	1.02	0.73	0.59	0.13	0.95	0.75	0.56
Control Delay	90.8	24.5		65.7	40.1	67.5	102.1	49.4	0.5	111.2	28.2	4.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.8	24.5		65.7	40.1	67.5	102.1	49.4	0.5	111.2	28.2	4.4
LOS	F	C		E	D	E	F	D	A	F	C	A
Approach Delay		52.3			55.3			50.7			50.2	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	83.4	67.7		3.4	68.6	~148.4	21.6	71.4	0.0	71.1	39.7	4.2
Queue Length 95th (m)	#121.5	100.5		10.6	87.3	#226.9	#48.6	91.1	0.0	#110.6	65.2	10.7
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0		60.0	80.0		
Base Capacity (vph)	563	1684		97	1126	662	101	893	493	505	638	740
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.45		0.12	0.49	1.02	0.73	0.59	0.13	0.95	0.75	0.56

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 52.2		Intersection LOS: D	

Intersection Capacity Utilization 88.5%	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.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Trafalgar Road

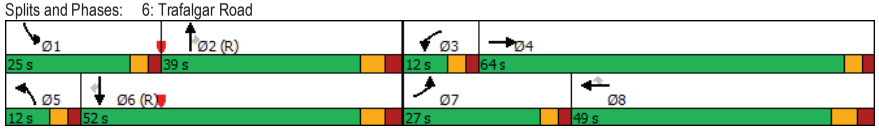


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	26.0	56.0	56.0	16.0	46.0	46.0	16.0	39.0		29.0	52.0	52.0
Total Split (%)	18.6%	40.0%	40.0%	11.4%	32.9%	32.9%	11.4%	27.9%		20.7%	37.1%	37.1%
Maximum Green (s)	21.0	51.0	51.0	11.0	39.0	39.0	11.0	32.0		24.0	45.0	45.0
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	0.0	-1.0	-3.0	0.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	5.0	4.0	4.0	7.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	22.0	57.6	54.6	10.8	42.0	39.0	12.0	35.0		25.0	48.0	48.0
Actuated g/C Ratio	0.16	0.41	0.39	0.08	0.30	0.28	0.09	0.25		0.18	0.34	0.34
v/c Ratio	1.01	0.41	0.31	0.53	0.76	1.10	0.97	0.64		1.02	1.04	0.84
Control Delay	98.1	31.1	11.0	75.5	49.9	90.5	127.8	50.2		85.6	77.2	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	98.1	31.1	11.0	75.5	49.9	90.5	127.8	50.2		85.6	77.2	36.5
LOS	F	C	B	E	D	F	F	D		F	E	D
Approach Delay		55.3			69.4			65.9			67.1	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	~83.7	65.7	11.4	20.6	113.6	~164.3	43.2	78.2		~101.2	~204.1	91.0
Queue Length 95th (m)	#123.2	83.0	31.2	38.0	138.8	#244.1	#88.4	99.3		m90.4	m145.5	m83.1
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	544	1440	667	154	1072	663	151	893		613	651	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	1.01	0.41	0.31	0.47	0.76	1.10	0.97	0.64		1.02	1.04	0.84

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 64.8		Intersection LOS: E	

Intersection Capacity Utilization 82.0% ICU Level of Service D
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: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	608	96	11	511	622	68	484	57	443	438	379
Future Volume (vph)	507	608	96	11	511	622	68	484	57	443	438	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3392		1703	3505	1460	1770	3574	1529	3367	1863	1474
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3392		1703	3505	1460	1770	3574	1529	3367	1863	1474
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)	551	661	104	12	555	676	74	526	62	482	476	412
RTOR Reduction (vph)	0	8	0	0	0	187	0	0	49	0	0	243
Lane Group Flow (vph)	551	757	0	12	555	489	74	526	13	482	476	169
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	22.0	66.2		2.8	45.0	45.0	7.0	29.0	29.0	20.0	42.0	42.0
Effective Green, g (s)	23.0	69.2		3.8	48.0	48.0	8.0	32.0	29.0	21.0	45.0	45.0
Actuated g/C Ratio	0.16	0.49		0.03	0.34	0.34	0.06	0.23	0.21	0.15	0.32	0.32
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	563	1676		46	1201	500	101	816	316	505	598	473
v/s Ratio Prot	c0.16	0.22		0.01	0.16		0.04	0.15		c0.14	c0.26	
v/s Ratio Perm						c0.33			0.01			0.11
v/c Ratio	0.98	0.45		0.26	0.46	0.98	0.73	0.64	0.04	0.95	0.80	0.36
Uniform Delay, d1	58.3	23.0		66.7	35.9	45.5	64.9	48.9	44.4	59.0	43.3	36.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.42	0.50	0.25
Incremental Delay, d2	32.1	0.2		3.0	0.3	34.1	23.7	3.9	0.2	27.8	10.1	2.0
Delay (s)	90.4	23.2		69.7	36.2	79.5	88.7	52.8	44.6	111.8	31.9	11.3
Level of Service	F	C		E	D	E	F	D	D	F	C	B
Approach Delay (s)		51.4			60.1			56.0			53.8	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
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)	503	538	190	67	750	671	134	482	46	578	621	551
Future Volume (vph)	503	538	190	67	750	671	134	482	46	578	621	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.98	1.00		0.98		0.95
Frt			0.850			0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3505	1599	1805	3574	1599	1770	3552	0	3433	1900	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3412	3505	1482	1761	3574	1503	1742	3552	0	3373	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			340		7				296
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	547	585	207	73	815	729	146	524	50	628	675	599
Shared Lane Traffic (%)												
Lane Group Flow (vph)	547	585	207	73	815	729	146	574	0	628	675	599
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1043	93	140	160	156	291	152	1467	44	139	1486	340
Future Volume (vph)	1043	93	140	160	156	291	152	1467	44	139	1486	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	1.00	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.98	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3400	1548		1726	1827	1599	1719	5072		1805	4924	
Flt Permitted	0.95	1.00		0.60	1.00	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	3400	1548		1094	1827	1599	152	5072		160	4924	
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)	1134	101	152	174	170	316	165	1595	48	151	1615	370
RTOR Reduction (vph)	0	39	0	0	0	99	0	2	0	0	27	0
Lane Group Flow (vph)	1134	214	0	174	170	217	165	1641	0	151	1958	0
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	40.0	65.0		18.0	18.0	18.0	57.1	47.7		56.9	47.6	
Effective Green, g (s)	43.0	68.0		21.0	21.0	21.0	57.1	50.7		56.9	50.6	
Actuated g/C Ratio	0.31	0.49		0.15	0.15	0.15	0.41	0.36		0.41	0.36	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1044	751		164	274	239	167	1836		174	1779	
v/s Ratio Prot	c0.33	0.14			0.09		c0.07	0.32		0.06	c0.40	
v/s Ratio Perm				c0.16		0.14	0.34			0.30		
v/c Ratio	1.09	0.29		1.06	0.62	0.91	0.99	0.89		0.87	1.10	
Uniform Delay, d1	48.5	21.5		59.5	55.8	58.5	37.2	42.1		33.8	44.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.48	1.13		0.85	0.90	
Incremental Delay, d2	54.3	0.2		87.4	4.3	33.9	38.0	2.8		26.7	52.3	
Delay (s)	102.8	21.7		146.9	60.1	92.4	92.9	50.5		55.6	92.6	
Level of Service	F	C		F	E	F	F	D		E	F	
Approach Delay (s)		88.0			98.4			54.4			89.9	
Approach LOS		F			F			D			F	

Intersection Summary					
HCM 2000 Control Delay	79.7	HCM 2000 Level of Service		E	
HCM 2000 Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	140.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	96.5%	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)	38	547	47	126	756	37	57	0	144	92	19	581
Future Volume (vph)	38	547	47	126	756	37	57	0	144	92	19	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98			0.96	0.98	0.99	
Frt			0.850			0.850			0.850		0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3217	727	818	3217	1384	805	1710	761	1570	1385	0
Flt Permitted	0.330			0.251			0.150			0.757		
Satd. Flow (perm)	545	3217	708	216	3217	1354	127	1710	734	1222	1385	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			91			256		154	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	73	629	72	150	859	47	108	0	206	118	31	653
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	629	72	150	859	47	108	0	206	118	684	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

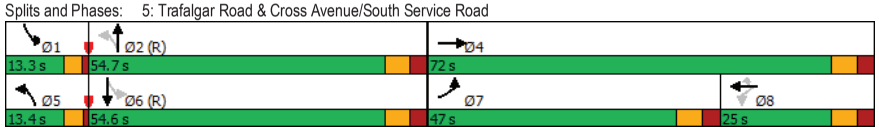
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	27.8	27.8	27.8	39.4	39.4	39.4	34.1		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.49	0.49	0.49	0.43		0.38	0.30	0.30	
v/c Ratio	0.39	0.56	0.21	0.92	0.54	0.07	1.03		0.47	0.32	1.31	
Control Delay	26.2	23.1	1.5	73.1	15.4	0.6	124.1		5.0	26.1	173.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	26.2	23.1	1.5	73.1	15.4	0.6	124.1		5.0	26.1	173.7	
LOS	C	C	A	E	B	A	F		A	C	F	
Approach Delay		21.4			22.9			46.0			151.9	
Approach LOS		C			C			D			F	
Queue Length 50th (m)	8.6	42.1	0.0	14.1	47.2	0.0	~10.8		0.0	14.0	~120.8	
Queue Length 95th (m)	10.3	55.0	0.0	#40.6	60.8	0.3	#17.4		0.0	27.6	#110.6	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	259	1532	410	163	1996	874	105		438	367	524	
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	0.28	0.41	0.18	0.92	0.43	0.05	1.03		0.47	0.32	1.31	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 80
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 60.1 Intersection LOS: E

Intersection Capacity Utilization 96.5% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		10.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		25.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	47.0	72.0		25.0	25.0	25.0	13.4	54.7		13.3	54.6	
Total Split (%)	33.6%	51.4%		17.9%	17.9%	17.9%	9.6%	39.1%		9.5%	39.0%	
Maximum Green (s)	40.0	65.0		18.0	18.0	18.0	9.4	47.7		9.3	47.6	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0		0			0	
Act Effct Green (s)	43.0	68.0		21.0	21.0	21.0	60.1	50.7		59.9	50.6	
Actuated g/C Ratio	0.31	0.49		0.15	0.15	0.15	0.43	0.36		0.43	0.36	
v/c Ratio	1.09	0.32		1.06	0.62	0.93	0.97	0.89		0.85	1.10	
Control Delay	99.6	16.2		142.9	66.6	71.1	78.5	50.6		55.8	89.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	99.6	16.2		142.9	66.6	71.1	78.5	50.6		55.8	89.0	
LOS	F	B		F	E	E	E	D		E	F	
Approach Delay		84.4			88.9			53.1			86.7	
Approach LOS		F			F			D			F	
Queue Length 50th (m)	~190.7	30.0		~55.6	47.1	60.3	38.7	165.9		22.4	~241.5	
Queue Length 95th (m)	#234.3	50.2		#105.2	73.1	#119.9	m#48.4	m145.9		m#57.1	#272.4	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	1044	790		164	274	339	170	1839		177	1806	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.09	0.32		1.06	0.62	0.93	0.97	0.89		0.85	1.10	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 76.3 Intersection LOS: E

Intersection Capacity Utilization 100.4% 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: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	547	47	126	756	37	57	0	144	92	19	581
Future Volume (vph)	38	547	47	126	756	37	57	0	144	92	19	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5		6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00		0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.86	
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)	1570	3217	708	818	3217	1354	805		736	1538	1386	
Flt Permitted	0.33	1.00	1.00	0.25	1.00	1.00	0.15		1.00	0.76	1.00	
Satd. Flow (perm)	545	3217	708	216	3217	1354	127		736	1226	1386	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	73	629	72	150	859	47	108	0	206	118	31	653
RTOR Reduction (vph)	0	0	47	0	0	24	0	0	127	0	108	0
Lane Group Flow (vph)	73	629	25	150	859	23	108	0	79	118	576	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	25.9	25.9	25.9	37.4	37.4	37.4	30.6		30.6	22.1	22.1	
Effective Green, g (s)	27.9	27.9	27.9	37.4	39.4	39.4	32.6		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.47	0.49	0.49	0.41		0.38	0.30	0.30	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5		6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	190	1121	246	157	1584	666	102		281	369	417	
v/s Ratio Prot		0.20		c0.09	0.27		c0.08				c0.42	
v/s Ratio Perm	0.13		0.04	c0.36		0.02	0.35		0.11	0.10		
v/c Ratio	0.38	0.56	0.10	0.96	0.54	0.03	1.06		0.28	0.32	1.38	
Uniform Delay, d1	19.6	21.1	17.6	18.0	14.1	10.5	21.6		17.1	21.6	27.9	
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	2.7	1.1	0.4	58.1	0.7	0.0	105.9		0.7	0.7	186.4	
Delay (s)	22.3	22.2	18.0	76.0	14.7	10.5	127.5		17.8	22.3	214.4	
Level of Service	C	C	B	E	B	B	F		B	C	F	
Approach Delay (s)		21.8			23.2			55.6			186.1	
Approach LOS		C			C			E			F	

Intersection Summary				
HCM 2000 Control Delay	70.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	1.13			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	100.4%	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)	1043	93	140	160	156	291	152	1467	44	139	1486	340
Future Volume (vph)	1043	93	140	160	156	291	152	1467	44	139	1486	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.97		0.98				0.99			0.99	
Frt		0.910				0.850		0.996			0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1548	0	1770	1827	1599	1719	5074	0	1805	4924	0
Flt Permitted	0.950			0.602			0.084			0.084		
Satd. Flow (perm)	3400	1548	0	1094	1827	1599	152	5074	0	160	4924	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		75				117		3			42	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1134	101	152	174	170	316	165	1595	48	151	1615	370
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1134	253	0	174	170	316	165	1643	0	151	1985	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	56	0	0	0	0	2324	475	0	1832	443
Future Volume (Veh/h)	0	0	56	0	0	0	0	2324	475	0	1832	443
Sign Control		Stop			Stop			Free			Free	
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)	0	0	61	0	0	0	0	2526	516	0	1991	482
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.86	0.86	0.73	0.86	0.86	0.73	0.73			0.73		
vC, conflicting volume	3098	4782	929	3190	5023	842	2497			2526		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	754	2705	0	860	2984	0	1752			1786		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	92	100	100	100	100			100		
cM capacity (veh/h)	251	18	761	198	12	793	259			256		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	61	842	842	842	516	796	796	880
Volume Left	0	0	0	0	0	0	0	0
Volume Right	61	0	0	0	516	0	0	482
cSH	761	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.50	0.50	0.50	0.30	0.47	0.47	0.52
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.1	0.0				0.0		
Approach LOS	B							

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization		55.9%	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)	84	307	109	221	124	22	35	3	59	61	25	62
Future Volume (vph)	84	307	109	221	124	22	35	3	59	61	25	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3094	1425	1593	2801	1454	1593	1676	1425	1624	1676	1163
Flt Permitted	0.663			0.261			0.740			0.756		
Satd. Flow (perm)	1124	3094	1425	438	2801	1410	1241	1676	1425	1279	1676	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			44			73			124
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			149.2			41.7	
Travel Time (s)		20.3			2.9			10.7			3.0	
Confl. Peds. (#/hr)	4					4				7		
Peak Hour Factor	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	122	529	118	240	141	44	38	3	64	98	27	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	529	118	240	141	44	38	3	64	98	27	124
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	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	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	26.0	60.0	60.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	37.8%	37.8%	37.8%	28.9%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	29.5	29.5	29.5	21.5	55.5	55.5	25.5	25.5	25.5	25.5	25.5	25.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	17.3	17.3	17.3	33.4	33.4	33.4	25.8	25.8	25.8	25.8	25.8	25.8
Actuated g/C Ratio	0.25	0.25	0.25	0.49	0.49	0.49	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.43	0.68	0.26	0.59	0.10	0.06	0.08	0.00	0.11	0.20	0.04	0.24
Control Delay	26.8	27.8	6.1	16.2	9.0	3.0	17.1	17.0	4.9	18.4	16.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	27.8	6.1	16.2	9.0	3.0	17.1	17.0	4.9	18.4	16.8	5.4
LOS	C	C	A	B	A	A	B	B	A	B	B	A
Approach Delay		24.3			12.4			9.7			11.7	
Approach LOS		C			B			A			B	
Queue Length 50th (m)	13.6	33.3	0.0	18.0	4.9	0.0	3.2	0.3	0.0	8.6	2.2	0.0
Queue Length 95th (m)	21.4	30.4	11.2	30.6	8.7	1.0	10.9	2.2	7.3	15.3	8.6	0.0
Internal Link Dist (m)		257.3			16.1			125.2			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	490	1351	689	581	2301	1166	468	632	583	482	632	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.39	0.17	0.41	0.06	0.04	0.08	0.00	0.11	0.20	0.04	0.24

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 68.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 18.1		Intersection LOS: B	
Intersection Capacity Utilization 44.7%		ICU Level of Service A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	56	0	0	0	0	2324	475	0	1832	443
Future Volume (vph)	0	0	56	0	0	0	0	2324	475	0	1832	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.971	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	61	0	0	0	0	2526	516	0	1991	482
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	61	0	0	0	0	2526	516	0	2473	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1044	504	0	2324	1771	0
Future Volume (vph)	1044	504	0	2324	1771	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1135	548	0	2526	1925	0
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	1135	543	0	2526	1925	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	50.9	50.9		75.1	75.1	
Effective Green, g (s)	53.9	53.9		78.1	78.1	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1348	605		2836	2836	
v/s Ratio Prot				c0.50	0.38	
v/s Ratio Perm	0.32	c0.35				
v/c Ratio	0.84	0.90		0.89	0.68	
Uniform Delay, d1	39.2	40.5		27.2	22.0	
Progression Factor	1.00	1.00		1.64	0.82	
Incremental Delay, d2	4.9	16.0		1.4	0.3	
Delay (s)	44.1	56.4		46.0	18.5	
Level of Service	D	E		D	B	
Approach Delay (s)	48.1			46.0	18.5	
Approach LOS	D			D	B	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	307	109	221	124	22	35	3	59	61	25	62
Future Volume (vph)	84	307	109	221	124	22	35	3	59	61	25	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	3094	1425	1593	2801	1414	1593	1676	1425	1612	1676	1163
Flt Permitted	0.66	1.00	1.00	0.26	1.00	1.00	0.74	1.00	1.00	0.76	1.00	1.00
Satd. Flow (perm)	1126	3094	1425	437	2801	1414	1240	1676	1425	1282	1676	1163
Peak-hour factor, PHF	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Adj. Flow (vph)	122	529	118	240	141	44	38	3	64	98	27	124
RTOR Reduction (vph)	0	0	88	0	0	22	0	0	40	0	0	77
Lane Group Flow (vph)	122	529	30	240	141	22	38	3	24	98	27	47
Confl. Peds. (#/hr)	4					4				7		
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.3	17.3	17.3	33.4	33.4	33.4	25.8	25.8	25.8	25.8	25.8	25.8
Effective Green, g (s)	17.3	17.3	17.3	33.4	33.4	33.4	25.8	25.8	25.8	25.8	25.8	25.8
Actuated g/C Ratio	0.25	0.25	0.25	0.49	0.49	0.49	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	784	361	410	1371	692	469	634	539	484	634	439
v/s Ratio Prot		c0.17		c0.10	0.05			0.00			0.02	
v/s Ratio Perm	0.11		0.02	0.19		0.02	0.03		0.02	c0.08		0.04
v/c Ratio	0.43	0.67	0.08	0.59	0.10	0.03	0.08	0.00	0.04	0.20	0.04	0.11
Uniform Delay, d1	21.3	22.9	19.4	11.4	9.3	9.0	13.6	13.2	13.4	14.3	13.4	13.7
Progression 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
Incremental Delay, d2	1.0	2.3	0.1	2.1	0.0	0.0	0.3	0.0	0.2	0.9	0.1	0.5
Delay (s)	22.3	25.2	19.5	13.5	9.4	9.0	13.9	13.2	13.6	15.2	13.5	14.2
Level of Service	C	C	B	B	A	A	B	B	B	B	B	B
Approach Delay (s)		23.9			11.7			13.7			14.5	
Approach LOS		C			B			B			B	

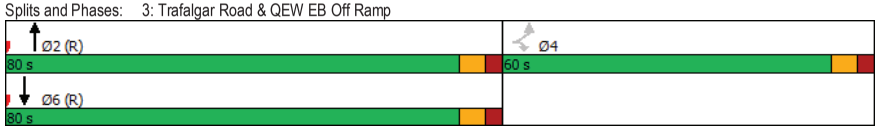
Intersection Summary				
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	44.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Queue shown is maximum after two cycles.

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

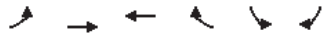
Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	60.0	60.0		80.0	80.0	
Total Split (%)	42.9%	42.9%		57.1%	57.1%	
Maximum Green (s)	53.0	53.0		73.0	73.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	53.9	53.9		78.1	78.1	
Actuated g/C Ratio	0.38	0.38		0.56	0.56	
v/c Ratio	0.84	0.90		0.89	0.68	
Control Delay	45.8	58.6		47.0	18.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	45.8	58.6		47.0	18.9	
LOS	D	E		D	B	
Approach Delay	50.0			47.0	18.9	
Approach LOS	D			D	B	
Queue Length 50th (m)	149.9	143.5		286.8	97.2	
Queue Length 95th (m)	178.9	#211.7		m287.4	m93.1	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1400	634		2838	2838	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.81	0.86		0.89	0.68	

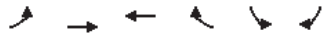
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 39.0		Intersection LOS: D	
Intersection Capacity Utilization 106.6%		ICU Level of Service G	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	8	8	8	2
Future Volume (vph)	0	10	8	8	8	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.932		0.963	
Flt Protected					0.965	
Satd. Flow (prot)	0	1710	1594	0	1283	0
Flt Permitted					0.965	
Satd. Flow (perm)	0	1710	1594	0	1283	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	20	11	11	21	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	22	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	8	8	8	2
Future Volume (Veh/h)	0	10	8	8	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	20	11	11	21	8
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	28				44	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				44	22
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1591				889	1055

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	22	29
Volume Left	0	0	21
Volume Right	0	11	8
cSH	1591	1700	929
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

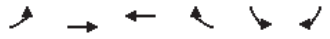
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1044	504	0	2324	1771	0
Future Volume (vph)	1044	504	0	2324	1771	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		8				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1135	548	0	2526	1925	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1135	548	0	2526	1925	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3368	1771	1667
Future Volume (Veh/h)	0	0	0	3368	1771	1667
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	0	0	3661	1925	1812
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.29					
vC, conflicting volume	3145	642	1925			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	642	1925			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	301	417	303			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1220	1220	1220	642	642	642	1812
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1812
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.72	0.72	0.72	0.38	0.38	0.38	1.07
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		106.6%	ICU Level of Service G
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	6	632	132	5	4
Future Volume (vph)	1	6	632	132	5	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.973		0.940	
Flt Protected		0.989			0.973	
Satd. Flow (prot)	0	1384	1625	0	1564	0
Flt Permitted		0.989			0.973	
Satd. Flow (perm)	0	1384	1625	0	1564	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	14	735	183	20	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	918	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.2%			ICU Level of Service B
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	6	632	132	5	4
Future Volume (Veh/h)	1	6	632	132	5	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	14	735	183	20	16
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	919				854	828
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	919				854	828
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				94	96
cM capacity (veh/h)	457				327	373

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	918	36
Volume Left	4	0	20
Volume Right	0	183	16
cSH	457	1700	346
Volume to Capacity	0.01	0.54	0.10
Queue Length 95th (m)	0.2	0.0	2.8
Control Delay (s)	3.0	0.0	16.6
Lane LOS	A		C
Approach Delay (s)	3.0	0.0	16.6
Approach LOS			C

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		56.2%	ICU Level of Service B
Analysis Period (min)		15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3368	1771	1667
Future Volume (vph)	0	0	0	3368	1771	1667
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3661	1925	1812
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3661	1925	1812
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	106.6%	ICU Level of Service G	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	265	491	137	382	0	2828	540	0	2682	12
Future Volume (vph)	20	0	265	491	137	382	0	2828	540	0	2682	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	1.0		4.0	1.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99		1.00	0.97		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1728	1563		5085	1556		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1728	1563		5085	1556		4217	1497
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)	22	0	288	534	149	415	0	3074	587	0	2915	13
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	22	0	267	336	347	415	0	3074	587	0	2915	8
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Actuated Green, G (s)	4.9		43.2	33.3	33.3	140.0		82.8	140.0		82.8	82.8
Effective Green, g (s)	5.9		46.2	36.3	36.3	140.0		85.8	140.0		85.8	85.8
Actuated g/C Ratio	0.04		0.33	0.26	0.26	1.00		0.61	1.00		0.61	0.61
Clearance Time (s)	5.0		7.0	7.0	7.0			7.0			7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	76		532	435	448	1563		3116	1556		2584	917
v/s Ratio Prot	0.01							0.60			c0.69	
v/s Ratio Perm			0.17	0.20	0.20	0.27			c0.38			0.01
v/c Ratio	0.29		0.50	0.77	0.77	0.27		0.99	0.38		1.13	0.01
Uniform Delay, d1	65.0		37.7	48.0	48.1	0.0		26.5	0.0		27.1	10.5
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.77	1.00		1.00	1.00
Incremental Delay, d2	2.1		0.7	8.3	8.2	0.4		8.4	0.3		63.2	0.0
Delay (s)	67.1		38.4	56.3	56.2	0.4		28.9	0.3		90.3	10.6
Level of Service	E		D	E	E	A		C	A		F	B
Approach Delay (s)		40.5			35.2			24.4			90.0	
Approach LOS		D			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

