Traffic Impact Study

Proposed Mixed-Use Development
17 Jacobs Terrace

Tonlu Holdings Ltd.

April 08, 2024

→ The Power of Commitment

Executive summary

GHD was retained to prepare a Traffic Impact Study (TIS) for a proposed residential development located at 17 Jacobs Terrace in the City of Barrie.

This report establishes the existing road network and the subsequent traffic-related impacts on the adjacent future road network during the weekday a.m. and p.m. peak hours. These impacts are based on projected future background traffic derived for build-out in 2025 and a period of five and ten year post build-out in 2030 and 2035.

The site is located in in close proximity to a variety of local amenities including the Allandale GO Station which is the location of the future Allandale Transit Mobility Hub.

There are planned road improvements in the area that have been accounted for in the analysis of future traffic scenarios including along:

- Essa Road
- Tiffin Street
- Anne Street
- Innisfil Street

The site well served by both Barrie Transit and GO Transit.

The proposed site Plan prepared by Architecture Unfolded consists of 504 residential units.

The study intersections include:

- Tiffin Street and Anne Street South
- Tiffin Street and Innisfil Street
- Jacobs Terrace and Anne Street South
- Jacobs Terrace and Innisfil Street
- Essa Road and Anne Street South
- Essa Road and Innisfil Street

Existing traffic volumes were based on historic traffic data obtained from the City and factored to 2021 base conditions using growth rates provided by the City.

Future traffic forecasts were developed using corridor growth rates and proposed background developments that are expected to contribute additional traffic through the study intersections.

The subject development is estimated to generate approximately 98 new two-way vehicle trips during the a.m. peak hour consisting of 26 inbound and 72 outbound trips. During the p.m. peak hour, it is expected to generate 116 new two-way vehicle trips consisting of 72 inbound and 44 outbound trips.

Based on the TTS data and target transit mode share, the subject site is expected to also generate a total 12 two-way transit trips during the a.m. peak hour consisting of 3 inbound and 9 outbound trips. During the p.m. peak hour, a total 14 two-way transit trips are generated consisting of 9 inbound and 5 outbound trips.

A total of 14 two-way walking trips are generated during the a.m. peak hour consisting of 6 inbound and 8 outbound trips. During the p.m. peak hour, a total 1 two-way walking trips are generated consisting of 1 inbound and 0 outbound trips.

Lastly, a total 1 two-way cycle trips are generated during the a.m. peak hour consisting of 0 inbound and 1 outbound trip. During the p.m. peak hour, a total 2 two-way cycle trips are generated consisting of 2 inbound and 0 outbound trips. The aforementioned site trips are expected to increase with the planned improvements to the cycle network.

Traffic analysis was undertaken for existing conditions and expected future traffic conditions for build-out in 2025 and a period of five and ten years post build-out in 2030 and 2035. The capacity analysis was completed using the Synchro V 10 software package.

Based on an assessment of future traffic conditions, the site traffic generated from the subject development is expected to have a nominal impact on the operation of all study area intersections. As a result, there are no recommended geometric improvements to any of the study intersections in response to development of the subject site.

The site driveways on Jacobs Terrace and Innisfil Street are expected to operate well under all future scenarios under stop control on the driveway approach, with substantial reserve capacity, low levels of delay, and no excessive queueing.

Based on the current City of Barrie Zoning Bylaw, the proposed development requires a total of 509 parking spaces based on a rate of 1 space per residential unit. The proposed development proposes a total of 408 parking spaces for a rate of 0.80 spaces per unit. The proposed reduction is supported by the site's location within walking distance to the Allendale Transit Hub and other nearby amenities, adjacent transit routes and recommended TDM measures.

As per the Zoning by-law, no bicycle parking spaces are required for the subject site. However, the site plan provides a total of 472 bicycle parking spaces consisting of 32 (short-term) and 440 (long term) bicycle parking spaces.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD

William Maria, P. Eng.
Transportation Planning Lead

Contents

1. Introduction **1**
1.1 Retainer and Objective 1
1.2 Scope and limitations 1
1.3 Study Team 1
1.4 Development Proposal 2

2. Existing Road Network **4**
2.1 Study Area 4
2.2 Existing Road Network 4
2.3 Pedestrian Facilities 5
2.4 Cycling Facilities 5
2.5 Transit Service 6
2.5.1 Barrie Transit 6
2.5.2 GO Transit 7
2.6 Existing Traffic Data 7

3. Future Background Traffic Conditions **9**
3.1 Study Horizon Year 9
3.2 Planned Infrastructure Improvements 9
3.2.1 Road Improvements 9
3.2.2 Transit Service 12
3.2.3 Pedestrian Facilities 12
3.2.4 Bicycle Facilities 12
3.3 Future Background Traffic Growth 13
3.3.1 Future Background Developments 13
3.3.2 Allandale Transit Mobility Hub 14
3.4 Future Background Traffic Volumes 14

4. Site Generated Traffic **16**
4.1 Site Multi Modal Travel Demand Forecast 16
4.2 Vehicle Trip Generation 17
4.3 Modal Split 17
4.4 Site Trip Distribution and Assignment 18
4.5 Total Multi Modal Trip Generation 20

5. Future total traffic **21**
5.1 Future Total Traffic 21

6. Multi Modal Capacity Analysis **24**
6.1 Vehicle Capacity Analysis 24
6.1.1 Tiffin Street and Anne Street South 25
6.1.2 Tiffin Street and Innisfil Street 27
6.2 Anne Street South and Jacobs Terrace 30
6.2.1 Innisfil Street and Jacobs Terrace 31
6.2.2 Anne Street South and Essa Road 31

6.2.3 Innisfil Street and Essa Road 34
6.2.4 Jacobs Terrace and East Site Access 35
6.3 Transit Capacity Analysis 39
6.4 Pedestrian Capacity Analysis 40
6.5 Cycle Capacity Analysis 41
7. Vehicular Parking 43
7.1 Zoning By-Law 2009-141 Requirements 43
8. Conclusions and Recommendations 47

Table index

Table 1 Existing Traffic Data Source 8
Table 2 City's Strategic Travel Model Compounded Annual Growth Rates 8
Table 3 Existing Modal Split % 17
Table 4 Estimated Site Traffic 18
Table 5 Overall Site Trip Distribution 18
Table 6 Multi Modal Trip Generation 21
Table 7 Capacity Analysis for Tiffin Street and Anne Street South 25
Table 8 Capacity Analysis for Tiffin Street and Innisfil Street 28
Table 9 Capacity Analysis for Anne Street South and Jacobs Terrace 30
Table 10 Capacity Analysis for Innisfil Street and Jacobs Terrace 31
Table 11 Capacity Analysis for Anne Street South and Essa Road 32
Table 12 Capacity Analysis for Innisfil Street and Essa Road 34
Table 13 Capacity Analysis for Jacobs Terrace and East Site Access 36
Table 14 Zoning Bylaw 2009-141 Parking Requirements 43

Figure index

Figure 1 Site Location 2
Figure 2 Proposed Site Plan 3
Figure 3 Existing Lane Configurations and Intersection Control 5
Figure 4 City of Barrie Transit Map 6
Figure 5 Existing Transit Stop Locations 7
Figure 6 Existing 2021 Volumes 9
Figure 7 Planned Road Improvements by 2031 10
Figure 8 Future Lane Configuration as per City of Barrie's Masterplan 11
Figure 9 Planned Road Improvements by 2031 13
Figure 10 2025 Future Background Volumes 14
Figure 11 2030 Future Background Volumes 15
Figure 12 2035 Future Background Volumes 16
Figure 13 Site Trip Distribution 19
Figure 14 Site Traffic Assignment 20
Figure 15 2025 Total Traffic Volumes 22

Figure 16 2030 Total Traffic Volumes 23
Figure 17 2035 Total Traffic Volumes 24

Appendices

Appendix A Site Plan
Appendix B Turning Movements and Signal Timings
Appendix C Background Data
Appendix D Trip Generation
Appendix E Synchro Reports
Appendix F TTS
Appendix G Correspondence
Appendix H Left Turn Warrant
Appendix I TOR Adjustments
Appendix J TTS GO Terminals - Modal Splits
Appendix K SimTraffic
Appendix L Construction Management Plan (CMP)
Appendix M Vehichle Swept Path

1. Introduction

1.1 Retainer and Objective

GHD is pleased to provide the following Traffic Impact Study in support of a proposed Zoning Bylaw Amendment for the proposed residential development located at 17 Jacobs Terrace in the City of Barrie.

This study was completed to:

– Provide a summary of baseline traffic conditions for the study area intersections.
– Prepare trip generation estimates for the proposed site plan using Institute of Transportation Engineer's (ITE) Trip Generation data and the distribution of the development traffic to the adjacent road network.
– Update the existing traffic conditions to derive the future background operating conditions for the study intersections for a future 2025, 2030 and 2035 horizon including general corridor growth and background development traffic.
– Determine existing and future (background and total) traffic conditions during the critical peak hours by conducting intersectional capacity analysis.

The site is generally located on the south side of Jacobs Terrace between Anne Street South and Innisfil Street as shown in **Figure 1**.

The City of Barrie has reviewed the updated Traffic Impact Study (TIS) report by GHD dated November 2023 and provided comments dated January 2024. This study represents an update to the previously completed Traffic Assessment for the subject development in response to the city comments.

1.2 Scope and limitations

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

1.3 Study Team

The GHD team involved in the preparation of this study are:

- William Maria, P. Eng., Transportation Planning Lead
- Ameer Al Rijjal, Transportation Planner

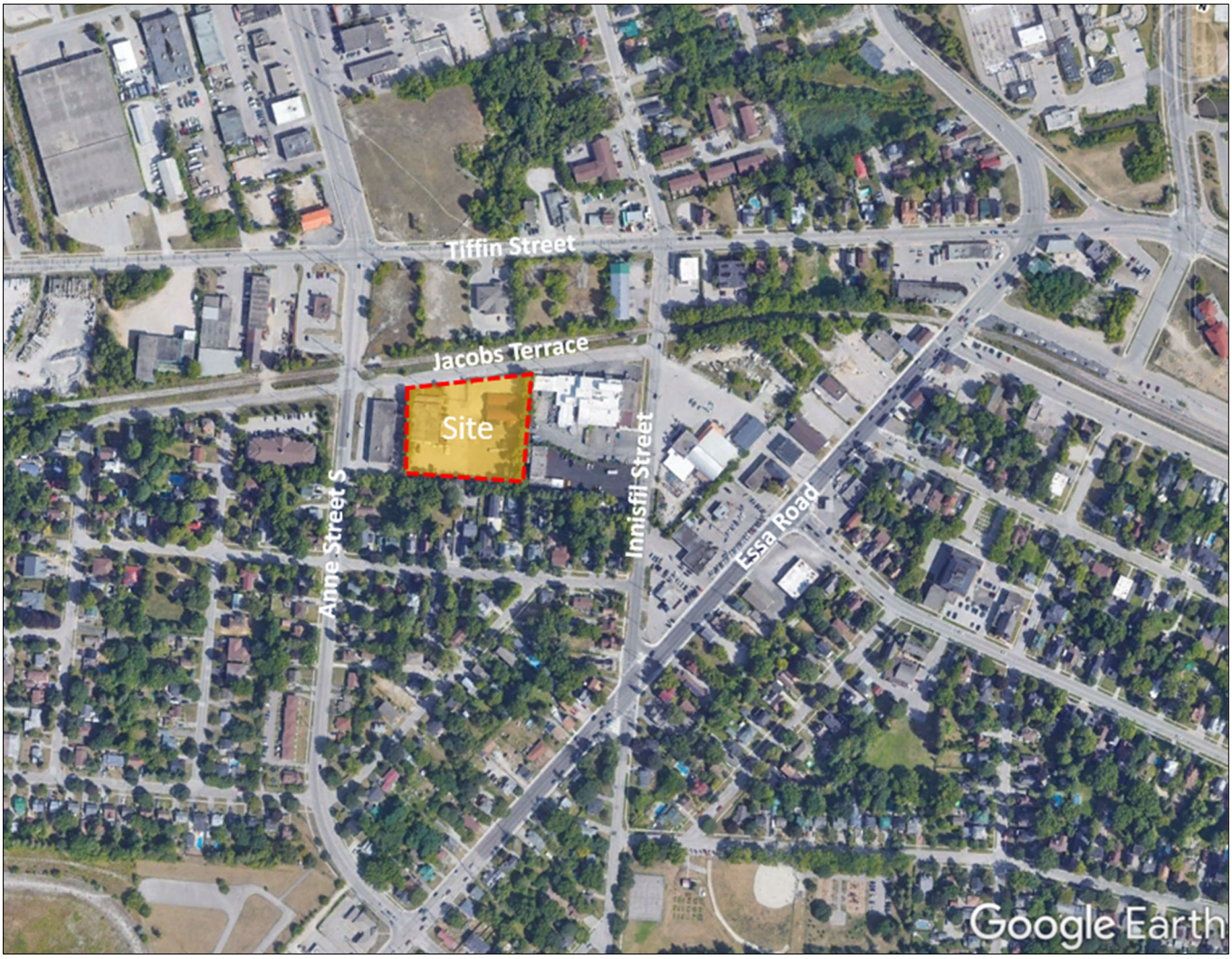


Figure 1 Site Location

1.4 Development Proposal

The proposed site plan prepared by Architecture Unfolded is provided in **Figure 2**. It consists of 509 residential units.

Access to the subject site is proposed via a full moves driveway located on Jacobs Terrace.

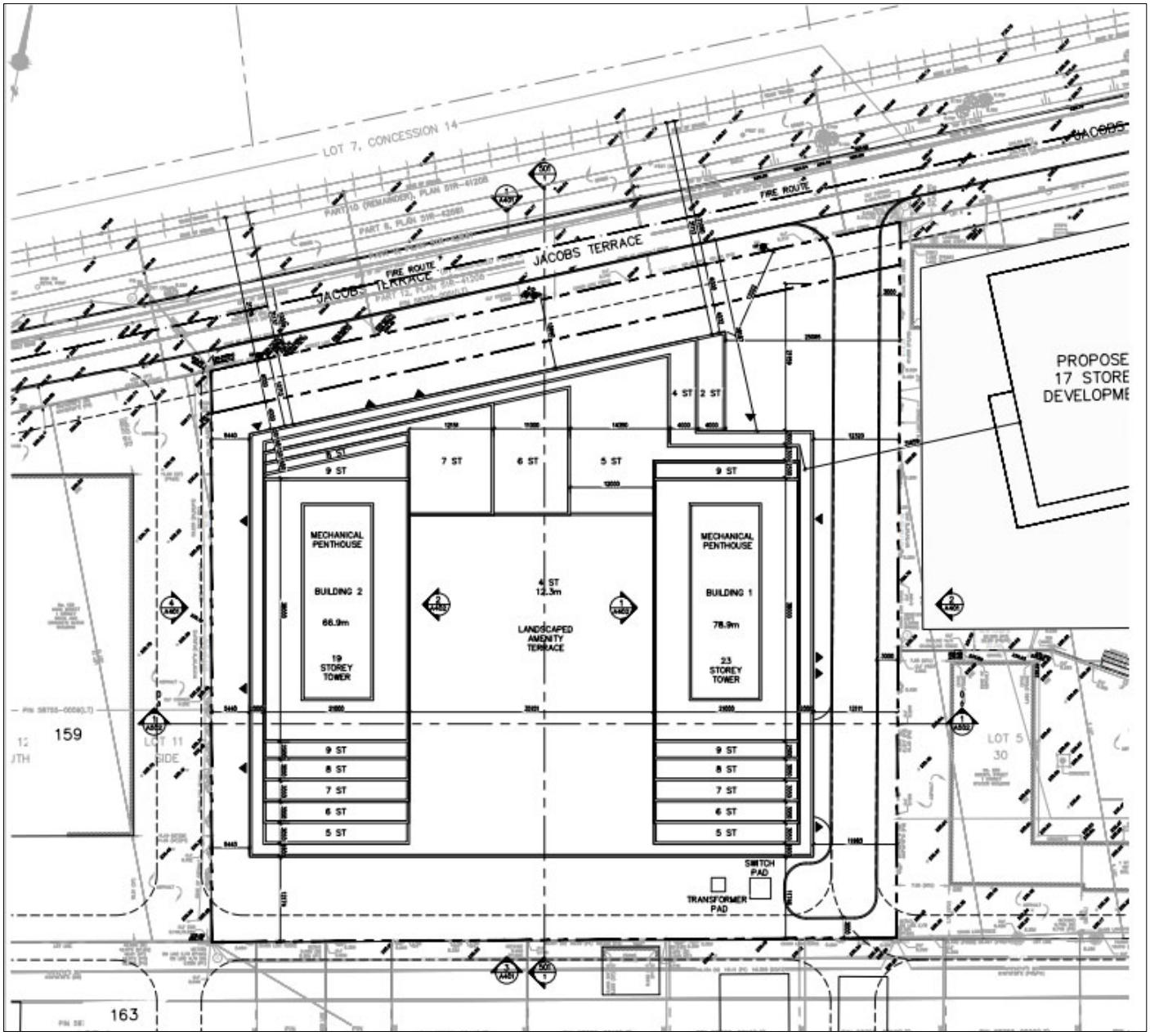


Figure 2 Proposed Site Plan

2. Existing Road Network

2.1 Study Area

As confirmed by City staff, the following intersections were included in the capacity analysis:

1. Anne Street South and Tiffin Street
2. Innisfil Street and Tiffin Street
3. Jacobs Terrace and Anne Street South
4. Jacobs Terrace and Innisfil Street
5. Anne Street and Essa Road
6. Innisfil Street and Essa Road

2.2 Existing Road Network

Anne Street South is a north-south arterial road under the jurisdiction of the City of Barrie. It has a level crossing with a railway line south of Tiffin Street and a two-lane urban cross section. The posted speed limit if 50 km/h.

Innisfil Street is a north-south major collector road under the jurisdiction of the City of Barrie.The posted speed limit if 50 km/h.

Tiffin Street is an east-west arterial road under the jurisdiction of the City of Barrie that extends from Dunlop Street West to Lakeshore Drive. It has a two-lane urban cross-section. The posted speed limit if 50 km/h.

Essa Road is an arterial road under the jurisdiction of the City of Barrie that travels southwest-northeast between Highway 27 and Tiffin Street. Within the study area it has a four-lane urban cross section. The posted speed limit if 50 km/h.

Jacobs Terrace is an east-west local road under the jurisdiction of the City of Barrie that extends from Alfred Street to Innisfil Street. Within the study area it has a two-lane rural cross section. The assumed speed limit is 50 km/h.

The existing lane configurations and traffic controls at the study intersections are shown in **Figure 3**.

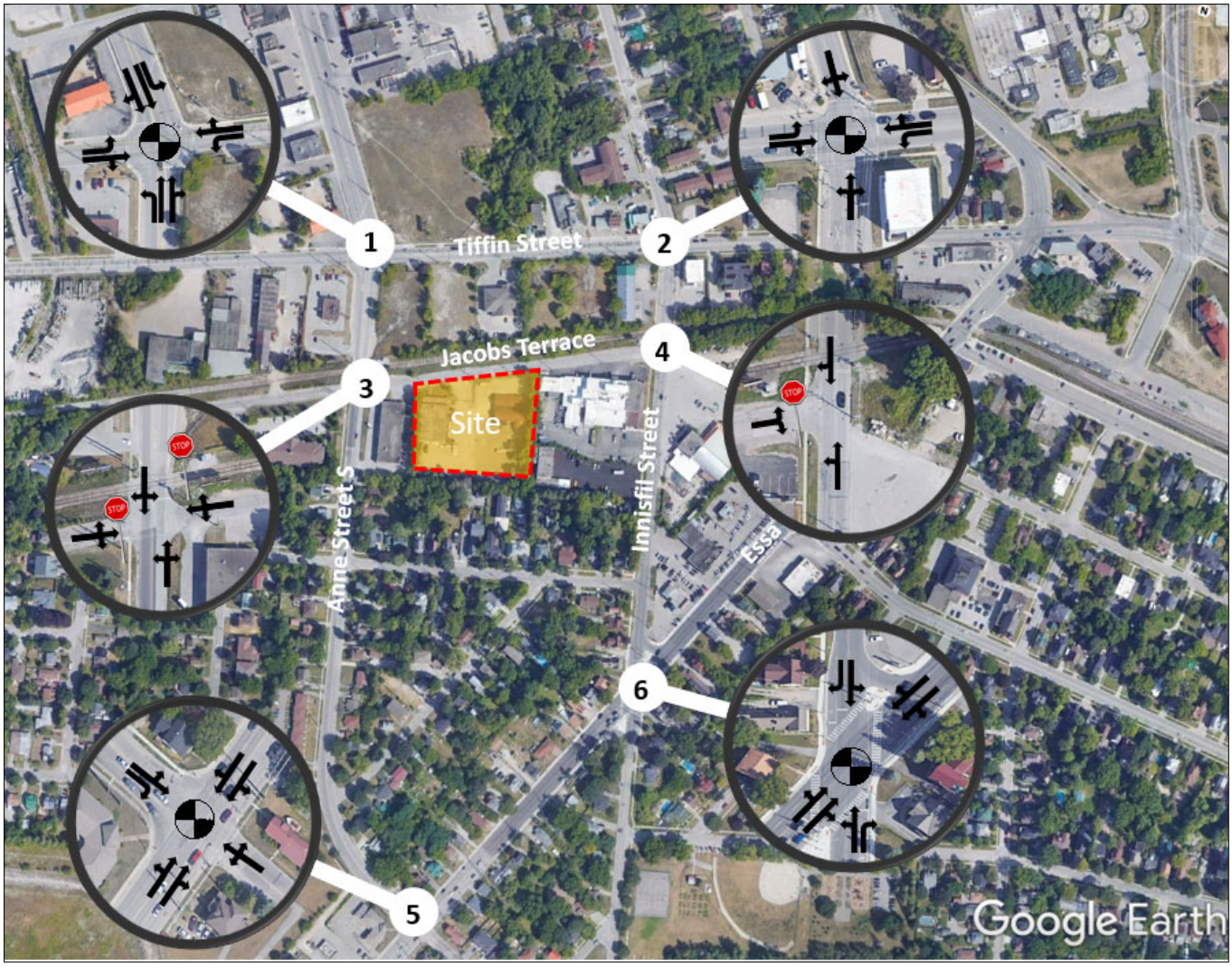


Figure 3 Existing Lane Configurations and Intersection Control

2.3 Pedestrian Facilities

Pedestrian sidewalks are currently provided on several roads within the study area including:

Tiffin Street – Sidewalk on the north side of the road west of Anne Street South to Innisfil Street and of both side of the road east of Innisfil Street.

Anne Street South -Sidewalk provided on the west side of the roads from Tiffin Street to Essa Road and of the east side of the road north of Essa Road to Centre Street.

Essa Road – Sidewalks are provided on both sides of the road through the study area.

Innisfil Street – Sidewalks are provided on the west side of the road.

2.4 Cycling Facilities

None of the roads within the study area currently provide cycling facilities.

2.5 Transit Service

2.5.1 Barrie Transit

Barrie Transit operates several routes within the study area as illustrated in **Figure 4** below.

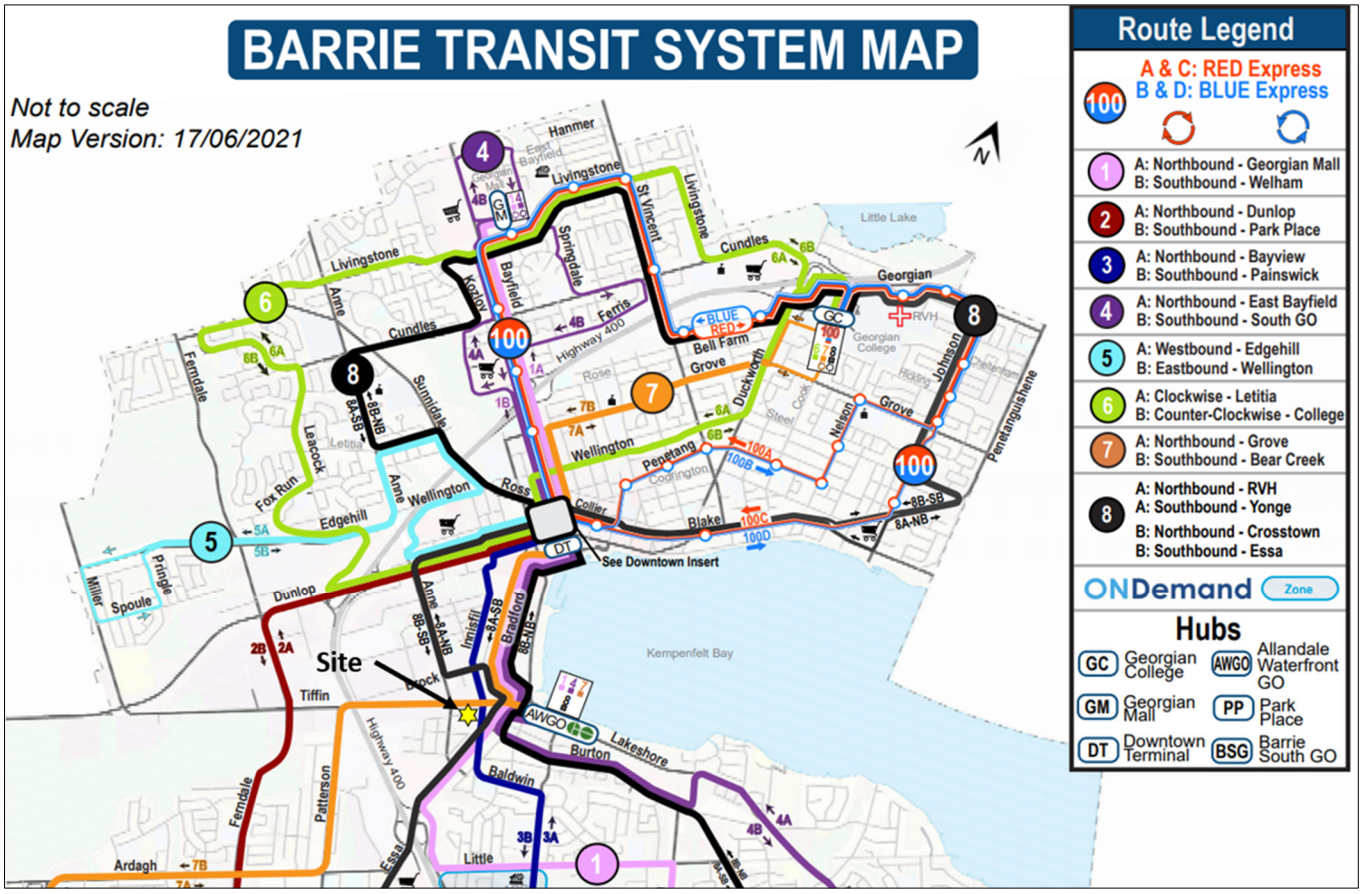


Figure 4 City of Barrie Transit Map

Route #7A – Grove offers weekday and Weekend service every half hour to an hour depending on the time of day.

Route #1A-B (Georgian Mall/Welham) offers weekday and weekend service every half hour to 45 minutes depending on the time of day.

Route #3A-B (Bayview/Painswick) offers weekday and weekend service every half hour to an hour depending on the time of day.

Route #7B – Bear Creek offers weekday and weekend service every half hour to an hour depending on the time of day.

Route #8A – RVH offers weekday and weekend service every half hour to an hour depending on the time of day.

Figure 5 shows the location of the existing transit stops adjacent to the subject site.

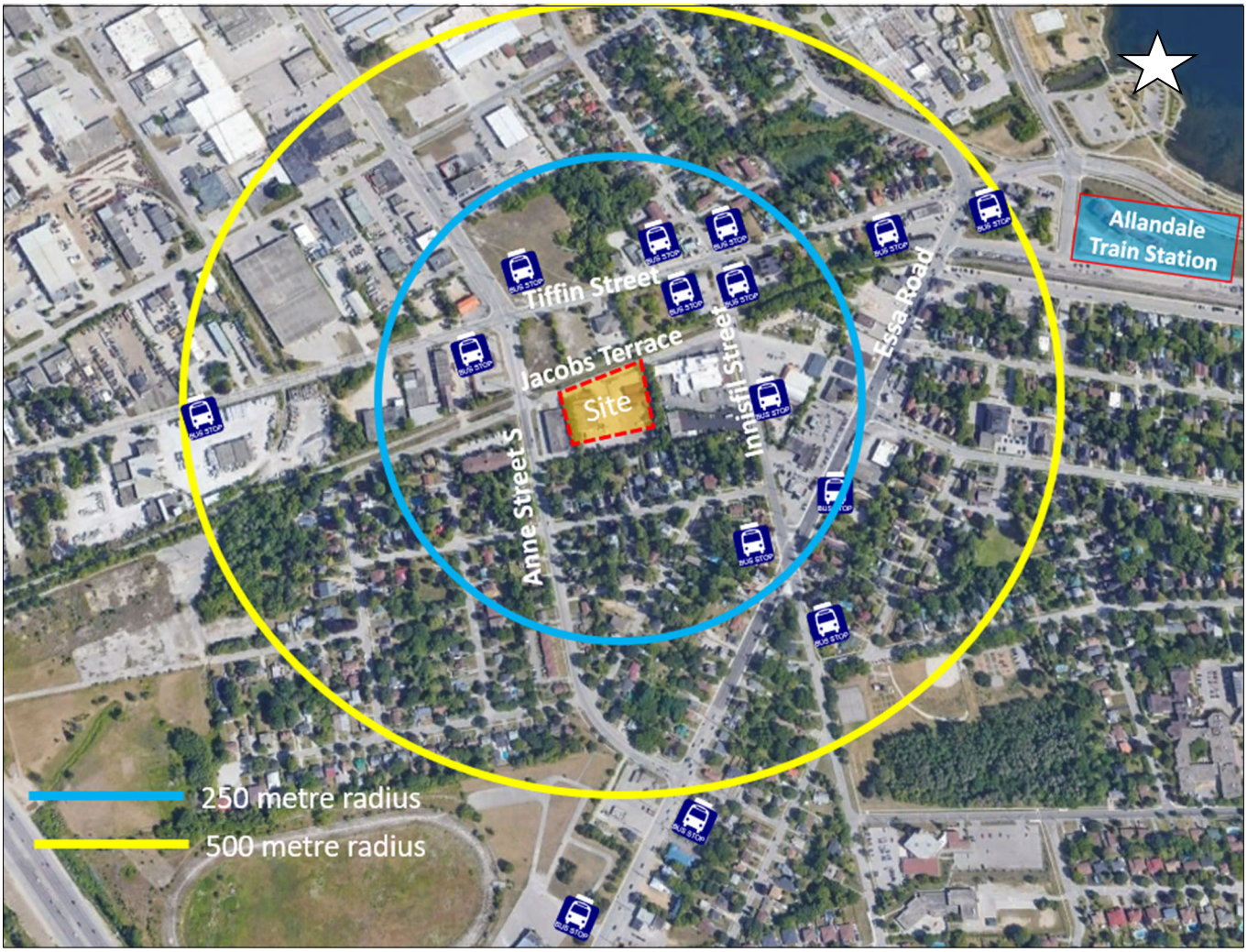


Figure 5 Existing Transit Stop Locations

2.5.2 GO Transit

The Allandale Waterfront GO rail station is located approximately 500 meters to the east of the proposed development and currently provides weekday service with seven southbound departures in the morning and six northbound arrivals in the evening and on weekends by three morning departures and evening arrivals.

GO buses also currently service the terminal with the route 68 which operates weekday service hourly throughout the day.

2.6 Existing Traffic Data

Due to COVID-19 pandemic and travel restrictions imposed by the provincial lockdowns, traffic throughout the City at the time of writing this report is lower than historical levels. Consequently, conducting updated traffic counts at the study intersections would not provide a realistic estimate of the 2021 base traffic volumes. Instead, GHD used historical traffic data purchased from the city for each of the study intersections and factored the data to the base 2021 year. It is important to note that since the counts for the intersections of Jacobs Terrace/Innisfil Street and Jacobs Terrace/Annes Street were conducted during the Covid 19 pandemic period (2021), through movements along Anne Street and Innisfil Streets were balanced from counts at Anne Street/Tiffin Street and Innisfil Street/Tiffin Street, all other turning movement counts to/from Jacobs Terrace were multiplied by 2.0 for a conservative analysis.

The most recent turning movement count data available from the city is summarized in **Table 1** below and is provided in **Appendix B** along with signal timing cards.

Table 1 Existing Traffic Data Source

Intersection	Date	Source
Tiffin Street and Anne Street South	2017	City of Barrie
Tiffin Street and Innisfil Street	2017	City of Barrie
Anne Street South and Essa Road	2019	City of Barrie
Innisfil Street and Essa Road	2019	City of Barrie
Anne Street South and Jacobs Terrace	2021	Ontario Traffic
Innisfil Street and Jacobs Terrace	2021	Ontario Traffic

City staff provided growth rates extracted from the City's Strategic EMME model for each of the study area roads to estimate the base 2021 traffic volumes for each intersection. These rates are summarized in **Table 2**. As per discussion with city staff, the growth rate on Essa Road has been updated to 2% based on the latest modelling exercise. All correspondences with city staff are provided in **Appendix I**.

Table 2 City's Strategic Travel Model Compounded Annual Growth Rates

Street Name	Annual Growth Rate
Anne Street South	1%
Innisfil Street	1%
Jacobs Terrace	1%
Essa Road	2%
Tiffin Street	4%
Burton Avenue	2%
Gowan Street	1%

Figure 6 summarizes the existing traffic volumes for each of the study intersections during the weekday a.m. and p.m. peak hours.

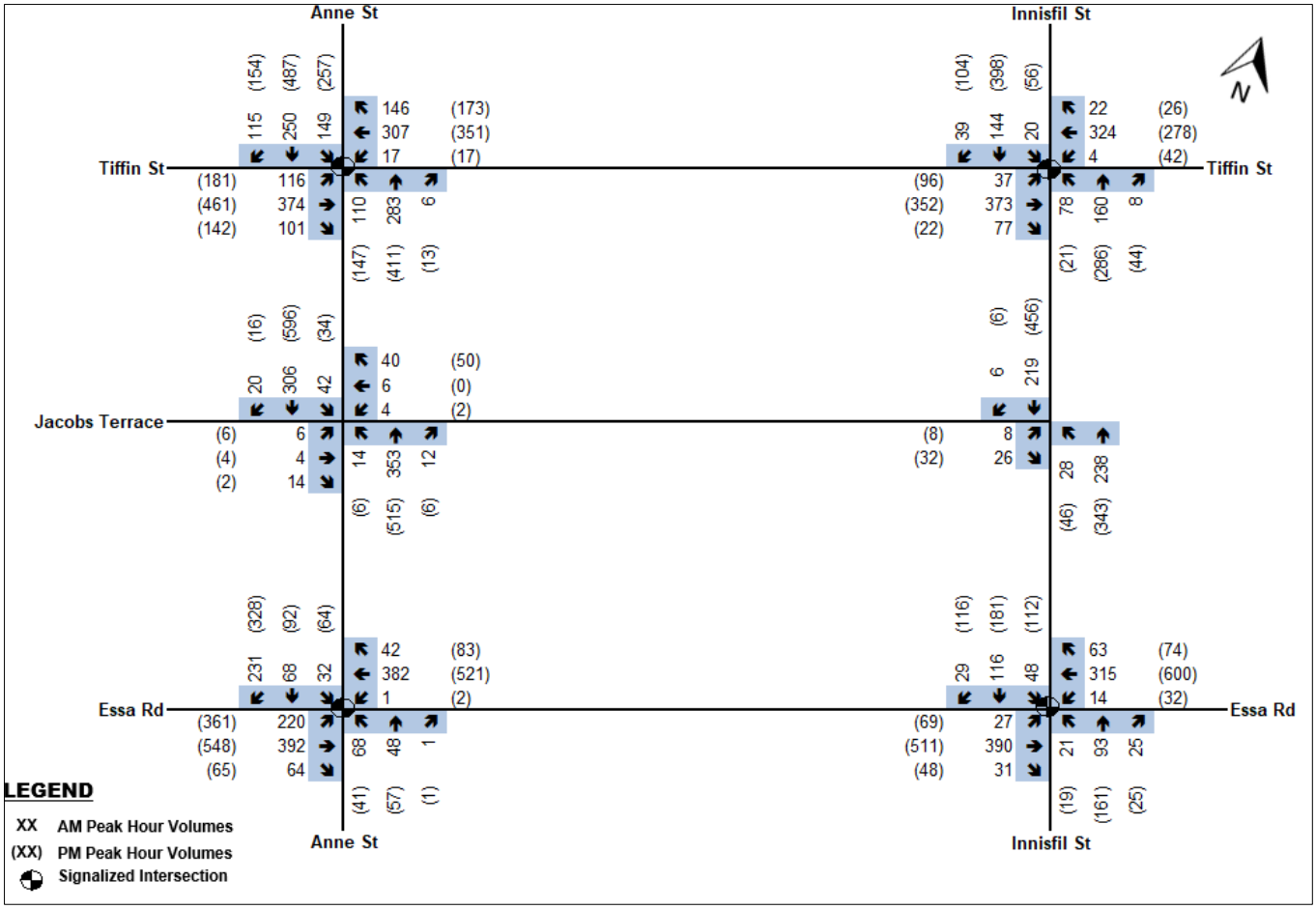


Figure 6 Existing 2021 Volumes

3. Future Background Traffic Conditions

3.1 Study Horizon Year

As per the email correspondence with town staff provided in **Appendix G**, this study has been prepared with an expected build-out year of 2025 for the subject site and for a period of 5 and 10 years post build-out. As a result, the future traffic scenarios include analysis of the 2025 (build-out), 2030 (five years post build-out) and 2035 (10 years post build-out) planning horizons.

3.2 Planned Infrastructure Improvements

3.2.1 Road Improvements

Planned improvements within the study area are contained within the City of Barrie Transportation Master Plan Final Report dated June 2019 and include the following by 2031:

- Innisfil Street from Tiffin Street to Essa Road – two lanes plus two-way left turn lane (with adjacent development)
- Tiffin Street from Ferndale Drive to Essa Road – four lanes plus two-way left turn lane (before 2026)
- Essa Road from Tiffin Street to Anne Street – four lane plus two-way left turn lane (before 2026)

- Burton Avenue from Bayview Drive to Robinson Drive – two lanes plus Two-way left turn (with adjacent development)
- Anne Street South from Tiffin Street to Centre Street – two lanes plus two-way left turn lane (2026-2031)
- Anne Street South from Centre Street/Campbell Avenue to Essa Road – four lanes plus two-way left turn lane (2026-2031)
- Anne Street South from Essa Road to Adelaide Street – two lanes plus two-way left turn lane (2026-2031)

Figure 7 and 8 below illustrates the planned road improvements within the study area by 2031 based on the City's Transportation Master Plan.

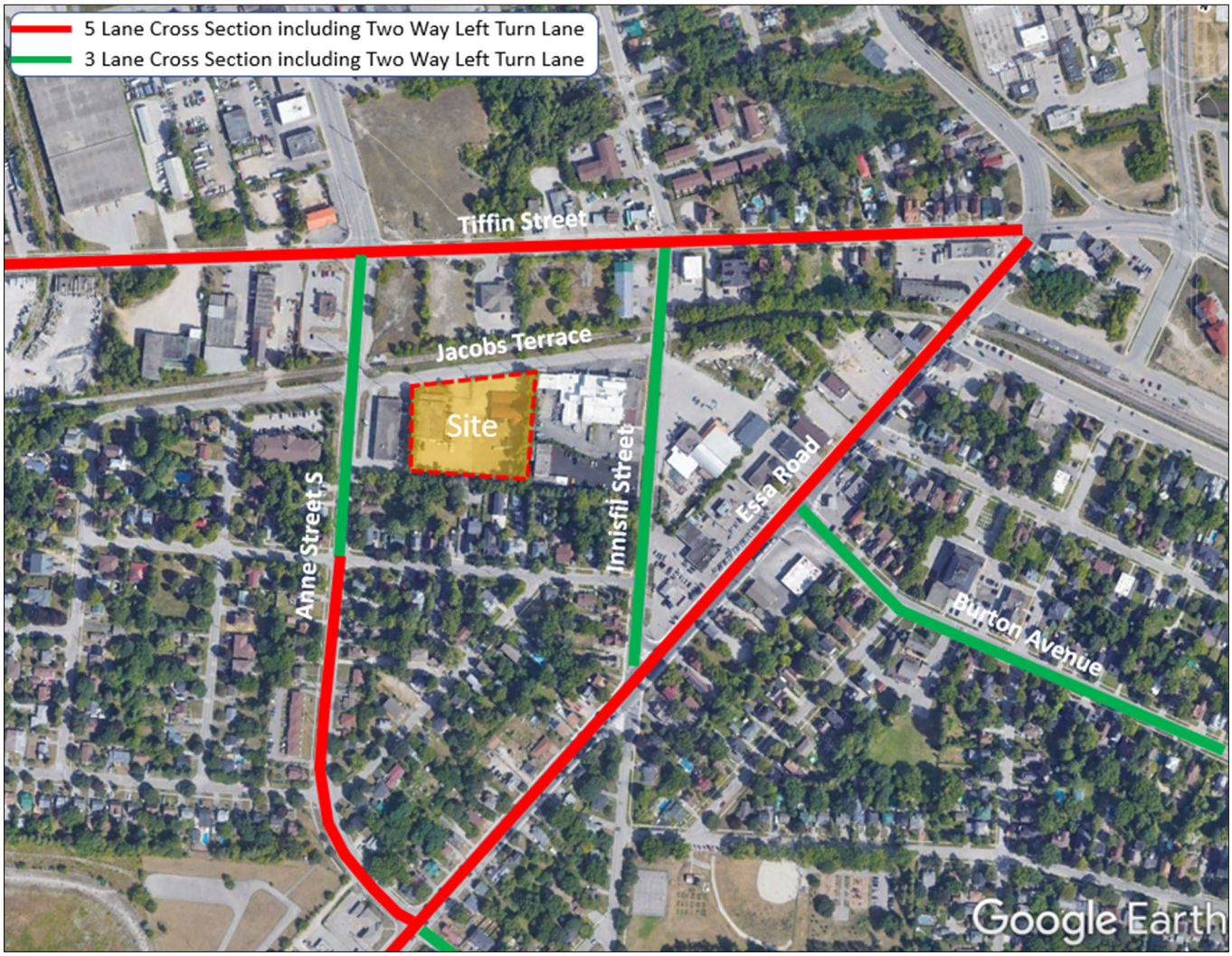


Figure 7 Planned Road Improvements by 2031

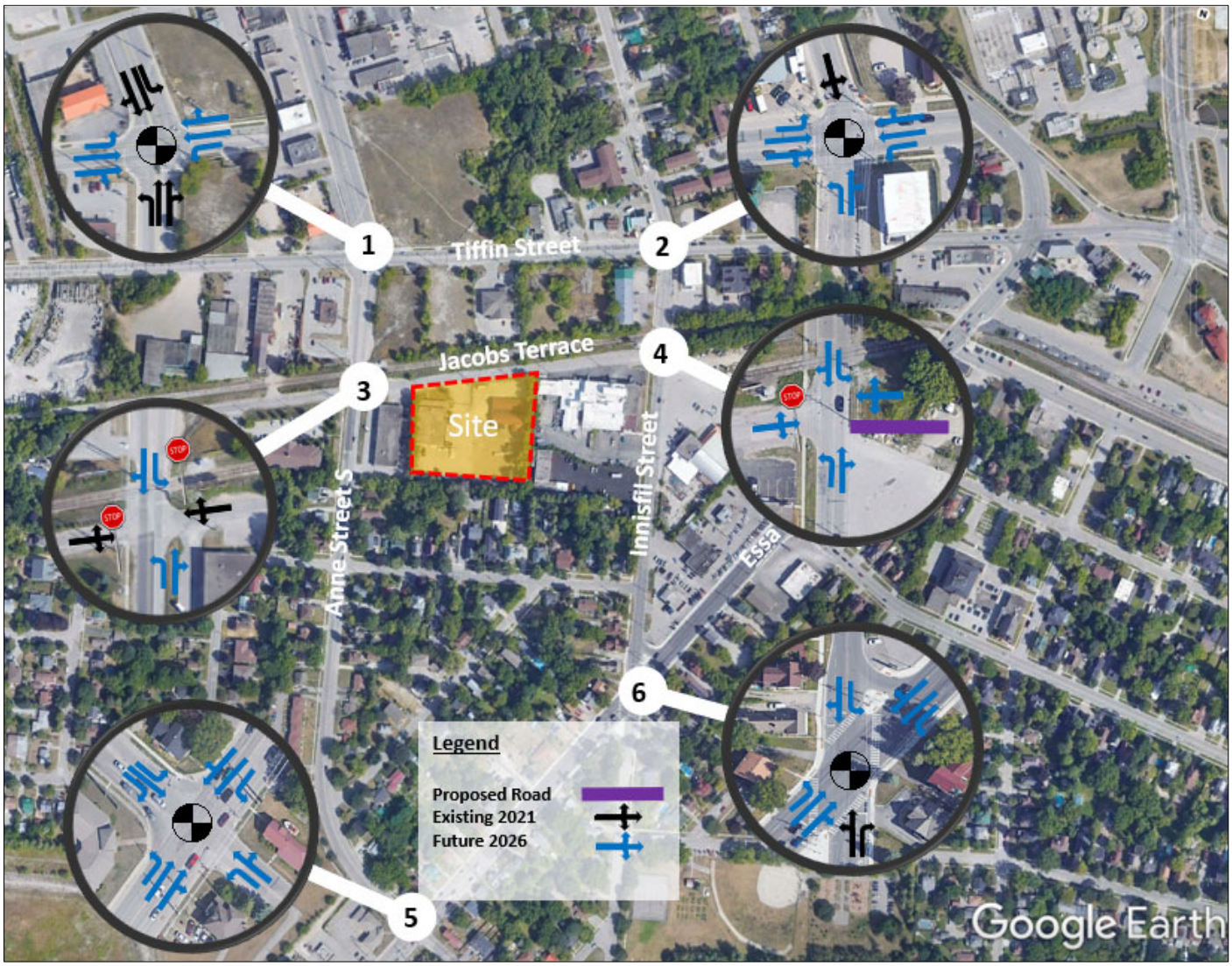


Figure 8 Future Lane Configuration as per City of Barrie's Masterplan

As per the correspondence with City staff provided in appendix G, the following improvements were applied for the horizon years:

- 2025 (Build out)
  - No Improvements
- 2030 (5 years post Build-out)
  - Improvements applied to the intersection of Anne Street/Essa Road as per Figure 8.
- 2035 (10 years post Build-out)
  - Improvements applied to all study area intersections as per Figure 8.