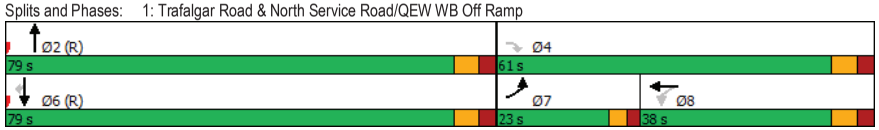
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	283	569	142	286	0	2614	490	0	1791	10
Future Volume (vph)	21	0	283	569	142	286	0	2614	490	0	1791	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.93			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.971							
Satd. Flow (prot)	1805	0	1615	1681	1725	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.971							
Satd. Flow (perm)	1800	0	1615	1681	1725	1557	0	5085	1482	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			66			324			66
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	23	0	308	618	154	311	0	2841	533	0	1947	11
Shared Lane Traffic (%)				38%								
Lane Group Flow (vph)	23	0	308	383	389	311	0	2841	533	0	1947	11
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	9.5		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	9.5		51.5	42.0	42.0	42.0		88.5	88.5		88.5	88.5
Total Split (%)	6.8%		36.8%	30.0%	30.0%	30.0%		63.2%	63.2%		63.2%	63.2%
Maximum Green (s)	5.0		44.5	35.0	35.0	35.0		81.5	81.5		81.5	81.5
Yellow Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.0		42.4	36.7	36.7	36.7		89.6	89.6		89.6	89.6
Actuated g/C Ratio	0.04		0.30	0.26	0.26	0.26		0.64	0.64		0.64	0.64
v/c Ratio	0.30		0.60	0.87	0.86	0.68		0.87	0.50		0.72	0.01
Control Delay	75.2		41.7	69.6	68.1	44.3		15.5	4.4		19.8	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.1	0.0		0.0	0.0
Total Delay	75.2		41.7	69.6	68.1	44.3		15.5	4.4		19.8	0.0
LOS	E		D	E	E	D		B	A		B	A
Approach Delay		44.0			61.8			13.8			19.7	
Approach LOS		D			E			B			B	
Queue Length 50th (m)	6.6		65.3	111.3	112.8	64.2		115.3	20.2		145.8	0.0
Queue Length 95th (m)	16.7		96.7	#167.3	#168.6	99.2		211.9	m34.4		166.1	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	77		568	456	468	470		3253	1064		2697	981
Starvation Cap Reductn	0		0	0	0	0		22	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.30		0.54	0.84	0.83	0.66		0.88	0.50		0.72	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 24.7		Intersection LOS: C	

Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp

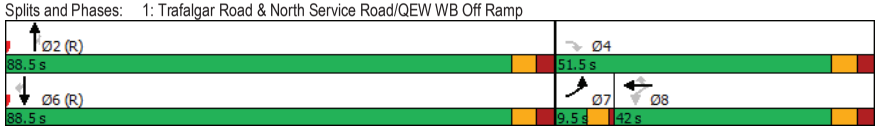


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Free		NA	Free		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		Free			Free			6
Detector Phase	7		4	8	8			2			6	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0			5.0			5.0	5.0
Minimum Split (s)	23.0		38.0	38.0	38.0			35.0			35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0			79.0			79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%			56.4%			56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0			72.0			72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0			4.0			4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0			3.0			3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0			-3.0			-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0			4.0			4.0	4.0
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
Recall Mode	None		None	None	None			C-Max			C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)			0	0	0			0			0	0
Act Effct Green (s)	8.2		44.2	36.3	36.3	140.0		87.8	140.0		87.8	87.8
Actuated g/C Ratio	0.06		0.32	0.26	0.26	1.00		0.63	1.00		0.63	0.63
v/c Ratio	0.21		0.54	0.77	0.77	0.27		0.96	0.38		1.10	0.01
Control Delay	66.7		37.2	59.9	59.9	0.4		26.7	0.3		79.1	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	66.7		37.2	59.9	59.9	0.4		26.7	0.3		79.1	0.0
LOS	E		D	E	E	A		C	A		E	A
Approach Delay		39.3			37.4			22.4			78.8	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	6.2		58.2	94.8	98.0	0.0		~346.0	0.0		~370.7	0.0
Queue Length 95th (m)	15.6		79.6	127.4	130.9	0.0		#401.9	m0.0		#420.6	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		675	454	466	1563		3187	1556		2643	964
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09		0.43	0.74	0.74	0.27		0.96	0.38		1.10	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 45.8		Intersection LOS: D	

Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			
#	95th percentile volume exceeds capacity, queue may be longer.		
	Queue shown is maximum after two cycles.		
m	Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	0	283	569	142	286	0	2614	490	0	1791	10
Future Volume (vph)	21	0	283	569	142	286	0	2614	490	0	1791	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98		1.00	0.93		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1724	1557		5085	1482		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1724	1557		5085	1482		4217	1497
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)	23	0	308	618	154	311	0	2841	533	0	1947	11
RTOR Reduction (vph)	0	0	21	0	0	49	0	0	121	0	0	4
Lane Group Flow (vph)	23	0	287	383	389	262	0	2841	412	0	1947	7
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	3.0		41.2	33.7	33.7	33.7		84.8	84.8		84.8	84.8
Effective Green, g (s)	4.0		44.2	36.7	36.7	36.7		87.8	87.8		87.8	87.8
Actuated g/C Ratio	0.03		0.32	0.26	0.26	0.26		0.63	0.63		0.63	0.63
Clearance Time (s)	4.5		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51		509	440	451	408		3189	929		2644	938
v/s Ratio Prot	0.01							c0.56			0.46	
v/s Ratio Perm			c0.18	c0.23	0.23	0.17			0.28			0.00
v/c Ratio	0.45		0.56	0.87	0.86	0.64		0.89	0.44		0.74	0.01
Uniform Delay, d1	66.9		39.9	49.4	49.2	45.8		22.1	13.5		18.1	9.8
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.60	0.65		1.00	1.00
Incremental Delay, d2	6.2		1.4	16.9	15.5	3.5		2.5	0.9		1.9	0.0
Delay (s)	73.1		41.3	66.3	64.8	49.3		15.7	9.7		20.0	9.8
Level of Service	E		D	E	E	D		B	A		B	A
Approach Delay (s)		43.5			60.9			14.7			19.9	
Approach LOS		D			E			B			B	

Intersection Summary				
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.5	
Intersection Capacity Utilization	83.3%	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)	20	0	265	491	137	382	0	2828	540	0	2682	12
Future Volume (vph)	20	0	265	491	137	382	0	2828	540	0	2682	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.99			0.97			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.972							
Satd. Flow (prot)	1805	0	1615	1681	1727	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.972							
Satd. Flow (perm)	1800	0	1615	1681	1727	1563	0	5085	1556	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			338			131			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	22	0	288	534	149	415	0	3074	587	0	2915	13
Shared Lane Traffic (%)				37%								
Lane Group Flow (vph)	22	0	288	336	347	415	0	3074	587	0	2915	13
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	3	8	18	4	8	78
Future Volume (Veh/h)	3	8	18	4	8	78
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	20	4	9	85
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			12		52	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		52	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	92
cM capacity (veh/h)			1607		945	1075

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	12	24	94
Volume Left	0	20	9
Volume Right	9	0	85
cSH	1700	1607	1061
Volume to Capacity	0.01	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.3
Control Delay (s)	0.0	6.1	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	6.1	8.7
Approach LOS			A

Intersection Summary			
Average Delay		7.4	
Intersection Capacity Utilization		19.8%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3104	1875	768
Future Volume (vph)	0	0	0	3104	1875	768
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3374	2038	835
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3374	2038	835
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	77.0%	ICU Level of Service D	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3104	1875	768
Future Volume (Veh/h)	0	0	0	3104	1875	768
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	0	0	3374	2038	835
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.38					
vC, conflicting volume	3163	679	2038			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	679	2038			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	96	394	273			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1125	1125	1125	679	679	679	835
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	835
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.66	0.66	0.66	0.40	0.40	0.40	0.49
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		77.0%	ICU Level of Service	D
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	3	8	18	4	8	78
Future Volume (vph)	3	8	18	4	8	78
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	0.899				0.878	
Flt Protected				0.960	0.995	
Satd. Flow (prot)	1675	0	0	1788	1627	0
Flt Permitted				0.960	0.995	
Satd. Flow (perm)	1675	0	0	1788	1627	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.1			666.7	58.4	
Travel Time (s)	11.5			48.0	4.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	9	20	4	9	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	24	94	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	19.8%		ICU Level of Service A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	607	145	23	62
Future Volume (Veh/h)	1	5	607	145	23	62
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	12	706	201	92	248
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	908				832	808
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908				832	808
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				73	35
cM capacity (veh/h)	462				337	383

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	907	340
Volume Left	4	0	92
Volume Right	0	201	248
cSH	462	1700	369
Volume to Capacity	0.01	0.53	0.92
Queue Length 95th (m)	0.2	0.0	76.8
Control Delay (s)	3.3	0.0	62.8
Lane LOS	A		F
Approach Delay (s)	3.3	0.0	62.8
Approach LOS			F

Intersection Summary			
Average Delay	17.0		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1090	548	0	2014	1875	0
Future Volume (vph)	1090	548	0	2014	1875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1185	596	0	2189	2038	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1185	596	0	2189	2038	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	67.0	67.0		73.0	73.0	
Total Split (%)	47.9%	47.9%		52.1%	52.1%	
Maximum Green (s)	60.0	60.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	60.0	60.0		72.0	72.0	
Actuated g/C Ratio	0.43	0.43		0.51	0.51	
v/c Ratio	0.79	0.88		0.84	0.78	
Control Delay	38.8	52.2		43.5	23.9	
Queue Delay	0.0	0.0		0.2	0.0	
Total Delay	38.8	52.2		43.7	23.9	
LOS	D	D		D	C	
Approach Delay	43.3			43.7	23.9	
Approach LOS	D			D	C	
Queue Length 50th (m)	145.7	150.7		240.5	121.6	
Queue Length 95th (m)	173.4	#214.7		m243.0	171.4	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1575	709		2615	2615	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		56	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.75	0.84		0.86	0.78	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 36.9		Intersection LOS: D	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	607	145	23	62
Future Volume (vph)	1	5	607	145	23	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.970		0.902	
Flt Protected		0.988			0.987	
Satd. Flow (prot)	0	1352	1621	0	1522	0
Flt Permitted		0.988			0.987	
Satd. Flow (perm)	0	1352	1621	0	1522	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	12	706	201	92	248
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	907	0	340	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.0%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	4	3	11	11	1
Future Volume (Veh/h)	0	4	3	11	11	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	8	4	15	29	4
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	25				26	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				26	18
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1595				910	1062

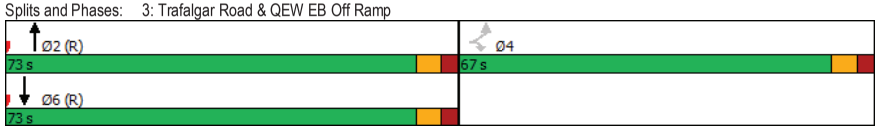
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	8	19	33
Volume Left	0	0	29
Volume Right	0	15	4
cSH	1595	1700	926
Volume to Capacity	0.00	0.01	0.04
Queue Length 95th (m)	0.0	0.0	0.9
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1090	548	0	2014	1875	0
Future Volume (vph)	1090	548	0	2014	1875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	596	0	2189	2038	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	1185	594	0	2189	2038	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	57.0	57.0		69.0	69.0	
Effective Green, g (s)	60.0	60.0		72.0	72.0	
Actuated g/C Ratio	0.43	0.43		0.51	0.51	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1500	674		2615	2615	
v/s Ratio Prot				c0.43	0.40	
v/s Ratio Perm	0.34	c0.38				
v/c Ratio	0.79	0.88		0.84	0.78	
Uniform Delay, d1	34.6	36.7		29.0	27.6	
Progression Factor	1.00	1.00		1.42	0.78	
Incremental Delay, d2	2.9	12.9		1.0	1.6	
Delay (s)	37.5	49.7		42.2	23.2	
Level of Service	D	D		D	C	
Approach Delay (s)	41.6			42.2	23.2	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	3	11	11	1
Future Volume (vph)	0	4	3	11	11	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.893		0.984	
Flt Protected					0.958	
Satd. Flow (prot)	0	1710	1527	0	1250	0
Flt Permitted					0.958	
Satd. Flow (perm)	0	1710	1527	0	1250	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	8	4	15	29	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	19	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

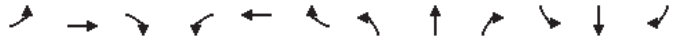
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	429	195	13	9	8
Future Volume (Veh/h)	25	429	195	13	9	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Hourly flow rate (vph)	36	740	222	26	15	16
Pedestrians			7		4	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			1		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			40			
pX, platoon unblocked						
vC, conflicting volume	252				688	128
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252				688	128
tC, single (s)	4.1				6.8	7.4
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.5
p0 queue free %	97				96	98
cM capacity (veh/h)	1321				371	827

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	36	370	370	148	100	31
Volume Left	36	0	0	0	0	15
Volume Right	0	0	0	0	26	16
cSH	1321	1700	1700	1700	1700	518
Volume to Capacity	0.03	0.22	0.22	0.09	0.06	0.06
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	1.5
Control Delay (s)	7.8	0.0	0.0	0.0	0.0	12.4
Lane LOS	A					B
Approach Delay (s)	0.4			0.0		12.4
Approach LOS						B

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		24.0%	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)	0	0	49	0	0	0	0	2014	920	0	1984	439
Future Volume (vph)	0	0	49	0	0	0	0	2014	920	0	1984	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.973	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4966	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4966	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	53	0	0	0	0	2189	1000	0	2157	477
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	53	0	0	0	0	2189	1000	0	2634	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

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)	0	0	49	0	0	0	0	2014	920	0	1984	439
Future Volume (Veh/h)	0	0	49	0	0	0	0	2014	920	0	1984	439
Sign Control		Stop			Stop			Free			Free	
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)	0	0	53	0	0	0	0	2189	1000	0	2157	477
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.79	0.79	0.67	0.79	0.79	0.76	0.67			0.76		
vC, conflicting volume	3149	4608	982	2908	4847	730	2658			2189		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	780	2627	0	475	2929	0	1761			1478		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	92	100	100	100	100			100		
cM capacity (veh/h)	220	19	702	343	12	834	237			353		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	53	730	730	730	1000	863	863	908
Volume Left	0	0	0	0	0	0	0	0
Volume Right	53	0	0	0	1000	0	0	477
cSH	702	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.43	0.43	0.43	0.59	0.51	0.51	0.53
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.5	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		60.3%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	429	195	13	9	8
Future Volume (vph)	25	429	195	13	9	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	5.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.930	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1624	3094	2796	0	1375	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1624	3094	2796	0	1375	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		281.3	40.1		41.7	
Travel Time (s)		20.3	2.9		3.0	
Confl. Peds. (#/hr)	4			4	7	
Peak Hour Factor	0.69	0.58	0.88	0.50	0.62	0.50
Heavy Vehicles (%)	0%	5%	16%	0%	0%	25%
Adj. Flow (vph)	36	740	222	26	15	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	740	248	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.0%	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 (vph)	59	183	205	228	129	5	18	3	14	17	24	42
Future Volume (vph)	59	183	205	228	129	5	18	3	14	17	24	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.87		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1530	2806		1570	2727		1566	1473		1463	1498	
Flt Permitted	0.64	1.00		0.39	1.00		0.71	1.00		0.74	1.00	
Satd. Flow (perm)	1033	2806		649	2727		1168	1473		1139	1498	
Peak-hour factor, PHF	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Adj. Flow (vph)	76	226	281	345	163	12	22	4	23	27	26	49
RTOR Reduction (vph)	0	137	0	0	3	0	0	19	0	0	41	0
Lane Group Flow (vph)	76	370	0	345	172	0	23	8	0	27	34	0
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		50.0	50.0		10.3	10.3		10.3	10.3	
Effective Green, g (s)	37.1	37.1		50.0	52.0		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.51	0.51		0.69	0.72		0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	530	1439		587	1961		198	250		193	254	
v/s Ratio Prot		0.13		c0.09	0.06			0.01			0.02	
v/s Ratio Perm	0.07			c0.32			0.02			c0.02		
v/c Ratio	0.14	0.26		0.59	0.09		0.12	0.03		0.14	0.14	
Uniform Delay, d1	9.2	9.9		4.9	3.0		25.4	25.0		25.5	25.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2		1.3	0.0		0.4	0.1		0.5	0.3	
Delay (s)	9.5	10.1		6.1	3.1		25.8	25.1		26.0	25.8	
Level of Service	A	B		A	A		C	C		C	C	
Approach Delay (s)		10.0			5.1			25.4			25.9	
Approach LOS		A			A			C			C	

Intersection Summary				
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	77.6%	ICU Level of Service	D	
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)	1122	248	172	226	242	351	179	1461	120	154	1429	460
Future Volume (vph)	1122	248	172	226	242	351	179	1461	120	154	1429	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor			0.95	0.98					0.83			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3343	1482	3433	3471	1599	1719	5136	1615	1805	5136	1568
Flt Permitted	0.950			0.950			0.093			0.099		
Satd. Flow (perm)	3400	3343	1413	3350	3471	1599	168	5136	1337	188	5136	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185			117			117			279
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1220	270	187	246	263	382	195	1588	130	167	1553	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1220	270	187	246	263	382	195	1588	130	167	1553	500
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	5.0	10.0	7.0	7.0	27.0	5.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	9.5	25.0	11.5	11.5	34.0	9.5	11.5	34.0	34.0
Total Split (s)	52.0	56.6	56.6	20.4	25.0	14.4	15.4	48.6	20.4	14.4	47.6	47.6
Total Split (%)	37.1%	40.4%	40.4%	14.6%	17.9%	10.3%	11.0%	34.7%	14.6%	10.3%	34.0%	34.0%
Maximum Green (s)	45.0	49.6	49.6	16.4	18.0	10.4	11.4	41.6	16.4	10.4	40.6	40.6
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	48.0	51.9	48.9	14.6	18.4	34.1	59.3	45.9	60.5	55.3	43.6	43.6
Actuated g/C Ratio	0.34	0.37	0.35	0.10	0.13	0.24	0.42	0.33	0.43	0.40	0.31	0.31
v/c Ratio	1.05	0.22	0.31	0.69	0.58	0.80	0.87	0.94	0.19	0.80	0.97	0.76
Control Delay	83.9	30.7	5.7	70.8	62.1	47.4	55.7	52.8	12.2	47.9	51.7	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.9	30.7	5.7	70.8	62.1	47.4	55.7	52.8	12.2	47.9	51.7	16.8
LOS	F	C	A	E	E	D	E	D	B	D	D	B
Approach Delay		66.6			58.2			50.4			43.6	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	~198.6	28.3	0.4	36.0	38.3	74.2	49.0	166.9	6.0	25.1	171.6	72.3
Queue Length 95th (m)	#242.2	39.1	17.2	50.6	52.7	116.1	m#53.5	m132.1	m7.1	m#50.6	#202.4	m119.5
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	1165	1256	620	402	520	477	225	1683	692	208	1599	654
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.21	0.30	0.61	0.51	0.80	0.87	0.94	0.19	0.80	0.97	0.76

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 53.2 Intersection LOS: D

Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

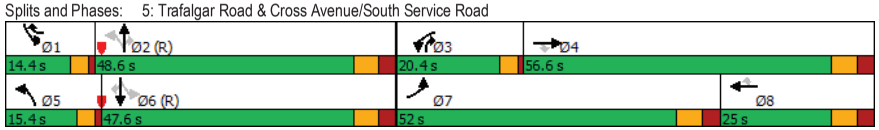
Splits and Phases: 8: Lyons Lane/Commercial Driveway & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	35.0	35.0		8.0	35.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	41.0	41.0		12.5	41.0		28.0	28.0		28.0	28.0	
Total Split (s)	41.0	41.0		21.0	62.0		28.0	28.0		28.0	28.0	
Total Split (%)	45.6%	45.6%		23.3%	68.9%		31.1%	31.1%		31.1%	31.1%	
Maximum Green (s)	35.0	35.0		17.0	56.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		51.9	51.9		12.3	12.3		12.3	12.3	
Actuated g/C Ratio	0.51	0.51		0.72	0.72		0.17	0.17		0.17	0.17	
v/c Ratio	0.14	0.32		0.57	0.09		0.12	0.10		0.14	0.25	
Control Delay	11.1	5.2		7.7	3.0		28.1	14.1		28.5	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.1	5.2		7.7	3.0		28.1	14.1		28.5	15.6	
LOS	B	A		A	A		C	B		C	B	
Approach Delay		6.0			6.1			20.5			19.0	
Approach LOS		A			A			C			B	
Queue Length 50th (m)	5.2	8.2		13.8	2.8		2.8	0.5		3.3	3.2	
Queue Length 95th (m)	12.0	15.3		16.4	4.8		8.4	5.4		7.2	14.7	
Internal Link Dist (m)		16.1			350.0			45.1			46.9	
Turn Bay Length (m)				25.0			20.0					
Base Capacity (vph)	528	1575		683	2195		387	504		378	530	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.32		0.51	0.08		0.06	0.05		0.07	0.14	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.2			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 7.7		Intersection LOS: A	

Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1122	248	172	226	242	351	179	1461	120	154	1429	460
Future Volume (vph)	1122	248	172	226	242	351	179	1461	120	154	1429	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.87	1.00	1.00	0.95
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3343	1413	3433	3471	1599	1719	5136	1408	1805	5136	1485
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.09	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	3343	1413	3433	3471	1599	169	5136	1408	188	5136	1485
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)	1220	270	187	246	263	382	195	1588	130	167	1553	500
RTOR Reduction (vph)	0	0	120	0	0	94	0	0	69	0	0	192
Lane Group Flow (vph)	1220	270	67	246	263	288	195	1588	61	167	1553	308
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	45.0	48.9	48.9	14.6	15.5	27.2	56.8	42.8	57.4	52.2	40.5	40.5
Effective Green, g (s)	48.0	51.9	48.9	14.6	18.5	27.2	56.8	45.8	57.4	52.2	43.5	43.5
Actuated g/C Ratio	0.34	0.37	0.35	0.10	0.13	0.19	0.41	0.33	0.41	0.37	0.31	0.31
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1165	1239	493	358	458	310	223	1680	577	205	1595	461
v/s Ratio Prot	c0.36	0.08		0.07	0.08	c0.08	c0.09	c0.31	0.01	0.07	0.30	
v/s Ratio Perm			0.05			0.10	0.27		0.03	0.24		0.21
v/c Ratio	1.05	0.22	0.14	0.69	0.57	0.93	0.87	0.95	0.11	0.81	0.97	0.67
Uniform Delay, d1	46.0	30.2	31.1	60.5	57.1	55.4	37.7	45.9	25.5	35.6	47.7	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.38	1.06	2.57	0.99	0.83	0.61
Incremental Delay, d2	39.6	0.1	0.1	5.4	1.7	32.6	10.0	4.2	0.0	14.1	12.5	4.7
Delay (s)	85.6	30.2	31.2	65.9	58.8	88.0	62.0	53.0	65.5	49.2	52.0	30.2
Level of Service	F	C	C	E	E	F	E	D	E	D	D	C
Approach Delay (s)		70.6			73.3			54.8			46.8	
Approach LOS		E			E			D			D	

Intersection Summary				
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	92.0%	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)	59	183	205	228	129	5	18	3	14	17	24	42
Future Volume (vph)	59	183	205	228	129	5	18	3	14	17	24	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	0.0		0.0	25.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.917			0.990			0.872			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1540	2805	0	1570	2727	0	1570	1471	0	1468	1497	0
Flt Permitted	0.641			0.393			0.708			0.740		
Satd. Flow (perm)	1030	2805	0	649	2727	0	1166	1471	0	1139	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		281			12			23			49	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		40.1			374.0			69.1			70.9	
Travel Time (s)		2.9			26.9			5.0			5.1	
Confl. Peds. (#/hr)	5		1	1		5	3		3	3		3
Peak Hour Factor	0.78	0.81	0.73	0.66	0.79	0.42	0.80	0.75	0.60	0.62	0.92	0.86
Heavy Vehicles (%)	2%	11%	0%	0%	19%	0%	0%	0%	0%	7%	0%	3%
Adj. Flow (vph)	76	226	281	345	163	12	23	4	23	27	26	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	507	0	345	175	0	23	27	0	27	75	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)		3.3			3.3			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	404	15	41	628	24	21	0	51	118	17	521
Future Volume (vph)	33	404	15	41	628	24	21	0	51	118	17	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.97	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1569	3049		817	3190		805	722		1525	1387	
Flt Permitted	0.37	1.00		0.33	1.00		0.14	1.00		0.71	1.00	
Satd. Flow (perm)	610	3049		285	3190		121	722		1139	1387	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	63	464	23	49	714	30	40	0	73	151	27	585
RTOR Reduction (vph)	0	5	0	0	4	0	0	45	0	0	142	0
Lane Group Flow (vph)	63	482	0	49	740	0	40	28	0	151	470	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.6	22.6		34.8	34.8		26.0	26.0		26.0	26.0	
Effective Green, g (s)	24.6	24.6		34.8	36.8		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.34	0.34		0.48	0.51		0.38	0.38		0.38	0.38	
Clearance Time (s)	6.0	6.0		4.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	206	1030		196	1612		46	277		438	533	
v/s Ratio Prot		0.16		0.03	c0.23			0.04			c0.34	
v/s Ratio Perm	0.10			0.09			0.33			0.13		
v/c Ratio	0.31	0.47		0.25	0.46		0.87	0.10		0.34	0.88	
Uniform Delay, d1	17.8	19.0		11.0	11.6		20.7	14.3		15.9	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.7		0.5	0.4		85.4	0.2		0.6	16.2	
Delay (s)	19.6	19.7		11.5	12.0		106.1	14.6		16.5	37.0	
Level of Service	B	B		B	B		F	B		B	D	
Approach Delay (s)		19.6			12.0			47.0			33.0	
Approach LOS		B			B			D			C	

Intersection Summary				
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	81.6%	ICU Level of Service	D	
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)	559	657	213	59	894	718	152	482	43	577	683	564
Future Volume (vph)	559	657	213	59	894	718	152	482	43	577	683	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99		0.94			0.97	0.98		0.95
Frt		0.963				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3330	0	1805	3574	1599	1770	3610	1615	3433	1900	1583
Flt Permitted	0.950			0.206			0.118			0.950		
Satd. Flow (perm)	3423	3330	0	388	3574	1503	220	3610	1559	3369	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38				313			187			299
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	608	714	232	64	972	780	165	524	47	627	742	613
Shared Lane Traffic (%)												
Lane Group Flow (vph)	608	946	0	64	972	780	165	524	47	627	742	613
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	26.0	60.0		12.0	46.0	46.0	12.0	41.0	41.0	27.0	56.0	56.0
Total Split (%)	18.6%	42.9%		8.6%	32.9%	32.9%	8.6%	29.3%	29.3%	19.3%	40.0%	40.0%
Maximum Green (s)	21.0	55.0		7.0	39.0	39.0	7.0	34.0	34.0	22.0	49.0	49.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	22.0	60.4		50.0	42.0	42.0	45.0	37.0	37.0	23.0	52.0	52.0
Actuated g/C Ratio	0.16	0.43		0.36	0.30	0.30	0.32	0.26	0.26	0.16	0.37	0.37
v/c Ratio	1.12	0.65		0.29	0.91	1.16	1.04	0.55	0.09	1.11	1.05	0.82
Control Delay	127.7	33.2		24.3	59.9	116.1	114.0	46.9	0.3	130.8	89.7	42.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	127.7	33.2		24.3	59.9	116.1	114.0	46.9	0.3	130.8	89.7	43.5
LOS	F	C		C	E	F	F	D	A	F	F	D
Approach Delay		70.2			82.7			59.0			88.4	
Approach LOS		E			F			E			F	
Queue Length 50th (m)	~104.5	112.3		9.7	143.7	~201.9	~33.4	69.5	0.0	~110.6	~225.1	105.1
Queue Length 95th (m)	#143.5	137.2		18.5	#182.3	#282.9	#82.7	88.9	0.0	m#123.8	m#252.7	m117.4
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0			80.0		
Base Capacity (vph)	544	1458		219	1072	670	159	954	549	563	705	746
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	27
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.65		0.29	0.91	1.16	1.04	0.55	0.09	1.11	1.05	0.85

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 78.5 Intersection LOS: E

Intersection Capacity Utilization 81.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

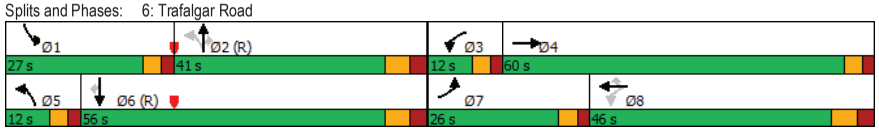
Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		8.0	22.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	45.0	45.0		12.5	29.0		29.0	29.0		29.0	29.0	
Total Split (s)	45.4	45.4		12.6	58.0		32.0	32.0		32.0	32.0	
Total Split (%)	50.4%	50.4%		14.0%	64.4%		35.6%	35.6%		35.6%	35.6%	
Maximum Green (s)	39.4	39.4		8.6	52.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		0.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		2.5	5.0		4.0	4.0		4.0	4.0	
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0			16.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	24.6	24.6		36.8	36.8		28.0	28.0		28.0	28.0	
Actuated g/C Ratio	0.34	0.34		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.31	0.47		0.24	0.46		0.87	0.15		0.35	0.91	
Control Delay	22.8	20.5		12.5	12.6		130.2	0.6		19.1	33.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.8	20.5		12.5	12.6		130.2	0.6		19.1	33.8	
LOS	C	C		B	B		F	A		B	C	
Approach Delay		20.7			12.6			46.5			30.9	
Approach LOS		C			B			D			C	
Queue Length 50th (m)	6.6	28.0		3.5	33.6		5.1	0.0		14.7	52.3	
Queue Length 95th (m)	8.7	39.8		8.3	45.4		#11.7	0.0		26.2	44.9	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0			20.0						15.0		
Base Capacity (vph)	346	1737		207	2368		46	500		434	674	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.28		0.24	0.31		0.87	0.15		0.35	0.91	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 72.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 22.6		Intersection LOS: C	

Intersection Capacity Utilization 98.4%	ICU Level of Service F
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	559	657	213	59	894	718	152	482	43	577	683	564
Future Volume (vph)	559	657	213	59	894	718	152	482	43	577	683	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3331		1802	3574	1503	1770	3610	1559	3433	1900	1503
Flt Permitted	0.95	1.00		0.21	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3331		391	3574	1503	219	3610	1559	3433	1900	1503
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)	608	714	232	64	972	780	165	524	47	627	742	613
RTOR Reduction (vph)	0	22	0	0	0	217	0	0	35	0	0	190
Lane Group Flow (vph)	608	924	0	64	972	563	165	524	12	627	742	423
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Actuated Green, G (s)	21.0	57.4		45.6	40.0	40.0	40.0	33.0	33.0	22.0	48.0	48.0
Effective Green, g (s)	22.0	60.4		47.6	43.0	43.0	42.0	36.0	36.0	23.0	51.0	51.0
Actuated g/C Ratio	0.16	0.43		0.34	0.31	0.31	0.30	0.26	0.26	0.16	0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1437		199	1097	461	154	928	400	563	692	547
v/s Ratio Prot	c0.18	0.28		0.02	0.27		0.06	0.15		c0.18	c0.39	
v/s Ratio Perm				0.09		c0.37	0.26		0.01			0.28
v/c Ratio	1.12	0.64		0.32	0.89	1.22	1.07	0.56	0.03	1.11	1.07	0.77
Uniform Delay, d1	59.0	31.3		32.3	46.2	48.5	44.4	45.2	38.9	58.5	44.5	39.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.34	1.24	1.89
Incremental Delay, d2	75.1	1.0		0.9	8.8	117.9	92.8	2.5	0.1	63.2	45.6	5.1
Delay (s)	134.1	32.3		33.2	55.0	166.4	137.2	47.7	39.1	141.4	100.7	79.5
Level of Service	F	C		C	D	F	F	D	D	F	F	E
Approach Delay (s)		72.1			102.1			67.2			107.0	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	91.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.4%	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)	33	404	15	41	628	24	21	0	51	118	17	521
Future Volume (vph)	33	404	15	41	628	24	21	0	51	118	17	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.94		0.96	0.99	
Frt		0.993			0.994			0.850			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3049	0	818	3190	0	805	717	0	1570	1387	0
Flt Permitted	0.369			0.332			0.143			0.709		
Satd. Flow (perm)	610	3049	0	285	3190	0	121	717	0	1131	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			8			365			230	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	63	464	23	49	714	30	40	0	73	151	27	585
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	487	0	49	744	0	40	73	0	151	612	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	541	84	21	443	657	56	374	53	613	558	374
Future Volume (vph)	404	541	84	21	443	657	56	374	53	613	558	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.97
Flpb, ped/bikes	1.00	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	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3471	1524	1703	3505	1460	1770	3488		3367	1863	1474
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3471	1524	1703	3505	1460	1770	3488		3367	1863	1474
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)	439	588	91	23	482	714	61	407	58	666	607	407
RTOR Reduction (vph)	0	0	53	0	0	286	0	8	0	0	0	191
Lane Group Flow (vph)	439	588	38	23	482	428	61	457	0	666	607	216
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	18.0	54.8	54.8	4.2	39.0	39.0	5.6	32.0		27.0	53.4	53.4
Effective Green, g (s)	19.0	57.8	57.8	5.2	42.0	42.0	6.6	35.0		28.0	56.4	56.4
Actuated g/C Ratio	0.14	0.41	0.41	0.04	0.30	0.30	0.05	0.25		0.20	0.40	0.40
Clearance Time (s)	5.0	5.0	5.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	465	1433	629	63	1051	438	83	872		673	750	593
v/s Ratio Prot	c0.13	0.17		0.01	0.14		0.03	0.13		c0.20	c0.33	
v/s Ratio Perm			0.02			c0.29						0.15
v/c Ratio	0.94	0.41	0.06	0.37	0.46	0.98	0.73	0.52		0.99	0.81	0.36
Uniform Delay, d1	60.0	29.1	24.7	65.8	39.8	48.5	65.8	45.3		55.9	37.0	29.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.47	0.93	1.62
Incremental Delay, d2	28.0	0.2	0.0	3.6	0.3	36.9	28.3	2.2		23.0	5.3	1.0
Delay (s)	88.0	29.2	24.8	69.4	40.1	85.4	94.1	47.6		105.0	39.7	48.4
Level of Service	F	C	C	E	D	F	F	D		F	D	D
Approach Delay (s)		51.9			67.2			53.0			67.7	
Approach LOS		D			E			D			E	

Intersection Summary				
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.2%	ICU Level of Service	D	
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)	29	1025	44	117	450	76	92	2	106	175	21	191
Future Volume (vph)	29	1025	44	117	450	76	92	2	106	175	21	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.96	0.97	0.97	
Frt			0.850			0.850			0.850		0.865	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3249	727	797	3249	1454	785	855	727	1570	1308	0
Flt Permitted	0.481			0.090			0.287			0.752		
Satd. Flow (perm)	787	3249	706	76	3249	1395	235	855	698	1209	1308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			94			158		245	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	44	1265	59	124	474	94	131	8	158	203	28	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	1265	59	124	474	94	131	8	158	203	273	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

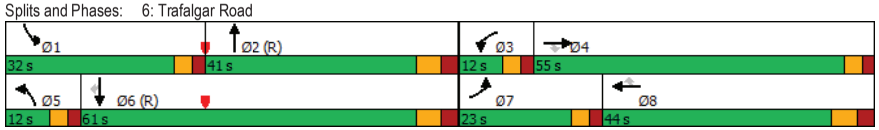
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	46.5	46.5	46.5	17.0	63.5	63.5	13.0	42.0	42.0	29.0	29.0	
Total Split (%)	44.1%	44.1%	44.1%	16.1%	60.2%	60.2%	12.3%	39.8%	39.8%	27.5%	27.5%	
Maximum Green (s)	40.5	40.5	40.5	13.0	57.5	57.5	8.5	36.0	36.0	23.0	23.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	42.6	42.6	42.6	59.6	59.6	59.6	37.1	35.6	33.6	22.6	22.6	
Actuated g/C Ratio	0.41	0.41	0.41	0.58	0.58	0.58	0.36	0.34	0.33	0.22	0.22	
v/c Ratio	0.14	0.94	0.16	0.93	0.25	0.11	0.94	0.03	0.47	0.77	0.57	
Control Delay	21.3	44.8	1.0	88.7	11.6	2.6	92.1	22.5	9.3	57.8	11.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.3	44.8	1.0	88.7	11.6	2.6	92.1	22.5	9.3	57.8	11.5	
LOS	C	D	A	F	B	A	F	C	A	E	B	
Approach Delay		42.2			24.2			46.2			31.3	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	5.9	138.1	0.0	18.9	26.0	0.0	21.0	1.1	0.0	40.4	4.7	
Queue Length 95th (m)	9.9	144.8	0.0	#57.0	35.4	5.3	#35.9	1.3	4.3	#65.4	13.9	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	324	1339	361	134	1876	844	140	315	346	293	502	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.94	0.16	0.93	0.25	0.11	0.94	0.03	0.46	0.69	0.54	

Intersection Summary

Area Type: CBD
Cycle Length: 105.5
Actuated Cycle Length: 103.2
Natural Cycle: 100
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 36.4 Intersection LOS: D

Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0	10.0	7.0	20.0		7.0	20.0	20.0
Minimum Split (s)	12.0	37.0	37.0	12.0	37.0	37.0	12.0	39.0		12.0	39.0	39.0
Total Split (s)	23.0	55.0	55.0	12.0	44.0	44.0	12.0	41.0		32.0	61.0	61.0
Total Split (%)	16.4%	39.3%	39.3%	8.6%	31.4%	31.4%	8.6%	29.3%		22.9%	43.6%	43.6%
Maximum Green (s)	18.0	50.0	50.0	7.0	37.0	37.0	7.0	34.0		27.0	54.0	54.0
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0		-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0			0	0
Act Effct Green (s)	19.0	57.8	57.8	8.0	40.0	40.0	8.0	37.0		28.0	59.4	59.4
Actuated g/C Ratio	0.14	0.41	0.41	0.06	0.29	0.29	0.06	0.26		0.20	0.42	0.42
v/c Ratio	0.94	0.41	0.13	0.24	0.48	1.01	0.60	0.50		0.99	0.77	0.50
Control Delay	89.5	31.1	0.7	69.4	43.4	57.3	88.8	44.8		102.9	37.5	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	89.5	31.1	0.7	69.4	43.4	57.3	88.8	44.8		102.9	37.5	12.2
LOS	F	C	A	E	D	E	F	D		F	D	B
Approach Delay		51.5			52.0			49.9			57.3	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	66.2	67.1	0.0	6.5	61.4	~117.8	17.7	59.3		106.6	90.4	26.0
Queue Length 95th (m)	#99.7	84.7	1.1	16.5	79.4	#206.0	#37.8	77.5		m#142.2	m128.8	m48.1
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0		30.0	80.0			25.0			80.0		
Base Capacity (vph)	465	1433	715	97	1001	708	101	929		673	790	809
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.94	0.41	0.13	0.24	0.48	1.01	0.60	0.50		0.99	0.77	0.50

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 53.6 Intersection LOS: D

Intersection Capacity Utilization 76.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1025	44	117	450	76	92	2	106	175	21	191
Future Volume (vph)	29	1025	44	117	450	76	92	2	106	175	21	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1554	3249	706	797	3249	1396	784	855	699	1529	1309	
Flt Permitted	0.48	1.00	1.00	0.09	1.00	1.00	0.29	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	786	3249	706	75	3249	1396	237	855	699	1211	1309	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	44	1265	59	124	474	94	131	8	158	203	28	245
RTOR Reduction (vph)	0	0	35	0	0	40	0	0	107	0	191	0
Lane Group Flow (vph)	44	1265	24	124	474	54	131	8	51	203	82	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	40.6	40.6	40.6	57.6	57.6	57.6	33.6	33.6	33.6	20.6	20.6	
Effective Green, g (s)	42.6	42.6	42.6	57.6	59.6	59.6	35.6	35.6	33.6	22.6	22.6	
Actuated g/C Ratio	0.41	0.41	0.41	0.56	0.58	0.58	0.34	0.34	0.33	0.22	0.22	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	324	1341	291	132	1876	806	137	294	227	265	286	
v/s Ratio Prot		0.39		c0.12	0.15		c0.10	0.01			0.06	
v/s Ratio Perm	0.06		0.03	c0.40		0.04	c0.23		0.07	0.17		
v/c Ratio	0.14	0.94	0.08	0.94	0.25	0.07	0.96	0.03	0.23	0.77	0.29	
Uniform Delay, d1	18.8	29.1	18.4	29.8	10.8	9.6	30.5	22.4	25.3	37.8	33.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	13.7	0.3	59.2	0.1	0.1	62.9	0.1	0.7	13.1	0.8	
Delay (s)	19.3	42.8	18.7	89.0	10.9	9.7	93.4	22.4	26.0	50.9	34.3	
Level of Service	B	D	B	F	B	A	F	C	C	D	C	
Approach Delay (s)		41.0			24.8			55.7			41.4	
Approach LOS		D			C			E			D	

Intersection Summary				
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	103.2	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	76.4%	ICU Level of Service	D	
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)	404	541	84	21	443	657	56	374	53	613	558	374
Future Volume (vph)	404	541	84	21	443	657	56	374	53	613	558	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		30.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		1	1		1	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00
Ped Bike Factor	0.97		0.95	0.99		0.93	0.99	0.99		0.96		0.97
Frt			0.850			0.850		0.981				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3471	1599	1703	3505	1568	1770	3487	0	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3331	3471	1524	1682	3505	1460	1754	3487	0	3243	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			408		11				320
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	439	588	91	23	482	714	61	407	58	666	607	407
Shared Lane Traffic (%)												
Lane Group Flow (vph)	439	588	91	23	482	714	61	465	0	666	607	407
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	492	94	125	47	94	134	131	1302	59	287	1506	461
Future Volume (vph)	492	94	125	47	94	134	131	1302	59	287	1506	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.99	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3213	1568		1745	1759	1531	1641	4962		1752	4808	
Flt Permitted	0.95	1.00		0.61	1.00	1.00	0.07	1.00		0.07	1.00	
Satd. Flow (perm)	3213	1568		1122	1759	1531	124	4962		126	4808	
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)	535	102	136	51	102	146	142	1415	64	312	1637	501
RTOR Reduction (vph)	0	34	0	0	0	128	0	3	0	0	37	0
Lane Group Flow (vph)	535	204	0	51	102	18	142	1476	0	312	2101	0
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Actuated Green, G (s)	21.0	28.4		24.1	14.5	14.5	67.2	55.6		83.5	67.9	
Effective Green, g (s)	24.0	31.4		30.1	17.5	17.5	67.2	58.6		83.5	70.9	
Actuated g/C Ratio	0.17	0.22		0.22	0.12	0.12	0.48	0.42		0.60	0.51	
Clearance Time (s)	7.0	7.0		4.5	7.0	7.0	4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	550	351		297	219	191	185	2076		352	2434	
v/s Ratio Prot	c0.17	c0.13		0.02	0.06		0.06	0.30		c0.15	c0.44	
v/s Ratio Perm				0.02		0.01	0.30			0.38		
v/c Ratio	0.97	0.58		0.17	0.47	0.10	0.77	0.71		0.89	0.86	
Uniform Delay, d1	57.7	48.4		44.4	56.9	54.2	32.5	33.7		42.9	30.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.88	1.21		1.19	0.65	
Incremental Delay, d2	31.3	2.4		0.3	1.6	0.2	9.8	1.1		2.8	0.4	
Delay (s)	89.0	50.9		44.7	58.5	54.5	38.3	42.0		53.9	20.2	
Level of Service	F	D		D	E	D	D	D		D	C	
Approach Delay (s)		77.2			54.2			41.7			24.5	
Approach LOS		E			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.9%	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)	35	193	7	23	542	54	158	1	226	48	2	26
Future Volume (vph)	35	193	7	23	542	54	158	1	226	48	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1388	2954	1425	1593	3154	1454	1593	1676	1425	1624	1676	1398
Flt Permitted	0.273			0.620			0.757			0.757		
Satd. Flow (perm)	399	2954	1425	1039	3154	1421	1269	1676	1425	1277	1676	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			93			246			63
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			172.6			41.7	
Travel Time (s)		20.3			2.9			12.4			3.0	
Confl. Peds. (#/hr)	1					1				9		
Peak Hour Factor	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	70	210	8	25	645	93	172	1	246	109	2	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	210	8	25	645	93	172	1	246	109	2	63
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	41.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	54.4%	54.4%	54.4%	54.4%	54.4%	54.4%	45.6%	45.6%	45.6%	45.6%	45.6%	45.6%
Maximum Green (s)	44.5	44.5	44.5	44.5	44.5	44.5	36.5	36.5	36.5	36.5	36.5	36.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	18.6	18.6	18.6	18.6	18.6	18.6	36.7	36.7	36.7	36.7	36.7	36.7
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
v/c Ratio	0.61	0.25	0.02	0.08	0.71	0.19	0.24	0.00	0.27	0.15	0.00	0.08
Control Delay	43.5	17.8	4.3	16.6	24.9	5.2	9.0	8.0	2.2	8.4	7.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	17.8	4.3	16.6	24.9	5.2	9.0	8.0	2.2	8.4	7.5	2.8
LOS	D	B	A	B	C	A	A	A	A	A	A	A
Approach Delay		23.7			22.2			5.0			6.3	
Approach LOS		C			C			A			A	
Queue Length 50th (m)	7.5	10.4	0.0	2.3	37.4	0.0	9.7	0.1	0.0	5.8	0.1	0.0
Queue Length 95th (m)	9.4	17.8	1.7	7.2	48.8	2.3	23.9	0.8	9.8	7.0	1.1	0.1
Internal Link Dist (m)		257.3			16.1			148.6			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	277	2053	995	722	2192	1016	723	955	918	728	955	824
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.10	0.01	0.03	0.29	0.09	0.24	0.00	0.27	0.15	0.00	0.08

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 64.3			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 48.5%		ICU Level of Service A	

Intersection Capacity Utilization 82.9% ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road

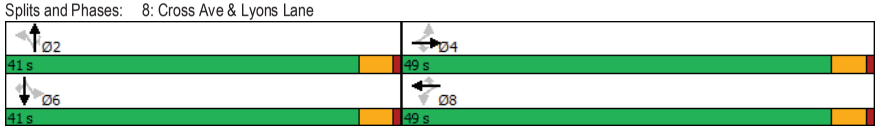
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2			6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	5.0		12.0	10.0	10.0	7.0	27.0		7.0	27.0	
Minimum Split (s)	17.0	25.0		17.0	25.0	25.0	11.5	34.0		11.5	34.0	
Total Split (s)	28.0	36.0		17.0	25.0	25.0	16.6	56.8		30.2	70.4	
Total Split (%)	20.0%	25.7%		12.1%	17.9%	17.9%	11.9%	40.6%		21.6%	50.3%	
Maximum Green (s)	21.0	29.0		12.5	18.0	18.0	12.6	49.8		26.2	63.4	
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0	3.0	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	-3.0	0.0	-3.0		0.0	-3.0	
Total Lost Time (s)	4.0	4.0		1.5	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	24.0	31.4		34.1	16.6	16.6	71.1	59.5		87.4	71.8	
Actuated g/C Ratio	0.17	0.22		0.24	0.12	0.12	0.51	0.42		0.62	0.51	
v/c Ratio	0.97	0.62		0.15	0.49	0.43	0.76	0.70		0.88	0.85	
Control Delay	89.5	47.9		32.4	65.2	6.8	43.1	42.5		49.1	19.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	89.5	47.9		32.4	65.2	6.8	43.1	42.5		49.1	19.9	
LOS	F	D		C	E	A	D	D		D	B	
Approach Delay		76.7			31.1			42.5			23.6	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	80.8	53.2		10.2	28.3	0.0	26.5	115.2		63.4	55.0	
Queue Length 95th (m)	#118.3	81.0		19.4	46.3	10.1	m34.8	m142.4		m59.6	m46.1	
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0			25.0			50.0			25.0		
Base Capacity (vph)	550	413		346	263	385	206	2113		388	2501	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.97	0.58		0.15	0.39	0.38	0.69	0.70		0.80	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 38.0 Intersection LOS: D

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

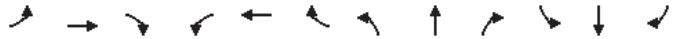


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	193	7	23	542	54	158	1	226	48	2	26
Future Volume (vph)	35	193	7	23	542	54	158	1	226	48	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	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	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1388	2954	1425	1593	3154	1422	1593	1676	1425	1609	1676	1398
Flt Permitted	0.27	1.00	1.00	0.62	1.00	1.00	0.76	1.00	1.00	0.76	1.00	1.00
Satd. Flow (perm)	399	2954	1425	1040	3154	1422	1268	1676	1425	1282	1676	1398
Peak-hour factor, PHF	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Adj. Flow (vph)	70	210	8	25	645	93	172	1	246	109	2	63
RTOR Reduction (vph)	0	0	6	0	0	66	0	0	106	0	0	27
Lane Group Flow (vph)	70	210	2	25	645	27	172	1	140	109	2	36
Confl. Peds. (#/hr)	1					1				9		
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.6	18.6	18.6	18.6	18.6	18.6	36.7	36.7	36.7	36.7	36.7	36.7
Effective Green, g (s)	18.6	18.6	18.6	18.6	18.6	18.6	36.7	36.7	36.7	36.7	36.7	36.7
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	854	412	300	912	411	723	956	813	731	956	797
v/s Ratio Prot		0.07			c0.20			0.00			0.00	
v/s Ratio Perm	0.18		0.00	0.02		0.02	c0.14		0.10	0.08		0.03
v/c Ratio	0.61	0.25	0.01	0.08	0.71	0.07	0.24	0.00	0.17	0.15	0.00	0.05
Uniform Delay, d1	19.7	17.5	16.3	16.6	20.4	16.6	6.9	5.9	6.6	6.5	5.9	6.1
Progression 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
Incremental Delay, d2	8.8	0.2	0.0	0.1	2.5	0.1	0.8	0.0	0.5	0.4	0.0	0.1
Delay (s)	28.5	17.6	16.3	16.8	22.9	16.6	7.6	5.9	7.0	6.9	5.9	6.2
Level of Service	C	B	B	B	C	B	A	A	A	A	A	A
Approach Delay (s)		20.2			22.0			7.3			6.6	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.40			
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
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)	492	94	125	47	94	134	131	1302	59	287	1506	461
Future Volume (vph)	492	94	125	47	94	134	131	1302	59	287	1506	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	50.0		0.0	25.0		0.0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.99		0.99			0.99	
Frt		0.914				0.850		0.994			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	1568	0	1752	1759	1553	1641	4965	0	1752	4809	0
Flt Permitted	0.950			0.611			0.072			0.068		
Satd. Flow (perm)	3206	1568	0	1120	1759	1531	124	4965	0	125	4809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44				183		6			75	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	535	102	136	51	102	146	142	1415	64	312	1637	501
Shared Lane Traffic (%)												
Lane Group Flow (vph)	535	238	0	51	102	146	142	1479	0	312	2138	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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	37	0	0	0	0	1311	629	0	2341	775
Future Volume (Veh/h)	0	0	37	0	0	0	0	1311	629	0	2341	775
Sign Control		Stop			Stop			Free			Free	
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)	0	0	40	0	0	0	0	1425	684	0	2545	842
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.58	0.58	0.50	0.58	0.58	0.86	0.50			0.86		
vC, conflicting volume	3465	4415	1293	2273	4836	475	3411			1425		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1030	2681	0	0	3413	0	2340			914		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	92	100	100	100	100			100		
cM capacity (veh/h)	106	13	526	538	4	936	106			647		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	40	475	475	475	684	1018	1018	1351
Volume Left	0	0	0	0	0	0	0	0
Volume Right	40	0	0	0	684	0	0	842
cSH	526	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.28	0.28	0.28	0.40	0.60	0.60	0.79
Queue Length 95th (m)	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	12.4	0.0				0.0		
Approach LOS	B							

Intersection Summary					
Average Delay			0.1		
Intersection Capacity Utilization			73.1%	ICU Level of Service	D
Analysis Period (min)			15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	6	1	6	15	6
Future Volume (vph)	4	6	1	6	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.904		0.957	
Flt Protected		0.974			0.967	
Satd. Flow (prot)	0	1666	1336	0	1582	0
Flt Permitted		0.974			0.967	
Satd. Flow (perm)	0	1666	1336	0	1582	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	11	10	4	10	30	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	14	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary				
Area Type:	CBD			
Control Type: Unsignalized				
Intersection Capacity Utilization	15.4%		ICU Level of Service A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	6	1	6	15	6
Future Volume (Veh/h)	4	6	1	6	15	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	11	10	4	10	30	14
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	21				48	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				48	16
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	99
cM capacity (veh/h)	1599				954	1063