3.2.2 Transit Service

As part of the GO Regional Express Rail program, two-way all day rail service is expected between Union Station and Allandale Waterfront GO by 2024. The improved service calls for hourly service between Union Station and Allandale Waterfront with 15-minute service between Union Station and Aurora GO. While these plans are subject to change, they indicate a significant increase in transit accessibility and options for residents surrounding the Transit Hub with a goal to increase transit modal split by 2041 to 7%.

Barrie Transit plans also plans to support future transit use by adopting 10-minute service for the core routes and direct connection between significant landmarks and 20-minute service for supporting networks. The 10 and 20 minute service will be recommended for peak commuter periods (morning and afternoon).

3.2.3 Pedestrian Facilities

As per the City of Barrie Transportation Master Plan – Active Transportation Strategy report dated June 2019, the city proposes to construct the following pedestrian facilities:

- **Tiffin Street** – provide an in-boulevard pathway west of Anne Street South
- **Jacobs Terrace** – provide a sidewalk on one side of the road
- **Anne Street South** – provide sidewalks on both sides of the road
- **Innisfil Street** – provide sidewalks on both sides of the road

3.2.4 Bicycle Facilities

As per the City of Barrie Transportation Master Plan – Active Transportation Strategy report dated June 2019, the city proposes to construct the following bicycle facilities:

Short Term – 2019 to 2023

No improvements proposed within this timeframe.

Medium Term – 2024 to 2031

Tiffin Street – provide an in-boulevard pathway west of Anne Street South

Tiffin Street – provide bike lanes east of Anne Street South

Anne Street South – provide cycle track north of Tiffin Street

Anne Street South – provide buffered bike lanes south of Tiffin Street to Essa Road

Anne Street South – provide bike lanes south of Essa Road

Innisfil Street – provide bike lanes from Perry Street to Bayview Drive

Figure 9 below illustrates the planned cycle improvements within the study area by 2031 from the City's Transportation Master Plan.

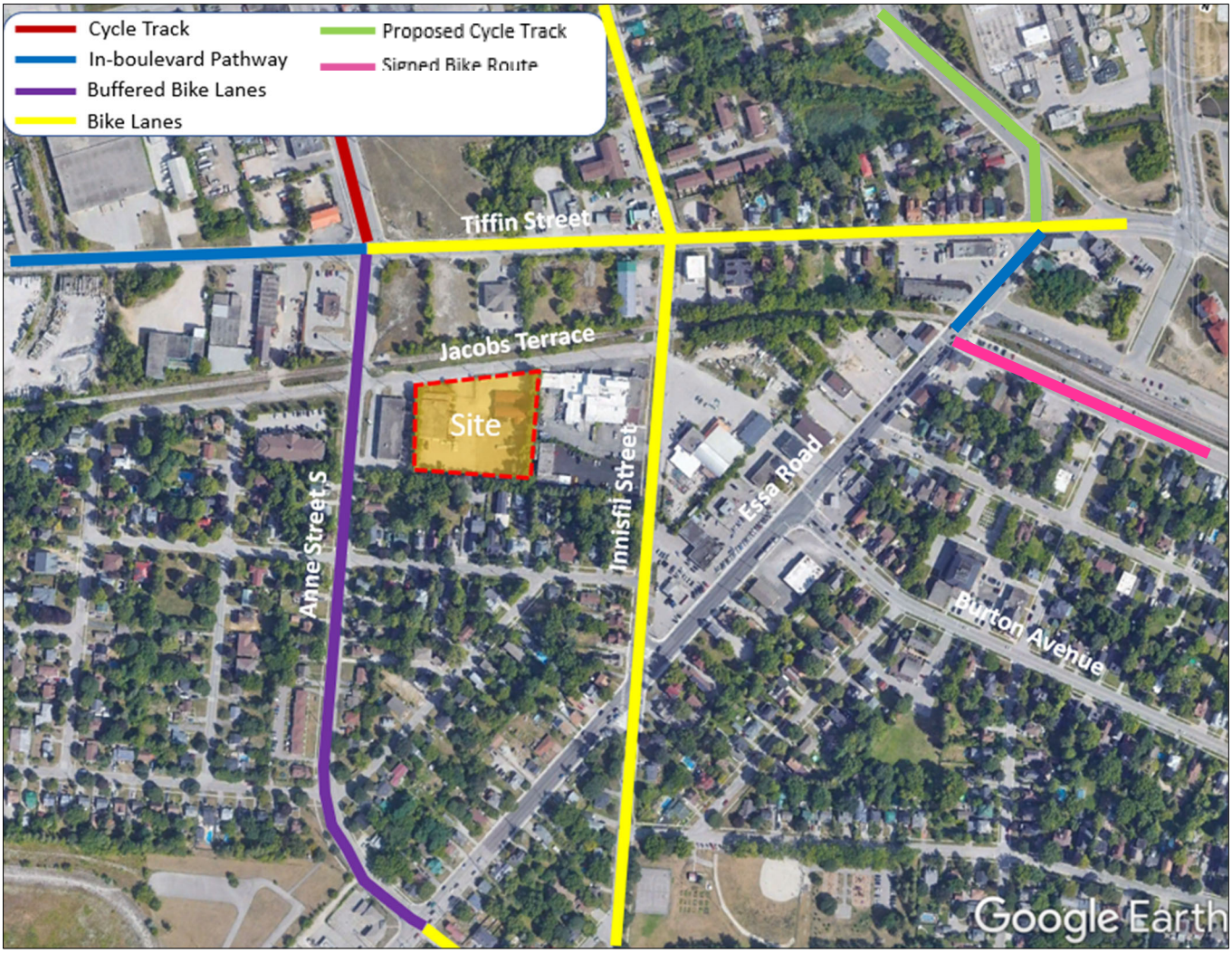


Figure 9 Planned Road Improvements by 2031

3.3 Future Background Traffic Growth

City staff provided growth rates to be used in establishing future background traffic volumes at the study intersections. These growth rates have been extracted from the City's EMME model and were previously summarized in **Table 2**.

3.3.1 Future Background Developments

Background site generated traffic from the following planned developments have also been reviewed and if necessary, site trips from these developments included in the future background traffic volumes:

- 175, 199 Essa Road & 50 Wood Street
- 272 Innisfil Street
- 220 Bradford Street
- 259 Innisfil Street 41 – 43 Essa Road

Excerpts from each respective Traffic Impact Study are provided in the **Appendix C**.

Traffic generated by all other future planned developments near the study are assumed to be included in the projected annual growth rates provided by City Staff from the City's EMME model.

3.3.2 Allandale Transit Mobility Hub

The City of Barrie is currently constructing a new Transit Mobility Hub within Barrie's Allandale area. The project is meant to support future Barrie Transit growth, increase transit access to the Allandale GO Station to provide more sustainable travel choices for residents, provide a seamless connection between GO Train service and buses providing integrated transit access to Simcoe County, Muskoka and the GTA.

3.4 Future Background Traffic Volumes

The total future background traffic volumes including corridor growth and background site generated traffic for the 2025, 2030 and 2035 planning horizons are summarized in **Figures 10, 11 and 12 respectively** for the weekday a.m. and p.m. peak hours.

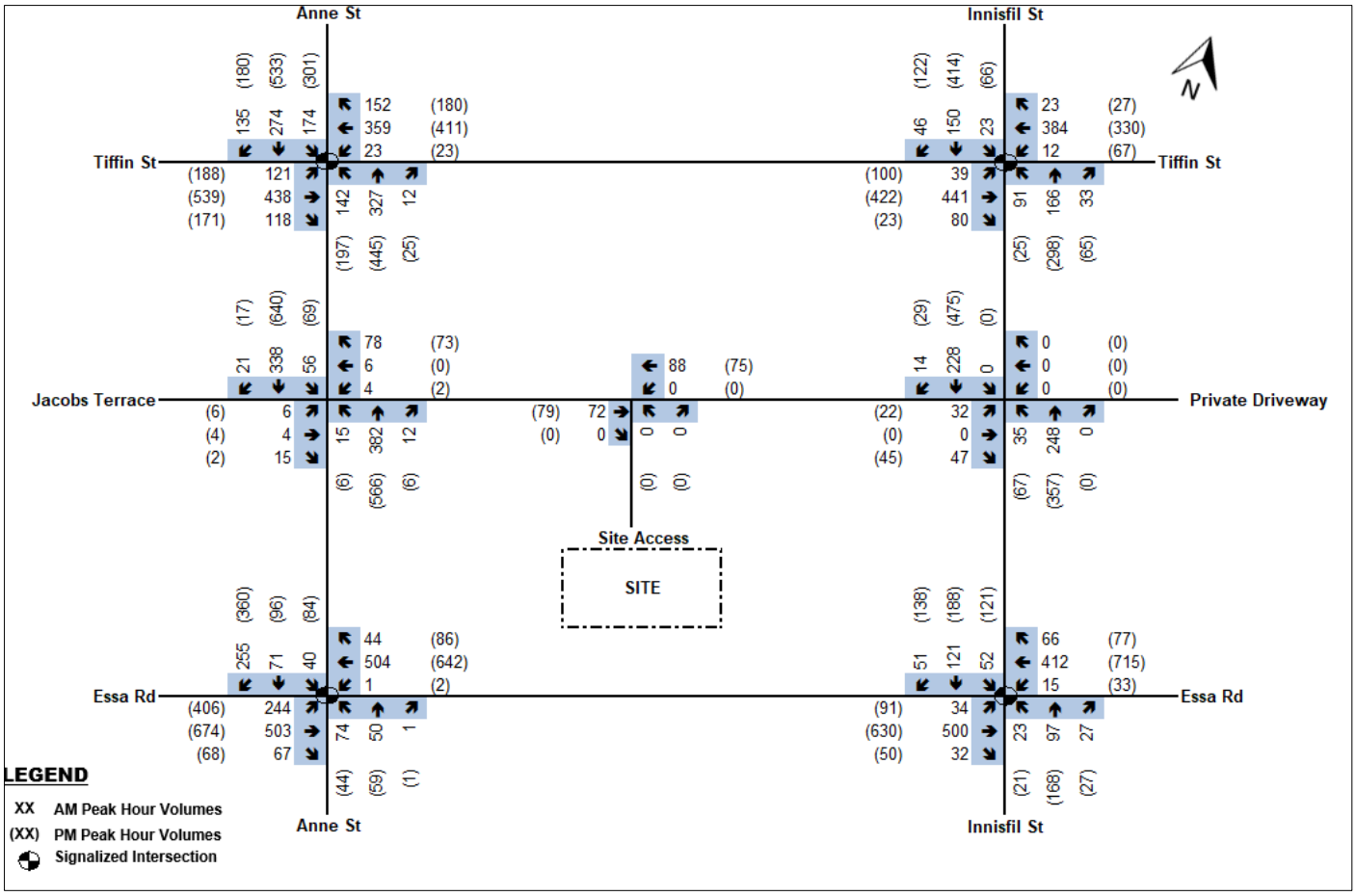


Figure 10 2025 Future Background Volumes

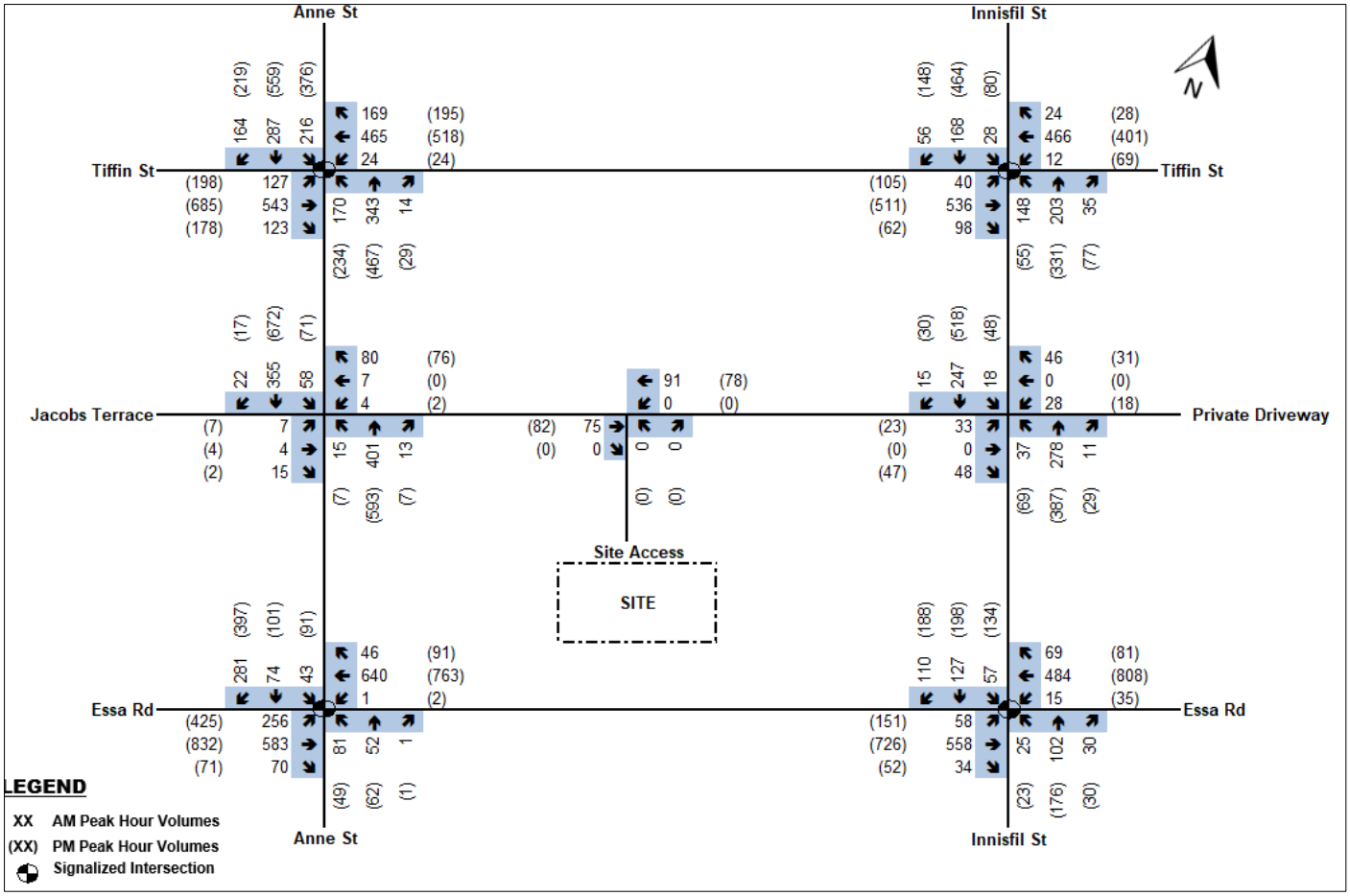


Figure 11 2030 Future Background Volumes

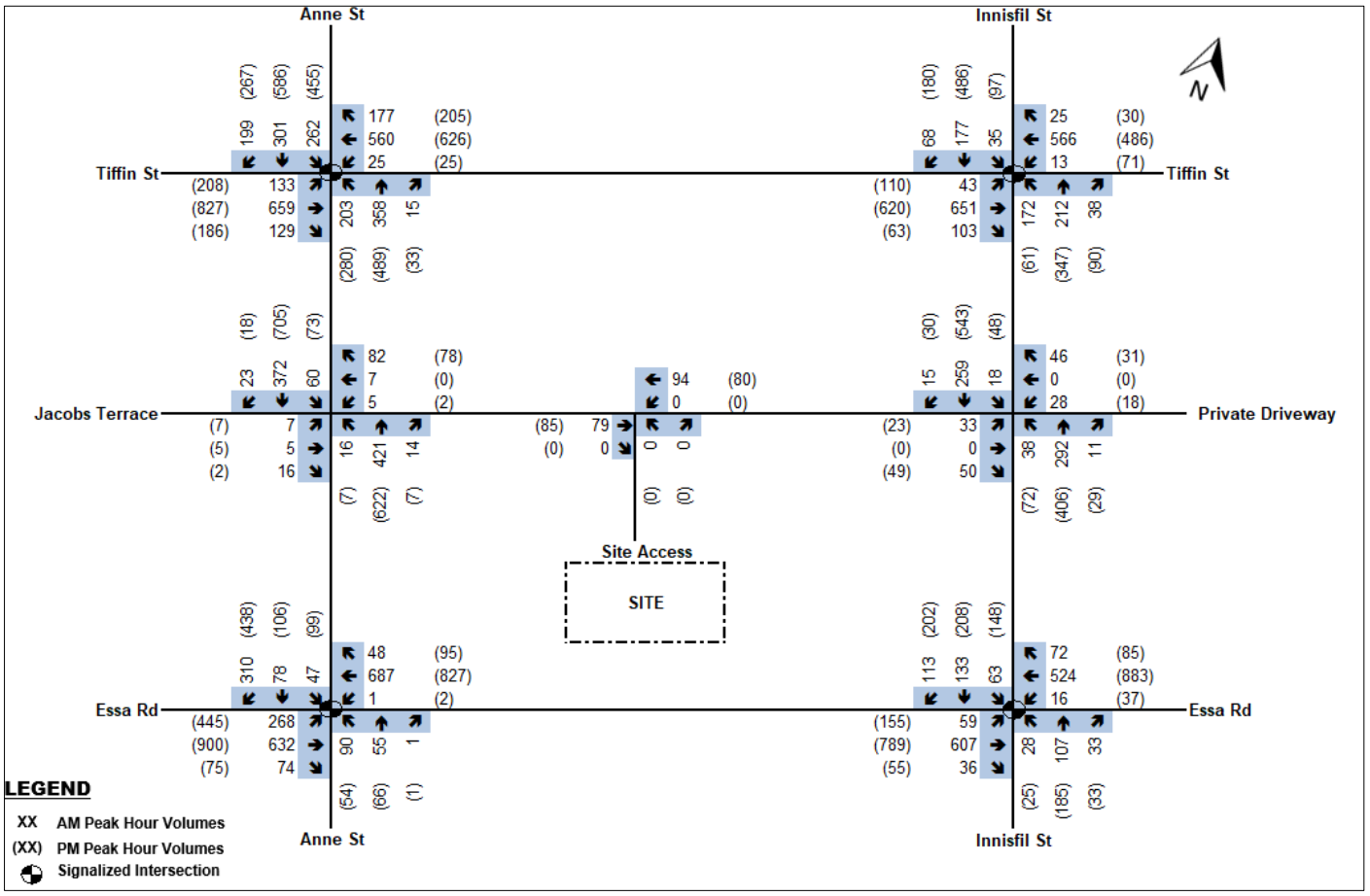


Figure 12 2035 Future Background Volumes

4. Site Generated Traffic

4.1 Site Multi Modal Travel Demand Forecast

A multi-modal analysis was undertaken utilizing data retrieved from the 2016 Transportation Tomorrow Survey (TTS). Although the proposed development is within Zone 8502, Zones 8502,8525,8526 and 8527 were utilized for this analysis to improve the accuracy of the results.

The proposed development is in an area where alternate forms of transportation are available. The results in Table 3 indicate that some residents in this zone currently use non-auto modes of transportation.

Table 3 Existing Modal Split %

Transportation Mode	AM PEAK		PM PEAK	
	Inbound	Outbound	Inbound	Outbound
Auto Driver	82% (existing)	79% (existing)	86% (existing)	77% (existing)
Auto Passenger	0%	7%	9%	23%
Transit	0%	4%	4%	0%
Walk	18%	9%	1%	0%
Cycle	0%	1%	2%	0%

In consideration of the future improvements to the GO train schedule and through discussion with city staff, a modal share of 16% was assumed for both the a.m. and p.m. peak hours based on the TTS data and existing mode splits surrounding GO Stations within other municipalities as provided in **Appendix J**.

4.2 Vehicle Trip Generation

4.3 Modal Split

As per the City of Barrie Transportation Master Plan, the city has identified a mode share target of 7% for transit by 2041 City wide. Considering that the subject site is located within a kilometre of the Allandale Transit Mobility Hub, it has been assumed that this target can be achieved for the subject site by 2025 when the site is expected to be built out.

As per discussion with City staff, a future total mode share including transit, walk and cycle of 16% for both peak ours is appropriate for this area. For a conservative approach, GHD applied a modal share of 11% to the ITE trip generation rates in consideration that ITE trip rates already account for 5% mode share.

The proposed residential development consists of 509 residential units. Site traffic generated by the proposed development for the weekday a.m. and p.m. peak hours were estimated using the trip rates published by the ITE Trip Generation Manual, 11th Edition. Trip generation for the residential units used Land Use Code 222 (Multifamily Housing – High-Rise).