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	21	14	44
Volume Left	11	0	30
Volume Right	0	10	14
cSH	1599	1700	986
Volume to Capacity	0.01	0.01	0.04
Queue Length 95th (m)	0.2	0.0	1.1
Control Delay (s)	3.8	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	3.8	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		5.9	
Intersection Capacity Utilization		15.4%	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)	0	0	37	0	0	0	0	1311	629	0	2341	775
Future Volume (vph)	0	0	37	0	0	0	0	1311	629	0	2341	775
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.963	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4921	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4921	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	40	0	0	0	0	1425	684	0	2545	842
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	40	0	0	0	0	1425	684	0	3387	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	73.1%	ICU Level of Service D	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	963	707	0	1311	2409	0
Future Volume (vph)	963	707	0	1311	2409	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1047	768	0	1425	2618	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1047	767	0	1425	2618	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	59.0	59.0		67.0	67.0	
Effective Green, g (s)	62.0	62.0		70.0	70.0	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1505	708		2446	2494	
v/s Ratio Prot				0.29	c0.52	
v/s Ratio Perm	0.31	c0.48				
v/c Ratio	0.70	1.08		0.58	1.05	
Uniform Delay, d1	31.4	39.0		24.7	35.0	
Progression Factor	1.00	1.00		1.83	0.89	
Incremental Delay, d2	1.4	58.9		0.7	23.7	
Delay (s)	32.8	97.9		45.7	54.7	
Level of Service	C	F		D	D	
Approach Delay (s)	60.3			45.7	54.7	
Approach LOS	E			D	D	

Intersection Summary			
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	118.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	9	327	96	15	16
Future Volume (vph)	12	9	327	96	15	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963		0.925	
Flt Protected		0.971			0.978	
Satd. Flow (prot)	0	1578	1535	0	1547	0
Flt Permitted		0.971			0.978	
Satd. Flow (perm)	0	1578	1535	0	1547	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	27	18	376	141	20	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	45	517	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	35.6%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	9	327	96	15	16
Future Volume (Veh/h)	12	9	327	96	15	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	27	18	376	141	20	25
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	517				524	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517				524	446
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				96	96
cM capacity (veh/h)	1059				502	616

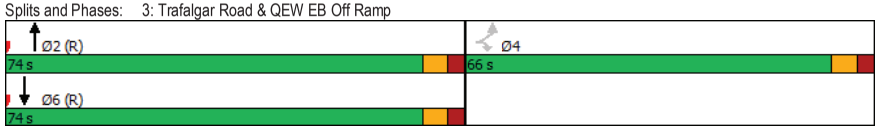
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	45	517	45
Volume Left	27	0	20
Volume Right	0	141	25
cSH	1059	1700	560
Volume to Capacity	0.03	0.30	0.08
Queue Length 95th (m)	0.6	0.0	2.1
Control Delay (s)	5.2	0.0	12.0
Lane LOS	A		B
Approach Delay (s)	5.2	0.0	12.0
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	66.0	66.0		74.0	74.0	
Total Split (%)	47.1%	47.1%		52.9%	52.9%	
Maximum Green (s)	59.0	59.0		67.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	62.0	62.0		70.0	70.0	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
v/c Ratio	0.70	1.08		0.58	1.05	
Control Delay	34.4	96.4		46.1	54.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	34.4	96.4		46.1	54.6	
LOS	C	F		D	D	
Approach Delay	60.7			46.1	54.6	
Approach LOS	E			D	D	
Queue Length 50th (m)	124.8	~250.5		159.3	~302.7	
Queue Length 95th (m)	150.0	#330.8		m173.0	m196.9	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1505	708		2446	2494	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.70	1.08		0.58	1.05	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 54.4		Intersection LOS: D	
Intersection Capacity Utilization 118.3%		ICU Level of Service H	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	196	577	42	249	0	1956	515	0	2266	8
Future Volume (vph)	1	0	196	577	42	249	0	1956	515	0	2266	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850		0.892	0.850			0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1805	0	1568	1719	1453	1447	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1805	0	1568	1719	1453	1447	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		98	154			323			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	213	627	46	271	0	2126	560	0	2463	9
Shared Lane Traffic (%)						43%						
Lane Group Flow (vph)	1	0	213	627	163	154	0	2126	560	0	2463	9
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		74.0	51.0	51.0	51.0		66.0	66.0		66.0	66.0
Total Split (%)	16.4%		52.9%	36.4%	36.4%	36.4%		47.1%	47.1%		47.1%	47.1%
Maximum Green (s)	18.0		67.0	44.0	44.0	44.0		59.0	59.0		59.0	59.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		69.1	66.9	66.9	66.9		62.9	62.9		62.9	62.9
Actuated g/C Ratio	0.05		0.49	0.48	0.48	0.48		0.45	0.45		0.45	0.45
v/c Ratio	0.01		0.27	0.76	0.22	0.20		0.96	0.67		1.09	0.01
Control Delay	64.0		18.6	38.2	10.1	4.0		35.5	12.1		85.1	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		18.6	38.2	10.1	4.0		35.5	12.1		85.1	0.0
LOS	E		B	D	B	A		D	B		F	A
Approach Delay		18.8			27.8			30.6			84.8	
Approach LOS		B			C			C			F	
Queue Length 50th (m)	0.3		30.5	145.0	10.5	0.0		122.2	31.3		~290.1	0.0
Queue Length 95th (m)	2.3		47.2	#236.1	28.7	14.5		#254.6	61.6		#326.4	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		799	821	745	771		2218	841		2261	726
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.27	0.76	0.22	0.20		0.96	0.67		1.09	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 51.0		Intersection LOS: D	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	963	707	0	1311	2409	0
Future Volume (vph)	963	707	0	1311	2409	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1047	768	0	1425	2618	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1047	768	0	1425	2618	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

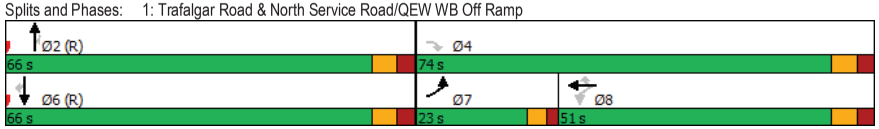
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2274	2409	1856
Future Volume (Veh/h)	0	0	0	2274	2409	1856
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2472	2618	2017
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.57	0.37	0.37			
vC, conflicting volume	3442	873	2618			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	585	406	608			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	824	824	824	873	873	873	2017
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	2017
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.48	0.48	0.48	0.51	0.51	0.51	1.19
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		118.3%	ICU Level of Service	H
Analysis Period (min)		15		

Intersection Capacity Utilization 97.9% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	196	577	42	249	0	1956	515	0	2266	8
Future Volume (vph)	1	0	196	577	42	249	0	1956	515	0	2266	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	0.95	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	0.89	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1719	1454	1447		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1719	1454	1447		4940	1478		5036	1533
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)	1	0	213	627	46	271	0	2126	560	0	2463	9
RTOR Reduction (vph)	0	0	15	0	51	80	0	0	187	0	0	5
Lane Group Flow (vph)	1	0	198	627	112	74	0	2126	373	0	2463	4
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		70.1	63.9	63.9	63.9		55.9	55.9		55.9	55.9
Effective Green, g (s)	2.2		73.1	66.9	66.9	66.9		58.9	58.9		58.9	58.9
Actuated g/C Ratio	0.02		0.52	0.48	0.48	0.48		0.42	0.42		0.42	0.42
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		818	821	694	691		2078	621		2118	644
v/s Ratio Prot	0.00				0.08			0.43			c0.49	
v/s Ratio Perm			c0.13	c0.36		0.05			0.25			0.00
v/c Ratio	0.04		0.24	0.76	0.16	0.11		1.02	0.60		1.16	0.01
Uniform Delay, d1	67.9		18.3	30.1	20.7	20.1		40.5	31.4		40.5	23.5
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.71	0.77		1.00	1.00
Incremental Delay, d2	0.5		0.2	4.3	0.1	0.1		22.4	2.9		78.9	0.0
Delay (s)	68.4		18.5	34.3	20.8	20.2		51.1	27.0		119.5	23.6
Level of Service	E		B	C	C	C		D	C		F	C
Approach Delay (s)		18.7			29.7			46.0			119.1	
Approach LOS		B			C			D			F	

Intersection Summary				
HCM 2000 Control Delay	71.3	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	97.9%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2274	2409	1856
Future Volume (vph)	0	0	0	2274	2409	1856
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2472	2618	2017
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2472	2618	2017
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	118.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	212	429	35	265	0	1930	344	0	3624	6
Future Volume (vph)	1	0	212	429	35	265	0	1930	344	0	3624	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1633	1607	1524		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	0.96	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1633	1607	1524		4940	1478		5036	1533
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)	1	0	230	466	38	288	0	2098	374	0	3939	7
RTOR Reduction (vph)	0	0	23	0	0	172	0	0	84	0	0	2
Lane Group Flow (vph)	1	0	207	252	252	116	0	2098	290	0	3939	5
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		33.8	27.6	27.6	27.6		92.2	92.2		92.2	92.2
Effective Green, g (s)	2.2		36.8	30.6	30.6	30.6		95.2	95.2		95.2	95.2
Actuated g/C Ratio	0.02		0.26	0.22	0.22	0.22		0.68	0.68		0.68	0.68
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		412	356	351	333		3359	1005		3424	1042
v/s Ratio Prot	0.00							0.42			c0.78	
v/s Ratio Perm			c0.13	0.15	0.16	0.08			0.20			0.00
v/c Ratio	0.04		0.50	0.71	0.72	0.35		0.62	0.29		1.15	0.00
Uniform Delay, d1	67.9		43.8	50.6	50.7	46.3		12.5	8.9		22.4	7.2
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.45	0.51		1.00	1.00
Incremental Delay, d2	0.5		1.0	6.3	6.9	0.6		0.7	0.6		71.5	0.0
Delay (s)	68.4		44.8	56.9	57.6	46.9		6.3	5.1		93.9	7.2
Level of Service	E		D	E	E	D		A	A		F	A
Approach Delay (s)		44.9			53.5			6.1			93.7	
Approach LOS		D			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	58.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2473	2081	958
Future Volume (vph)	0	0	0	2473	2081	958
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2688	2262	1041
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2688	2262	1041
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

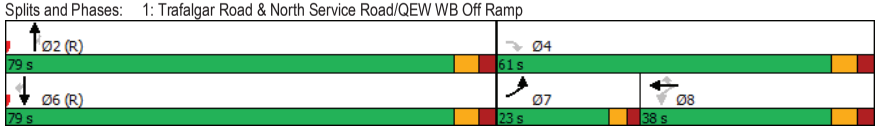
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2473	2081	958
Future Volume (Veh/h)	0	0	0	2473	2081	958
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2688	2262	1041
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.75	0.60	0.60			
vC, conflicting volume	3158	754	2262			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	796			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	763	655	496			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	896	896	896	754	754	754	1041
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1041
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.53	0.53	0.53	0.44	0.44	0.44	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	115.8%	ICU Level of Service	H	
Analysis Period (min)	15			

Intersection Capacity Utilization 106.0% 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: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		61.0	38.0	38.0	38.0		79.0	79.0		79.0	79.0
Total Split (%)	16.4%		43.6%	27.1%	27.1%	27.1%		56.4%	56.4%		56.4%	56.4%
Maximum Green (s)	18.0		54.0	31.0	31.0	31.0		72.0	72.0		72.0	72.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		32.8	30.6	30.6	30.6		99.2	99.2		99.2	99.2
Actuated g/C Ratio	0.05		0.23	0.22	0.22	0.22		0.71	0.71		0.71	0.71
v/c Ratio	0.01		0.59	0.71	0.72	0.57		0.60	0.33		1.10	0.01
Control Delay	64.0		45.5	60.9	61.8	16.1		6.0	2.2		73.2	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		45.5	60.9	61.8	16.1		6.0	2.2		73.2	0.0
LOS	E		D	E	E	B		A	A		E	A
Approach Delay		45.6			44.9			5.4			73.1	
Approach LOS		D			D			A			E	
Queue Length 50th (m)	0.3		53.0	71.8	72.1	16.3		60.1	6.8		~469.7	0.0
Queue Length 95th (m)	2.3		66.9	96.7	97.1	43.0		104.4	25.4		#566.6	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		656	410	404	547		3501	1123		3569	1106
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.35	0.61	0.62	0.53		0.60	0.33		1.10	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 46.7		Intersection LOS: D	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1113	0	1350	2081	0
Future Volume (vph)	1123	1113	0	1350	2081	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1221	1210	0	1467	2262	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1221	1210	0	1467	2262	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	83.0	83.0		57.0	57.0	
Total Split (%)	59.3%	59.3%		40.7%	40.7%	
Maximum Green (s)	76.0	76.0		50.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	79.0	79.0		53.0	53.0	
Actuated g/C Ratio	0.56	0.56		0.38	0.38	
v/c Ratio	0.64	1.34		0.79	1.20	
Control Delay	22.6	189.5		52.2	131.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	22.6	189.5		52.2	131.1	
LOS	C	F		D	F	
Approach Delay	105.7			52.2	131.1	
Approach LOS	F			D	F	
Queue Length 50th (m)	120.0	~458.9		165.2	~288.6	
Queue Length 95th (m)	143.0	#543.5		m180.5	m#264.9	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1918	902		1852	1888	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.64	1.34		0.79	1.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.34			
Intersection Signal Delay: 102.3		Intersection LOS: F	
Intersection Capacity Utilization 115.8%		ICU Level of Service H	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	212	429	35	265	0	1930	344	0	3624	6
Future Volume (vph)	1	0	212	429	35	265	0	1930	344	0	3624	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.959							
Satd. Flow (prot)	1805	0	1568	1633	1607	1524	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950	0.959							
Satd. Flow (perm)	1805	0	1568	1633	1607	1524	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			220			263			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	230	466	38	288	0	2098	374	0	3939	7
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	1	0	230	252	252	288	0	2098	374	0	3939	7
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	10	361	106	17	18
Future Volume (Veh/h)	13	10	361	106	17	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	29	20	415	156	23	28
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	571				576	493
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	571				576	493
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				95	95
cM capacity (veh/h)	1012				467	580

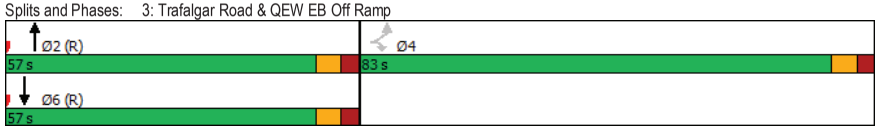
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	49	571	51
Volume Left	29	0	23
Volume Right	0	156	28
cSH	1012	1700	523
Volume to Capacity	0.03	0.34	0.10
Queue Length 95th (m)	0.7	0.0	2.6
Control Delay (s)	5.2	0.0	12.6
Lane LOS	A		B
Approach Delay (s)	5.2	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Queue shown is maximum after two cycles.

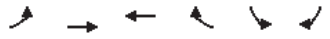
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



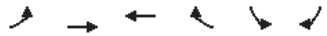
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1113	0	1350	2081	0
Future Volume (vph)	1123	1113	0	1350	2081	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1221	1210	0	1467	2262	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1221	1210	0	1467	2262	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	76.0	76.0		50.0	50.0	
Effective Green, g (s)	79.0	79.0		53.0	53.0	
Actuated g/C Ratio	0.56	0.56		0.38	0.38	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1918	902		1852	1888	
v/s Ratio Prot				0.30	c0.45	
v/s Ratio Perm	0.36	c0.76				
v/c Ratio	0.64	1.34		0.79	1.20	
Uniform Delay, d1	20.7	30.5		38.6	43.5	
Progression Factor	1.00	1.00		1.29	1.06	
Incremental Delay, d2	0.7	161.1		1.9	90.7	
Delay (s)	21.4	191.6		51.8	136.8	
Level of Service	C	F		D	F	
Approach Delay (s)	106.2			51.8	136.8	
Approach LOS	F			D	F	

Intersection Summary			
HCM 2000 Control Delay	104.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	10	361	106	17	18
Future Volume (vph)	13	10	361	106	17	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
Ped Bike Factor						
Frt			0.963		0.926	
Flt Protected		0.971			0.978	
Satd. Flow (prot)	0	1577	1535	0	1549	0
Flt Permitted		0.971			0.978	
Satd. Flow (perm)	0	1577	1535	0	1549	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	29	20	415	156	23	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	49	571	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	6	1	6	17	6
Future Volume (Veh/h)	4	6	1	6	17	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Hourly flow rate (vph)	11	10	4	10	34	14
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	21				48	16
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				48	16
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	99
cM capacity (veh/h)	1599				954	1063

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	21	14	48
Volume Left	11	0	34
Volume Right	0	10	14
cSH	1599	1700	984
Volume to Capacity	0.01	0.01	0.05
Queue Length 95th (m)	0.2	0.0	1.2
Control Delay (s)	3.8	0.0	8.8
Lane LOS	A		A
Approach Delay (s)	3.8	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		6.1	
Intersection Capacity Utilization		15.4%	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)	0	0	22	0	0	0	0	1350	578	0	2272	922
Future Volume (vph)	0	0	22	0	0	0	0	1350	578	0	2272	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.957	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4894	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4894	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	24	0	0	0	0	1467	628	0	2470	1002
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	24	0	0	0	0	1467	628	0	3472	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	75.2%		ICU Level of Service D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	22	0	0	0	0	1350	578	0	2272	922
Future Volume (Veh/h)	0	0	22	0	0	0	0	1350	578	0	2272	922
Sign Control		Stop			Stop			Free			Free	
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)	0	0	24	0	0	0	0	1467	628	0	2470	1002
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.70	0.70	0.63	0.70	0.70	0.85	0.63			0.85		
vC, conflicting volume	3484	4462	1348	2290	4963	489	3496			1467		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1601	2996	0	0	3711	0	2895			930		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	100	100	100	100			100		
cM capacity (veh/h)	49	10	653	684	3	927	79			632		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	24	489	489	489	628	988	988	1496
Volume Left	0	0	0	0	0	0	0	0
Volume Right	24	0	0	0	628	0	0	1002
cSH	653	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.04	0.29	0.29	0.29	0.37	0.58	0.58	0.88
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.7	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay			0.0	
Intersection Capacity Utilization			75.2%	ICU Level of Service D
Analysis Period (min)			15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	6	1	6	17	6
Future Volume (vph)	4	6	1	6	17	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.904		0.961	
Flt Protected		0.974			0.966	
Satd. Flow (prot)	0	1666	1336	0	1587	0
Flt Permitted		0.974			0.966	
Satd. Flow (perm)	0	1666	1336	0	1587	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.38	0.62	0.25	0.62	0.50	0.42
Heavy Vehicles (%)	0%	0%	0%	22%	0%	0%
Adj. Flow (vph)	11	10	4	10	34	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	14	0	48	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.4%	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 (vph)	41	225	9	32	600	90	169	0	276	65	1	36
Future Volume (vph)	41	225	9	32	600	90	169	0	276	65	1	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00		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	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)	1388	2954	1425	1593	3154	1422	1593		1425	1609	1676	1398
Flt Permitted	0.25	1.00	1.00	0.60	1.00	1.00	0.76		1.00	0.76	1.00	1.00
Satd. Flow (perm)	363	2954	1425	1005	3154	1422	1269		1425	1282	1676	1398
Peak-hour factor, PHF	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Adj. Flow (vph)	82	245	10	35	714	155	184	0	300	148	1	88
RTOR Reduction (vph)	0	0	7	0	0	106	0	0	137	0	0	40
Lane Group Flow (vph)	82	245	3	35	714	49	184	0	163	148	1	48
Confl. Peds. (#/hr)	1					1				9		
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	20.3	20.3	20.3	20.3	20.3	20.3	34.7		34.7	34.7	34.7	34.7
Effective Green, g (s)	20.3	20.3	20.3	20.3	20.3	20.3	34.7		34.7	34.7	34.7	34.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.54		0.54	0.54	0.54	0.54
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	936	451	318	1000	451	688		772	695	908	757
v/s Ratio Prot		0.08			c0.23						0.00	
v/s Ratio Perm	0.23		0.00	0.03		0.03	c0.14		0.11	0.12		0.03
v/c Ratio	0.71	0.26	0.01	0.11	0.71	0.11	0.27		0.21	0.21	0.00	0.06
Uniform Delay, d1	19.3	16.3	15.0	15.5	19.3	15.5	7.8		7.6	7.6	6.7	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	18.8	0.1	0.0	0.2	2.4	0.1	1.0		0.6	0.7	0.0	0.2
Delay (s)	38.1	16.4	15.0	15.6	21.7	15.6	8.8		8.2	8.3	6.7	7.1
Level of Service	D	B	B	B	C	B	A		A	A	A	A
Approach Delay (s)		21.6			20.4			8.4			7.8	
Approach LOS		C			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

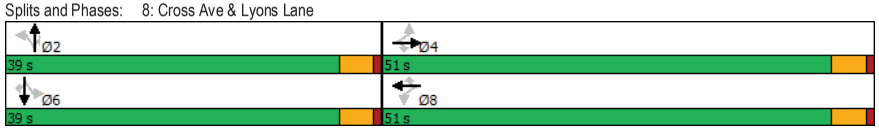
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	684	396	173	87	365	179	154	1062	547	389	1225	663
Future Volume (vph)	684	396	173	87	365	179	154	1062	547	389	1225	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.87			0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	3406	1442	3400	3343	1553	1641	5036	1615	1752	5036	1553
Flt Permitted	0.950			0.950			0.140			0.104		
Satd. Flow (perm)	3208	3406	1411	3382	3343	1531	241	5036	1404	192	5036	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			117			148			524
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	743	430	188	95	397	195	167	1154	595	423	1332	721
Shared Lane Traffic (%)												
Lane Group Flow (vph)	743	430	188	95	397	195	167	1154	595	423	1332	721
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	12.0	10.0	7.0	7.0	27.0	12.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	17.0	25.0	11.5	11.5	34.0	17.0	11.5	34.0	34.0
Total Split (s)	39.0	33.0	33.0	31.0	25.0	36.0	18.2	40.0	31.0	36.0	57.8	57.8
Total Split (%)	27.9%	23.6%	23.6%	22.1%	17.9%	25.7%	13.0%	28.6%	22.1%	25.7%	41.3%	41.3%
Maximum Green (s)	32.0	26.0	26.0	27.0	18.0	32.0	14.2	33.0	27.0	32.0	50.8	50.8
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	34.9	37.0	37.0	18.6	20.7	51.5	50.5	37.6	56.2	72.4	55.5	55.5
Actuated g/C Ratio	0.25	0.26	0.26	0.13	0.15	0.37	0.36	0.27	0.40	0.52	0.40	0.40
v/c Ratio	0.93	0.48	0.37	0.21	0.80	0.30	0.78	0.85	0.88	0.96	0.67	0.79
Control Delay	69.8	46.7	8.2	53.2	70.7	12.4	35.5	53.5	40.9	46.4	23.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	46.7	8.2	53.2	70.7	12.4	35.5	53.5	41.0	46.4	23.9	3.9
LOS	E	D	A	D	E	B	D	D	D	D	C	A
Approach Delay		54.0			51.8			48.0			21.9	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	109.5	55.4	0.0	12.9	59.5	14.1	33.3	100.1	104.8	91.0	110.6	29.2
Queue Length 95th (m)	#146.9	79.3	21.2	20.3	#80.0	32.1	m34.5	m98.7	m78.0	m59.8	m76.7	m11.7
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	803	900	511	655	501	654	231	1352	767	455	1996	910
Starvation Cap Reductn	0	0	0	0	0	0	0	0	3	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.48	0.37	0.15	0.79	0.30	0.72	0.85	0.78	0.93	0.67	0.79

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 39.7		Intersection LOS: D	

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

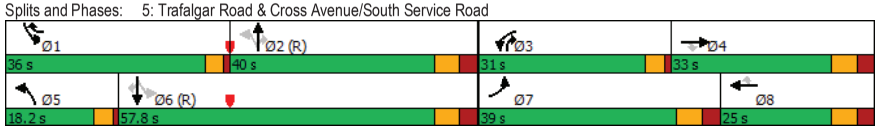


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	46.5	46.5	46.5	46.5	46.5	46.5	34.5	34.5	34.5	34.5	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	20.4	20.4	20.4	20.4	20.4	20.4	34.7		34.7	34.7	34.7	34.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.54		0.54	0.54	0.54	0.54
v/c Ratio	0.71	0.26	0.02	0.11	0.71	0.28	0.27		0.29	0.21	0.00	0.11
Control Delay	53.7	16.6	4.9	15.6	23.4	4.3	10.5		0.7	10.0	9.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	53.7	16.6	4.9	15.6	23.4	4.3	10.5		0.7	10.0	9.0	2.9
LOS	D	B	A	B	C	A	B		A	A	A	A
Approach Delay		25.3			19.9			4.4			7.4	
Approach LOS		C			B			A			A	
Queue Length 50th (m)	8.8	11.7	0.0	3.0	40.5	0.0	11.0		0.0	8.5	0.1	0.0
Queue Length 95th (m)	10.6	19.4	2.1	8.6	52.0	1.6	28.0		0.0	9.8	0.8	0.0
Internal Link Dist (m)		257.3			16.1			148.6			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	265	2154	1044	734	2301	1078	687		1044	691	907	796
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.31	0.11	0.01	0.05	0.31	0.14	0.27		0.29	0.21	0.00	0.11

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 64.1			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 15.5		Intersection LOS: B	
Intersection Capacity Utilization 50.9%		ICU Level of Service A	