The resulting trip generation for the subject site was reduced by 20% to 408 units in consideration that the reduced parking supply for the subject site will result in more than 100 units not having a parking space and not generated any primary commuter trips during the peak hours.

Table 4 summarizes the trip generation calculations as per the City's Guidelines. Detailed ITE Trip Generation excerpts are provided in **Appendix D.**

Table 4 Estimated Site Traffic

Land Use	Units	Parameters	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise)	407 units	Trip Rate	0.071	0.199	0.270	0.199	0.120	0.319
		Trip Ratio	26%	74%	-	62%	38%	-
		Gross Trips	29	81	110	81	49	130
		Mode Share %	11%	11%	22%	11%	11%	22%
		Mode Share reduction	3	9	12	9	5	14
Total Primary Trips			26	72	98	72	44	116

The subject development is estimated to generate approximately 98 new two-way vehicle trips during the a.m. peak hour consisting of 26 inbound and 72 outbound trips. During the p.m. peak hour, it is expected to generate 116 new two-way vehicle trips consisting of 72 inbound and 44 outbound trips.

4.4 Site Trip Distribution and Assignment

The distribution of site traffic between the subject site through the study area was based on a review of the 2016 TTS data and traffic data at the study intersections.

Upon determining origin and destination points throughout the study area for all inbound and outbound trips, trips were assigned to individual turning movements at the study area intersections based on route choice assignment with consideration for anticipated travel times. **Table 5** below summarizes the site trips distribution within the study area road network for both passenger vehicles and heavy vehicles.

Table 5 Overall Site Trip Distribution

Trip Orientation	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
West on Essa Road	60%	60%	60%	60%
West on Tiffin Street	10%	10%	10%	10%
East on Burton Avenue	5%	5%	5%	5%
North on Anne Street	10%	10%	10%	10%
North on Innisfil Street	10%	10%	10%	10%
North on Bradford Street	5%	5%	5%	5%

The site trip distribution and the estimated site trips generated from the proposed development and assigned to the adjacent road network for the weekday a.m. and p.m. peak hours are Illustrated in **Figures 13 and 14**.

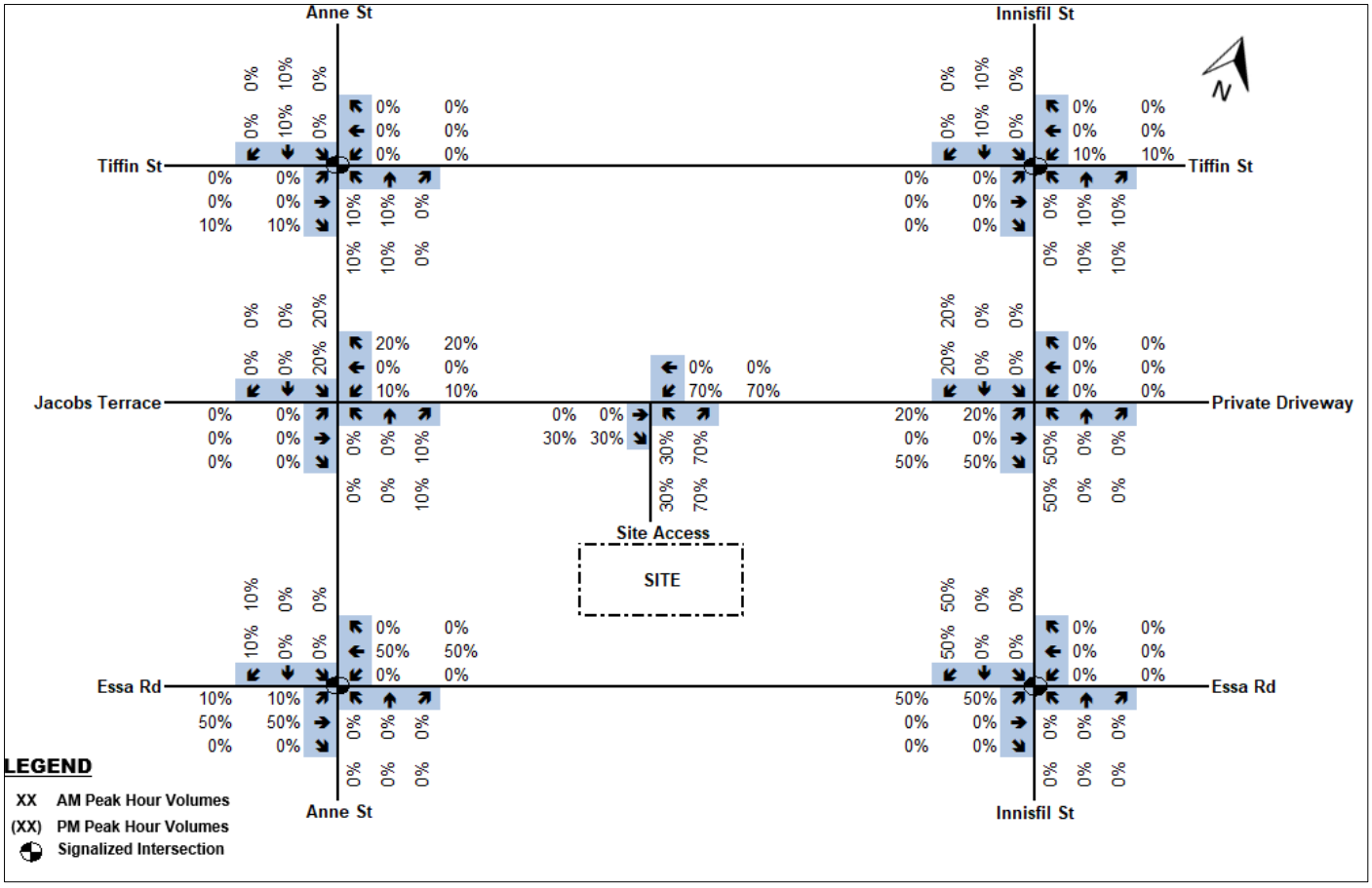


Figure 13 Site Trip Distribution

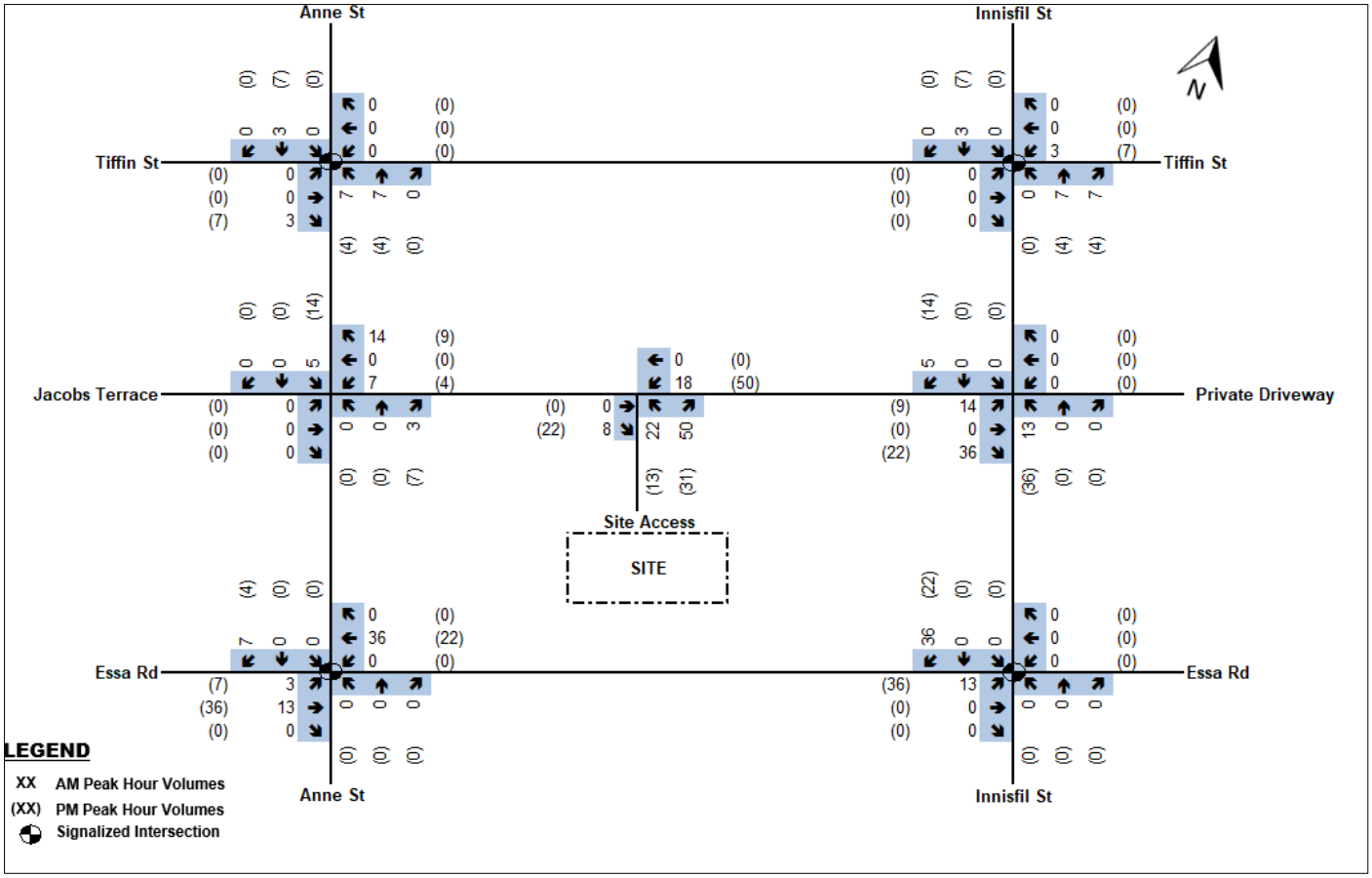


Figure 14 Site Traffic Assignment

4.5 Total Multi Modal Trip Generation

The TTS data shows that in addition to automobile trips, the proposed development is expected to also generate a number of transit trips and auto passenger trips. Walking and cycling are expected to also make up a portion of the trips to and from the site in the future as bike lanes are implemented within the study area.

Individual trip generation for each mode of travel was estimated using the ITE estimates for vehicle trip generation and the TTS data of the study area's mode splits summarized in Table 6.

Table 6 Multi Modal Trip Generation

Mode	Modal Split Volume Breakdown			
	Site Trips			
	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
Auto Driver	25	72	71	44
Auto Passenger	0	6	8	14
Transit	3	9	9	5
Walk	6	8	1	0
Cycle	0	1	1	1
Total	34	96	90	64

In addition to vehicle trips, the subject site is also expected to also generate a total of 12 two-way transit trips during the a.m. peak hour consisting of 3 inbound and 9 outbound trips. During the p.m. peak hour, it generates a total 14 two-way transit trips are generated consisting of 9 inbound and 5 outbound trips.

A total of 14 two-way walking trips are generated during the a.m. peak hour consisting of 6 inbound and 8 outbound trips. During the p.m. peak hour, a total 1 two-way walking trips are generated consisting of 1 inbound and 0 outbound trips.

Lastly, a total 1 cycle trip is generated during the a.m. peak hour and a total 2 cycle trips are generated during the p.m. peak hour.

5. Future total traffic

5.1 Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak study hours for each of the future planning horizon years were derived by combining the future background traffic volumes with the corresponding estimates of site trips generation by the proposed residential development for each planning horizon.

Figures 15, 16 and 17 summarize the future total traffic volumes for the 2025, 2030 and 2035 planning horizons respectively, for the weekday a.m. and p.m. peak hours.

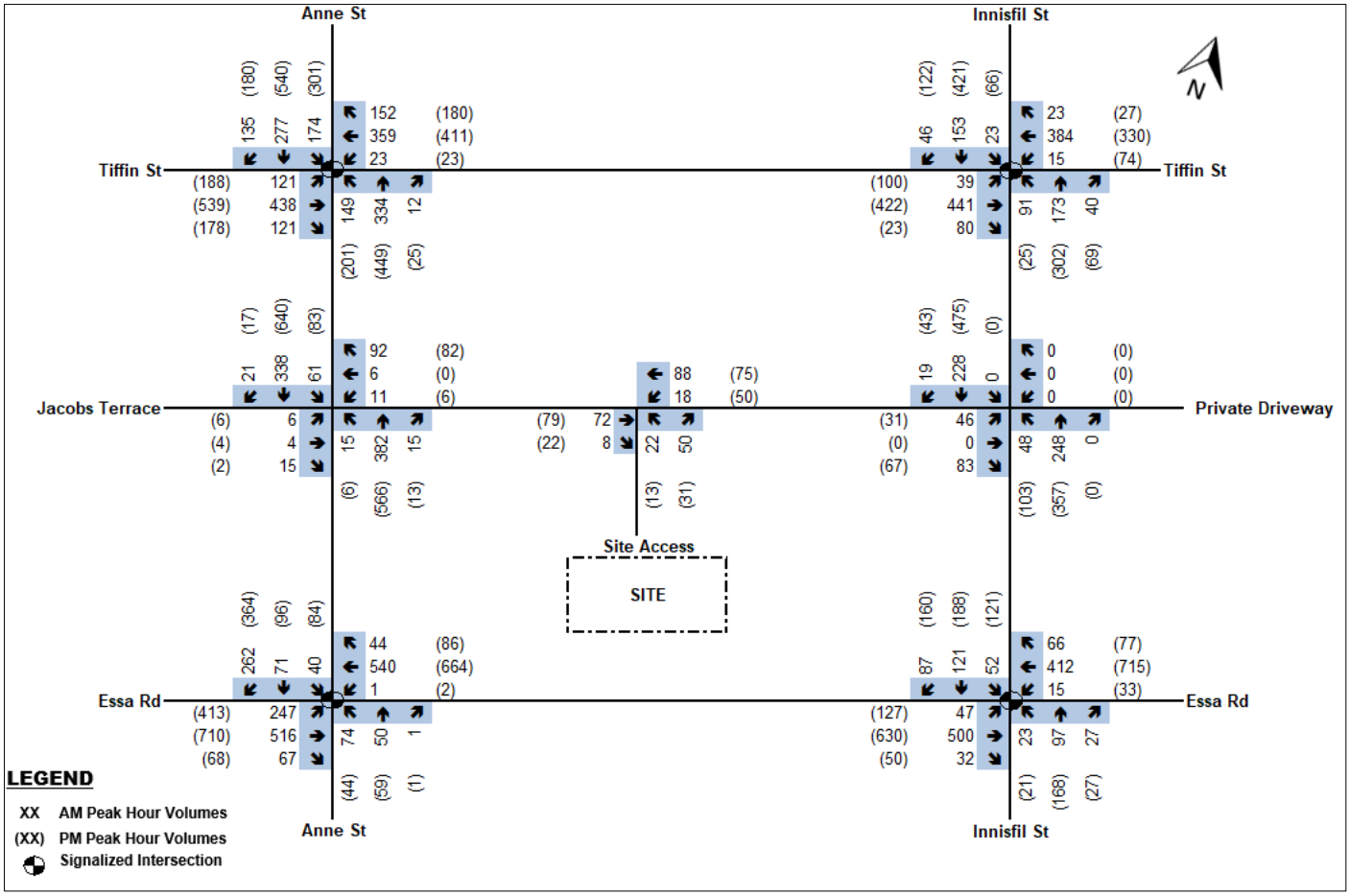


Figure 15 2025 Total Traffic Volumes

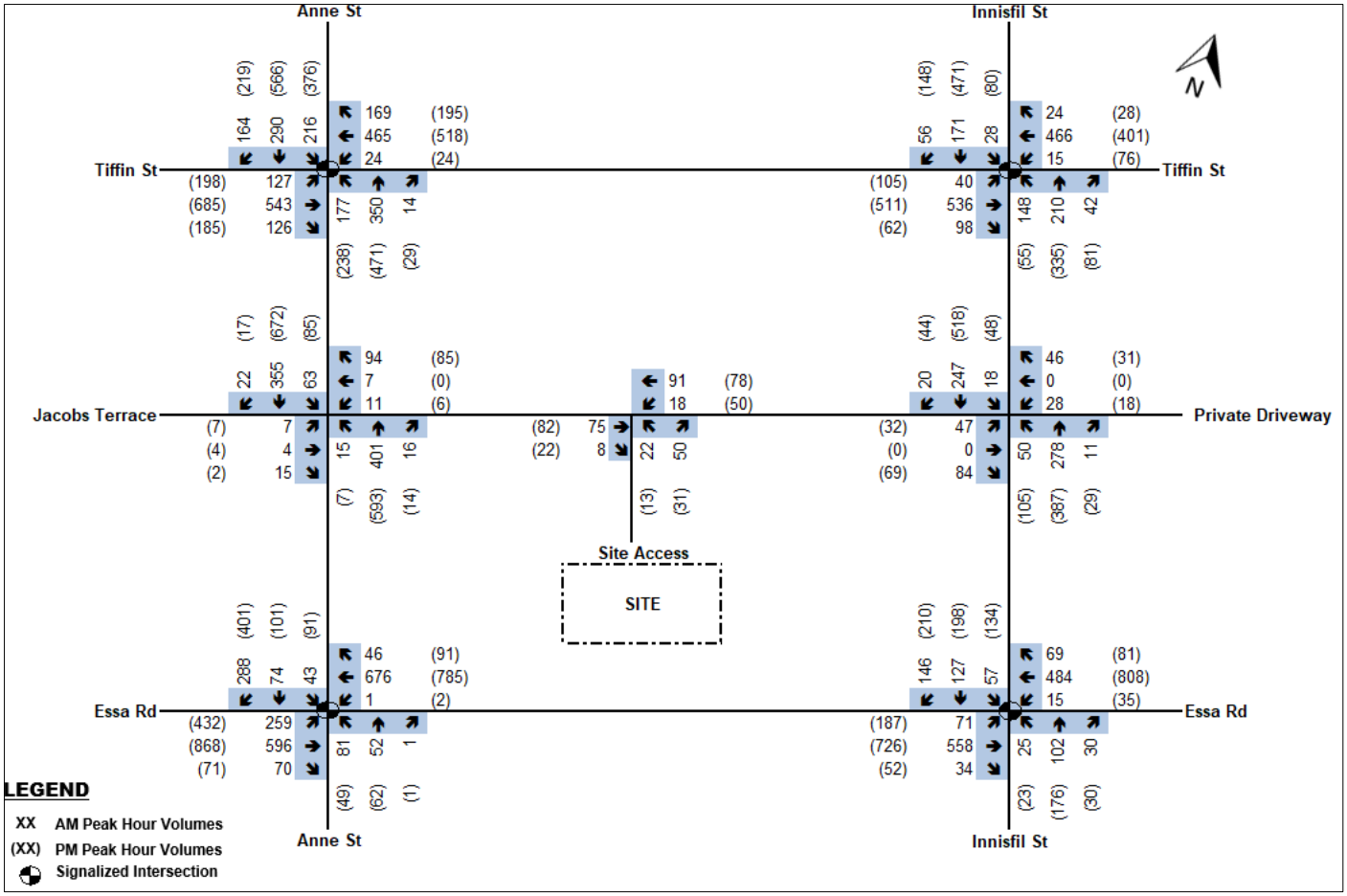


Figure 16 2030 Total Traffic Volumes

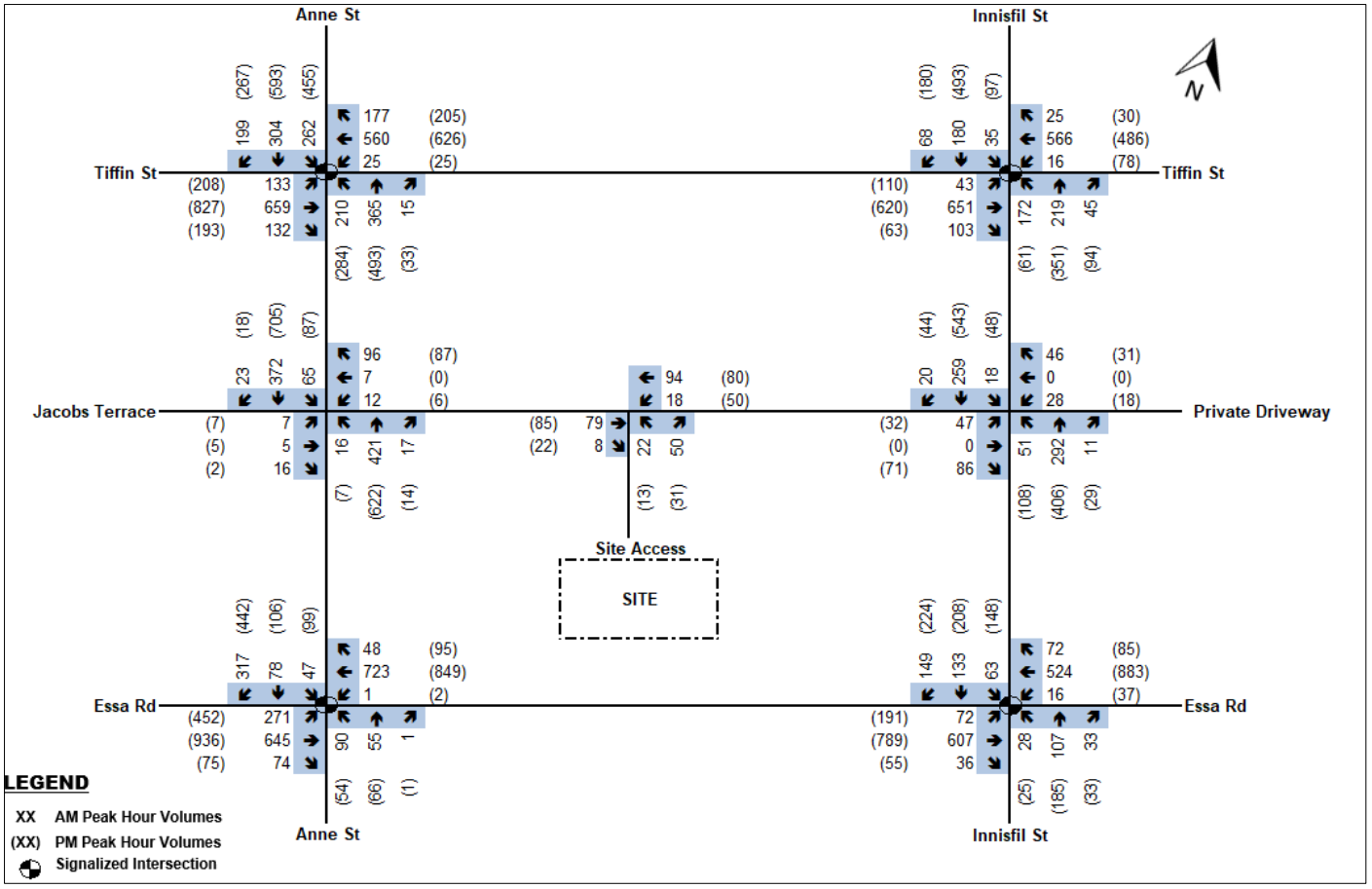


Figure 17 2035 Total Traffic Volumes

6. Multi Modal Capacity Analysis

6.1 Vehicle Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 10 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement.

In accordance with the City of Barrie Traffic Impact Study Guidelines, the analysis includes identification of conditions at signalized intersections where:

- Levels of Service (LOS) for overall intersection operations exceeds LOS D.
- Volume/capacity (v/c) ratios for through movements or shared through/turning movements increased to 0.85 or above.
- V/c ratios for exclusive movements increased to 0.85 or above.
- Where the 50th and 95th percentile queues for an individual movement are projected to exceed available turning lane storage.
- Queues for exclusive left and right turn lanes that are inaccessible due to the through lane queue length.

The analysis includes identification of conditions at unsignalized intersections where:

- Level of service based on average delay per vehicle for individual movements exceed LOS E.
- 95th percentile queues for an individual movement are projected to exceed the lesser of 5 vehicles or the available queue storage.

The following tables summarize the HCM 2000 capacity results for the study intersections during the weekday a.m. and p.m. hours under existing 2021 and future background condition in 2025 and future total traffic conditions for the 2025, 2030 and 2035 planning horizons.

The detailed Synchro calculation sheets are provided in **Appendix E**.

Existing signal timing plans were obtained from the city for use in the analysis. A copy of the timing plans is also included in **Appendix B**.

6.1.1 Tiffin Street and Anne Street South

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 7 Capacity Analysis for Tiffin Street and Anne Street South

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	Overall: 0.52 (C) 31 EBL = 0.47 (C) 24 EBTR = 0.75 (C) 35 WBL = 0.09 (C) 25 WBTR = 0.8 (D) 42 NBL = 0.25 (B) 19 NBTR = 0.25 (C) 26 SBL = 0.32 (C) 22 SBTR = 0.31 (C) 28	EBL = 25 m EBTR = 135 m WBL = 5 m WBTR = 125 m NBL = 30 m NBTR = 40 m SBL = 40 m SBTR = 45 m	Overall: 0.81 (D) 40 EBL = 0.75 (D) 36 EBTR = 0.84 (D) 39 WBL = 0.12 (C) 26 WBTR = **0.89** (D) 51 NBL = 0.58 (C) 29 NBTR = 0.45 (D) 36 SBL = 0.73 (D) 35 SBTR = 0.67 (D) 40	EBL = 55 m EBTR = 210 m WBL = 5 m WBTR = 185 m NBL = 40 m NBTR = 65 m SBL = 65 m SBTR = 95 m
Future Background 2025	Overall: 0.62 (C) 35 EBL = 0.55 (C) 26 EBTR = **0.85** (D) 43 WBL = 0.15 (C) 25 WBTR = 0.83 (D) 43 NBL = 0.36 (C) 22 NBTR = 0.31 (C) 29 SBL = 0.4 (C) 24 SBTR = 0.36 (C) 30	EBL = 30 m EBTR = 180 m WBL = 10 m WBTR = 145 m NBL = 35 m NBTR = 45 m SBL = 45 m SBTR = 50 m	**Overall: 1.0 (E) 55** EBL = **0.93** (E) 73 EBTR = **0.98** (E) 62 WBL = 0.21 (C) 28 WBTR = 0.93 (D) 54 NBL = 0.93 (E) 71 NBTR = 0.51 (D) 38 SBL = **0.97** (E) 76 SBTR = 0.76 (D) 45	EBL = 75 m EBTR = 270 m WBL = 10 m WBTR = 210 m NBL = 75 m NBTR = 70 m SBL = 110 m SBTR = 110 m
Future Total 2025	Overall: 0.63 (C) 35 EBL = 0.55 (C) 26 EBTR = **0.86** (D) 43	EBL = 30 m EBTR = 180 m	**Overall: 1.01 (E) 57** EBL = **0.93** (E) 73 EBTR = **0.99** (E) 64	EBL = 75 m EBTR = 270 m

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
	WBL = 0.15 (C) 25 WBTR = 0.83 (D) 43 NBL = 0.38 (C) 22 NBTR = 0.31 (C) 29 SBL = 0.41 (C) 24 SBTR = 0.36 (C) 31	WBL = 10 m WBTR = 145 m NBL = 40 m NBTR = 50 m SBL = 45 m SBTR = 50 m	WBL = 0.21 (C) 28 WBTR = **0.93** (D) 54 NBL = **0.96** (E) 79 NBTR = 0.51 (D) 38 SBL = **0.98** (E) 78 SBTR = 0.77 (D) 45	WBL = 10 m WBTR = 210 m NBL = 80 m NBTR = 70 m SBL = 110 m SBTR = 110 m
Future Background 2030	Overall: 0.76 (D) 41 EBL = 0.7 (D) 35 EBTR = **0.92** (D) 48 WBL = 0.18 (C) 25 WBTR = **0.92** (D) 50 NBL = 0.5 (C) 26 NBTR = 0.36 (C) 34 SBL = 0.57 (C) 30 SBTR = 0.43 (D) 36	EBL = 40 m EBTR = 230 m WBL = 10 m WBTR = 210 m NBL = 45 m NBTR = 50 m SBL = 55 m SBTR = 55 m	**Overall: 1.25 (F) 102** EBL = **1.19 (F) 160** EBTR = **1.19 (F) 131** WBL = 0.22 (C) 29 WBTR = **1.06 (F) 88** NBL = **1.23 (F) 168** NBTR = 0.52 (D) 37 SBL = **1.29 (F) 189** SBTR = 0.83 (D) 48	EBL = 95 m EBTR = 355 m WBL = 10 m WBTR = 275 m NBL = 110 m NBTR = 75 m SBL = 165 m SBTR = 120 m
Future Total 2030	Overall: 0.77 (D) 41 EBL = 0.7 (D) 35 EBTR = **0.92** (D) 49 WBL = 0.19 (C) 25 WBTR = **0.92** (D) 50 NBL = 0.52 (C) 27 NBTR = 0.37 (C) 34 SBL = 0.57 (C) 30 SBTR = 0.43 (D) 36	EBL = 40 m EBTR = 230 m WBL = 10 m WBTR = 210 m NBL = 45 m NBTR = 50 m SBL = 55 m SBTR = 55 m	**Overall: 1.27 (F) 104** **EBL = 1.19 (F) 160** **EBTR = 1.2 (F) 136** WBL = 0.22 (C) 29 **WBTR = 1.06 (F) 88** **NBL = 1.26 (F) 182** NBTR = 0.52 (D) 38 **SBL = 1.3 (F) 191** SBTR = 0.83 (D) 49	EBL = 95 m EBTR = 360 m WBL = 10 m WBTR = 275 m NBL = 110 m NBTR = 75 m SBL = 170 m SBTR = 120 m
Future Total 2035	Overall: 0.63 (C) 32 EBL = 0.55 (C) 27 EBTR = 0.71 (C) 35 WBL = 0.16 (C) 28 WBTR = 0.78 (D) 42 NBL = 0.52 (C) 22 NBTR = 0.34 (C) 29 SBL = 0.54 (C) 20 SBTR = 0.38 (C) 29	EBL = 35 m EBTR = 110 m WBL = 10 m WBTR = 105 m NBL = 45 m NBTR = 55 m SBL = 60 m SBTR = 55 m	**Overall: 0.99 (E) 56** EBL = **0.90** (E) 68 EBTR = **0.91** (D) 52 WBL = 0.25 (D) 36 WBTR = **0.95** (E) 64 NBL = **0.96** (E) 74 NBTR = 0.61 (D) 45 SBL = **0.98** (E) 61 SBTR = 0.82 (D) 48	EBL = 90 m EBTR = 195 m WBL = 10 m WBTR = 165 m NBL = 115 m NBTR = 85 m SBL = 150 m SBTR = 135 m

Under existing 2021 traffic condition the intersection operates with reserve capacity and acceptable levels of delay except for the westbound through movement that operates with a reported v/c ratio of 0.89 in the p.m. peak hour.

It is important to note that since the traffic counts for this intersection were dated 2019, GHD adopted a cycle length of 120 seconds which is consistent with 2019 signal timings plan. Relevant excerpts are found in **Appendix C**.

With additional corridor growth and background developments, under 2025 future background conditions the intersection is expected to operate with an overall reported v/c ratio of 0.62 and 1.0 for the a.m. and p.m. peak hours with all individual movements operating with reported v/c ratios below critical except for the eastbound through and left turning movements and the southbound left turn movement in the p.m. peak hour as well as the eastbound through movement in the a.m. peak hour. The high v/c ratios of these movements are a result of the adopted background development and corridor growth along Tiffin Street and Anne Street. All movements are expected to operate below their theoretical maximum v/c ratio of 1.0.

Under the 2025 total traffic scenario including the subject site trips, the overall intersection v/c ratios increase by 0.01 resulting in an overall reported v/c ratio of 0.63 (LOS C) during the a.m. peak hour and 1.01 (LOS E) during the p.m. peak hour. The overall average delay per vehicle is expected to remain unchanged in the a.m. peak hour at 35 seconds and increase by 2 seconds in the p.m. peak hour to 57 seconds. Consequently, the operational impact of the added site traffic is minimal and is generally not expected to be identifiable from a driver's perspective. During the a.m. and p.m. peak hours, the subject site trips are expected to utilize approximately 1% of the capacity of this intersection under the 2025 future total traffic scenario.

With additional corridor growth, under 2030 future background conditions the intersection is expected to operate with an overall reported v/c ratio of 0.76 and 1.25 for the a.m. and p.m. peak hours. While this intersection is expected to operate with a reported v/c ratio of less than 1.0 for all individual movements in the a.m. peak hour, this intersection is expected to operate with couple of movements reaching capacity in the p.m. peak hour. The high v/c ratios in the p.m. peak hour are due to the adopted corridor growth and not a result of the subject site. It is recommended that the city review implementing the planned improvements for this intersection by 2030.

Under the 2030 future total traffic conditions including the subject site trips, the overall intersection v/c ratios increase by 0.01 and 0.02 in the a.m. and p.m. peak hours resulting in an overall reported v/c ratio of 0.77 (LOS D) during the a.m. peak hour and 1.27 (LOS F) during the p.m. peak hour. While this intersection is expected to operate with a reported v/c ratio of less than 1.0 for all individual movements in the a.m. peak hour, this intersection is expected to operate with couple of movements reaching capacity in the p.m. peak hour. The high v/c ratios in the p.m. peak hour are due to the adopted corridor growth and not a result of the subject site. It is recommended that the city review implementing the planned improvements by 2030. The subject site trips utilize approximately 1% of the intersection capacity during the a.m. peak hour and 2% during the p.m. peak hour.

Under the 2035 total traffic scenario with the city's planned improvements, this intersection is expected to operate with most individual movements operating at less than critical levels. Nevertheless, the movements showing critical v/c ratios are operating below their theoretical maximum capacity with v/c ratios of less than 1.0. The improvement in v/c ratios and LOS is a result of planned road improvements expected to be completed by the 2035 horizon year. Signal timings have been optimized where possible to minimize delays. In addition, the cycle length was increased by 10 seconds to 130 seconds.

There are no geometric improvements recommended at this intersection in response to the site traffic generated from the subject development however the timing of planned improvements should be reviewed by the City as development proceeds and corridor growth increases.

6.1.2 Tiffin Street and Innisfil Street

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 8 Capacity Analysis for Tiffin Street and Innisfil Street

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	Overall: 0.57 (B) 15 EBL = 0.08 (A) 7 EBTR = 0.51 (B) 11 WBL = 0.01 (A) 6 WBTR = 0.38 (A) 9 NBTLR = 0.71 (C) 27 SBTLR = 0.47 (C) 20	EBL = 10 m EBTR = 70 m WBL = 5 m WBTR = 50 m NBTLR = 50 m SBTLR = 40 m	Overall: 0.64 (C) 22 EBL = 0.21 (B) 12 EBTR = 0.43 (B) 15 WBL = 0.1 (B) 11 WBTR = 0.35 (B) 14 NBTLR = 0.54 (B) 19 SBTLR = **0.89** (D) 37	EBL = 20 m EBTR = 60 m WBL = 10 m WBTR = 45 m NBTLR = 60 m SBTLR = 125 m
Future Background 2025	Overall: 0.66 (B) 16 EBL = 0.09 (A) 8 EBTR = 0.6 (B) 13 WBL = 0.04 (A) 7 WBTR = 0.45 (B) 11 NBTLR = 0.76 (C) 29 SBTLR = 0.47 (B) 20	EBL = 10 m EBTR = 95 m WBL = 5 m WBTR = 70 m NBTLR = 60 m SBTLR = 40 m	Overall: 0.70 (C) 23 EBL = 0.27 (B) 17 EBTR = 0.55 (C) 20 WBL = 0.23 (B) 17 WBTR = 0.45 (B) 18 NBTLR = 0.53 (B) 19 SBTLR = **0.86** (C) 32	EBL = 30 m EBTR = 110 m WBL = 20 m WBTR = 85 m NBTLR = 70 m SBTLR = 125 m
Future Total 2025	Overall: 0.66 (B) 17 EBL = 0.09 (A) 8 EBTR = 0.61 (B) 14 WBL = 0.05 (A) 8 WBTR = 0.46 (B) 11 NBTLR = 0.77 (C) 30 SBTLR = 0.46 (B) 20	EBL = 10 m EBTR = 95 m WBL = 5 m WBTR = 70 m NBTLR = 60 m SBTLR = 40 m	Overall: 0.71 (C) 23 EBL = 0.28 (B) 17 EBTR = 0.56 (C) 21 WBL = 0.26 (B) 17 WBTR = 0.45 (B) 19 NBTLR = 0.54 (B) 19 SBTLR = **0.86** (C) 33	EBL = 30 m EBTR = 110 m WBL = 25 m WBTR = 85 m NBTLR = 70 m SBTLR = 130 m
Future Background 2030	Overall: 0.84 (C) 24 EBL = 0.14 (B) 11 EBTR = 0.81 (C) 24 WBL = 0.07 (B) 11 WBTR = 0.61 (B) 17 NBTLR = **0.87** (D) 38 SBTLR = 0.44 (B) 18	EBL = 10 m EBTR = 150 m WBL = 5 m WBTR = 90 m NBTLR = 95 m SBTLR = 45 m	Overall: 0.86 (C) 30 EBL = 0.42 (C) 25 EBTR = 0.79 (C) 33 WBL = 0.48 (C) 32 WBTR = 0.59 (C) 25 NBTLR = 0.63 (B) 20 SBTLR = **0.91** (D) 38	EBL = 35 m EBTR = 165 m WBL = 30 m WBTR = 105 m NBTLR = 90 m SBTLR = 180 m
Future Total 2030	Overall: 0.85 (C) 25 EBL = 0.14 (B) 12 EBTR = 0.82 (C) 25 WBL = 0.09 (B) 11 WBTR = 0.61 (B) 17 NBTLR = **0.89** (D) 39	EBL = 10 m EBTR = 150 m WBL = 5 m WBTR = 90 m NBTLR = 100 m	Overall: 0.86 (C) 30 EBL = 0.42 (C) 25 EBTR = 0.79 (C) 33 WBL = 0.55 (D) 36 WBTR = 0.59 (C) 26 NBTLR = 0.63 (B) 20	EBL = 35 m EBTR = 165 m WBL = 35 m WBTR = 105 m NBTLR = 90 m

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
	SBTLR = 0.44 (B) 18	SBTLR = 45 m	SBTLR = **0.92** (D) 38	SBTLR = 185 m
Future Total 2035	Overall: 0.55 (B) 15 EBL = 0.12 (A) 8 EBTR = 0.45 (B) 10 WBL = 0.05 (A) 8 WBTR = 0.34 (A) 9 NBL = 0.75 (C) 33 NBTR = 0.55 (C) 21 SBTLR = 0.63 (C) 23	 EBL = 10 m EBTR = 60 m WBL = 5 m WBTR = 45 m NBL = 40 m NBTR = 45 m SBTLR = 50 m	Overall: 0.82 (C) 31 EBL = 0.48 (C) 34 EBTR = 0.59 (C) 31 WBL = 0.49 (D) 38 WBTR = 0.44 (C) 28 NBL = 0.18 (B) 12 NBTR = 0.45 (B) 14 SBTLR = **0.96** (D) 45	 EBL = 40 m EBTR = 90 m WBL = 35 m WBTR = 65 m NBL = 15 m NBTR = 75 m SBTLR = 230 m

Under existing 2021 traffic condition the intersection operates with reserve capacity, acceptable levels of delay, and a reported v/c ratio less than 1.0 for all individual movements.

Under the 2025 future background conditions, the intersection is expected to operate with an overall reported v/c ratio of 0.66 LOS B and 0.7 LOS C during the a.m. and p.m. peak hours with all individual movements operating with a reported v/c ratio below critical levels except the for southbound left/through/right that is expected to operate with a reported v/c ratio of 0.86 in the p.m. peak hour.

With the addition of site traffic under the future total 2025 condition, the overall intersection v/c ratio is for the a.m. peak hour is expected to continue to operate at 0.66 while the p.m. peak hour is expected to increase from 0.7 to 0.71. The overall average delay per vehicle is expected to increase by 1 second in the a.m. peak hour (17 seconds) and by <1 second in the p.m. peak hour (23 seconds). The subject site trips are expected to utilize approximately less than 1% of the capacity of this intersection during the a.m. peak hour and 1% during the p.m. peak hour under the 2025 future total traffic scenario. As a result, the operational impact of the added site traffic is minimal and is generally not expected to be identifiable from a driver's perspective.

With additional corridor growth and background developments added to the 2030 future background traffic conditions, the intersection is expected to operate with overall reported v/c ratios of 0.84 LOS C and 0.86 LOS C for the a.m. and p.m. peak hours with all individual movements operating with reported v/c ratios below critical except for the southbound approach that is operating at a reported v/c ratio of 0.91 LOS D (p.m.) and the northbound through movement in the a.m. peak hour that operates at a v/c ratio of 0.87 . Despite being critical, the southbound and northbound approaches are still expected to operate below the theoretical maximum capacity for the movements with a v/c ratio of less than 1.0.

With the addition of site traffic under the future total 2030 condition, the overall intersection v/c ratio is for the a.m. peak hour is expected to increase from 0.84 to 0.85 while the p.m. peak remains unchanged at 0.86. The overall average delay per vehicle is expected to increase by 1 second in the a.m. peak hour (25 seconds) and by <1 second in the p.m. peak hour (30 seconds). During the a.m. peak hours, the subject site trips are expected to utilize approximately 1% of the capacity of this intersection under the 2030 future total traffic scenario. Therefore, operational impact of the added site traffic is minimal and is generally not expected to be identifiable from a driver's perspective.

In the 2035 total traffic scenario the intersection is expected to operate with an overall reported v/c ratio of 0.55 LOS B and 0.82 LOS C for the a.m. and p.m. peak hours with all individual movements operating with v/c ratios below critical except for the southbound through movement which is showing a reported v/c ratio of 0.96 (pm) which remains below the maximum capacity for this movement. Any improvements in the reported v/c ratios for this intersection are a result of the planned road improvements which will increase capacity at the intersection. Signal timings were optimized where possible to minimize delay for all approaches. In addition, the cycle length was increased to 110 seconds in the p.m. peak hour to better accommodate future conditions.

There are no geometric improvements recommended at this intersection in response to the site traffic generated from the subject development.

6.2 Anne Street South and Jacobs Terrace

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 9 Capacity Analysis for Anne Street South and Jacobs Terrace

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	EBTLR = 0.04 (B) 12 WBTLR = 0.09 (B) 12 NBTLR = 0.01 (A) 0 SBTLR = 0.04 (A) 1	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.04 (C) 18 WBTLR = 0.13 (B) 15 NBTLR = 0.01 (A) 0 SBTLR = 0.04 (A) 1	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Background 2025	EBTLR = 0.05 (B) 12 WBTLR = 0.16 (B) 13 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 2	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.05 (C) 21 WBTLR = 0.2 (C) 16 NBTLR = 0.01 (A) 0 SBTLR = 0.09 (A) 2	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2025	EBTLR = 0.05 (B) 12 WBTLR = 0.21 (B) 14 NBTLR = 0.01 (A) 0 SBTLR = 0.06 (A) 2	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.06 (C) 22 WBTLR = 0.25 (C) 17 NBTLR = 0.01 (A) 0 SBTLR = 0.11 (A) 3	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m
Future Background 2030	EBTLR = 0.05 (B) 13 WBTLR = 0.18 (B) 13 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 2	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.06 (C) 23 WBTLR = 0.22 (C) 17 NBTLR = 0.01 (A) 0 SBTLR = 0.1 (A) 2	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m
Future Total 2030	EBTLR = 0.05 (B) 13 WBTLR = 0.22 (B) 14 NBTLR = 0.01 (A) 0 SBTLR = 0.06 (A) 2	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.07 (C) 24 WBTLR = 0.26 (C) 18 NBTLR = 0.01 (A) 0 SBTLR = 0.12 (A) 3	EBTLR = 5 m WBTLR = 10 m NBTLR = 5 m SBTLR = 5 m
Future Total 2035	EBTLR = 0.06 (B) 13 WBTLR = 0.24 (B) 14 NBL = 0.02 (A) 9 NBTR = 0.27 (A) 0 SBL = 0.06 (A) 8 SBTR = 0.24 (A) 0	EBTLR = 5 m WBTLR = 10 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.08 (D) 26 WBTLR = 0.29 (C) 19 NBL = 0.01 (A) 10 NBTR = 0.41 (A) 0 SBL = 0.12 (B) 10 SBTR = 0.46 (A) 0	EBTLR = 5 m WBTLR = 10 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m

Under existing 2021 traffic condition the intersection operates with substantial reserve capacity, acceptable levels of delay, and negligible queuing.

Under all future conditions this intersection is expected to continue to operate with substantial reserve capacity, acceptable levels of delay, and negligible queuing.

No geometric improvements are recommended at this study intersection in response to the site traffic generated from the subject site.