Intersection Capacity Utilization 87.1% ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	684	396	173	87	365	179	154	1062	547	389	1225	663
Future Volume (vph)	684	396	173	87	365	179	154	1062	547	389	1225	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3406	1411	3400	3343	1545	1640	5036	1478	1752	5036	1499
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3213	3406	1411	3400	3343	1545	242	5036	1478	191	5036	1499
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)	743	430	188	95	397	195	167	1154	595	423	1332	721
RTOR Reduction (vph)	0	0	138	0	0	76	0	0	92	0	0	316
Lane Group Flow (vph)	743	430	50	95	397	119	167	1154	503	423	1332	405
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	31.9	34.0	34.0	18.6	17.7	48.5	47.5	34.6	53.2	69.4	52.5	52.5
Effective Green, g (s)	34.9	37.0	37.0	18.6	20.7	48.5	47.5	37.6	53.2	69.4	55.5	55.5
Actuated g/C Ratio	0.25	0.26	0.26	0.13	0.15	0.35	0.34	0.27	0.38	0.50	0.40	0.40
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	800	900	372	451	494	535	210	1352	561	438	1996	594
v/s Ratio Prot	c0.23	0.13		0.03	c0.12	0.05	0.07	0.23	0.12	c0.21	0.26	
v/s Ratio Perm			0.04			0.03	0.20		0.22	c0.27		0.27
v/c Ratio	0.93	0.48	0.13	0.21	0.80	0.22	0.80	0.85	0.90	0.97	0.67	0.68
Uniform Delay, d1	51.3	43.4	39.3	54.2	57.7	32.4	34.7	48.6	40.8	42.9	34.7	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.05	1.34	1.01	0.68	0.32
Incremental Delay, d2	16.8	0.4	0.2	0.2	9.2	0.2	5.0	1.8	5.0	6.8	0.2	0.6
Delay (s)	68.1	43.8	39.4	54.4	66.9	32.6	37.6	53.0	59.6	50.2	23.6	11.8
Level of Service	E	D	D	D	E	C	D	D	E	D	C	B
Approach Delay (s)		56.5			55.4			53.7			24.7	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.1%	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)	41	225	9	32	600	90	169	0	276	65	1	36
Future Volume (vph)	41	225	9	32	600	90	169	0	276	65	1	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1388	2954	1425	1593	3154	1454	1593	1676	1425	1624	1676	1398
Flt Permitted	0.249			0.600			0.757			0.757		
Satd. Flow (perm)	364	2954	1425	1006	3154	1421	1269	1676	1425	1277	1676	1398
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			155			595			88
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			172.6			41.7	
Travel Time (s)		20.3			2.9			12.4			3.0	
Confl. Peds. (#/hr)	1					1				9		
Peak Hour Factor	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	82	245	10	35	714	155	184	0	300	148	1	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	245	10	35	714	155	184	0	300	148	1	88
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1175	71	197	534	108	166	3	164	202	24	249
Future Volume (vph)	44	1175	71	197	534	108	166	3	164	202	24	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1558	3249	707	797	3249	1400	784	855	702	1535	1322	
Flt Permitted	0.44	1.00	1.00	0.10	1.00	1.00	0.22	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	724	3249	707	84	3249	1400	185	855	702	1211	1322	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	67	1451	95	210	562	133	237	12	245	235	32	319
RTOR Reduction (vph)	0	0	54	0	0	58	0	0	90	0	197	0
Lane Group Flow (vph)	67	1451	41	210	562	75	237	12	155	235	154	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	36.1	36.1	36.1	47.6	47.6	47.6	28.5	28.5	28.5	20.0	20.0	
Effective Green, g (s)	38.1	38.1	38.1	47.6	49.6	49.6	30.5	30.5	28.5	22.0	22.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.54	0.56	0.56	0.35	0.35	0.32	0.25	0.25	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	313	1405	305	106	1829	788	104	295	227	302	330	
v/s Ratio Prot		0.45		c0.17	0.17		c0.15	0.01			0.12	
v/s Ratio Perm	0.09		0.06	c0.90		0.05	c0.63		0.22	0.19		
v/c Ratio	0.21	1.03	0.13	1.98	0.31	0.10	2.28	0.04	0.68	0.78	0.47	
Uniform Delay, d1	15.6	25.0	15.1	23.7	10.2	8.9	27.5	19.1	25.9	30.8	28.1	
Progression Factor	1.00	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	32.9	0.4	473.5	0.2	0.1	604.8	0.1	8.9	12.6	1.4	
Delay (s)	16.4	57.9	15.5	497.2	10.4	9.0	632.3	19.2	34.8	43.4	29.5	
Level of Service	B	E	B	F	B	A	F	B	C	D	C	
Approach Delay (s)		53.6			123.1			321.0			35.0	
Approach LOS		D			F			F			D	

Intersection Summary				
HCM 2000 Control Delay	104.8	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	2.18			
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	91.4%	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)	615	680	109	14	582	697	81	445	63	512	502	455
Future Volume (vph)	615	680	109	14	582	697	81	445	63	512	502	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		60.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99		0.93	0.99		0.95	0.96		0.97
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3390	0	1703	3505	1568	1770	3574	1615	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3350	3390	0	1689	3505	1460	1752	3574	1529	3247	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				273			187			349
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	668	739	118	15	633	758	88	484	68	557	546	495
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	857	0	15	633	758	88	484	68	557	546	495
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	28.0	64.0		12.0	48.0	48.0	12.0	40.0	40.0	24.0	52.0	52.0
Total Split (%)	20.0%	45.7%		8.6%	34.3%	34.3%	8.6%	28.6%	28.6%	17.1%	37.1%	37.1%
Maximum Green (s)	23.0	59.0		7.0	41.0	41.0	7.0	33.0	33.0	19.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	0.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	69.2		8.0	44.0	44.0	8.0	36.0	33.0	20.0	48.0	48.0
Actuated g/C Ratio	0.17	0.49		0.06	0.31	0.31	0.06	0.26	0.24	0.14	0.34	0.34
v/c Ratio	1.14	0.51		0.15	0.57	1.17	0.87	0.53	0.14	1.16	0.86	0.67
Control Delay	131.7	25.6		66.6	42.7	121.3	124.2	47.2	0.6	167.3	30.9	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.7	25.6		66.6	42.7	121.3	124.2	47.2	0.6	167.3	30.9	10.8
LOS	F	C		E	D	F	F	D	A	F	C	B
Approach Delay		72.1			85.3			52.8			72.2	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~116.4	78.8		4.3	81.3	~205.8	26.0	64.1	0.0	~101.4	38.5	8.1
Queue Length 95th (m)	#156.3	116.0		12.1	101.9	#286.1	#59.5	82.8	0.0	#140.6	#200.7	39.5
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0		60.0	80.0		
Base Capacity (vph)	588	1683		97	1101	646	101	919	503	481	638	734
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.51		0.15	0.57	1.17	0.87	0.53	0.14	1.16	0.86	0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 73.3		Intersection LOS: E	

Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

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

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

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

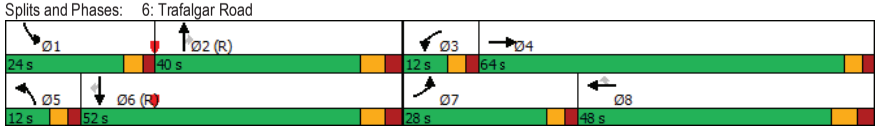
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	38.0	38.0	38.0	49.5	49.5	49.5	32.0	30.5	28.5	22.0	22.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.56	0.56	0.56	0.36	0.35	0.32	0.25	0.25	
v/c Ratio	0.21	1.03	0.25	1.94	0.31	0.16	2.21	0.04	0.78	0.78	0.67	
Control Delay	18.9	59.9	2.7	479.7	11.1	2.3	591.6	19.3	30.9	49.9	15.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	59.9	2.7	479.7	11.1	2.3	591.6	19.3	30.9	49.9	15.0	
LOS	B	E	A	F	B	A	F	B	C	D	B	
Approach Delay		54.8			118.5			299.6			29.0	
Approach LOS		D			F			F			C	
Queue Length 50th (m)	7.6	~154.0	0.0	~53.2	27.4	0.0	~69.6	1.4	17.8	38.9	12.6	
Queue Length 95th (m)	11.9	#163.0	0.8	#98.2	37.8	5.8	#85.3	1.4	24.4	#67.9	23.4	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	312	1403	384	108	1828	845	107	315	330	330	552	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.21	1.03	0.25	1.94	0.31	0.16	2.21	0.04	0.74	0.71	0.64	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 88
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 2.21
Intersection Signal Delay: 100.2 Intersection LOS: F

Intersection Capacity Utilization 89.7% 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: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	680	109	14	582	697	81	445	63	512	502	455
Future Volume (vph)	615	680	109	14	582	697	81	445	63	512	502	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
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)	668	739	118	15	633	758	88	484	68	557	546	495
RTOR Reduction (vph)	0	8	0	0	0	181	0	0	53	0	0	237
Lane Group Flow (vph)	668	849	0	15	633	577	88	484	15	557	546	258
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	23.0	66.2		2.8	44.0	44.0	7.0	30.0	30.0	19.0	42.0	42.0
Effective Green, g (s)	24.0	69.2		3.8	47.0	47.0	8.0	33.0	30.0	20.0	45.0	45.0
Actuated g/C Ratio	0.17	0.49		0.03	0.34	0.34	0.06	0.24	0.21	0.14	0.32	0.32
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	588	1676		46	1176	490	101	842	327	481	598	473
v/s Ratio Prot	c0.19	0.25		0.01	0.18		0.05	0.14		c0.17	c0.29	
v/s Ratio Perm						c0.40			0.01			0.18
v/c Ratio	1.14	0.51		0.33	0.54	1.18	0.87	0.57	0.04	1.16	0.91	0.55
Uniform Delay, d1	58.0	23.9		66.8	37.7	46.5	65.5	47.3	43.6	60.0	45.6	39.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.63	0.43	0.62
Incremental Delay, d2	80.6	0.2		4.1	0.5	99.2	50.9	2.8	0.3	88.7	17.5	3.6
Delay (s)	138.6	24.1		71.0	38.2	145.7	116.4	50.1	43.9	186.3	37.2	27.8
Level of Service	F	C		E	D	F	F	D	D	F	D	C
Approach Delay (s)		74.3			96.5			58.6			86.3	
Approach LOS		E			F			E			F	

Intersection Summary				
HCM 2000 Control Delay	82.1	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.11			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	89.7%	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)	44	1175	71	197	534	108	166	3	164	202	24	249
Future Volume (vph)	44	1175	71	197	534	108	166	3	164	202	24	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.96	0.98	0.98	
Frt			0.850			0.850			0.850		0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3249	727	797	3249	1454	785	855	727	1570	1322	0
Flt Permitted	0.441			0.100			0.225			0.750		
Satd. Flow (perm)	723	3249	707	84	3249	1399	185	855	701	1211	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			133			133		263	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	67	1451	95	210	562	133	237	12	245	235	32	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	1451	95	210	562	133	237	12	245	235	351	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	621	781	239	66	1047	794	170	480	49	643	697	627
Future Volume (vph)	621	781	239	66	1047	794	170	480	49	643	697	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3339		1805	3574	1503	1770	3610	1559	3433	1900	1503
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3339		241	3574	1503	219	3610	1559	3433	1900	1503
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)	675	849	260	72	1138	863	185	522	53	699	758	682
RTOR Reduction (vph)	0	20	0	0	0	217	0	0	39	0	0	186
Lane Group Flow (vph)	675	1089	0	72	1138	646	185	522	14	699	758	496
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Actuated Green, G (s)	21.0	57.4		45.6	40.0	40.0	40.0	33.0	33.0	22.0	48.0	48.0
Effective Green, g (s)	22.0	60.4		47.6	43.0	43.0	42.0	36.0	36.0	23.0	51.0	51.0
Actuated g/C Ratio	0.16	0.43		0.34	0.31	0.31	0.30	0.26	0.26	0.16	0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1440		155	1097	461	154	928	400	563	692	547
v/s Ratio Prot	c0.19	0.33		0.02	0.32		0.07	0.14		c0.20	c0.40	
v/s Ratio Perm				0.14		c0.43	0.29		0.01			0.33
v/c Ratio	1.24	0.76		0.46	1.04	1.40	1.20	0.56	0.03	1.24	1.10	0.91
Uniform Delay, d1	59.0	33.6		33.6	48.5	48.5	44.4	45.2	39.0	58.5	44.5	42.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.32	1.24	1.82
Incremental Delay, d2	123.3	2.3		2.2	37.3	193.4	136.8	2.5	0.2	114.4	51.9	9.5
Delay (s)	182.3	35.9		35.8	85.8	241.9	181.1	47.6	39.1	191.7	107.0	86.5
Level of Service	F	D		D	F	F	F	D	D	F	F	F
Approach Delay (s)		91.3			149.1			79.5			128.1	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	119.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.1%	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)	45	698	81	210	899	50	94	0	237	124	21	648
Future Volume (vph)	45	698	81	210	899	50	94	0	237	124	21	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98			0.96	0.98	0.99	
Frt			0.850			0.850			0.850		0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3217	727	818	3217	1384	805	1710	761	1570	1386	0
Flt Permitted	0.265			0.187			0.150			0.757		
Satd. Flow (perm)	438	3217	708	161	3217	1354	127	1710	734	1222	1386	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			91			202		96	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	87	802	125	250	1022	63	177	0	339	159	34	728
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	802	125	250	1022	63	177	0	339	159	762	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

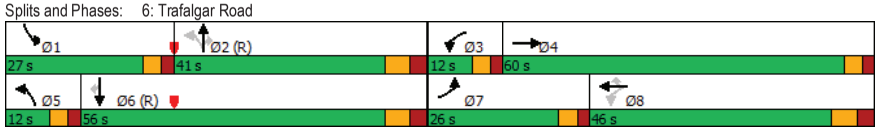
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	32.5	32.5	32.5	44.0	44.0	44.0	34.1		30.6	24.1	24.1	
Actuated g/C Ratio	0.38	0.38	0.38	0.52	0.52	0.52	0.40		0.36	0.28	0.28	
v/c Ratio	0.52	0.65	0.35	1.76	0.61	0.08	1.79		0.86	0.46	1.65	
Control Delay	32.5	24.0	5.5	389.8	16.0	1.3	412.0		34.7	31.6	323.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	32.5	24.0	5.5	389.8	16.0	1.3	412.0		34.7	31.6	323.6	
LOS	C	C	A	F	B	A	F		C	C	F	
Approach Delay		22.4			85.3			164.1			273.2	
Approach LOS		C			F			F			F	
Queue Length 50th (m)	11.1	57.4	0.0	~52.9	60.5	0.0	~39.7		23.2	22.9	~184.8	
Queue Length 95th (m)	12.6	73.0	1.9	#105.7	76.4	1.9	#38.8		35.6	37.0	#152.2	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	197	1449	395	142	1887	832	99		394	347	463	
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	0.44	0.55	0.32	1.76	0.54	0.08	1.79		0.86	0.46	1.65	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 84.7
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.79
Intersection Signal Delay: 124.9 Intersection LOS: F

Intersection Capacity Utilization 106.1% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Trafalgar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	26.0	60.0		12.0	46.0	46.0	12.0	41.0	41.0	27.0	56.0	56.0
Total Split (%)	18.6%	42.9%		8.6%	32.9%	32.9%	8.6%	29.3%	29.3%	19.3%	40.0%	40.0%
Maximum Green (s)	21.0	55.0		7.0	39.0	39.0	7.0	34.0	34.0	22.0	49.0	49.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	22.0	60.4		50.0	42.0	42.0	45.0	37.0	37.0	23.0	52.0	52.0
Actuated g/C Ratio	0.16	0.43		0.36	0.30	0.30	0.32	0.26	0.26	0.16	0.37	0.37
v/c Ratio	1.24	0.76		0.41	1.06	1.29	1.16	0.55	0.10	1.24	1.08	0.92
Control Delay	170.9	37.3		28.5	91.9	166.8	152.6	46.9	0.3	173.6	94.3	50.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.9	37.3		28.5	91.9	166.8	152.6	46.9	0.3	173.6	94.3	50.4
LOS	F	D		C	F	F	F	D	A	F	F	D
Approach Delay		87.9			120.9			69.4			106.2	
Approach LOS		F			F			E			F	
Queue Length 50th (m)	~125.4	142.6		11.0	~191.5	~252.8	~45.2	69.2	0.0	~133.5	~235.0	127.9
Queue Length 95th (m)	#165.3	171.8		20.4	#235.7	#335.0	#96.8	88.5	0.0	m#134.3	m#235.6	m125.1
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0			80.0		
Base Capacity (vph)	544	1460		175	1072	670	159	954	549	563	705	741
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.76		0.41	1.06	1.29	1.16	0.55	0.10	1.24	1.08	0.92

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.29
Intersection Signal Delay: 101.7 Intersection LOS: F

Intersection Capacity Utilization 111.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	698	81	210	899	50	94	0	237	124	21	648
Future Volume (vph)	45	698	81	210	899	50	94	0	237	124	21	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5		6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00		0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.86	
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)	1570	3217	708	818	3217	1354	805		735	1536	1386	
Flt Permitted	0.26	1.00	1.00	0.19	1.00	1.00	0.15		1.00	0.76	1.00	
Satd. Flow (perm)	438	3217	708	161	3217	1354	127		735	1224	1386	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	87	802	125	250	1022	63	177	0	339	159	34	728
RTOR Reduction (vph)	0	0	77	0	0	30	0	0	129	0	69	0
Lane Group Flow (vph)	87	802	48	250	1022	33	177	0	210	159	693	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	42.0	42.0	42.0	30.6		30.6	22.1	22.1	
Effective Green, g (s)	32.5	32.5	32.5	42.0	44.0	44.0	32.6		30.6	24.1	24.1	
Actuated g/C Ratio	0.38	0.38	0.38	0.50	0.52	0.52	0.39		0.36	0.28	0.28	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5		6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	168	1235	271	138	1673	704	97		265	348	394	
v/s Ratio Prot		0.25		c0.16	0.32		c0.13				0.50	
v/s Ratio Perm	0.20		0.07	c0.74		0.02	c0.57		0.29	0.13		
v/c Ratio	0.52	0.65	0.18	1.81	0.61	0.05	1.82		0.79	0.46	1.76	
Uniform Delay, d1	20.0	21.4	17.2	17.8	14.3	10.0	24.0		24.2	24.9	30.2	
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	5.3	1.6	0.7	392.3	1.0	0.1	408.4		15.7	1.3	352.2	
Delay (s)	25.3	23.0	17.9	410.1	15.2	10.0	432.5		39.9	26.2	382.4	
Level of Service	C	C	B	F	B	B	F		D	C	F	
Approach Delay (s)		22.6			88.9			174.5			320.9	
Approach LOS		C			F			F			F	

Intersection Summary				
HCM 2000 Control Delay	139.3	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.90			
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	111.2%	ICU Level of Service	H	
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)	621	781	239	66	1047	794	170	480	49	643	697	627
Future Volume (vph)	621	781	239	66	1047	794	170	480	49	643	697	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	0.98				0.94			0.97	0.98		0.95
Frt		0.965				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3339	0	1805	3574	1599	1770	3610	1615	3433	1900	1583
Flt Permitted	0.950			0.127			0.118			0.950		
Satd. Flow (perm)	3432	3339	0	241	3574	1503	220	3610	1559	3368	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				313			187			292
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	675	849	260	72	1138	863	185	522	53	699	758	682
Shared Lane Traffic (%)												
Lane Group Flow (vph)	675	1109	0	72	1138	863	185	522	53	699	758	682
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1240	405	205	294	331	413	224	1474	197	172	1470	584
Future Volume (vph)	1240	405	205	294	331	413	224	1474	197	172	1470	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.95
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3343	1413	3433	3471	1599	1719	5136	1422	1805	5136	1485
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3400	3343	1413	3433	3471	1599	181	5136	1422	200	5136	1485
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)	1348	440	223	320	360	449	243	1602	214	187	1598	635
RTOR Reduction (vph)	0	0	124	0	0	93	0	0	85	0	0	238
Lane Group Flow (vph)	1348	440	99	320	360	356	243	1602	129	187	1598	397
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	46.0	48.7	48.7	17.6	17.3	28.9	53.8	40.1	57.7	49.6	38.0	38.0
Effective Green, g (s)	49.0	51.7	48.7	17.6	20.3	28.9	53.8	43.1	57.7	49.6	41.0	41.0
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.15	0.21	0.38	0.31	0.41	0.35	0.29	0.29
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1190	1234	491	431	503	330	220	1581	586	203	1504	434
v/s Ratio Prot	c0.40	0.13		0.09	0.10	c0.09	c0.11	0.31	0.03	0.08	0.31	
v/s Ratio Perm			0.07			0.13	c0.32		0.06	0.25		0.27
v/c Ratio	1.13	0.36	0.20	0.74	0.72	1.08	1.10	1.01	0.22	0.92	1.06	0.92
Uniform Delay, d1	45.5	32.1	32.0	59.0	57.1	55.5	40.8	48.4	26.6	37.1	49.5	47.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.34	1.07	2.19	1.03	0.73	0.48
Incremental Delay, d2	70.7	0.2	0.2	6.8	4.8	72.3	53.8	10.4	0.0	25.3	35.8	15.3
Delay (s)	116.2	32.2	32.2	65.8	61.9	127.9	108.7	62.1	58.3	63.6	72.1	38.3
Level of Service	F	C	C	E	E	F	F	E	E	E	E	D
Approach Delay (s)		88.5			89.2			67.2			62.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	74.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

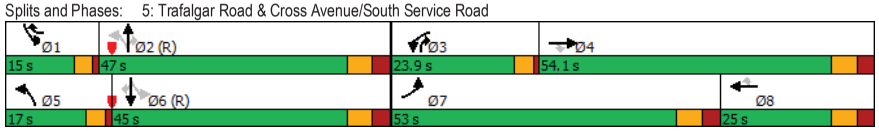
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	327	133	247	112	32	54	1	107	99	28	77
Future Volume (vph)	93	327	133	247	112	32	54	1	107	99	28	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3094	1425	1593	2801	1454	1593	1676	1425	1624	1676	1163
Flt Permitted	0.671			0.244			0.738			0.757		
Satd. Flow (perm)	1138	3094	1425	409	2801	1410	1237	1676	1425	1281	1676	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			64			116			154
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			149.2			41.7	
Travel Time (s)		20.3			2.9			10.7			3.0	
Confl. Peds. (#/hr)	4					4				7		
Peak Hour Factor	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	135	564	145	268	127	64	59	1	116	160	30	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	564	145	268	127	64	59	1	116	160	30	154
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	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	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	35.6%	35.6%	35.6%	28.9%	64.4%	64.4%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	27.5	27.5	27.5	21.5	53.5	53.5	27.5	27.5	27.5	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	19.4	19.4	19.4	36.8	36.8	36.8	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.26	0.26	0.26	0.50	0.50	0.50	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.45	0.69	0.30	0.65	0.09	0.09	0.13	0.00	0.19	0.33	0.05	0.29
Control Delay	28.3	29.5	5.9	18.7	9.2	2.7	19.0	19.0	5.2	21.3	18.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	29.5	5.9	18.7	9.2	2.7	19.0	19.0	5.2	21.3	18.2	5.4
LOS	C	C	A	B	A	A	B	B	A	C	B	A
Approach Delay		25.3			13.8			9.9			13.9	
Approach LOS		C			B			A			B	
Queue Length 50th (m)	16.3	38.5	0.0	21.8	4.7	0.0	5.4	0.1	0.0	16.0	2.7	0.0
Queue Length 95th (m)	24.9	34.3	12.8	36.0	8.4	0.8	16.6	1.3	11.4	24.9	9.7	0.0
Internal Link Dist (m)		257.3			16.1			125.2			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	429	1168	628	553	2058	1053	467	632	610	483	632	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.48	0.23	0.48	0.06	0.06	0.13	0.00	0.19	0.33	0.05	0.29

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 73.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	

Intersection Capacity Utilization 99.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	5.0	10.0	7.0	7.0	27.0	5.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	9.5	25.0	11.5	11.5	34.0	9.5	11.5	34.0	34.0
Total Split (s)	53.0	54.1	54.1	23.9	25.0	15.0	17.0	47.0	23.9	15.0	45.0	45.0
Total Split (%)	37.9%	38.6%	38.6%	17.1%	17.9%	10.7%	12.1%	33.6%	17.1%	10.7%	32.1%	32.1%
Maximum Green (s)	46.0	47.1	47.1	19.9	18.0	11.0	13.0	40.0	19.9	11.0	38.0	38.0
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	49.0	51.7	48.7	17.6	20.3	35.9	56.8	43.1	60.7	52.6	41.0	41.0
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.14	0.26	0.41	0.31	0.43	0.38	0.29	0.29
v/c Ratio	1.13	0.36	0.36	0.74	0.72	0.91	1.08	1.01	0.31	0.90	1.06	0.94
Control Delay	112.2	33.3	8.7	69.9	65.7	59.8	90.1	60.8	16.5	58.8	71.5	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.2	33.3	8.7	69.9	65.7	59.8	90.1	60.8	16.5	58.8	71.5	26.5
LOS	F	C	A	E	E	E	F	E	B	E	E	C
Approach Delay		83.5			64.6			59.7			58.7	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	~234.6	48.7	6.4	46.8	53.0	98.4	~66.9	~183.4	18.5	33.6	~190.6	112.3
Queue Length 95th (m)	#278.6	65.1	27.2	62.9	71.1	#163.4	m#63.8	m124.1	m15.1	m#49.2	m#219.6	m#161.5
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	1190	1235	615	487	520	496	224	1582	721	207	1504	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.36	0.36	0.66	0.69	0.91	1.08	1.01	0.30	0.90	1.06	0.94

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 66.4 Intersection LOS: E

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	327	133	247	112	32	54	1	107	99	28	77
Future Volume (vph)	93	327	133	247	112	32	54	1	107	99	28	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1613	3094	1425	1593	2801	1413	1593	1676	1425	1611	1676	1163
Flt Permitted	0.67	1.00	1.00	0.24	1.00	1.00	0.74	1.00	1.00	0.76	1.00	1.00
Satd. Flow (perm)	1140	3094	1425	410	2801	1413	1237	1676	1425	1284	1676	1163
Peak-hour factor, PHF	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Adj. Flow (vph)	135	564	145	268	127	64	59	1	116	160	30	154
RTOR Reduction (vph)	0	0	107	0	0	32	0	0	72	0	0	96
Lane Group Flow (vph)	135	564	38	268	127	32	59	1	44	160	30	58
Confl. Peds. (#/hr)	4					4				7		
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	19.5	19.5	36.8	36.8	36.8	27.8	27.8	27.8	27.8	27.8	27.8
Effective Green, g (s)	19.5	19.5	19.5	36.8	36.8	36.8	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.26	0.26	0.26	0.50	0.50	0.50	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	302	819	377	410	1400	706	467	633	538	484	633	439
v/s Ratio Prot		0.18		c0.11	0.05			0.00			0.02	
v/s Ratio Perm	0.12		0.03	c0.21		0.02	0.05		0.03	c0.12		0.05
v/c Ratio	0.45	0.69	0.10	0.65	0.09	0.05	0.13	0.00	0.08	0.33	0.05	0.13
Uniform Delay, d1	22.6	24.3	20.4	12.3	9.6	9.4	15.0	14.3	14.7	16.3	14.5	15.0
Progression 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
Incremental Delay, d2	1.1	2.4	0.1	3.7	0.0	0.0	0.6	0.0	0.3	1.8	0.1	0.6
Delay (s)	23.6	26.7	20.6	16.0	9.7	9.4	15.5	14.3	15.0	18.1	14.7	15.6
Level of Service	C	C	C	B	A	A	B	B	B	B	B	B
Approach Delay (s)		25.2			13.3			15.2			16.7	
Approach LOS		C			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	49.3%	ICU Level of Service	A	
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)	1240	405	205	294	331	413	224	1474	197	172	1470	584
Future Volume (vph)	1240	405	205	294	331	413	224	1474	197	172	1470	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor			0.95	0.98					0.83			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3343	1482	3433	3471	1599	1719	5136	1615	1805	5136	1568
Flt Permitted	0.950			0.950			0.100			0.105		
Satd. Flow (perm)	3400	3343	1413	3368	3471	1599	181	5136	1337	200	5136	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			117			145			336
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1348	440	223	320	360	449	243	1602	214	187	1598	635
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1348	440	223	320	360	449	243	1602	214	187	1598	635
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