6.2.1 Innisfil Street and Jacobs Terrace

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 10 Capacity Analysis for Innisfil Street and Jacobs Terrace

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	EBLR = 0.07 (B) 11 NBTL = 0.03 (A) 1 SBTR = 0.17 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m	EBLR = 0.08 (B) 12 NBTL = 0.05 (A) 2 SBTR = 0.29 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m
Future Background 2025	EBLR = 0.12 (B) 11 NBTL = 0.03 (A) 1 SBTR = 0.15 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m	EBLR = 0.13 (B) 12 NBTL = 0.07 (A) 2 SBTR = 0.32 (A) 0	EBLR = 5 m NBTL = 5 m SBTR = 0 m
Future Total 2025	EBTLR = 0.2 (B) 12 NBTL = 0.04 (A) 2 SBTR = 0.16 (A) 0	EBTLR = 5 m NBTL = 5 m SBTR = 0 m	EBTLR = 0.21 (B) 14 NBTLR = 0.11 (A) 3 SBTLR = 0 (A) 0	EBTLR = 5 m NBTLR = 5 m SBTLR = 0 m
Future Background 2030	EBTLR = 0.14 (B) 12 WBTLR = 0.13 (B) 12 NBTL = 0.03 (A) 1 SBTR = 0.02 (A) 1	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTR = 5 m	EBTLR = 0.17 (B) 15 WBTLR = 0.13 (C) 15 NBTLR = 0.08 (A) 2 SBTLR = 0.05 (A) 1	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2030	EBTLR = 0.23 (B) 13 WBTLR = 0.14 (B) 12 NBTL = 0.04 (A) 2 SBTR = 0.02 (A) 1	EBTLR = 5 m WBTLR = 5 m NBTL = 5 m SBTR = 5 m	EBTLR = 0.26 (C) 17 WBTLR = 0.15 (C) 17 NBTLR = 0.12 (A) 3 SBTLR = 0.05 (A) 1	EBTLR = 10 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2035	EBTLR = 0.24 (B) 13 WBTLR = 0.14 (B) 12 NBL = 0.05 (A) 8 NBTR = 0.19 (A) 0 SBL = 0.02 (A) 8 SBTR = 0.18 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.28 (C) 18 WBTLR = 0.16 (C) 18 NBL = 0.13 (A) 10 NBTR = 0.28 (A) 0 SBL = 0.05 (A) 9 SBTR = 0.38 (A) 0	EBTLR = 10 m WBTLR = 5 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m

Under existing 2021 traffic condition the intersection operates with substantial reserve capacity, acceptable levels of delay, and negligible queuing.

Under all future conditions this intersection is expected to continue to operate with substantial reserve capacity, acceptable levels of delay, and negligible queuing.

No geometric improvements are recommended at this study intersection in response to the site traffic generated from the subject site.

6.2.2 Anne Street South and Essa Road

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 11 Capacity Analysis for Anne Street South and Essa Road

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	**Overall: 0.51 (B) 12** EBTLR = 0.46 (A) 6 WBTLR = 0.2 (A) 5 NBTLR = 0.55 (C) 32 SBTL = 0.41 (C) 30 SBR = 0.17 (C) 28	EBTLR = 40 m WBTLR = 20 m NBTLR = 35 m SBTL = 30 m SBR = 20 m	**Overall: 0.74 (B) 16** EBTLR = 0.72 (B) 10 WBTLR = 0.28 (A) 6 NBTLR = 0.5 (D) 37 SBTL = 0.64 (D) 41 SBR = 0.24 (C) 34	EBTLR = 100 m WBTLR = 35 m NBTLR = 35 m SBTL = 50 m SBR = 25 m
Future Background 2025	**Overall: 0.62 (B) 13** EBTLR = 0.59 (A) 7 WBTLR = 0.27 (A) 5 NBTLR = 0.58 (C) 33 SBTL = 0.45 (C) 30 SBR = 0.18 (C) 28	EBTLR = 60 m WBTLR = 30 m NBTLR = 35 m SBTL = 30 m SBR = 20 m	**Overall: 0.80 (C) 21** EBL* = 0.8 (B) 18 EBTR = 0.64 (B) 11 WBTLR = 0.52 (B) 19 NBTLR = 0.48 (D) 35 SBTL = 0.67 (D) 41 SBR = 0.26 (C) 32	EBL = 70 m EBTR = 135 m WBTLR = 85 m NBTLR = 35 m SBTL = 55 m SBR = 25 m
Future Total 2025	**Overall: 0.64 (B) 13** EBTLR = 0.61 (A) 8 WBTLR = 0.28 (A) 5 NBTLR = 0.58 (C) 33 SBTL = 0.45 (C) 30 SBR = 0.19 (C) 28	EBTLR = 60 m WBTLR = 30 m NBTLR = 35 m SBTL = 30 m SBR = 20 m	**Overall: 0.82 (C) 21** EBL* = 0.82 (C) 20 EBTR = 0.67 (B) 12 WBTLR = 0.54 (C) 20 NBTLR = 0.48 (D) 35 SBTL = 0.67 (D) 41 SBR = 0.26 (C) 32	EBL = 85 m EBTR = 150 m WBTLR = 90 m NBTLR = 35 m SBTL = 55 m SBR = 25 m
Future Background 2030	**Overall: 0.60 (B) 13** EBL = 0.6 (A) 7 EBTR = 0.3 (A) 5 WBL = 0 (A) 8 WBTR = 0.4 (B) 11 NBL = 0.43 (C) 30 NBTR = 0.2 (C) 28 SBL = 0.22 (C) 28 SBT = 0.27 (C) 29 SBR = 0.29 (C) 29	EBL = 25 m EBTR = 35 m WBL = 5 m WBTR = 50 m NBL = 25 m NBTR = 20 m SBL = 15 m SBT = 25 m SBR = 25 m	**Overall: 0.78 (C) 20** EBL = 0.82 (C) 25 EBTR = 0.39 (A) 6 WBL = 0.01 (B) 14 WBTR = 0.6 (C) 21 NBL = 0.26 (C) 34 NBTR = 0.23 (C) 33 SBL = 0.45 (D) 36 SBT = 0.37 (C) 34 SBR = 0.28 (C) 34	EBL = 105 m EBTR = 55 m WBL = 5 m WBTR = 100 m NBL = 20 m NBTR = 25 m SBL = 30 m SBT = 35 m SBR = 25 m
Future Total 2030	**Overall: 0.62 (B) 14** EBL = 0.64 (A) 8 EBTR = 0.3 (A) 5 WBL = 0 (A) 8	EBL = 30 m EBTR = 35 m WBL = 5 m	**Overall: 0.79 (C) 21** EBL = 0.84 (C) 28 EBTR = 0.41 (A) 6 WBL = 0.01 (B) 15	EBL = 110 m EBTR = 60 m WBL = 5 m

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
	WBTR = 0.42 (B) 11 NBL = 0.43 (C) 30 NBTR = 0.19 (C) 28 SBL = 0.22 (C) 28 SBT = 0.27 (C) 29 SBR = 0.36 (C) 30	WBTR = 55 m NBL = 25 m NBTR = 20 m SBL = 15 m SBT = 25 m SBR = 30 m	WBTR = 0.63 (C) 22 NBL = 0.26 (C) 34 NBTR = 0.23 (C) 33 SBL = 0.45 (D) 36 SBT = 0.36 (C) 34 SBR = 0.29 (C) 34	WBTR = 100 m NBL = 20 m NBTR = 25 m SBL = 30 m SBT = 35 m SBR = 25 m
Future Total 2035	**Overall: 0.63 (B) 15** EBL = 0.62 (A) 9 EBTR = 0.32 (A) 5 WBL = 0 (A) 10 WBTR = 0.48 (B) 14 NBL = 0.49 (C) 33 NBTR = 0.21 (C) 30 SBL = 0.25 (C) 30 SBT = 0.3 (C) 30 SBR = 0.23 (C) 30	 EBL = 30 m EBTR = 35 m WBL = 5 m WBTR = 75 m NBL = 30 m NBTR = 20 m SBL = 20 m SBT = 25 m SBR = 25 m	**Overall: 0.80 (C) 25** EBL = 0.83 (C) 33 EBTR = 0.43 (A) 6 WBL = 0.01 (B) 18 WBTR = 0.68 (C) 27 NBL = 0.3 (D) 40 NBTR = 0.25 (D) 40 SBL = 0.51 (D) 43 SBT = 0.39 (D) 41 SBR = 0.4 (D) 41	 EBL = 145 m EBTR = 75 m WBL = 5 m WBTR = 135 m NBL = 25 m NBTR = 25 m SBL = 40 m SBT = 40 m SBR = 40 m

* Note: The eastbound movement was modelled as a left lane and through/right lane for the PM peak hour as Synchro has identified this movement as a defacto left turn lane.

Under existing 2021 traffic condition the intersection operates with reserve capacity, acceptable levels of delay, and negligible queuing.

Under the 2025 future background conditions with corridor growth and background developments included, the intersection is expected to operate with an overall reported v/c ratio of 0.62 and 0.8 for the a.m. and p.m. peak hours with all individual movements operating with a reported v/c ratio below critical in both peak hours

With the addition of site trips, under future total 2025 conditions, the overall intersection v/c ratio for the a.m. peak hour is expected to increase from 0.62 to 0.64 and from 0.80 to 0.82 in the p.m. peak hour. During both. peak hours, the subject site trips are expected to utilize approximately 2% of the capacity of this intersection under the 2025 future total traffic scenario. This intersection continues to operate with all individual movements operating with a reported v/c ratio below critical in both peak hours. As a result, the operational impact of the added site traffic is considered negligible, with any changes in operations not expected to be identifiable from a driver's perspective.

With additional corridor growth and background developments, under 2030 future background conditions which includes the City's planned improvements as per the masterplan, this intersection is expected to operate with an overall reported v/c ratio of 0.60 and 0.78 for the a.m. and p.m. peak hours with all individual movements operating with v/c ratios below critical levels.

Under the 2030 total traffic scenario including the subject site trips, the overall intersection v/c ratios increase by 0.02 resulting in an overall reported v/c ratio of 0.62 (LOS B) during the a.m. peak hour and 0.79 (LOS C) during the p.m. peak hour. The overall average delay per vehicle is expected to increase by 1 second in the a.m. peak (14 seconds) and 1 second in the p.m. peak hour (21 seconds). Consequently, the operational impact of the added site traffic is minimal and is generally not expected to be identifiable from a driver's perspective. During the a.m. and p.m. peak hours, the subject site trips are expected to utilize approximately 2%(a.m.) and 1% (p.m.) of the capacity of this intersection under the 2030 future total traffic scenario.

With additional corridor growth and background developments, under 2035 future conditions the intersection is expected to operate with an overall reported v/c ratio of 0.63 and 0.80 for the a.m. and p.m. peak hours with all individual movements operating with v/c ratios below critical levels. Although critical, both movements are expected to operate below their theoretical maximum capacity with v/c ratios less than 1.0.

There are no geometric improvements recommended in addition to the planned improvements at this intersection in response to the site traffic generated from the subject development.

6.2.3 Innisfil Street and Essa Road

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 12 Capacity Analysis for Innisfil Street and Essa Road

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Existing 2021	**Overall: 0.34 (B) 15** EBTLR = 0.25 (A) 8 WBTLR = 0.21 (A) 8 NBTL = 0.31 (C) 31 NBR = 0.02 (C) 29 SBTL = 0.47 (C) 33 SBR = 0.02 (C) 29	EBTLR = 30 m WBTLR = 25 m NBTL = 35 m NBR = 0 m SBTL = 50 m SBR = 5 m	**Overall: 0.54 (B) 19** EBTLR = 0.4 (B) 14 WBTLR = 0.39 (B) 13 NBTL = 0.32 (C) 29 NBR = 0.02 (C) 26 SBTL = 0.68 (D) 37 SBR = 0.14 (C) 27	EBTLR = 60 m WBTLR = 65 m NBTL = 50 m NBR = 0 m SBTL = 85 m SBR = 20 m
Future Background 2025	**Overall: 0.40 (B) 14** EBTLR = 0.31 (A) 9 WBTLR = 0.26 (A) 8 NBTL = 0.32 (C) 31 NBR = 0.02 (C) 29 SBTL = 0.49 (C) 33 SBR = 0.03 (C) 29	EBTLR = 35 m WBTLR = 30 m NBTL = 40 m NBR = 0 m SBTL = 55 m SBR = 10 m	**Overall: 0.67 (C) 21** EBTLR = 0.56 (B) 17 WBTLR = 0.47 (B) 14 NBTL = 0.33 (C) 29 NBR = 0.02 (C) 26 SBTL = 0.71 (D) 38 SBR = 0.17 (C) 27	EBTLR = 80 m WBTLR = 80 m NBTL = 50 m NBR = 0 m SBTL = 90 m SBR = 25 m
Future Total 2025	**Overall: 0.41 (B) 15** EBTLR = 0.33 (A) 9 WBTLR = 0.26 (A) 8 NBTL = 0.32 (C) 31 NBR = 0.02 (C) 29 SBTL = 0.49 (C) 33 SBR = 0.07 (C) 29	EBTLR = 35 m WBTLR = 30 m NBTL = 40 m NBR = 0 m SBTL = 55 m SBR = 15 m	**Overall: 0.73 (C) 22** EBTLR = 0.65 (B) 20 WBTLR = 0.47 (B) 15 NBTL = 0.33 (C) 29 NBR = 0.02 (C) 26 SBTL = 0.7 (D) 38 SBR = 0.2 (C) 27	EBTLR = 95 m WBTLR = 80 m NBTL = 50 m NBR = 0 m SBTL = 90 m SBR = 30 m
Future Background 2030	**Overall: 0.46 (B) 15** EBTLR = 0.38 (A) 9 WBTLR = 0.3 (A) 8 NBTL = 0.34 (C) 32	EBTLR = 45 m WBTLR = 35 m NBTL = 40 m	**Overall: 0.85 (C) 25** EBTLR = 0.74 (C) 21 WBTLR = 0.5 (B) 14 NBTL = 0.4 (C) 34	EBTLR = 105 m WBTLR = 75 m NBTL = 60 m

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
	NBR = 0.02 (C) 29 SBTL = 0.52 (C) 34 SBR = 0.1 (C) 29	NBR = 0 m SBTL = 55 m SBR = 15 m	NBR = 0.02 (C) 29 SBTL = **0.89** (E) 61 SBR = 0.27 (C) 32	NBR = 0 m SBTL = 130 m SBR = 40 m
Future Total 2030	**Overall: 0.48 (B) 15** EBTLR = 0.4 (A) 10 WBTLR = 0.3 (A) 8 NBTL = 0.34 (C) 32 NBR = 0.02 (C) 29 SBTL = 0.52 (C) 34 SBR = 0.14 (C) 30	 EBTLR = 45 m WBTLR = 35 m NBTL = 40 m NBR = 0 m SBTL = 55 m SBR = 20 m	**Overall: 0.89 (C) 26** EBTLR = 0.79 (C) 23 WBTLR = 0.5 (B) 14 NBTL = 0.4 (C) 34 NBR = 0.02 (C) 29 SBTL = **0.89** (E) 61 SBR = 0.31 (C) 32	 EBTLR = 115 m WBTLR = 75 m NBTL = 60 m NBR = 0 m SBTL = 130 m SBR = 45 m
Future Total 2035	**Overall: 0.45 (C) 20** EBL = 0.2 (B) 16 EBTR = 0.38 (B) 17 WBL = 0.05 (B) 11 WBTR = 0.32 (B) 12 NBTL = 0.43 (D) 39 NBR = 0.02 (D) 35 SBL = 0.19 (C) 28 SBTR = 0.5 (C) 32	 EBL = 20 m EBTR = 70 m WBL = 5 m WBTR = 50 m NBTL = 50 m NBR = 0 m SBL = 20 m SBTR = 70 m	**Overall: 0.7 (C) 26** EBL = 0.59 (B) 17 EBTR = 0.49 (B) 19 WBL = 0.12 (B) 16 WBTR = 0.64 (C) 26 NBTL = 0.57 (D) 38 NBR = 0.02 (C) 32 SBL = 0.48 (C) 30 SBTR = 0.74 (D) 38	 EBL = 30 m EBTR = 85 m WBL = 10 m WBTR = 115 m NBTL = 65 m NBR = 0 m SBL = 40 m SBTR = 110 m

Under existing 2021 traffic condition the intersection operates with substantial reserve capacity, acceptable levels of delay, and a reported v/c ratio below critical for all movements.

Under the 2025 future background conditions with corridor growth and background developments included, the intersection is expected to operate with an overall reported v/c ratio of 0.40 and 0.67 for the a.m. and p.m. peak hours with all individual movements operating with a reported v/c ratio below critical in both peak hours.

With the addition of site trips, under future total 2025 conditions, the overall intersection v/c ratio is for the a.m. peak hour is expected to increase from 0.40 to 0.41 while the p.m. peak is expected to increase from 0.67 to 0.73. During the a.m. peak hour, the subject site trips are expected to utilize approximately 1% of the capacity of this intersection while in the pm peak the subject site trips are expected to utilize approximately 6% of the capacity of this intersection under the 2025 future total traffic scenario. This intersection continues to operate with all individual movements operating with a reported v/c ratio below critical in both peak hours. As a result, the operational impact of the added site traffic is considered negligible, with any changes in operations not expected to be identifiable from a driver's perspective.

With additional corridor growth and background developments, under 2030 future background conditions the intersection is expected to operate with an overall reported v/c ratio of 0.46 and 0.85 for the a.m. and p.m. peak hours with all individual movements operating with v/c ratios below critical levels except for the southbound through shared left movements that is expected to operate at a reported v/c ratio of 0.89 in the p.m. peak hour only. Although critical, the aforementioned movement is expected to operate below the theoretical maximum capacity with v/c ratios less than 1.0.

With the addition of site trips, under future total 2030 conditions, the overall intersection v/c ratio for the a.m. peak hour is expected to increase from 0.46 to 0.48 while the p.m. peak is expected to increase from 0.85 to 0.89. During a.m. peak hour, the subject site trips utilize approximately 2% of the capacity of this intersection while in the pm peak the subject site trips utilize approximately 4% of the capacity of this intersection under the 2030 future total traffic scenario.

This intersection continues to operate with all individual movements operating with v/c ratios below critical levels except for the southbound through shared left movements that is expected to operate at a reported v/c ratio of 0.89 in the p.m. peak hour only. Although critical, the aforementioned movement is expected to operate below the theoretical maximum capacity with a v/c ratio of less than 1.0.

With additional corridor growth and background developments, under 2035 future conditions the intersection is expected to operate with an overall reported v/c ratio of 0.45 and 0.70 for the a.m. and p.m. peak hours with all individual movements operating with v/c ratios below critical levels.

There are no geometric improvements recommended at this intersection in response to the site traffic generated from the subject development.

6.2.4 Jacobs Terrace and Site Driveway

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 13 Capacity Analysis for Jacobs Terrace and Site Driveway

Traffic Condition	AM Peak Hour		PM Peak Hour	
	Movement v/c (LOS) Delay(sec)	95th Percentile Queue	Movement v/c (LOS) Delay(sec)	95th Percentile Queue
Future Total 2025	EBTR = 0.05 (A) 0 WBTL = 0.01 (A) 1 NBLR = 0.09 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.06 (A) 0 WBTL = 0.04 (A) 3 NBLR = 0.06 (A) 10	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2030	EBTR = 0.05 (A) 0 WBTL = 0.01 (A) 1 NBLR = 0.09 (A) 9	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.07 (A) 0 WBTL = 0.04 (A) 3 NBLR = 0.06 (A) 10	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2035	EBTR = 0.06 (A) 0 WBTL = 0.01 (A) 1 NBLR = 0.09 (A) 10	EBTR = 0 m WBTL = 5 m NBLR = 5 m	EBTR = 0.07 (A) 0 WBTL = 0.04 (A) 3 NBLR = 0.06 (A) 10	EBTR = 0 m WBTL = 5 m NBLR = 5 m

Under future conditions, the proposed site driveway is expected to operate satisfactorily with substantial reserve capacity, low levels of delay and negligible queuing.

6.3 Queuing Review

As requested by the City of Barrie, the intersections of Anne Street and Innisfil Street at Essa Road was reviewed to evaluate the expected queue lengths on the intersections of Essa Road/Anne Street and Essa Road/Innisfil Street. Sim Traffic analysis was conducted with a 30-minute seeding time and 60 minutes interval time as per the City's Traffic Impact Study Guideline.

6.3.1 Queuing review at Essa Road and Anne Street

SimTraffic Queuing analysis at this intersection during the weekday a.m. and p.m. peak hours for the future traffic conditions are summarized in the following table.

Table 14 SimTraffic Queuing for the intersection of Anne Street & Essa Road

Traffic Conditions	Movement = 95th % queue Length (Total Delay/ vehicle)	
	AM Peak Hour	PM Peak Hour
Future Background 2025	EBTLR = 86 m WBTLR = 40 m NBTLR = 34 m SBTL = 58 m SBR = 32 m	EBL* = 71 m EBTR = 96 m WBTLR = 78 m NBTLR = 34 m SBTL = 83 m SBR = 33 m
Future Total 2025	EBTLR = 100 m WBTLR = 43 m NBTLR = 36 m SBTL = 56m SBR = 32 m	EBL* = 75 m EBTR = 102 m WBTLR = 76 m NBTLR = 35 m SBTL = 73 m SBR = 33 m
Future Background 2030	EBL = 46 m EBTR = 42 m WBL = 5 m WBTR = 60 m NBL = 33 m NBTR = 21 m SBL = 20 m SBT = 50 m SBR = 32 m	EBL = 75 m EBTR = 57 m WBL = 5 m WBTR = 80 m NBL = 22 m NBTR = 26 m SBL = 31 m SBT = 58 m SBR = 32 m
Future Total 2030	EBL = 50 m EBTR = 40 m WBL = 5 m WBTR = 62 m NBL = 30 m NBTR = 20 m SBL = 19 m SBT = 55 m SBR = 32 m	EBL = 77 m EBTR = 57 m WBL = 5 m WBTR = 82 m NBL = 21 m NBTR = 29 m SBL = 30 m SBT = 57 m SBR = 32 m
Future Total 2035	EBL = 51 m EBTR = 43 m WBL = 5 m	EBL = 105 m EBTR = 78 m WBL = 9 m

Traffic Conditions	Movement = 95th % queue Length (Total Delay/ vehicle)	
	AM Peak Hour	PM Peak Hour
	WBTR = 77 m NBL = 32 m NBTR = 22 m SBL = 19 m SBT = 77 m SBR = 32 m	WBTR = 111 m NBL = 26 m NBTR = 29 m SBL = 22 m SBT = 90 m SBR = 32 m

* Note: The eastbound movement was modelled as a left lane and through/right lane for the PM peak hour as Synchro has identified this movement as a defacto left turn lane.