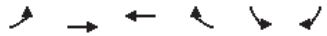
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	54	0	0	0	0	2187	940	0	2165	485
Future Volume (Veh/h)	0	0	54	0	0	0	0	2187	940	0	2165	485
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	59	0	0	0	0	2377	1022	0	2353	527
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.73	0.73	0.61	0.73	0.73	0.75	0.61			0.75		
vC, conflicting volume	3433	5018	1072	3161	5281	792	2904			2377		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	783	2939	0	413	3297	0	1891			1682		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	91	100	100	100	100			100		
cM capacity (veh/h)	204	11	638	347	6	822	192			291		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	59	792	792	792	1022	941	941	998
Volume Left	0	0	0	0	0	0	0	0
Volume Right	59	0	0	0	1022	0	0	527
cSH	638	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.47	0.47	0.47	0.60	0.55	0.55	0.59
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.2	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	8	8	8	2
Future Volume (vph)	0	10	8	8	8	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.932		0.963	
Flt Protected					0.965	
Satd. Flow (prot)	0	1710	1594	0	1283	0
Flt Permitted					0.965	
Satd. Flow (perm)	0	1710	1594	0	1283	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		60.5	89.6		37.6	
Travel Time (s)		4.4	6.5		2.7	
Confl. Peds. (#/hr)	6			6	1	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	33%	0%
Adj. Flow (vph)	0	20	11	11	21	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	22	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	15.1%	ICU Level of Service A	
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	8	8	8	2
Future Volume (Veh/h)	0	10	8	8	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.50	0.75	0.75	0.38	0.25
Hourly flow rate (vph)	0	20	11	11	21	8
Pedestrians			1		6	
Lane Width (m)			3.6		3.6	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			393			
pX, platoon unblocked						
vC, conflicting volume	28				44	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				44	22
tC, single (s)	4.1				6.7	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1591				889	1055

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	22	29
Volume Left	0	0	21
Volume Right	0	11	8
cSH	1591	1700	929
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

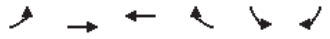
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	54	0	0	0	0	2187	940	0	2165	485
Future Volume (vph)	0	0	54	0	0	0	0	2187	940	0	2165	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.973	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4966	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4966	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	59	0	0	0	0	2377	1022	0	2353	527
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	59	0	0	0	0	2377	1022	0	2880	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.1%	ICU Level of Service B	
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	610	0	2187	2040	0
Future Volume (vph)	1210	610	0	2187	2040	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1315	663	0	2377	2217	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1315	662	0	2377	2217	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	58.6	58.6		67.4	67.4	
Effective Green, g (s)	61.6	61.6		70.4	70.4	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1540	692		2557	2557	
v/s Ratio Prot				c0.47	0.44	
v/s Ratio Perm	0.38	c0.42				
v/c Ratio	0.85	0.96		0.93	0.87	
Uniform Delay, d1	35.2	37.9		32.5	30.7	
Progression Factor	1.00	1.00		1.40	0.85	
Incremental Delay, d2	4.8	23.8		0.8	2.3	
Delay (s)	40.0	61.7		46.3	28.3	
Level of Service	D	E		D	C	
Approach Delay (s)	47.3			46.3	28.3	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	6	740	155	5	4
Future Volume (vph)	1	6	740	155	5	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.973		0.940	
Flt Protected		0.989			0.973	
Satd. Flow (prot)	0	1384	1625	0	1564	0
Flt Permitted		0.989			0.973	
Satd. Flow (perm)	0	1384	1625	0	1564	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	14	860	215	20	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	1075	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

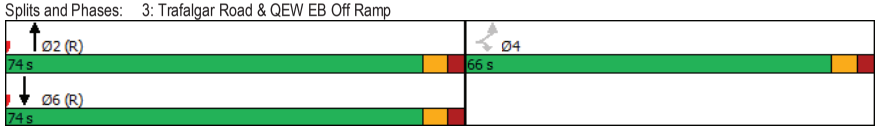
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	6	740	155	5	4
Future Volume (Veh/h)	1	6	740	155	5	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	14	860	215	20	16
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	1076				996	970
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1076				996	970
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				93	95
cM capacity (veh/h)	388				269	310

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	1075	36
Volume Left	4	0	20
Volume Right	0	215	16
cSH	388	1700	286
Volume to Capacity	0.01	0.63	0.13
Queue Length 95th (m)	0.3	0.0	3.4
Control Delay (s)	3.3	0.0	19.4
Lane LOS	A		C
Approach Delay (s)	3.3	0.0	19.4
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	66.0	66.0		74.0	74.0	
Total Split (%)	47.1%	47.1%		52.9%	52.9%	
Maximum Green (s)	59.0	59.0		67.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	61.6	61.6		70.4	70.4	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	
v/c Ratio	0.85	0.96		0.93	0.87	
Control Delay	41.8	63.2		46.5	28.8	
Queue Delay	0.0	0.0		3.7	0.0	
Total Delay	41.8	63.2		50.2	28.8	
LOS	D	E		D	C	
Approach Delay	48.9			50.2	28.8	
Approach LOS	D			D	C	
Queue Length 50th (m)	173.6	182.9		262.2	171.4	
Queue Length 95th (m)	205.4	#267.2		m245.6	215.9	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1550	697		2556	2556	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		129	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.85	0.95		0.98	0.87	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 84.1%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	314	658	158	330	0	2846	551	0	2027	11
Future Volume (vph)	24	0	314	658	158	330	0	2846	551	0	2027	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.93			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.970							
Satd. Flow (prot)	1805	0	1615	1681	1723	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.970							
Satd. Flow (perm)	1800	0	1615	1681	1723	1557	0	5085	1482	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			66			347			66
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	26	0	341	715	172	359	0	3093	599	0	2203	12
Shared Lane Traffic (%)				39%								
Lane Group Flow (vph)	26	0	341	436	451	359	0	3093	599	0	2203	12
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	9.5		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	9.5		49.5	40.0	40.0	40.0		90.5	90.5		90.5	90.5
Total Split (%)	6.8%		35.4%	28.6%	28.6%	28.6%		64.6%	64.6%		64.6%	64.6%
Maximum Green (s)	5.0		42.5	33.0	33.0	33.0		83.5	83.5		83.5	83.5
Yellow Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.0		45.5	39.8	39.8	39.8		86.5	86.5		86.5	86.5
Actuated g/C Ratio	0.04		0.32	0.28	0.28	0.28		0.62	0.62		0.62	0.62
v/c Ratio	0.34		0.63	0.91	0.92	0.73		0.98	0.57		0.85	0.01
Control Delay	77.2		42.1	73.4	74.3	47.6		24.4	4.5		25.4	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		2.0	0.0		0.0	0.0
Total Delay	77.2		42.1	73.4	74.3	47.6		26.4	4.5		25.4	0.0
LOS	E		D	E	E	D		C	A		C	A
Approach Delay		44.6			66.3			22.8			25.3	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	7.5		76.7	~136.5	~146.1	81.8		196.9	21.5		178.5	0.0
Queue Length 95th (m)	18.3		112.2	#211.8	#218.6	#130.2		#358.4	m24.8		202.7	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	77		545	478	489	489		3141	1048		2605	950
Starvation Cap Reductn	0		0	0	0	0		35	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.34		0.63	0.91	0.92	0.73		1.00	0.57		0.85	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 31.8		Intersection LOS: C	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	610	0	2187	2040	0
Future Volume (vph)	1210	610	0	2187	2040	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1315	663	0	2377	2217	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1315	663	0	2377	2217	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

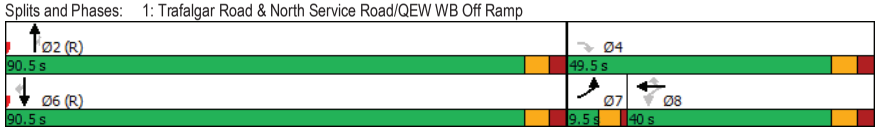
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3397	2040	959
Future Volume (Veh/h)	0	0	0	3397	2040	959
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3692	2217	1042
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.26					
vC, conflicting volume	3448	739	2217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422	739	2217			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	144	360	232			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1231	1231	1231	739	739	739	1042
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1042
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.72	0.72	0.72	0.43	0.43	0.43	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

Intersection Capacity Utilization 91.0% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	314	658	158	330	0	2846	551	0	2027	11
Future Volume (vph)	24	0	314	658	158	330	0	2846	551	0	2027	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98		1.00	0.93		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1723	1557		5085	1482		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1723	1557		5085	1482		4217	1497
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)	26	0	341	715	172	359	0	3093	599	0	2203	12
RTOR Reduction (vph)	0	0	21	0	0	47	0	0	137	0	0	5
Lane Group Flow (vph)	26	0	320	436	451	312	0	3093	462	0	2203	7
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	3.0		44.3	36.8	36.8	36.8		81.7	81.7		81.7	81.7
Effective Green, g (s)	4.0		47.3	39.8	39.8	39.8		84.7	84.7		84.7	84.7
Actuated g/C Ratio	0.03		0.34	0.28	0.28	0.28		0.61	0.61		0.61	0.61
Clearance Time (s)	4.5		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51		545	477	489	442		3076	896		2551	905
v/s Ratio Prot	0.01							c0.61			0.52	
v/s Ratio Perm			c0.20	0.26	0.26	0.20			0.31			0.00
v/c Ratio	0.51		0.59	0.91	0.92	0.71		1.01	0.52		0.86	0.01
Uniform Delay, d1	67.0		38.3	48.4	48.6	44.9		27.6	15.9		22.9	11.0
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.63	0.60		1.00	1.00
Incremental Delay, d2	7.8		1.6	21.9	23.0	5.1		11.8	0.9		4.2	0.0
Delay (s)	74.8		39.9	70.4	71.6	49.9		29.1	10.4		27.1	11.0
Level of Service	E		D	E	E	D		C	B		C	B
Approach Delay (s)		42.4			64.9			26.1			27.0	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

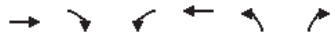
c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3397	2040	959
Future Volume (vph)	0	0	0	3397	2040	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3692	2217	1042
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3692	2217	1042
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

Appendix G

Lyons Lane Closure Sensitivity Operations Reports



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	69	0	67	62	0	43
Future Volume (Veh/h)	69	0	67	62	0	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	0	73	67	0	47
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			75		288	75
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			75		288	75
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	95
cM capacity (veh/h)			1524		669	986

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	75	140	47
Volume Left	0	73	0
Volume Right	0	0	47
cSH	1700	1524	986
Volume to Capacity	0.04	0.05	0.05
Queue Length 95th (m)	0.0	1.2	1.2
Control Delay (s)	0.0	4.1	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	4.1	8.8
Approach LOS			A

Intersection Summary			
Average Delay			3.8
Intersection Capacity Utilization			23.6%
Analysis Period (min)			15

ICU Level of Service A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Future Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor									0.96			0.95
Frt			0.850		0.892	0.850			0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1805	0	1568	1719	1453	1447	0	4940	1538	0	5036	1615
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1805	0	1568	1719	1453	1447	0	4940	1478	0	5036	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		98	154			331			70
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)							8		5	5		8
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 (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Adj. Flow (vph)	1	0	213	629	46	271	0	2162	582	0	2474	9
Shared Lane Traffic (%)						43%						
Lane Group Flow (vph)	1	0	213	629	163	154	0	2162	582	0	2474	9
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	23.0		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	23.0		74.0	51.0	51.0	51.0		66.0	66.0		66.0	66.0
Total Split (%)	16.4%		52.9%	36.4%	36.4%	36.4%		47.1%	47.1%		47.1%	47.1%
Maximum Green (s)	18.0		67.0	44.0	44.0	44.0		59.0	59.0		59.0	59.0
Yellow Time (s)	3.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.7		69.4	67.2	67.2	67.2		62.6	62.6		62.6	62.6
Actuated g/C Ratio	0.05		0.50	0.48	0.48	0.48		0.45	0.45		0.45	0.45
v/c Ratio	0.01		0.27	0.76	0.22	0.20		0.98	0.69		1.10	0.01
Control Delay	64.0		18.4	38.0	10.0	4.0		40.0	13.1		88.9	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	64.0		18.4	38.0	10.0	4.0		40.0	13.1		88.9	0.0
LOS	E		B	D	B	A		D	B		F	A
Approach Delay		18.6			27.6			34.3			88.6	
Approach LOS		B			C			C			F	
Queue Length 50th (m)	0.3		30.3	144.9	10.4	0.0		126.7	31.1		~294.2	0.0
Queue Length 95th (m)	2.3		47.2	#237.3	28.7	14.5		#262.8	m66.5		#328.9	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	244		799	824	748	774		2208	843		2252	724
Starvation Cap Reductn	0		0	0	0	0		0	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.00		0.27	0.76	0.22	0.20		0.98	0.69		1.10	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 53.9		Intersection LOS: D	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	69	0	67	62	0	43
Future Volume (vph)	69	0	67	62	0	43
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				0.975		
Satd. Flow (prot)	1863	0	0	1816	1611	0
Flt Permitted				0.975		
Satd. Flow (perm)	1863	0	0	1816	1611	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	110.8			715.0	42.7	
Travel Time (s)	8.0			51.5	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	0	73	67	0	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	0	140	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	74	10	361	151	51	86
Future Volume (Veh/h)	74	10	361	151	51	86
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	164	20	415	222	68	132
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	637				879	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637				879	526
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				74	76
cM capacity (veh/h)	956				265	556

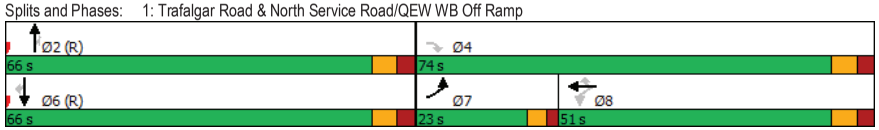
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	184	637	200
Volume Left	164	0	68
Volume Right	0	222	132
cSH	956	1700	404
Volume to Capacity	0.17	0.37	0.49
Queue Length 95th (m)	4.9	0.0	21.3
Control Delay (s)	8.7	0.0	22.3
Lane LOS	A		C
Approach Delay (s)	8.7	0.0	22.3
Approach LOS			C

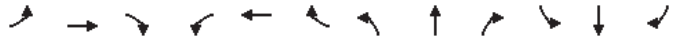
Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection Capacity Utilization 98.2%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Future Volume (vph)	1	0	196	579	42	249	0	1989	535	0	2276	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	0.95	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	0.96		1.00	0.95
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	0.89	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1568	1719	1454	1447		4940	1478		5036	1533
Flt Permitted	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1568	1719	1454	1447		4940	1478		5036	1533
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)	1	0	213	629	46	271	0	2162	582	0	2474	9
RTOR Reduction (vph)	0	0	15	0	51	80	0	0	192	0	0	5
Lane Group Flow (vph)	1	0	198	629	112	74	0	2162	390	0	2474	4
Confl. Peds. (#/hr)							8		5	5		8
Heavy Vehicles (%)	0%	0%	3%	5%	23%	6%	0%	5%	5%	0%	3%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	1.2		70.4	64.2	64.2	64.2		55.6	55.6		55.6	55.6
Effective Green, g (s)	2.2		73.4	67.2	67.2	67.2		58.6	58.6		58.6	58.6
Actuated g/C Ratio	0.02		0.52	0.48	0.48	0.48		0.42	0.42		0.42	0.42
Clearance Time (s)	5.0		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	28		822	825	697	694		2067	618		2107	641
v/s Ratio Prot	0.00				0.08			0.44			c0.49	
v/s Ratio Perm			c0.13	c0.37		0.05			0.26			0.00
v/c Ratio	0.04		0.24	0.76	0.16	0.11		1.05	0.63		1.17	0.01
Uniform Delay, d1	67.9		18.1	29.9	20.5	19.9		40.7	32.1		40.7	23.7
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.74	0.80		1.00	1.00
Incremental Delay, d2	0.5		0.2	4.2	0.1	0.1		29.6	3.2		83.8	0.0
Delay (s)	68.4		18.3	34.1	20.6	20.0		59.9	28.8		124.5	23.7
Level of Service	E		B	C	C	C		E	C		F	C
Approach Delay (s)		18.5			29.5			53.3			124.1	
Approach LOS		B			C			D			F	

Intersection Summary				
HCM 2000 Control Delay	76.1	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.94			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	98.2%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	10	361	151	51	86
Future Volume (vph)	74	10	361	151	51	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.953		0.911	
Flt Protected		0.957			0.983	
Satd. Flow (prot)	0	1614	1530	0	1531	0
Flt Permitted		0.957			0.983	
Satd. Flow (perm)	0	1614	1530	0	1531	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	164	20	415	222	68	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	637	0	200	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.5%	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 (vph)	33	232	9	32	514	81	188	0	288	46	1	0
Future Volume (vph)	33	232	9	32	514	81	188	0	288	46	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	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	0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	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)	1388	2954	1425	1593	3154	1422	1593		1425	1610	1676	
Flt Permitted	0.30	1.00	1.00	0.60	1.00	1.00	0.76		1.00	0.76	1.00	
Satd. Flow (perm)	438	2954	1425	999	3154	1422	1269		1425	1283	1676	
Peak-hour factor, PHF	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Adj. Flow (vph)	66	252	10	35	612	140	204	0	313	105	1	0
RTOR Reduction (vph)	0	0	7	0	0	100	0	0	136	0	0	0
Lane Group Flow (vph)	66	252	3	35	612	40	204	0	177	105	1	0
Confl. Peds. (#/hr)	1					1				9		
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.5	17.5	17.5	17.5	17.5	17.5	34.6		34.6	34.6	34.6	
Effective Green, g (s)	17.5	17.5	17.5	17.5	17.5	17.5	34.6		34.6	34.6	34.6	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.57		0.57	0.57	0.57	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	
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)	125	846	408	286	903	407	718		806	726	949	
v/s Ratio Prot		0.09			c0.19						0.00	
v/s Ratio Perm	0.15		0.00	0.04		0.03	c0.16		0.12	0.08		
v/c Ratio	0.53	0.30	0.01	0.12	0.68	0.10	0.28		0.22	0.14	0.00	
Uniform Delay, d1	18.3	17.0	15.6	16.1	19.3	16.0	6.8		6.6	6.3	5.8	
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	4.0	0.2	0.0	0.2	2.0	0.1	1.0		0.6	0.4	0.0	
Delay (s)	22.3	17.2	15.6	16.3	21.3	16.1	7.8		7.2	6.7	5.8	
Level of Service	C	B	B	B	C	B	A		A	A	A	
Approach Delay (s)		18.2			20.2			7.4			6.7	
Approach LOS		B			C			A			A	

Intersection Summary				
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.42			
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	49.4%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2524	2093	958
Future Volume (vph)	0	0	0	2524	2093	958
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2743	2275	1041
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2743	2275	1041
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		

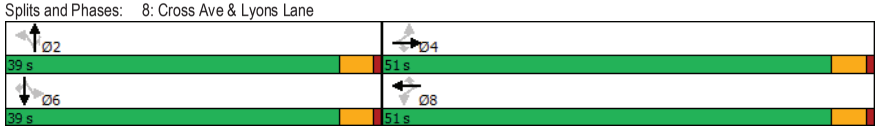
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2524	2093	958
Future Volume (Veh/h)	0	0	0	2524	2093	958
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2743	2275	1041
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.73	0.61	0.61			
vC, conflicting volume	3189	758	2275			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0	824			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	748	656	485			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	914	914	914	758	758	758	1041
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1041
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.54	0.54	0.54	0.45	0.45	0.45	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		116.4%	ICU Level of Service H
Analysis Period (min)		15	

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm		Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	46.5	46.5	46.5	46.5	46.5	46.5	34.5	34.5	34.5	34.5	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	17.5	17.5	17.5	17.5	17.5	17.5	34.7		34.7	34.7	34.7	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.57		0.57	0.57	0.57	
v/c Ratio	0.53	0.30	0.02	0.12	0.68	0.28	0.28		0.30	0.15	0.00	
Control Delay	34.7	17.7	5.3	16.6	23.3	4.9	9.2		0.7	8.1	7.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	34.7	17.7	5.3	16.6	23.3	4.9	9.2		0.7	8.1	7.0	
LOS	C	B	A	B	C	A	A		A	A	A	
Approach Delay		20.7			19.8			4.1			8.1	
Approach LOS		C			B			A			A	
Queue Length 50th (m)	6.5	12.0	0.0	3.0	33.3	0.0	11.1		0.0	5.2	0.1	
Queue Length 95th (m)	8.4	20.3	2.1	8.8	44.3	2.1	27.0		0.0	6.4	0.7	
Internal Link Dist (m)		257.3			16.1			148.6			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		
Base Capacity (vph)	334	2255	1092	762	2408	1118	718		1060	723	949	
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	0.11	0.01	0.05	0.25	0.13	0.28		0.30	0.15	0.00	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 61.2			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1119	0	1401	2093	0
Future Volume (vph)	1123	1119	0	1401	2093	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1599	0	4893	4988	0
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1599	0	4893	4988	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Adj. Flow (vph)	1221	1216	0	1523	2275	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1221	1216	0	1523	2275	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Detector Phase	4	4		2	6	
Switch Phase						

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	84.0	84.0		56.0	56.0	
Total Split (%)	60.0%	60.0%		40.0%	40.0%	
Maximum Green (s)	77.0	77.0		49.0	49.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	80.0	80.0		52.0	52.0	
Actuated g/C Ratio	0.57	0.57		0.37	0.37	
v/c Ratio	0.63	1.33		0.84	1.23	
Control Delay	21.9	185.0		51.4	144.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	21.9	185.0		51.4	144.6	
LOS	C	F		D	F	
Approach Delay	103.3			51.4	144.6	
Approach LOS	F			D	F	
Queue Length 50th (m)	117.8	~459.0		172.0	~295.4	
Queue Length 95th (m)	140.4	#543.7		m183.6	m#268.4	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1942	913		1817	1852	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.63	1.33		0.84	1.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.33			
Intersection Signal Delay: 105.7		Intersection LOS: F	
Intersection Capacity Utilization 116.4%		ICU Level of Service H	
Analysis Period (min) 15			

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

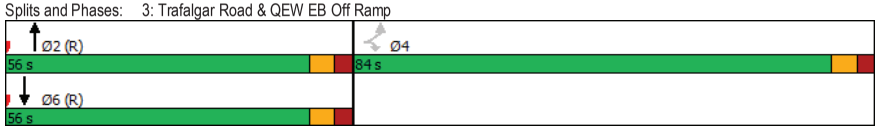
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	232	9	32	514	81	188	0	288	46	1	0
Future Volume (vph)	33	232	9	32	514	81	188	0	288	46	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98				0.99		
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1388	2954	1425	1593	3154	1454	1593	1676	1425	1624	1676	1644
Flt Permitted	0.300			0.596			0.757			0.757		
Satd. Flow (perm)	438	2954	1425	999	3154	1421	1269	1676	1425	1277	1676	1644
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			140			584			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			172.6			41.7	
Travel Time (s)		20.3			2.9			12.4			3.0	
Confl. Peds. (#/hr)	1					1				9		
Peak Hour Factor	0.50	0.92	0.92	0.92	0.84	0.58	0.92	0.92	0.92	0.44	0.92	0.41
Heavy Vehicles (%)	17%	10%	2%	2%	3%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	66	252	10	35	612	140	204	0	313	105	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	252	10	35	612	140	204	0	313	105	1	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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	1156	71	197	525	155	166	3	164	230	24	289
Future Volume (vph)	58	1156	71	197	525	155	166	3	164	230	24	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1558	3249	707	797	3249	1400	785	855	701	1534	1333	
Flt Permitted	0.45	1.00	1.00	0.10	1.00	1.00	0.17	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	730	3249	707	84	3249	1400	137	855	701	1211	1333	
Peak-hour factor, PHF	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Adj. Flow (vph)	88	1427	95	210	553	191	237	12	245	267	32	371
RTOR Reduction (vph)	0	0	54	0	0	85	0	0	89	0	196	0
Lane Group Flow (vph)	88	1427	41	210	553	106	237	12	156	267	207	0
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	36.0	36.0	36.0	47.5	47.5	47.5	29.6	29.6	29.6	21.1	21.1	
Effective Green, g (s)	38.0	38.0	38.0	47.5	49.5	49.5	31.6	31.6	29.6	23.1	23.1	
Actuated g/C Ratio	0.43	0.43	0.43	0.53	0.56	0.56	0.35	0.35	0.33	0.26	0.26	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	311	1385	301	104	1805	777	92	303	232	313	345	
v/s Ratio Prot		0.44		c0.17	0.17		c0.17	0.01			0.16	
v/s Ratio Perm	0.12		0.06	c0.90		0.08	c0.74		0.22	0.22		
v/c Ratio	0.28	1.03	0.13	2.02	0.31	0.14	2.58	0.04	0.67	0.85	0.60	
Uniform Delay, d1	16.7	25.5	15.5	23.6	10.6	9.5	26.4	18.8	25.6	31.4	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	32.3	0.4	490.7	0.2	0.2	739.9	0.1	8.1	20.2	3.3	
Delay (s)	17.7	57.9	16.0	514.3	10.8	9.7	766.3	18.9	33.6	51.6	32.2	
Level of Service	B	E	B	F	B	A	F	B	C	D	C	
Approach Delay (s)		53.2			121.4			384.8			39.9	
Approach LOS		D			F			F			D	

Intersection Summary					
HCM 2000 Control Delay	112.2	HCM 2000 Level of Service		F	
HCM 2000 Volume to Capacity ratio	2.33				
Actuated Cycle Length (s)	89.1	Sum of lost time (s)		14.5	
Intersection Capacity Utilization	93.6%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1123	1119	0	1401	2093	0
Future Volume (vph)	1123	1119	0	1401	2093	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3400	1599		4893	4988	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3400	1599		4893	4988	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1221	1216	0	1523	2275	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1221	1216	0	1523	2275	0
Heavy Vehicles (%)	3%	1%	0%	6%	4%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	77.0	77.0		49.0	49.0	
Effective Green, g (s)	80.0	80.0		52.0	52.0	
Actuated g/C Ratio	0.57	0.57		0.37	0.37	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1942	913		1817	1852	
v/s Ratio Prot				0.31	c0.46	
v/s Ratio Perm	0.36	c0.76				
v/c Ratio	0.63	1.33		0.84	1.23	
Uniform Delay, d1	20.1	30.0		40.2	44.0	
Progression Factor	1.00	1.00		1.21	1.08	
Incremental Delay, d2	0.6	156.9		2.4	104.1	
Delay (s)	20.7	186.9		51.0	151.5	
Level of Service	C	F		D	F	
Approach Delay (s)	103.6			51.0	151.5	
Approach LOS	F			D	F	