With the addition of site trips, under future total 2025 conditions, the queue lengths along the eastbound through shared left/right movement are expected to increase from 86 m to 100 m (2 vehicles) in the a.m. peak hour while the eastbound through shared right movement is expected to increase from 96 m to 102 m (1 vehicle). As a result, the operational impact of the added site traffic under the 2025 traffic conditions is considered minimal, with any changes in operations not expected to be identifiable from the perspective of a driver.

With the addition of site trips and by implementing the city's planned improvements for this intersection, under the future total 2030 conditions, the queue lengths for the eastbound left turn movement are expected to increase from 46 m to 50 m (1 vehicles) in the a.m. peak hour while the eastbound left turning movement is expected to increase from 75 m to 77 m (<1 vehicle).

As per the SimTraffic results, the site traffic is not expected to add more than 2 vehicles for any of the intersection movements for both a.m. and p.m. peak hours.

There are no queuing concerns for the northbound through and turning movements for both peak hours under all future conditions. However, the southbound through movements is expected to extend up to one vehicle beyond the private driveway on Annes Street. By the future total 2035 the queue lengths are expected to extend up to 90 meters (6 vehicles beyond the private driveway on Annes Street) however, this condition would exist regardless of whether the subject site is developed as this condition is a result of the added corridor growth and not a result of the proposed site traffic.

6.3.2 Queuing review at Essa Road and Innisfil Street

SimTraffic Queuing analysis at this intersection during the weekday a.m. and p.m. peak hours for the future traffic conditions are summarized in the following table.

Table 15 SimTraffic Queuing for the intersection of Innisfil Street & Essa Road

Traffic Conditions	Movement = 95th % queue Length (Total Delay/ vehicle)	
	AM Peak Hour	PM Peak Hour
Future Background 2025	EBTLR = 46 m WBTLR = 38 m NBTL = 32 m NBR = 14 m SBTL = 48 m SBR = 21 m	EBTLR = 76 m WBTLR = 71 m NBTL = 49 m NBR = 16 m SBTL = 160 m SBR = 32 m

Traffic Conditions	Movement = 95th % queue Length (Total Delay/ vehicle)	
	AM Peak Hour	PM Peak Hour
Future Total 2025	EBTLR = 52 m WBTLR = 36 m NBTL = 33 m NBR = 15 m SBTL = 52 m SBR = 27 m	EBTLR = 81 m WBTLR = 76 m NBTL = 49 m NBR = 15 m SBTL = 149 m SBR = 32 m
Future Background 2030	EBTLR = 60 m WBTLR = 45 m NBTL = 34 m NBR = 16 m SBTL = 62 m SBR = 28 m	EBTLR = 94 m WBTLR = 74 m NBTL = 57 m NBR = 19 m SBTL = 163 m SBR = 30 m
Future Total 2030	EBTLR = 60 m WBTLR = 45 m NBTL = 34 m NBR = 16 m SBTL = 57 m SBR = 30 m	EBTLR = 104 m WBTLR = 72 m NBTL = 59 m NBR = 17 m SBTL = 167 m SBR = 30 m
Future Total 2035	EBL = 18 m EBTR = 58 m WBL = 5 m WBTR = 45 m NBTL = 37 m NBR = 16 m SBL = 23 m SBTR = 55 m	EBL = 50 m EBTR = 91 m WBL = 33 m WBTR = 107 m NBTL = 82 m NBR = 19 m SBL = 60 m SBTR = 120 m

With the addition of site trips, under future total 2025 conditions, the queue lengths along the eastbound through shared left/right movement is expected to increase from 46 m to 52 m (1 vehicles) in the a.m. peak hour and from 76 m to 81 m (1 vehicle) in the p.m. peak hour. As a result, the operational impact of the added site traffic is considered minimal, with any changes in operations not expected to be identifiable from a driver's perspective.

With the addition of site trips and by implementing the city's planned improvements for this intersection, under future total 2030 conditions, the queue lengths along the eastbound through shared right turning movement is expected to increase by <1 vehicle in the a.m. peak hour while the eastbound through shared right movement is expected to increase from 94 m to 104 m (<2 vehicles).

As per the SimTraffic results, the site traffic is not expected to add more than 2 vehicles for any of the intersection movements for both a.m. and p.m. peak hours.

There are no queuing concerns for the northbound right turn movements for both peak hours under all future conditions. However, the southbound right turn movement is expected to extend up to one vehicle beyond the existing

storage length on Innisfil Street for the 2025 and 2030 horizon years as a result of the adopted corridor growth and not a result of the subject site traffic.

6.4 Arterial LOS on Essa Road

GHD also completed a SimTraffic Arterial LOS results for the proposed arterial travel time between the two intersections on Essa Road for both the eastbound and westbound traffic under the Future Background and Future Total conditions for the 2025 and 2030 horizon years and are summarized in the following table.

Table 14 SimTraffic Arterial Los for the intersections of Essa Rd /Anne St & Essa Road / Innisfil St

Traffic Conditions	Travel Time	
	AM Peak Hour	PM Peak Hour
Future Background 2025	Eastbound = 54.6 sec Westbound = 55.6 sec	Eastbound = 64 sec Westbound = 75.4 sec
Future Total 2025	Eastbound = 57.2 sec Westbound = 56.2 sec	Eastbound = 65.3 sec Westbound = 74.6 sec
Future Background 2030	Eastbound = 52.7 sec Westbound = 64.9 sec	Eastbound = 63.2 sec Westbound = 73.6 sec
Future Total 2030	Eastbound = 53 sec Westbound = 64.8 sec	Eastbound = 62.2 sec Westbound = 75.4 sec

The impact to the total travel delay for the eastbound and westbound directions of Essa Road are negligible for both the a.m. and p.m. peak hours between the future background and future total traffic scenarios.

Between the future background 2025 and future total 2025 conditions there is very minimal difference to the expected travel times for the vehicles traveling along Essa Road through both intersections of Anne Street/Essa Road and Innisfil Street/Essa Road with the introduction of the subject site traffic volumes.

This is consistent with the 2030 future condition results where the subject site traffic also did not add any significant delay time for the vehicles traveling along Essa Road. The maximum increase in travel time as a result of the proposed site traffic as per the SimTraffic results is less than 3 seconds. This is evident that the operational impact of the added site traffic is considered negligible, with any changes in operations, delays and queuing not expected to be identifiable from a driver's perspective prior to implementation of the City's capital improvements along Essa Road.

6.5 Transit Capacity Analysis

As per Table 4 approximately 12 and 14 two-way transit trips are expected to be generated by the subject site during the a.m. and p.m. peak hours, respectively. Given the low volumes expected to be generated by the proposed development, the future transit service in the area should be able to adequately serve the subject site.

6.6 Pedestrian Capacity Analysis

As per Table 4 approximately 14 and 1 two-way pedestrian trips are expected to be generated by the subject site during the a.m. and p.m. peak hours, respectively. The existing sidewalks are adequate to accommodate this number of additional pedestrian trips and no improvements are required.

6.7 Cycle Capacity Analysis

As per Table 4 only 1 or 2 bicycle trips are expected to be generated by the subject site during the a.m. and p.m. peak hours, respectively based on existing modal splits. The number of bicycle trips are currently low in the study given the lack of cycle infrastructure. However, with the planned bicycle lanes along the study area intersections, the number of cyclists in the area is expected to increase and can be accommodated on the planned cycle lanes.

7. Vehicle Swept Path Analysis

GHD has undertaken Vehicle Swept Path Analysis utilizing the industry standard AutoTurn software. The analysis presents the expected vehicle paths for waste collection and loading/unloading. The results of the analysis indicate the proposed site plan can sufficiently accommodate the required design vehicles and their expected movements; the results are provided in **Appendix M.**

8. Sightline Assessment

Adjacent to the proposed site, Jacobs Terrace north of the proposed site access have a posted speed limit of 50 km/h This road is relatively flat with no significant vertical changes in elevation.

For the purpose of Stopping Sight Distance requirements a design speed of 60 km/h was used for the assessment of the proposed site access based on the 50 km/h posted speed limit.

Section 9.9 of the TAC GDCR provides intersection sight distances for different scenarios, with the following scenarios used to complete the intersection sight distance analysis:

- Case B1 – Left turn from the minor road
- Case B2 – Right turn from the minor road
- Case F – Left turns from the major road

For the purpose of the assessment, the minor roads are assumed to be the site driveway.

A vehicle entering the major road (Jacobs Terrace) from the site access is assumed to stop a distance of approximately 4.4 metres to the pavement edge of Jacobs Terrace as recommended by TAC. In this stopped position, the driver will be required to look left and right in order to perceive and react to approaching vehicles prior to initiating a turning movement onto the main road.

The required intersection sight distances are provided in TAC GDGCR Tables 9.9.4, 9.9.6 and 9.9.12 for passenger vehicles turning left from stop, turning right from stop, or turning left from the major road, respectively, and are summarized in the following table. The required intersection sight distances summarized in the tables below based on a 60 km/h design speed along the major road.

Table 14 Intersection Sight Distance Requirement (60 km/h Design Speed)

Case (Design Speed of 60 km/h)	Required Intersection Sight Distance for Passenger Cars (TAC 2017)	TAC Reference
Case B1: Vehicles turning left from stop	130 m	Table 9.9.4

Case B2: Vehicles turning right from stop	110 m	Table 9.9.6
Case F: Left turns from the major road	95 m	Table 9.9.12

The available sight distances to the north of the site access along Jacobs Terrace is shown in **Figure 18** and **Figure 19**.

Figure 18 Available Sightlines for case B1 and B2

A vehicle setback 4.4 metres from the edge of Jacobs Terrace has a clear view to the intersection of Jacobs Terrace and Innisfil Street and to the west along Jacobs Terrace to see vehicles approaching to satisfy the required sight distance for a posted 50 km/h speed limit.

Figure 19 Available Sightlines for case F

A vehicle making the left turn from Jacobs Terrance into the site driveway has more than the required 95 metres clear sightlines based on the 50 km/h posted speed limit.

As illustrated by the sightlines illustrated in Figures 18 and 19, the available sight distance along Jacobs Terrace within the vicinity of the site meets or exceeds the minimum required sight distance as indicated in Table 15.

9. Vehicular Parking

9.1 Zoning By-Law 2009-141 Requirements

As per the City of Barrie By-law 2009-141, the calculation of the parking requirement for the various components of the proposed site plan are summarized in Table 14.

Table 15 Zoning Bylaw 2009-141 Parking Requirements

Use	Rate	Units/Capacity	Minimum Requirement
Residential Dwelling in the Urban Growth Centre	1 space per dwelling unit	509	509 spaces

Application of the existing parking standards contained in Zoning By-law 2009-141 to the subject site results in a total parking requirement of 509 parking spaces.

9.2 Proposed Parking Supply

Providing off-street residential parking influences a commuter choice on whether to drive or choose alternate forms of transportation. Providing more parking in general leads to a higher percentage of auto ownership and auto usage as well. Changing travel behaviour is best done when a prospective buyer is looking to purchase a unit and providing the opportunity for a prospective buyer to easily purchase a parking space either through making it affordable, at no additional cost, or having an excess in number of spaces available to purchase can introduce travel behaviour into an area that once established is hard to change.

Given the subject site's location being walking distance from the Allandale transit hub and within the MTSA area, the subject site proposes to provide a parking rate of 0.80 parking space per residential unit to assist the City in achieving future mode share splits. The reduction in parking is supported through recommended TDM measures provided in section 9.

Table 16 Proposed Parking Supply

Use	Rate	Units/Capacity	Minimum Requirement
Residential Dwelling in the Urban Growth Centre	0.8 space per dwelling unit	509	408 spaces

The subject site is proposing a parking supply of 0.80 spaces per residential unit which results in a total parking supply of 408 parking spaces including both resident parking and visitor parking.

9.3 Proposed Bicycle Parking Supply

As per the Zoning by-law, no bicycle parking spaces are required for the subject site. However, the site plan provides a total of 472 bicycle parking spaces consisting of 32 (short-term) and 440 (long term) bicycle parking spaces.

10. Travel Demand Management (TDM)

Travel Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality;
- Decreased traffic congestion to reduce travel time;
- Increased travel options for businesses and commuters;
- Reduced personal transportation costs and energy consumptions; and
- Support Provincial smart growth objectives.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation standards for the local businesses and surrounding community.

Based on the proposed parking supply, some of the residents will not have a parking space. The proposed development will be heavily marketed to prospective purchasers who are looking to live in a walkable transit-oriented community where a vehicle is not required for commuting or discretionary trips and the limited number of parking spaces will be explicitly noted in any promotional material. Consequently, a process of elimination is expected where

many residents who choose to forgo owning a vehicle will be enticed to purchase a unit considering the transit infrastructure in the area and the proposed TDM measures proposed within the site.

The development is proposing Travel Demand Management (TDM), as outlined in Section 9.2 of this report including planning and design, walking and cycling, transit, parking, carshare/bikeshare, wayfinding and trip planning, education and promotion that can be adopted to make alternatives more competitive to driving, reducing the dependency on auto trips, and the need to provide an excessive supply of parking

10.1 Existing TDM Measures

10.1.1 Walking

Pedestrian sidewalks are currently provided on several roads within the study area including:

- Tiffin Street – Sidewalk on the north side of the road west of Anne Street South to Innisfil Street and of both side of the road east of Innisfil Street.
- Anne Street South -Sidewalk provided on the west side of the roads from Tiffin Street to Essa Road and of the east side of the road north of Essa Road to Centre Street.
- Essa Road – Sidewalks are provided on both sides of the road through the study area.
- Innisfil Street – Sidewalks are provided on the west side of the road.

10.1.2 Transit

Barrie Transit operates several routes within the study area as listed below.

- Route #7A – Grove offers weekday and Weekend service every half hour to an hour depending on the time of day.
- Route #1A-B (Georgian Mall/Welham) offers weekday and weekend service every half hour to 45 minutes depending on the time of day.
- Route #3A-B (Bayview/Painswick) offers weekday and weekend service every half hour to an hour depending on the time of day.
- Route #7B – Bear Creek offers weekday and weekend service every half hour to an hour depending on the time of day.
- Route #8A – RVH offers weekday and weekend service every half hour to an hour depending on the time of day.

In addition, the Allandale Waterfront GO rail station is located approximately 500 metres to the east of the proposed development and currently provides weekday service with four southbound departures in the morning and four northbound arrivals in the evening and on weekends by three morning departures and evening arrivals.

GO buses also currently service the terminal with the route 68 which operates weekday service hourly throughout the day.

10.2 Recommended TDM Measures

TDM Measure	Responsibility	Cost	Note
Hard Measures			
Pedestrian connections	Applicant	Integrated into the overall development cost	Site plan includes a walkway system providing a connection to the municipal sidewalks. Enhanced pedestrian amenities will also be provided on-site, including but not limited to benches, landscaping and lighting.
Bicycle Parking	Applicant	Integrated into the overall development cost. Long term bike parking racks with an enclosed room estimated at approx. $400 per bike plus $150 installation per bike space. Short term bike parking costs are estimated at $300 per rack that can accommodate 2 bikes. Values to be confirmed through detailed design. Bike repair station estimated cost of $1,500.00	Both short term and long term bicycle parking will be provided for residents and visitors. Short-term bicycle parking will also be provided within well-lit and visible areas. One bicycle repair station is proposed for resident use.
Reduced Vehicular Parking	Applicant	Integrated into the overall development cost	It is proposed to lower the resident parking supply for the site to reduce reliance on the automobile for travel needs.
Public Transit Access	Applicant	Integrated into the overall development cost	The subject site is located within walking distance of various public transit bus routes and walking distance from the Allandale Transit Hub.

Soft Measures			
Transit incentives (i.e. PRESTO cards)	Applicant	Provide a suggested fare card value of $150.00 per unit to encourage residents to use public transit.	To be provided with the purchase of each unit.
Information packages (Barrie Transit, GO Transit information)	Applicant	To be determined.	Distributed at the sales office with Purchase and Sales Agreement
Unbundled vehicle parking sales	Applicant	Integrated into the overall development cost	Proposed to unbundle the sales of the parking space and unit to provide residents with the true cost of the parking space.
Car share parking	Applicant	Integrated into the overall development cost	Applicant to review providing a car share space within the underground parking garage.

11. Conclusions and Recommendations

The site is located in in close proximity to a variety of local amenities including the Allandale GO Station which is the location of the future Allandale Transit Mobility Hub.

There are planned road improvements in the area that have been accounted for in the analysis of future traffic scenarios including along:

- Essa Road
- Tiffin Street
- Anne Street
- Innisfil Street

The site well served by both Barrie Transit and GO Transit.

The proposed site Plan prepared by Architecture Unfolded consists of 504 residential units and 3,084 m^2 of amenity space Gross Floor Area (GFA).

The study intersections include:

- Tiffin Street and Anne Street South
- Tiffin Street and Innisfil Street
- Jacobs Terrace and Anne Street South
- Jacobs Terrace and Innisfil Street
- Essa Road and Anne Street South
- Essa Road and Innisfil Street

Existing traffic volumes were based on historic traffic data obtained from the City and factored to 2021 base conditions using growth rates provided by the City.

Future traffic forecasts were developed using corridor growth rates and proposed background developments that are expected to contribute additional traffic through the study intersections.

The subject development is estimated to generate approximately 98 new two-way vehicle trips during the a.m. peak hour consisting of 26 inbound and 72 outbound trips. During the p.m. peak hour, it is expected to generate 116 new two-way vehicle trips consisting of 72 inbound and 44 outbound trips.

Based on the TTS data and target transit mode share, the subject site is expected to also generate a total 12 two-way transit trips during the a.m. peak hour consisting of 3 inbound and 9 outbound trips. During the p.m. peak hour, a total 14 two-way transit trips are generated consisting of 9 inbound and 5 outbound trips.

A total of 14 two-way walking trips are generated during the a.m. peak hour consisting of 6 inbound and 8 outbound trips. During the p.m. peak hour, a total 1 two-way walking trips are generated consisting of 1 inbound and 0 outbound trips.

Lastly, a total 1 two-way cycle trips are generated during the a.m. peak hour consisting of 0 inbound and 1 outbound trip. During the p.m. peak hour, a total 2 two-way cycle trips are generated consisting of 2 inbound and 0 outbound trips. The aforementioned site trips are expected to increase with the planned improvements to the cycle network.

Traffic analysis was undertaken for existing conditions and expected future traffic conditions for build-out in 2025 and a period of five and ten years post build-out in 2030 and 2035. The capacity analysis was completed using the Synchro V 10 software package.

Based on an assessment of future traffic conditions, the site traffic generated from the subject development is expected to have a nominal impact on the operation of all study area intersections. As a result, there are no recommended geometric improvements to any of the study intersections in response to development of the subject site.

The site driveways on Jacobs Terrace and Innisfil Street are expected to operate well under all future scenarios under stop control on the driveway approach, with substantial reserve capacity, low levels of delay, and no excessive queueing.

Based on the current City of Barrie Zoning Bylaw, the proposed development requires a total of 509 parking spaces based on a rate of 1 space per residential unit. The proposed development proposes a total of 408 parking spaces for a rate of 0.80 spaces per unit. The proposed reduction is supported by the site's location within walking distance to the Allendale Transit Hub and other nearby amenities, adjacent transit routes and recommended TDM measures.

We trust that we have addressed the pertinent transportation matters for this proposed development and please do not hesitate to contact us for further clarification of any point.