Intersection Summary			
HCM 2000 Control Delay	108.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection Capacity Utilization 93.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	38.0	38.0	38.0	49.5	49.5	49.5	33.1	31.6	29.6	23.1	23.1	
Actuated g/C Ratio	0.43	0.43	0.43	0.56	0.56	0.56	0.37	0.35	0.33	0.26	0.26	
v/c Ratio	0.28	1.03	0.25	1.98	0.31	0.22	2.52	0.04	0.76	0.85	0.74	
Control Delay	20.2	59.0	2.7	491.2	11.3	2.2	737.5	19.3	29.5	57.7	20.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.2	59.0	2.7	491.2	11.3	2.2	737.5	19.3	29.5	57.7	20.1	
LOS	C	E	A	F	B	A	F	B	C	E	C	
Approach Delay		53.6			115.2			368.9			35.0	
Approach LOS		D			F			F			D	
Queue Length 50th (m)	10.2	~149.1	0.0	~53.2	26.9	0.0	~65.3	1.4	17.5	45.7	21.4	
Queue Length 95th (m)	15.1	#158.6	0.8	#98.2	37.1	6.5	#81.4	1.4	24.2	#82.1	34.1	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	311	1386	381	106	1805	862	94	311	328	326	552	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	1.03	0.25	1.98	0.31	0.22	2.52	0.04	0.75	0.82	0.73	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 89.1			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.52			
Intersection Signal Delay: 107.8		Intersection LOS: F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	51	0	0	0	0	1401	584	0	2272	940
Future Volume (vph)	0	0	51	0	0	0	0	1401	584	0	2272	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.956	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4890	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4890	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	55	0	0	0	0	1523	635	0	2470	1022
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	55	0	0	0	0	1523	635	0	3492	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	51	0	0	0	0	1401	584	0	2272	940
Future Volume (Veh/h)	0	0	51	0	0	0	0	1401	584	0	2272	940
Sign Control		Stop			Stop			Free			Free	
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)	0	0	55	0	0	0	0	1523	635	0	2470	1022
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.71	0.71	0.63	0.71	0.71	0.85	0.63			0.85		
vC, conflicting volume	3513	4528	1358	2346	5039	508	3516			1523		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1642	3072	0	0	3792	0	2945			980		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	92	100	100	100	100			100		
cM capacity (veh/h)	46	9	660	659	3	923	76			603		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	55	508	508	508	635	988	988	1516
Volume Left	0	0	0	0	0	0	0	0
Volume Right	55	0	0	0	635	0	0	1022
cSH	660	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.30	0.30	0.30	0.37	0.58	0.58	0.89
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.9	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	1156	71	197	525	155	166	3	164	230	24	289
Future Volume (vph)	58	1156	71	197	525	155	166	3	164	230	24	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.97			0.96	0.99		0.96	0.98	0.98	
Frt			0.850			0.850			0.850		0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3249	727	797	3249	1454	785	855	727	1570	1333	0
Flt Permitted	0.445			0.100			0.165			0.750		
Satd. Flow (perm)	730	3249	707	84	3249	1399	136	855	701	1211	1333	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			191			134		265	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	9		4	4		9	12		20	20		12
Peak Hour Factor	0.66	0.81	0.75	0.94	0.95	0.81	0.70	0.25	0.67	0.86	0.75	0.78
Heavy Vehicles (%)	0%	0%	100%	97%	0%	0%	100%	100%	100%	0%	100%	0%
Adj. Flow (vph)	88	1427	95	210	553	191	237	12	245	267	32	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	1427	95	210	553	191	237	12	245	267	403	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	621	781	239	66	1047	804	170	486	49	650	703	627
Future Volume (vph)	621	781	239	66	1047	804	170	486	49	650	703	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3339		1805	3574	1503	1770	3610	1559	3433	1900	1503
Flt Permitted	0.95	1.00		0.13	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3339		241	3574	1503	219	3610	1559	3433	1900	1503
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)	675	849	260	72	1138	874	185	528	53	707	764	682
RTOR Reduction (vph)	0	20	0	0	0	216	0	0	39	0	0	186
Lane Group Flow (vph)	675	1089	0	72	1138	658	185	528	14	707	764	496
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
Heavy Vehicles (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Actuated Green, G (s)	21.0	57.4		45.6	40.0	40.0	40.0	33.0	33.0	22.0	48.0	48.0
Effective Green, g (s)	22.0	60.4		47.6	43.0	43.0	42.0	36.0	36.0	23.0	51.0	51.0
Actuated g/C Ratio	0.16	0.43		0.34	0.31	0.31	0.30	0.26	0.26	0.16	0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1440		155	1097	461	154	928	400	563	692	547
v/s Ratio Prot	c0.19	0.33		0.02	0.32		0.07	0.15		c0.21	c0.40	
v/s Ratio Perm				0.14		c0.44	0.29		0.01			0.33
v/c Ratio	1.24	0.76		0.46	1.04	1.43	1.20	0.57	0.03	1.26	1.10	0.91
Uniform Delay, d1	59.0	33.6		33.6	48.5	48.5	44.4	45.2	39.0	58.5	44.5	42.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.24	1.85
Incremental Delay, d2	123.3	2.3		2.2	37.3	204.4	136.8	2.5	0.2	119.9	54.4	8.5
Delay (s)	182.3	35.9		35.8	85.8	252.9	181.1	47.8	39.1	197.7	109.6	86.6
Level of Service	F	D		D	F	F	F	D	D	F	F	F
Approach Delay (s)		91.3			154.2			79.4			131.2	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	121.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

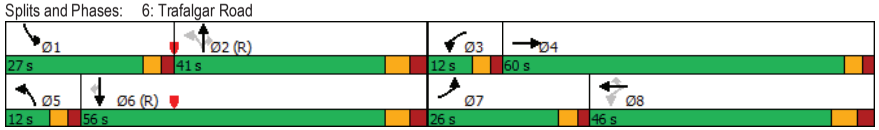
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	743	400	163	87	366	179	160	1062	547	393	1254	663
Future Volume (vph)	743	400	163	87	366	179	160	1062	547	393	1254	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.87			0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3213	3406	1442	3400	3343	1553	1641	5036	1615	1752	5036	1553
Flt Permitted	0.950			0.950			0.124			0.106		
Satd. Flow (perm)	3208	3406	1411	3382	3343	1531	214	5036	1404	196	5036	1499
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177			62			94			509
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
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 (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Adj. Flow (vph)	808	435	177	95	398	195	174	1154	595	427	1363	721
Shared Lane Traffic (%)												
Lane Group Flow (vph)	808	435	177	95	398	195	174	1154	595	427	1363	721
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	12.0	10.0	7.0	7.0	27.0	12.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	17.0	25.0	11.5	11.5	34.0	17.0	11.5	34.0	34.0
Total Split (s)	40.0	31.0	31.0	34.0	25.0	35.0	17.9	40.0	34.0	35.0	57.1	57.1
Total Split (%)	28.6%	22.1%	22.1%	24.3%	17.9%	25.0%	12.8%	28.6%	24.3%	25.0%	40.8%	40.8%
Maximum Green (s)	33.0	24.0	24.0	30.0	18.0	31.0	13.9	33.0	30.0	31.0	50.1	50.1
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	36.0	35.6	35.6	21.1	20.7	51.3	49.9	36.7	57.9	71.3	54.1	54.1
Actuated g/C Ratio	0.26	0.25	0.25	0.15	0.15	0.37	0.36	0.26	0.41	0.51	0.39	0.39
v/c Ratio	0.98	0.50	0.36	0.19	0.80	0.32	0.83	0.87	0.89	0.97	0.70	0.81
Control Delay	77.8	48.5	8.6	50.4	70.9	20.9	40.5	54.3	42.3	48.0	25.4	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	48.5	8.6	50.4	70.9	20.9	40.5	54.3	42.3	48.0	25.4	4.7
LOS	E	D	A	D	E	C	D	D	D	D	C	A
Approach Delay		60.2			53.9			49.3			23.3	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	121.1	57.7	0.0	12.5	59.6	25.5	36.7	100.1	148.5	94.3	119.3	42.9
Queue Length 95th (m)	#164.5	81.7	21.0	19.7	#80.4	45.1	m37.7	m98.6	m77.9	m61.4	m80.8	m13.6
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	826	866	490	728	501	609	218	1321	763	443	1947	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	1	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.50	0.36	0.13	0.79	0.32	0.80	0.87	0.78	0.96	0.70	0.81

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 42.2 Intersection LOS: D

Intersection Capacity Utilization 106.4% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Trafalgar Road

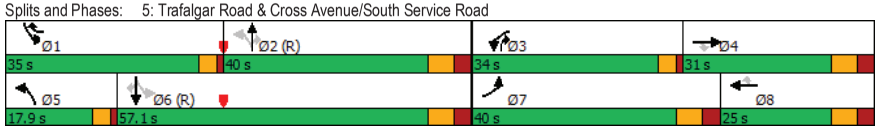


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	26.0	60.0		12.0	46.0	46.0	12.0	41.0	41.0	27.0	56.0	56.0
Total Split (%)	18.6%	42.9%		8.6%	32.9%	32.9%	8.6%	29.3%	29.3%	19.3%	40.0%	40.0%
Maximum Green (s)	21.0	55.0		7.0	39.0	39.0	7.0	34.0	34.0	22.0	49.0	49.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	-3.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	22.0	60.4		50.0	42.0	42.0	45.0	37.0	37.0	23.0	52.0	52.0
Actuated g/C Ratio	0.16	0.43		0.36	0.30	0.30	0.32	0.26	0.26	0.16	0.37	0.37
v/c Ratio	1.24	0.76		0.41	1.06	1.31	1.16	0.55	0.10	1.26	1.08	0.92
Control Delay	170.9	37.3		28.5	91.9	174.6	152.6	47.0	0.3	178.7	96.3	50.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.9	37.3		28.5	91.9	174.6	152.6	47.0	0.3	178.7	96.3	50.1
LOS	F	D		C	F	F	F	D	A	F	F	D
Approach Delay		87.9			124.4			69.3			108.7	
Approach LOS		F			F			E			F	
Queue Length 50th (m)	~125.4	142.6		11.0	~191.5	~260.0	~45.2	70.2	0.0	~136.2	~238.3	128.6
Queue Length 95th (m)	#165.3	171.8		20.4	#235.7	#342.8	#96.8	89.6	0.0	m#132.6	m#229.3	m123.2
Internal Link Dist (m)		74.1			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0			80.0		
Base Capacity (vph)	544	1460		175	1072	669	159	954	549	563	705	741
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.76		0.41	1.06	1.31	1.16	0.55	0.10	1.26	1.08	0.92

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 103.6 Intersection LOS: F

Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	743	400	163	87	366	179	160	1062	547	393	1254	663
Future Volume (vph)	743	400	163	87	366	179	160	1062	547	393	1254	663
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.92	1.00	1.00	0.97
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3406	1411	3400	3343	1545	1641	5036	1485	1752	5036	1499
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3213	3406	1411	3400	3343	1545	213	5036	1485	195	5036	1499
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)	808	435	177	95	398	195	174	1154	595	427	1363	721
RTOR Reduction (vph)	0	0	132	0	0	41	0	0	57	0	0	312
Lane Group Flow (vph)	808	435	45	95	398	154	174	1154	538	427	1363	409
Confl. Peds. (#/hr)	1		4	4		1	10		52	52		10
Heavy Vehicles (%)	9%	6%	12%	3%	8%	4%	10%	3%	0%	3%	3%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	33.0	32.6	32.6	21.1	17.7	48.2	46.9	33.8	54.9	68.3	51.2	51.2
Effective Green, g (s)	36.0	35.6	35.6	21.1	20.7	48.2	46.9	36.8	54.9	68.3	54.2	54.2
Actuated g/C Ratio	0.26	0.25	0.25	0.15	0.15	0.34	0.33	0.26	0.39	0.49	0.39	0.39
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	826	866	358	512	494	531	204	1323	582	434	1949	580
v/s Ratio Prot	c0.25	0.13		0.03	c0.12	0.06	0.08	0.23	0.14	c0.21	0.27	
v/s Ratio Perm			0.03			0.04	0.20		0.22	c0.27		0.27
v/c Ratio	0.98	0.50	0.13	0.19	0.81	0.29	0.85	0.87	0.92	0.98	0.70	0.71
Uniform Delay, d1	51.6	44.6	40.2	51.9	57.7	33.4	35.7	49.4	40.6	43.4	36.1	36.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.05	1.24	0.99	0.69	0.35
Incremental Delay, d2	25.7	0.5	0.2	0.2	9.3	0.3	8.1	2.1	6.5	9.5	0.2	0.7
Delay (s)	77.3	45.1	40.4	52.1	67.0	33.7	40.8	53.9	56.6	52.5	25.0	13.2
Level of Service	E	D	D	D	E	C	D	D	E	D	C	B
Approach Delay (s)		62.8			55.5			53.6			26.3	
Approach LOS		E			E			D			C	

Intersection Summary				
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0	
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)	621	781	239	66	1047	804	170	486	49	650	703	627
Future Volume (vph)	621	781	239	66	1047	804	170	486	49	650	703	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		0.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	0.98				0.94			0.97	0.98		0.95
Frt		0.965				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	3339	0	1805	3574	1599	1770	3610	1615	3433	1900	1583
Flt Permitted	0.950			0.127			0.118			0.950		
Satd. Flow (perm)	3432	3339	0	241	3574	1503	220	3610	1559	3369	1900	1503
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				312			187			292
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		98.1			316.9			171.0			266.5	
Travel Time (s)		7.1			22.8			12.3			19.2	
Confl. Peds. (#/hr)	21		14	14		21	17		10	10		17
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 (%)	1%	3%	1%	0%	1%	1%	2%	0%	0%	2%	0%	2%
Adj. Flow (vph)	675	849	260	72	1138	874	185	528	53	707	764	682
Shared Lane Traffic (%)												
Lane Group Flow (vph)	675	1109	0	72	1138	874	185	528	53	707	764	682
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1268	407	184	294	334	413	240	1474	197	172	1504	584
Future Volume (vph)	1268	407	184	294	334	413	240	1474	197	172	1504	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.95
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3343	1413	3433	3471	1599	1719	5136	1422	1805	5136	1485
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3400	3343	1413	3433	3471	1599	181	5136	1422	201	5136	1485
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)	1378	442	200	320	363	449	261	1602	214	187	1635	635
RTOR Reduction (vph)	0	0	124	0	0	93	0	0	85	0	0	232
Lane Group Flow (vph)	1378	442	76	320	363	356	261	1602	129	187	1635	403
Confl. Peds. (#/hr)			15	15			18		70	70		18
Heavy Vehicles (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Actuated Green, G (s)	46.0	48.8	48.8	17.6	17.4	28.9	53.8	40.1	57.7	49.4	37.9	37.9
Effective Green, g (s)	49.0	51.8	48.8	17.6	20.4	28.9	53.8	43.1	57.7	49.4	40.9	40.9
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.15	0.21	0.38	0.31	0.41	0.35	0.29	0.29
Clearance Time (s)	7.0	7.0	7.0	4.0	7.0	4.0	4.0	7.0	4.0	4.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1190	1236	492	431	505	330	220	1581	586	202	1500	433
v/s Ratio Prot	c0.41	0.13		0.09	0.10	c0.09	c0.12	0.31	0.03	0.08	0.32	
v/s Ratio Perm			0.05			0.13	c0.34		0.06	0.25		0.27
v/c Ratio	1.16	0.36	0.15	0.74	0.72	1.08	1.19	1.01	0.22	0.93	1.09	0.93
Uniform Delay, d1	45.5	32.0	31.4	59.0	57.1	55.5	40.8	48.4	26.6	37.3	49.5	48.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.34	1.06	2.18	1.05	0.74	0.47
Incremental Delay, d2	80.8	0.2	0.1	6.8	4.9	72.3	88.3	10.4	0.0	25.5	46.4	16.8
Delay (s)	126.3	32.2	31.5	65.8	61.9	127.9	143.2	62.0	58.1	64.5	83.1	39.5
Level of Service	F	C	C	E	E	F	F	E	E	E	F	D
Approach Delay (s)		96.4			89.2			71.8			70.4	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	80.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

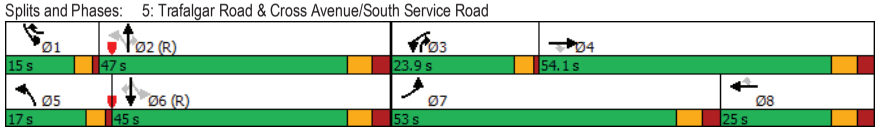
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Future Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	80.0		0.0	80.0		0.0	25.0		60.0	80.0		0.0
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99		0.93	0.99		0.95	0.96		0.97
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3390	0	1703	3505	1568	1770	3574	1615	3367	1863	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3350	3390	0	1689	3505	1460	1752	3574	1529	3247	1863	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				273			187			349
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.0			316.9			171.0			266.5	
Travel Time (s)		6.8			22.8			12.3			19.2	
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
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 (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Adj. Flow (vph)	668	739	118	15	633	762	88	486	68	571	552	495
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	857	0	15	633	762	88	486	68	571	552	495
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)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	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	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	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	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	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	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0	10.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	12.0	37.0		12.0	37.0	37.0	12.0	39.0	39.0	12.0	39.0	39.0
Total Split (s)	28.0	64.0		12.0	48.0	48.0	12.0	40.0	40.0	24.0	52.0	52.0
Total Split (%)	20.0%	45.7%		8.6%	34.3%	34.3%	8.6%	28.6%	28.6%	17.1%	37.1%	37.1%
Maximum Green (s)	23.0	59.0		7.0	41.0	41.0	7.0	33.0	33.0	19.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-3.0		-1.0	-3.0	-3.0	-1.0	-3.0	0.0	-1.0	-3.0	-3.0
Total Lost Time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0	0		0	0		0	0
Act Effct Green (s)	24.0	69.2		8.0	44.0	44.0	8.0	36.0	33.0	20.0	48.0	48.0
Actuated g/C Ratio	0.17	0.49		0.06	0.31	0.31	0.06	0.26	0.24	0.14	0.34	0.34
v/c Ratio	1.14	0.51		0.15	0.57	1.18	0.87	0.53	0.14	1.19	0.87	0.67
Control Delay	131.7	25.6		66.6	42.7	123.8	124.2	47.2	0.6	175.9	32.2	11.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.7	25.6		66.6	42.7	123.8	124.2	47.2	0.6	175.9	32.2	11.2
LOS	F	C		E	D	F	F	D	A	F	C	B
Approach Delay		72.1			86.8			52.8			76.5	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~116.4	78.8		4.3	81.3	~208.2	26.0	64.4	0.0	~105.9	37.9	9.6
Queue Length 95th (m)	#156.3	116.0		12.1	101.9	#288.6	#59.5	83.2	0.0	#145.1	#204.4	46.8
Internal Link Dist (m)		70.0			292.9			147.0			242.5	
Turn Bay Length (m)	80.0			80.0			25.0		60.0	80.0		
Base Capacity (vph)	588	1683		97	1101	646	101	919	503	481	638	734
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.51		0.15	0.57	1.18	0.87	0.53	0.14	1.19	0.87	0.67

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 54.5 (39%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 75.0	Intersection LOS: E

Intersection Capacity Utilization 101.1%	ICU Level of Service G
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Trafalgar Road & Cross Avenue/South Service Road



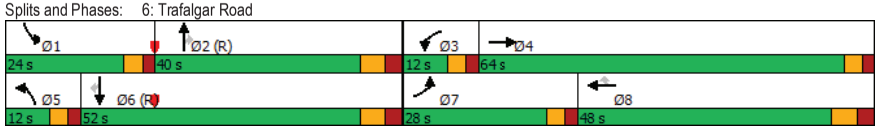
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	5.0	10.0	7.0	7.0	27.0	5.0	7.0	27.0	27.0
Minimum Split (s)	17.0	25.0	25.0	9.5	25.0	11.5	11.5	34.0	9.5	11.5	34.0	34.0
Total Split (s)	53.0	54.1	54.1	23.9	25.0	15.0	17.0	47.0	23.9	15.0	45.0	45.0
Total Split (%)	37.9%	38.6%	38.6%	17.1%	17.9%	10.7%	12.1%	33.6%	17.1%	10.7%	32.1%	32.1%
Maximum Green (s)	46.0	47.1	47.1	19.9	18.0	11.0	13.0	40.0	19.9	11.0	38.0	38.0
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0	1.0	1.0	3.0	1.0	1.0	3.0	3.0
Lost Time Adjust (s)	-3.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	0.0	0.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	7.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0			0	0
Act Effct Green (s)	49.0	51.8	48.8	17.6	20.3	35.9	56.8	43.1	60.7	52.5	41.0	41.0
Actuated g/C Ratio	0.35	0.37	0.35	0.13	0.14	0.26	0.41	0.31	0.43	0.38	0.29	0.29
v/c Ratio	1.16	0.36	0.32	0.74	0.72	0.90	1.17	1.01	0.31	0.90	1.09	0.95
Control Delay	121.8	33.3	6.7	69.9	65.9	59.8	122.2	60.9	16.5	58.6	80.8	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.8	33.3	6.7	69.9	65.9	59.8	122.2	60.9	16.5	58.6	80.8	27.7
LOS	F	C	A	E	E	E	F	E	B	E	F	C
Approach Delay		91.0			64.6			64.0			65.4	
Approach LOS		F			E			E			E	
Queue Length 50th (m)	~244.0	49.0	1.9	46.8	53.5	98.4	~77.8	~183.5	18.5	33.8	~200.2	114.0
Queue Length 95th (m)	#287.9	65.2	20.1	62.9	71.8	#163.4	m#66.2	m123.3	m14.7	m#46.0	m#228.5	m#155.6
Internal Link Dist (m)		219.7			214.9			242.5			247.0	
Turn Bay Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Base Capacity (vph)	1190	1235	616	487	520	497	223	1581	721	207	1504	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.36	0.32	0.66	0.70	0.90	1.17	1.01	0.30	0.90	1.09	0.95

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 54.5 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 71.6 Intersection LOS: E

Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Trafalgar Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Future Volume (vph)	615	680	109	14	582	701	81	447	63	525	508	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	2.0		4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	1.00	0.95	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3391		1703	3505	1460	1770	3574	1529	3367	1863	1474
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)	668	739	118	15	633	762	88	486	68	571	552	495
RTOR Reduction (vph)	0	8	0	0	0	181	0	0	53	0	0	237
Lane Group Flow (vph)	668	849	0	15	633	581	88	486	15	571	552	258
Confl. Peds. (#/hr)	25		7	7		25	9		18	18		9
Heavy Vehicles (%)	2%	4%	1%	6%	3%	3%	2%	1%	0%	4%	2%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	23.0	66.2		2.8	44.0	44.0	7.0	30.0	30.0	19.0	42.0	42.0
Effective Green, g (s)	24.0	69.2		3.8	47.0	47.0	8.0	33.0	30.0	20.0	45.0	45.0
Actuated g/C Ratio	0.17	0.49		0.03	0.34	0.34	0.06	0.24	0.21	0.14	0.32	0.32
Clearance Time (s)	5.0	5.0		5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	588	1676		46	1176	490	101	842	327	481	598	473
v/s Ratio Prot	c0.19	0.25		0.01	0.18		0.05	0.14		c0.17	c0.30	
v/s Ratio Perm						c0.40			0.01			0.18
v/c Ratio	1.14	0.51		0.33	0.54	1.19	0.87	0.58	0.04	1.19	0.92	0.55
Uniform Delay, d1	58.0	23.9		66.8	37.7	46.5	65.5	47.3	43.6	60.0	45.8	39.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.63	0.45	0.67
Incremental Delay, d2	80.6	0.2		4.1	0.5	102.4	50.9	2.9	0.3	99.7	18.3	3.5
Delay (s)	138.6	24.1		71.0	38.2	148.9	116.4	50.2	43.9	197.2	38.9	29.5
Level of Service	F	C		E	D	F	F	D	D	F	D	C
Approach Delay (s)		74.3			98.4			58.6			91.9	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	84.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.9%	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)	1268	407	184	294	334	413	240	1474	197	172	1504	584
Future Volume (vph)	1268	407	184	294	334	413	240	1474	197	172	1504	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		60.0	25.0		60.0	50.0		60.0	25.0		60.0
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor			0.95	0.98					0.83			0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3343	1482	3433	3471	1599	1719	5136	1615	1805	5136	1568
Flt Permitted	0.950			0.950			0.100			0.106		
Satd. Flow (perm)	3400	3343	1413	3368	3471	1599	181	5136	1337	201	5136	1485
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			117			145			328
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		243.7			238.9			266.5			271.0	
Travel Time (s)		17.5			17.2			19.2			19.5	
Confl. Peds. (#/hr)			15	15			18		70	70		18
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 (%)	3%	8%	9%	2%	4%	1%	5%	1%	0%	0%	1%	3%
Adj. Flow (vph)	1378	442	200	320	363	449	261	1602	214	187	1635	635
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1378	442	200	320	363	449	261	1602	214	187	1635	635
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)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	88	0	0	0	0	2210	944	0	2165	530
Future Volume (Veh/h)	0	0	88	0	0	0	0	2210	944	0	2165	530
Sign Control		Stop			Stop			Free			Free	
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)	0	0	96	0	0	0	0	2402	1026	0	2353	576
Pedestrians		24										
Lane Width (m)		3.6										
Walking Speed (m/s)		1.2										
Percent Blockage		2										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								271			51	
pX, platoon unblocked	0.72	0.72	0.59	0.72	0.72	0.75	0.59			0.75		
vC, conflicting volume	3466	5067	1096	3186	5355	801	2953			2402		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	735	2967	0	346	3368	0	1896			1714		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	85	100	100	100	100			100		
cM capacity (veh/h)	215	10	620	352	5	821	186			282		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	96	801	801	801	1026	941	941	1047
Volume Left	0	0	0	0	0	0	0	0
Volume Right	96	0	0	0	1026	0	0	576
cSH	620	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.47	0.47	0.47	0.60	0.55	0.55	0.62
Queue Length 95th (m)	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.9	0.0				0.0		
Approach LOS	B							

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	66.2%	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)	33	404	15	210	891	72	94	0	237	183	21	661
Future Volume (vph)	33	404	15	210	891	72	94	0	237	183	21	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Storage Length (m)	20.0		60.0	20.0		60.0	0.0		0.0	15.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98			0.96	0.98	0.99	
Frt			0.850			0.850			0.850		0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1570	3217	727	818	3217	1384	805	1710	761	1570	1387	0
Flt Permitted	0.267			0.354			0.150			0.757		
Satd. Flow (perm)	441	3217	708	304	3217	1354	127	1710	734	1222	1387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			91			342		98	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		374.0			243.7			81.9			180.7	
Travel Time (s)		26.9			17.5			5.9			13.0	
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Peak Hour Factor	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Adj. Flow (vph)	63	464	23	250	1013	91	177	0	339	235	34	743
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	464	23	250	1013	91	177	0	339	235	777	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)		7.2			7.2			3.3			3.3	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14	1.19	1.14	1.14
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	
Trailing Detector (m)	0.0	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	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	
Detector 1 Type	Cl+Ex	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	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	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	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	2	2	2	1	6	6	3	8	8	4	4	
Switch Phase												
Minimum Initial (s)	22.0	22.0	22.0	8.0	22.0	22.0	5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	45.0	45.0	45.0	12.5	29.0	29.0	9.5	29.0	29.0	29.0	29.0	
Total Split (s)	42.0	42.0	42.0	11.5	53.5	53.5	8.5	36.5	36.5	28.0	28.0	
Total Split (%)	46.7%	46.7%	46.7%	12.8%	59.4%	59.4%	9.4%	40.6%	40.6%	31.1%	31.1%	
Maximum Green (s)	36.0	36.0	36.0	7.5	47.5	47.5	4.0	30.5	30.5	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	4.0	6.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0	4.0	4.0	4.0	4.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0		16.0	16.0		16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0	0	0	
Act Effct Green (s)	28.3	28.3	28.3	39.8	39.8	39.8	34.1		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.49	0.49	0.49	0.42		0.38	0.30	0.30	
v/c Ratio	0.41	0.41	0.07	1.26	0.64	0.13	1.70		0.69	0.64	1.61	
Control Delay	28.3	20.7	0.4	173.4	16.9	2.8	371.9		11.3	35.8	305.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	28.3	20.7	0.4	173.4	16.9	2.8	371.9		11.3	35.8	305.5	
LOS	C	C	A	F	B	A	F		B	D	F	
Approach Delay		20.7			44.9			135.0			242.9	
Approach LOS		C			D			F			F	
Queue Length 50th (m)	7.5	29.1	0.0	~39.3	59.7	0.0	~33.0		0.0	30.8	~163.9	
Queue Length 95th (m)	9.4	39.5	0.0	#92.9	75.6	4.7	#38.8		3.7	54.7	#156.3	
Internal Link Dist (m)		350.0			219.7			57.9			156.7	
Turn Bay Length (m)	20.0		60.0	20.0		60.0				15.0		
Base Capacity (vph)	208	1524	408	198	1986	870	104		491	365	483	
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.30	0.30	0.06	1.26	0.51	0.10	1.70		0.69	0.64	1.61	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 80.5
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.70
Intersection Signal Delay: 112.9 Intersection LOS: F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	88	0	0	0	0	2210	944	0	2165	530
Future Volume (vph)	0	0	88	0	0	0	0	2210	944	0	2165	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Ped Bike Factor												
Frt			0.865						0.850		0.971	
Flt Protected												
Satd. Flow (prot)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Flt Permitted												
Satd. Flow (perm)	0	0	1522	0	0	0	0	5085	1568	0	4957	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		165.2			196.1			271.0			50.7	
Travel Time (s)		11.9			14.1			19.5			3.7	
Confl. Peds. (#/hr)												24
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 (%)	0%	0%	8%	0%	2%	0%	0%	2%	3%	0%	2%	0%
Adj. Flow (vph)	0	0	96	0	0	0	0	2402	1026	0	2353	576
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	96	0	0	0	0	2402	1026	0	2929	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			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 66.2% ICU Level of Service C
Analysis Period (min) 15

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	623	0	2210	2072	0
Future Volume (vph)	1210	623	0	2210	2072	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	1.00		0.91	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	1573		5085	5085	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	1573		5085	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1315	677	0	2402	2252	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1315	676	0	2402	2252	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	59.7	59.7		66.3	66.3	
Effective Green, g (s)	62.7	62.7		69.3	69.3	
Actuated g/C Ratio	0.45	0.45		0.49	0.49	
Clearance Time (s)	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1568	704		2517	2517	
v/s Ratio Prot				c0.47	0.44	
v/s Ratio Perm	0.38	c0.43				
v/c Ratio	0.84	0.96		0.95	0.89	
Uniform Delay, d1	34.2	37.4		33.8	32.0	
Progression Factor	1.00	1.00		1.36	0.87	
Incremental Delay, d2	4.1	24.4		1.3	2.9	
Delay (s)	38.3	61.8		47.4	30.6	
Level of Service	D	E		D	C	
Approach Delay (s)	46.3			47.4	30.6	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection Capacity Utilization 111.8% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 7: GO Bus Terminal/Argus Rd & Cross Ave

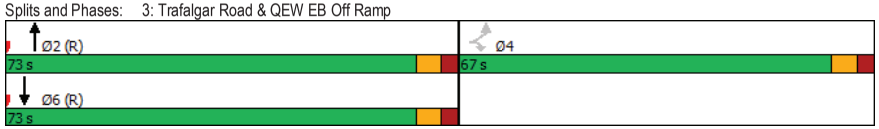
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	404	15	210	891	72	94	0	237	183	21	661
Future Volume (vph)	33	404	15	210	891	72	94	0	237	183	21	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6	3.3	3.6	3.6
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5		6.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00		0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.86	
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)	1570	3217	708	817	3217	1354	805		736	1537	1387	
Flt Permitted	0.27	1.00	1.00	0.35	1.00	1.00	0.15		1.00	0.76	1.00	
Satd. Flow (perm)	441	3217	708	305	3217	1354	127		736	1225	1387	
Peak-hour factor, PHF	0.52	0.87	0.65	0.84	0.88	0.79	0.53	0.25	0.70	0.78	0.62	0.89
Adj. Flow (vph)	63	464	23	250	1012	91	177	0	339	235	34	743
RTOR Reduction (vph)	0	0	15	0	0	46	0	0	210	0	69	0
Lane Group Flow (vph)	63	464	8	250	1013	45	177	0	129	235	708	0
Confl. Peds. (#/hr)	1		3	3		1	3		20	20		3
Heavy Vehicles (%)	0%	1%	100%	92%	1%	5%	95%	0%	91%	0%	93%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt		Perm	Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		
Actuated Green, G (s)	26.3	26.3	26.3	37.8	37.8	37.8	30.6		30.6	22.1	22.1	
Effective Green, g (s)	28.3	28.3	28.3	37.8	39.8	39.8	32.6		30.6	24.1	24.1	
Actuated g/C Ratio	0.35	0.35	0.35	0.47	0.50	0.50	0.41		0.38	0.30	0.30	
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.5		6.0	6.0	6.0	
Vehicle Extension (s)	5.0	5.0	5.0	2.5	5.0	5.0	3.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	155	1132	249	191	1592	670	102		280	367	415	
v/s Ratio Prot		0.14		c0.12	0.31		c0.13				0.51	
v/s Ratio Perm	0.14		0.01	c0.49		0.03	c0.57		0.18	0.19		
v/c Ratio	0.41	0.41	0.03	1.31	0.64	0.07	1.74		0.46	0.64	1.71	
Uniform Delay, d1	19.7	19.7	17.1	20.0	15.0	10.6	21.9		18.7	24.4	28.2	
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	3.6	0.5	0.1	171.4	1.2	0.1	368.3		1.6	4.2	328.3	
Delay (s)	23.3	20.2	17.2	191.3	16.1	10.7	390.2		20.3	28.6	356.4	
Level of Service	C	C	B	F	B	B	F		C	C	F	
Approach Delay (s)		20.5			48.1			147.2			280.3	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	127.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	14.5
Intersection Capacity Utilization	111.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Trafalgar Road & QEW EB Off Ramp



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0		29.0	29.0	
Minimum Split (s)	38.0	38.0		36.0	36.0	
Total Split (s)	67.0	67.0		73.0	73.0	
Total Split (%)	47.9%	47.9%		52.1%	52.1%	
Maximum Green (s)	60.0	60.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	62.7	62.7		69.3	69.3	
Actuated g/C Ratio	0.45	0.45		0.50	0.50	
v/c Ratio	0.84	0.96		0.95	0.89	
Control Delay	40.1	63.1		47.2	31.0	
Queue Delay	0.0	0.0		8.2	0.0	
Total Delay	40.1	63.1		55.4	31.0	
LOS	D	E		E	C	
Approach Delay	47.9			55.4	31.0	
Approach LOS	D			E	C	
Queue Length 50th (m)	171.1	187.0		266.1	185.4	
Queue Length 95th (m)	202.5	#272.9		m247.2	228.1	
Internal Link Dist (m)	47.3			26.7	162.0	
Turn Bay Length (m)						
Base Capacity (vph)	1575	708		2517	2517	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		133	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.83	0.96		1.01	0.89	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 44.9 Intersection LOS: D
Intersection Capacity Utilization 85.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	445	133	247	277	24	54	1	107	93	28	72
Future Volume (vph)	63	445	133	247	277	24	54	1	107	93	28	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1624	3094	1425	1593	2801	1454	1593	1676	1425	1624	1676	1163
Flt Permitted	0.561			0.159			0.738			0.757		
Satd. Flow (perm)	953	3094	1425	267	2801	1410	1237	1676	1425	1281	1676	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			48			116			144
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		281.3			40.1			149.2			41.7	
Travel Time (s)		20.3			2.9			10.7			3.0	
Confl. Peds. (#/hr)	4					4				7		
Peak Hour Factor	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	91	767	145	268	315	48	59	1	116	150	30	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	767	145	268	315	48	59	1	116	150	30	144
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)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	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	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	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	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	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	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	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	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	35.6%	35.6%	35.6%	28.9%	64.4%	64.4%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	27.5	27.5	27.5	21.5	53.5	53.5	27.5	27.5	27.5	27.5	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0	0	0	0	0
Act Effct Green (s)	24.0	24.0	24.0	42.4	42.4	42.4	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.30	0.30	0.30	0.53	0.53	0.53	0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.32	0.82	0.27	0.72	0.21	0.06	0.14	0.00	0.20	0.33	0.05	0.29
Control Delay	25.8	34.5	5.7	24.7	9.6	2.7	21.7	21.0	5.7	24.1	20.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	34.5	5.7	24.7	9.6	2.7	21.7	21.0	5.7	24.1	20.6	5.9
LOS	C	C	A	C	A	A	C	C	A	C	C	A
Approach Delay		29.6			15.5			11.1			15.7	
Approach LOS		C			B			B			B	
Queue Length 50th (m)	10.8	57.2	0.0	22.0	12.6	0.0	6.5	0.1	0.0	17.8	3.2	0.0
Queue Length 95th (m)	19.1	50.4	13.2	47.5	18.6	0.8	17.5	1.3	11.9	25.0	10.3	0.0
Internal Link Dist (m)		257.3			16.1			125.2			17.7	
Turn Bay Length (m)	60.0		60.0	60.0		60.0	60.0		60.0	60.0		60.0
Base Capacity (vph)	334	1085	594	506	1911	977	433	587	575	449	587	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.71	0.24	0.53	0.16	0.05	0.14	0.00	0.20	0.33	0.05	0.29

Intersection Summary			
Area Type:	CBD		
Cycle Length: 90			
Actuated Cycle Length: 79.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1210	623	0	2210	2072	0
Future Volume (vph)	1210	623	0	2210	2072	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	1599	0	5085	5085	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	1573	0	5085	5085	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	50			50	50	
Link Distance (m)	71.3			50.7	186.0	
Travel Time (s)	5.1			3.7	13.4	
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%
Adj. Flow (vph)	1315	677	0	2402	2252	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1315	677	0	2402	2252	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm		NA	NA	
Protected Phases				2	6	
Permitted Phases	4	4				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	3420	2072	959
Future Volume (Veh/h)	0	0	0	3420	2072	959
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	0	0	3717	2252	1042
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				186	145	
pX, platoon unblocked	0.25					
vC, conflicting volume	3491	751	2252			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	401	751	2252			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	142	353	225			

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	1239	1239	1239	751	751	751	1042
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	1042
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.73	0.73	0.73	0.44	0.44	0.44	0.61
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							
Approach Delay (s)	0.0			0.0			
Approach LOS							

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		85.5%	ICU Level of Service E
Analysis Period (min)		15	

Analysis Period (min) 15

Splits and Phases: 8: Cross Ave & Lyons Lane

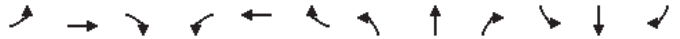
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	445	133	247	277	24	54	1	107	93	28	72
Future Volume (vph)	63	445	133	247	277	24	54	1	107	93	28	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1615	3094	1425	1593	2801	1412	1593	1676	1425	1610	1676	1163
Flt Permitted	0.56	1.00	1.00	0.16	1.00	1.00	0.74	1.00	1.00	0.76	1.00	1.00
Satd. Flow (perm)	953	3094	1425	266	2801	1412	1237	1676	1425	1283	1676	1163
Peak-hour factor, PHF	0.69	0.58	0.92	0.92	0.88	0.50	0.92	0.92	0.92	0.62	0.92	0.50
Adj. Flow (vph)	91	767	145	268	315	48	59	1	116	150	30	144
RTOR Reduction (vph)	0	0	101	0	0	22	0	0	75	0	0	93
Lane Group Flow (vph)	91	767	44	268	315	26	59	1	41	150	30	51
Confl. Peds. (#/hr)	4					4				7		
Heavy Vehicles (%)	0%	5%	2%	2%	16%	0%	2%	2%	2%	0%	2%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	24.0	24.0	24.0	42.4	42.4	42.4	27.8	27.8	27.8	27.8	27.8	27.8
Effective Green, g (s)	24.0	24.0	24.0	42.4	42.4	42.4	27.8	27.8	27.8	27.8	27.8	27.8
Actuated g/C Ratio	0.30	0.30	0.30	0.54	0.54	0.54	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	288	937	431	375	1499	755	434	588	500	450	588	408
v/s Ratio Prot		c0.25		c0.13	0.11			0.00			0.02	
v/s Ratio Perm	0.10		0.03	0.26		0.02	0.05		0.03	c0.12		0.04
v/c Ratio	0.32	0.82	0.10	0.71	0.21	0.03	0.14	0.00	0.08	0.33	0.05	0.12
Uniform Delay, d1	21.3	25.6	19.8	13.3	9.6	8.7	17.5	16.7	17.2	18.9	17.0	17.4
Progression 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
Incremental Delay, d2	0.6	5.6	0.1	6.3	0.1	0.0	0.7	0.0	0.3	2.0	0.2	0.6
Delay (s)	21.9	31.2	20.0	19.6	9.7	8.7	18.2	16.7	17.5	20.9	17.1	18.1
Level of Service	C	C	B	B	A	A	B	B	B	C	B	B
Approach Delay (s)		28.7			13.8			17.7			19.3	
Approach LOS		C			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	52.5%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	3420	2072	959
Future Volume (vph)	0	0	0	3420	2072	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	5085	5085	1583
Flt Permitted						
Satd. Flow (perm)	0	0	0	5085	5085	1583
Link Speed (k/h)	50			50	50	
Link Distance (m)	159.6			186.0	145.2	
Travel Time (s)	11.5			13.4	10.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	3717	2252	1042
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	3717	2252	1042
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Future Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00		1.00	0.95	0.95	1.00		0.91	1.00		0.91	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98		1.00	0.93		1.00	0.93
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)	1805		1615	1681	1723	1557		5085	1482		4217	1497
Flt Permitted	0.95		1.00	0.95	0.97	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)	1805		1615	1681	1723	1557		5085	1482		4217	1497
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)	26	0	345	722	172	359	0	3110	608	0	2228	12
RTOR Reduction (vph)	0	0	21	0	0	47	0	0	138	0	0	5
Lane Group Flow (vph)	26	0	324	440	454	312	0	3110	470	0	2228	7
Confl. Peds. (#/hr)	2					2	14		14	14		14
Heavy Vehicles (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	3.0		44.3	36.8	36.8	36.8		81.7	81.7		81.7	81.7
Effective Green, g (s)	4.0		47.3	39.8	39.8	39.8		84.7	84.7		84.7	84.7
Actuated g/C Ratio	0.03		0.34	0.28	0.28	0.28		0.61	0.61		0.61	0.61
Clearance Time (s)	4.5		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51		545	477	489	442		3076	896		2551	905
v/s Ratio Prot	0.01							c0.61			0.53	
v/s Ratio Perm			c0.20	0.26	0.26	0.20			0.32			0.00
v/c Ratio	0.51		0.60	0.92	0.93	0.71		1.01	0.52		0.87	0.01
Uniform Delay, d1	67.0		38.4	48.6	48.7	44.9		27.6	16.0		23.2	11.0
Progression Factor	1.00		1.00	1.00	1.00	1.00		0.63	0.60		1.00	1.00
Incremental Delay, d2	7.8		1.8	23.4	23.9	5.1		13.0	0.9		4.5	0.0
Delay (s)	74.8		40.2	72.0	72.6	49.9		30.4	10.5		27.7	11.0
Level of Service	E		D	E	E	D		C	B		C	B
Approach Delay (s)		42.6			65.9			27.1			27.6	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	604	145	23	62
Future Volume (vph)	1	5	604	145	23	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.970		0.902	
Flt Protected		0.988			0.987	
Satd. Flow (prot)	0	1352	1621	0	1522	0
Flt Permitted		0.988			0.987	
Satd. Flow (perm)	0	1352	1621	0	1522	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	4	12	702	201	92	248
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	903	0	340	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	604	145	23	62
Future Volume (Veh/h)	1	5	604	145	23	62
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	4	12	702	201	92	248
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	904				828	804
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	904				828	804
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	99				73	36
cM capacity (veh/h)	464				339	385

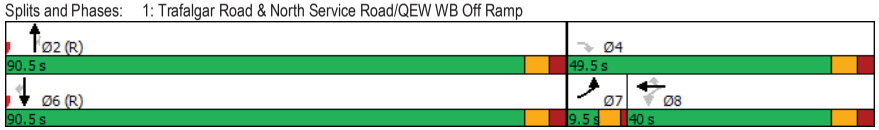
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	16	903	340
Volume Left	4	0	92
Volume Right	0	201	248
cSH	464	1700	371
Volume to Capacity	0.01	0.53	0.92
Queue Length 95th (m)	0.2	0.0	76.0
Control Delay (s)	3.3	0.0	61.7
Lane LOS	A		F
Approach Delay (s)	3.3	0.0	61.7
Approach LOS			F

Intersection Summary			
Average Delay	16.7		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Trafalgar Road & North Service Road/QEW WB Off Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases	7				8			2			6	
Permitted Phases			4	8		8			2			6
Detector Phase	7		4	8	8	8		2	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
Minimum Split (s)	9.5		38.0	38.0	38.0	38.0		35.0	35.0		35.0	35.0
Total Split (s)	9.5		49.5	40.0	40.0	40.0		90.5	90.5		90.5	90.5
Total Split (%)	6.8%		35.4%	28.6%	28.6%	28.6%		64.6%	64.6%		64.6%	64.6%
Maximum Green (s)	5.0		42.5	33.0	33.0	33.0		83.5	83.5		83.5	83.5
Yellow Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)	1.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lost Time Adjust (s)	-1.0		-3.0	-3.0	-3.0	-3.0		-3.0	-3.0		-3.0	-3.0
Total Lost Time (s)	3.5		4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None		None	None	None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)			7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)			0	0	0	0		0	0		0	0
Act Effct Green (s)	6.0		45.5	39.8	39.8	39.8		86.5	86.5		86.5	86.5
Actuated g/C Ratio	0.04		0.32	0.28	0.28	0.28		0.62	0.62		0.62	0.62
v/c Ratio	0.34		0.63	0.92	0.93	0.73		0.99	0.58		0.86	0.01
Control Delay	77.2		42.5	74.7	75.3	47.6		25.3	4.5		26.0	0.0
Queue Delay	0.0		0.0	0.0	0.0	0.0		2.3	0.0		0.0	0.0
Total Delay	77.2		42.5	74.7	75.3	47.6		27.6	4.5		26.0	0.0
LOS	E		D	E	E	D		C	A		C	A
Approach Delay		44.9			67.1			23.8			25.8	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	7.5		78.0	~142.5	~148.0	81.8		210.5	22.5		182.8	0.0
Queue Length 95th (m)	18.3		113.6	#215.0	#221.1	#130.2		#362.0	m23.2		207.3	0.0
Internal Link Dist (m)		96.4			141.1			121.2			185.2	
Turn Bay Length (m)	50.0								70.0			
Base Capacity (vph)	77		545	478	489	489		3141	1049		2605	950
Starvation Cap Reductn	0		0	0	0	0		35	0		0	0
Spillback Cap Reductn	0		0	0	0	0		0	0		0	0
Storage Cap Reductn	0		0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.34		0.63	0.92	0.93	0.73		1.00	0.58		0.86	0.01

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 32.6 Intersection LOS: C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	27	0	26	56	0	86
Future Volume (vph)	27	0	26	56	0	86
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				0.985		
Satd. Flow (prot)	1863	0	0	1835	1611	0
Flt Permitted				0.985		
Satd. Flow (perm)	1863	0	0	1835	1611	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	103.3			722.4	44.4	
Travel Time (s)	7.4			52.0	3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	0	28	61	0	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	89	93	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.0% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	27	0	26	56	0	86
Future Volume (Veh/h)	27	0	26	56	0	86
Sign Control	Free			Free	Stop	
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	28	61	0	93
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			29		146	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			29		146	29
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	91
cM capacity (veh/h)			1584		831	1046

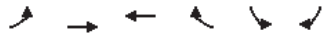
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	29	89	93
Volume Left	0	28	0
Volume Right	0	0	93
cSH	1700	1584	1046
Volume to Capacity	0.02	0.02	0.09
Queue Length 95th (m)	0.0	0.4	2.3
Control Delay (s)	0.0	2.4	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	2.4	8.8
Approach LOS			A

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	23.0%	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)	24	0	317	664	158	330	0	2861	559	0	2050	11
Future Volume (vph)	24	0	317	664	158	330	0	2861	559	0	2050	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	0.0		70.0	0.0		0.0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00					0.98			0.93			0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950	0.970							
Satd. Flow (prot)	1805	0	1615	1681	1723	1583	0	5085	1599	0	4217	1615
Flt Permitted	0.950			0.950	0.970							
Satd. Flow (perm)	1801	0	1615	1681	1723	1557	0	5085	1482	0	4217	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			66			350			66
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		120.4			165.1			145.2			209.2	
Travel Time (s)		8.7			11.9			10.5			15.1	
Confl. Peds. (#/hr)	2					2	14		14	14		14
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 (%)	0%	0%	0%	2%	1%	2%	0%	2%	1%	0%	23%	0%
Adj. Flow (vph)	26	0	345	722	172	359	0	3110	608	0	2228	12
Shared Lane Traffic (%)				39%								
Lane Group Flow (vph)	26	0	345	440	454	359	0	3110	608	0	2228	12
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)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1		1	1	2	1		2	1		2	1
Detector Template	Left		Right	Left	Thru	Right		Thru	Right		Thru	Right
Leading Detector (m)	2.0		2.0	2.0	10.0	2.0		10.0	2.0		10.0	2.0
Trailing Detector (m)	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
Detector 1 Size(m)	2.0		2.0	2.0	0.6	2.0		0.6	2.0		0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)					9.4			9.4			9.4	
Detector 2 Size(m)					0.6			0.6			0.6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Appendix H

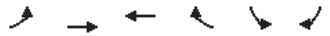
Sensitivity Analysis Operations Reports



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	361	151	0	74
Future Volume (Veh/h)	0	10	361	151	0	74
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Hourly flow rate (vph)	0	20	415	222	0	114
Pedestrians			5			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			0			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	637				551	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	637				551	526
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	79
cM capacity (veh/h)	956				497	556

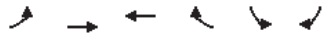
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	637	114
Volume Left	0	0	0
Volume Right	0	222	114
cSH	1700	1700	556
Volume to Capacity	0.01	0.37	0.21
Queue Length 95th (m)	0.0	0.0	6.1
Control Delay (s)	0.0	0.0	13.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization		43.1%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	6	740	173	0	78
Future Volume (vph)	0	6	740	173	0	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.971			0.865
Flt Protected						
Satd. Flow (prot)	0	1710	1622	0	0	1479
Flt Permitted						
Satd. Flow (perm)	0	1710	1622	0	0	1479
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)	1			1	5	1
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Heavy Vehicles (%)	100%	0%	3%	0%	0%	0%
Adj. Flow (vph)	0	14	860	240	0	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	1100	0	0	312
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

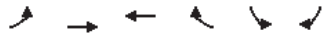
Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.4%			ICU Level of Service C
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	6	740	173	0	78
Future Volume (Veh/h)	0	6	740	173	0	78
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.42	0.86	0.72	0.25	0.25
Hourly flow rate (vph)	0	14	860	240	0	312
Pedestrians		1	5		1	
Lane Width (m)		3.6	3.6		3.6	
Walking Speed (m/s)		1.2	1.2		1.2	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		358				
pX, platoon unblocked						
vC, conflicting volume	1101				1000	982
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1101				1000	982
tC, single (s)	5.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	3.1				3.5	3.3
p0 queue free %	100				100	0
cM capacity (veh/h)	377				270	304

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	14	1100	312
Volume Left	0	0	0
Volume Right	0	240	312
cSH	1700	1700	304
Volume to Capacity	0.01	0.65	1.02
Queue Length 95th (m)	0.0	0.0	90.4
Control Delay (s)	0.0	0.0	96.5
Lane LOS			F
Approach Delay (s)	0.0	0.0	96.5
Approach LOS			F

Intersection Summary			
Average Delay		21.1	
Intersection Capacity Utilization		67.4%	ICU Level of Service C
Analysis Period (min)		15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	361	151	0	74
Future Volume (vph)	0	10	361	151	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.953			0.865
Flt Protected						
Satd. Flow (prot)	0	1513	1530	0	0	1479
Flt Permitted						
Satd. Flow (perm)	0	1513	1530	0	0	1479
Link Speed (k/h)		50	50		50	
Link Distance (m)		177.7	165.2		103.5	
Travel Time (s)		12.8	11.9		7.5	
Confl. Peds. (#/hr)					5	
Peak Hour Factor	0.45	0.50	0.87	0.68	0.75	0.65
Heavy Vehicles (%)	0%	13%	10%	0%	0%	0%
Adj. Flow (vph)	0	20	415	222	0	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	637	0	0	114
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.1%		ICU Level of Service A
Analysis Period (min)	15		