Sincerely,

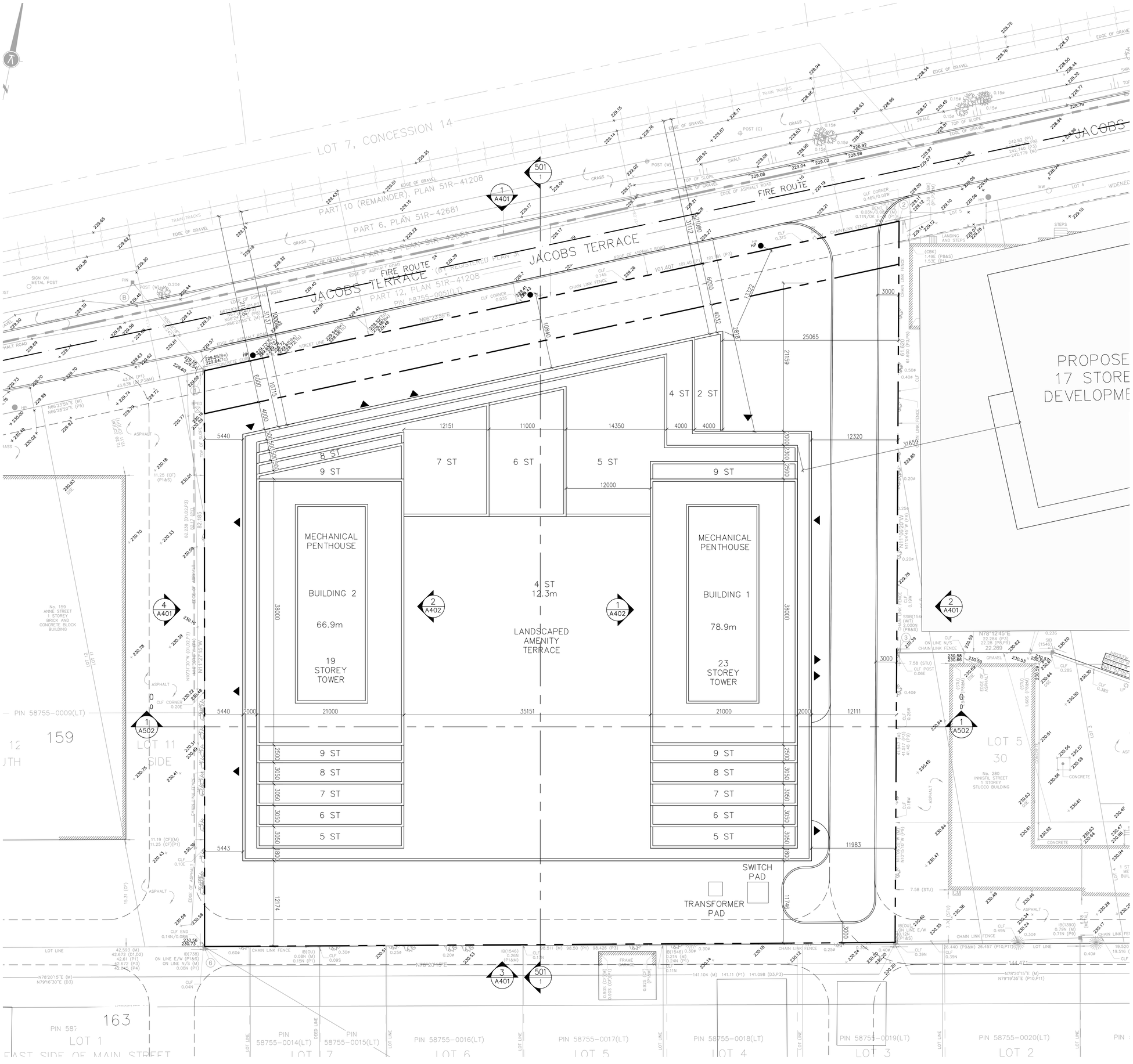
GHD

William Maria, P. Eng.
Transportation Planning Lead

Appendices

Appendix A

Site Plan Details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PART 10 (REMAINDER), PLAN 51R-41208
PART 6, PLAN 51R-42681
PART 5, PLAN 51R-42681
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(5) REGISTERED PLAN 51
PIN 58755-0051(LT)
JACOBS TERRACE
FIRE ROUTE
EDGE OF ASPHALT ROAD
EDGE OF GRAVEL
TRAIN TRACKS
GRASS
SWALE
TOP OF SLOPE
CHAIN LINK FENCE
CLF CORNER 0.03N/0.09W 0.11N/OK E/W
CLF 0.31S
CLF 0.14S
CLF 0.10E
CLF 0.09S
CLF 0.17N
CLF 0.04N
CLF 0.39N
CLF 0.49N
CLF 0.18W
CLF 0.26W
CLF 0.40E
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CLF 0.28S
CLF 0.38S
CLF 0.28S
CLF 0.15E
CLF END 0.14N/0.08W
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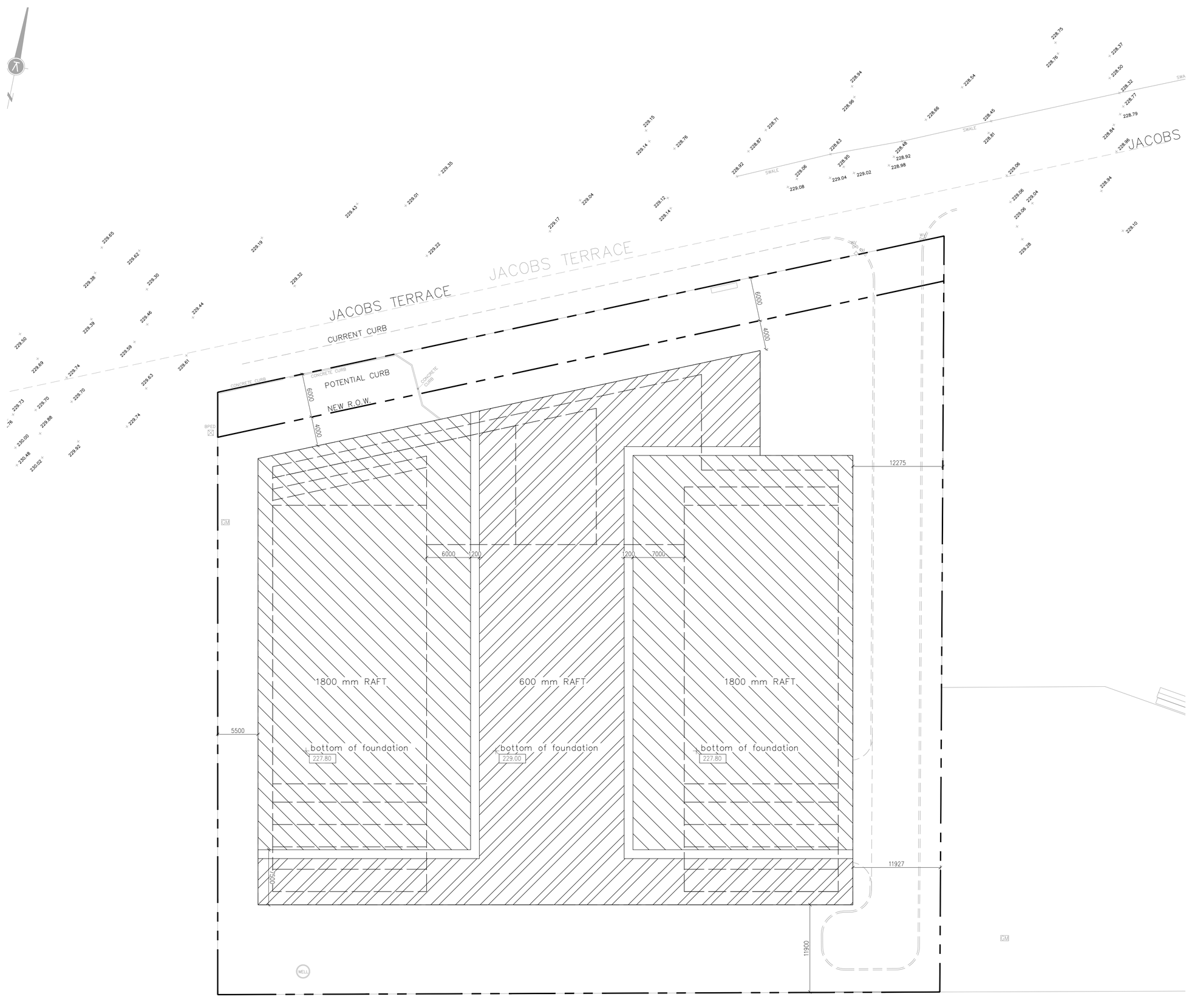
CLF POST 0.09E
CLF POST 0.03W
CLF POST 0.04W
CLF POST 0.04E
CLF POST 0.03



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revisions: date

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3	ZBA submission	23.02.24
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foundation plan

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:

true north | construction north

drawing number: A201

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ground floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north / construction north

A301

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2nd floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north / construction north

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3rd floor

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structural:
Jablonsky, Ast and Partners International
450-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

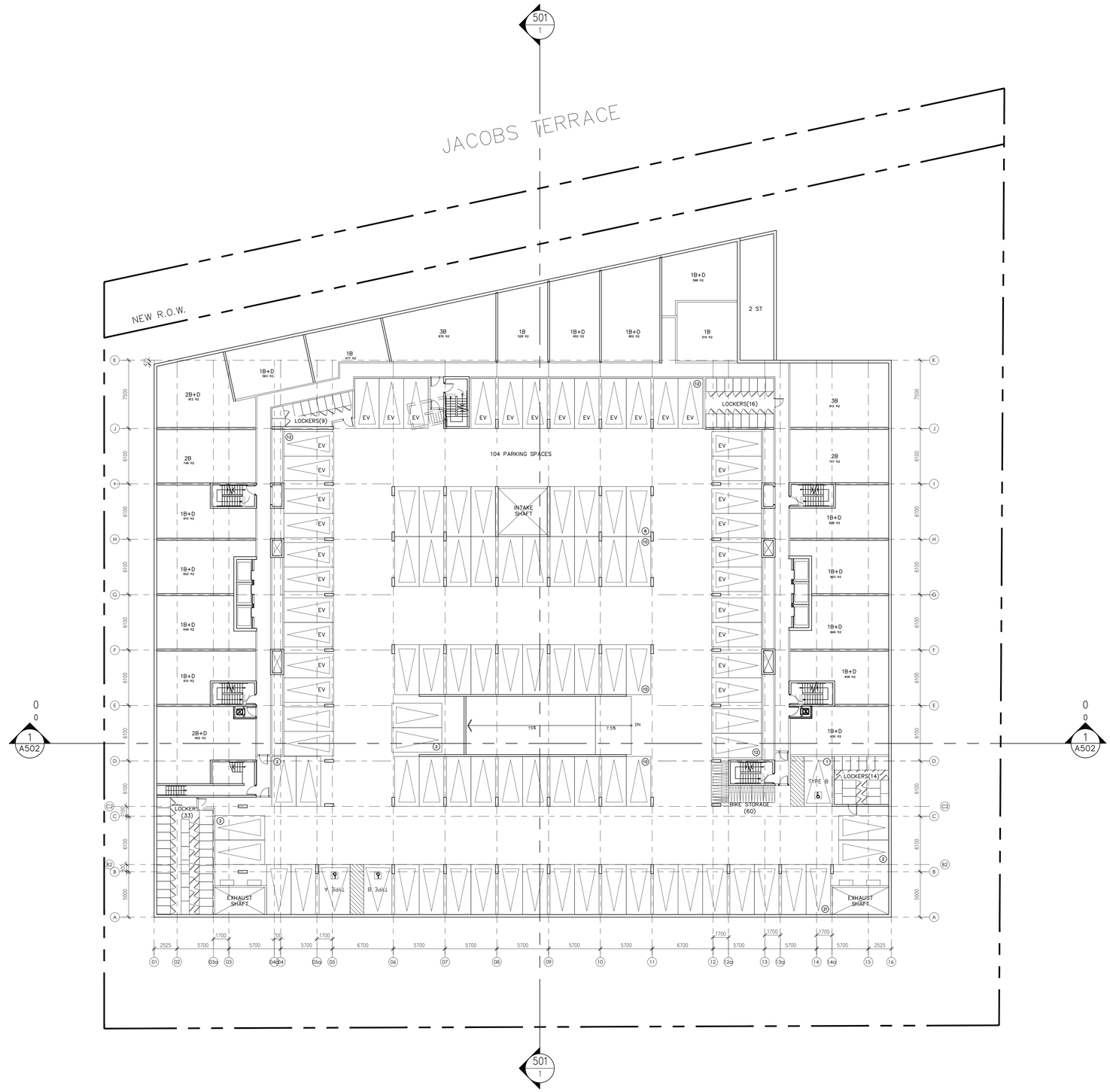
4th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north / construction north

A304

architectureunfolded
548 dufferin street, toronto, ont. m6k 1z8
tel: (416)601.5416 info@unfolded.ca



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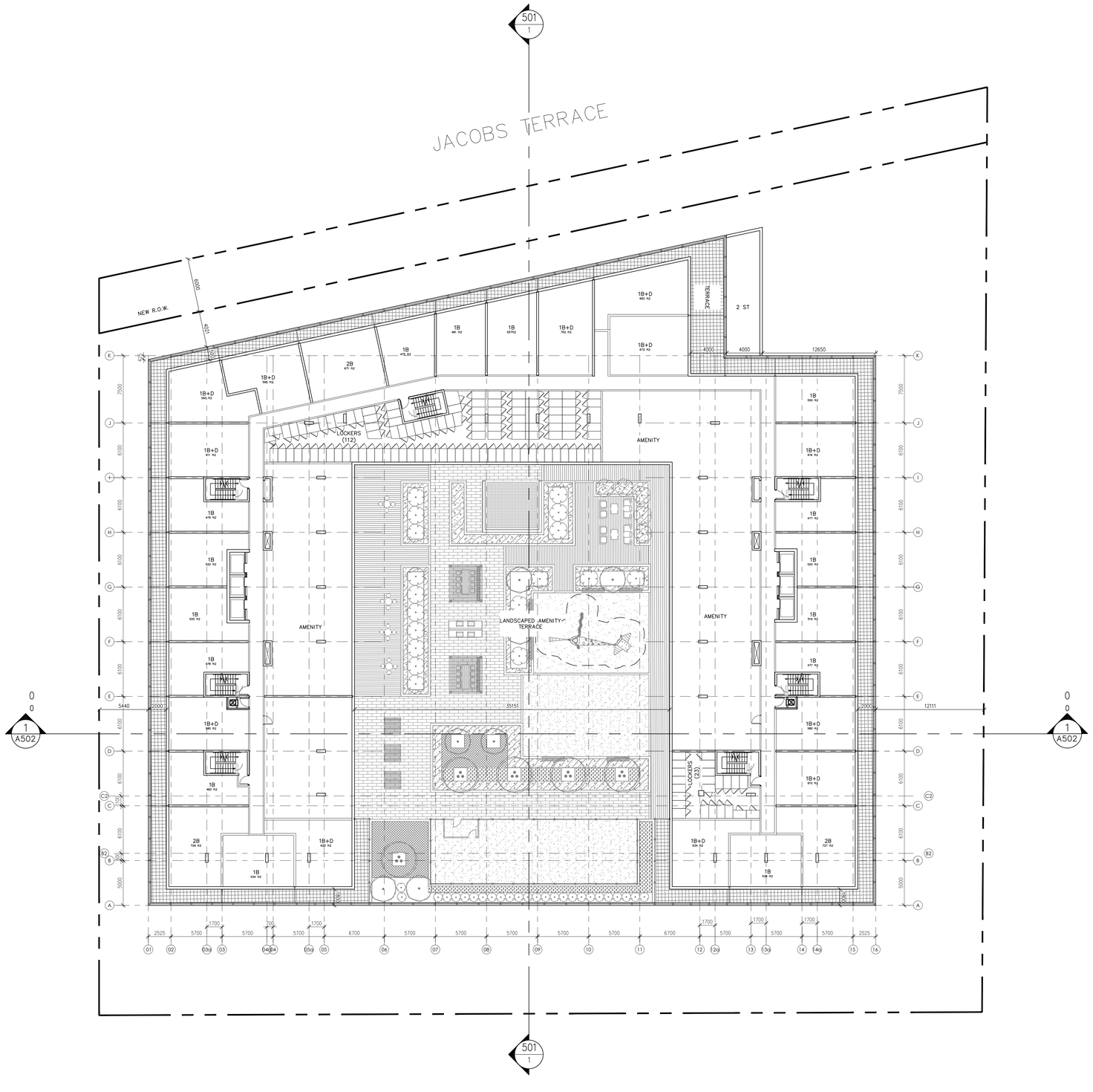
revisions: date



5 SPA submission 24.04.03
4 SPA submission 23.10.30
3 ZBA submission 23.02.24
2 ZBA submission 22.08.24
1 ZBA submission 21.08.25
submissions: yy.mm.dd

architectural team :

mark zwicker
ihab daakour
nour abboud

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447 Welham Road, Unit 9A, Barrie, ON, L4N 0B7

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site services:
Tatham Engineering
41 King Street, Unit 4, Barrie, ON, L4N 6B5

structural:
Jablonsky, Ast and Partners International
400-3 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

5th floor

2020 date:
1:200 scale:
20-50 project:
SS drawn by:

drawing number:
A305

true north
construction north

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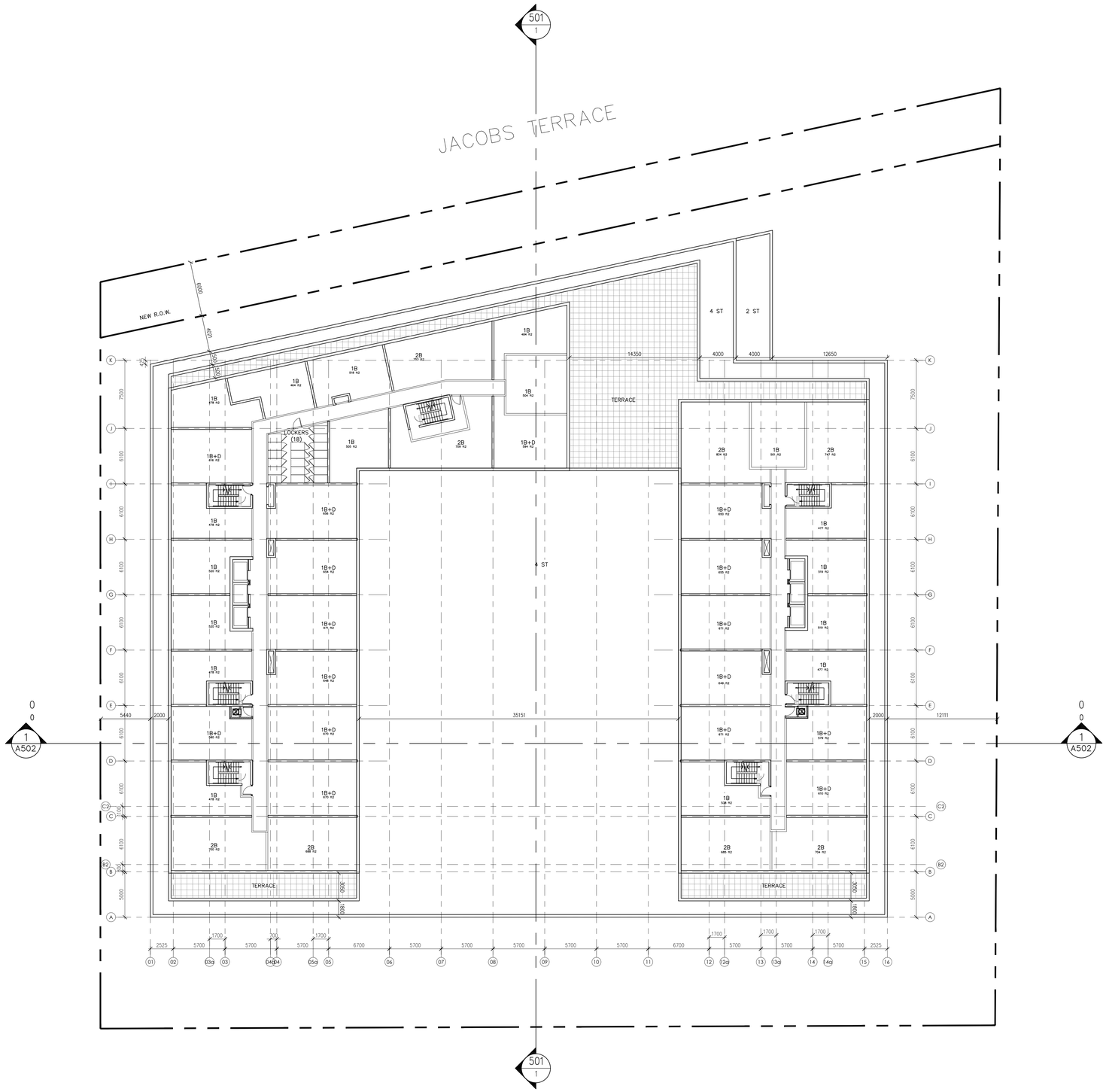

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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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site services:
Tatham Engineering
41 King Street Unit 4, Barrie, ON L4N 6E5

structural:
Jablonsky, Ast and Partners International
4053 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

6th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north
construction north

A306

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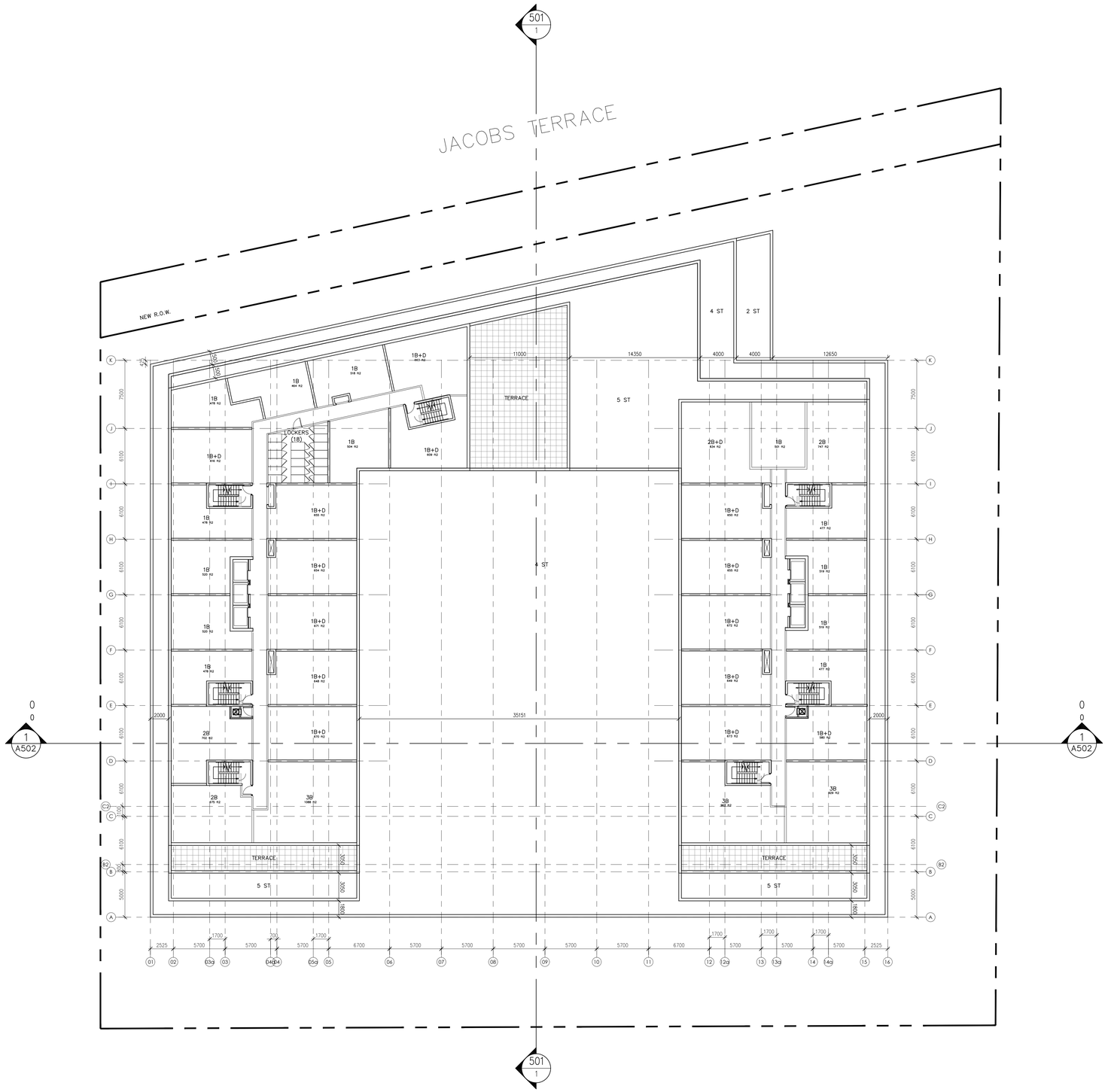
revisions: date



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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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site services:
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41 King Street, Unit 4, Barrie, ON, L4N 6B5

structural:
Jablonsky, Ast and Partners International
450-3 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

7th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north
construction north

A307

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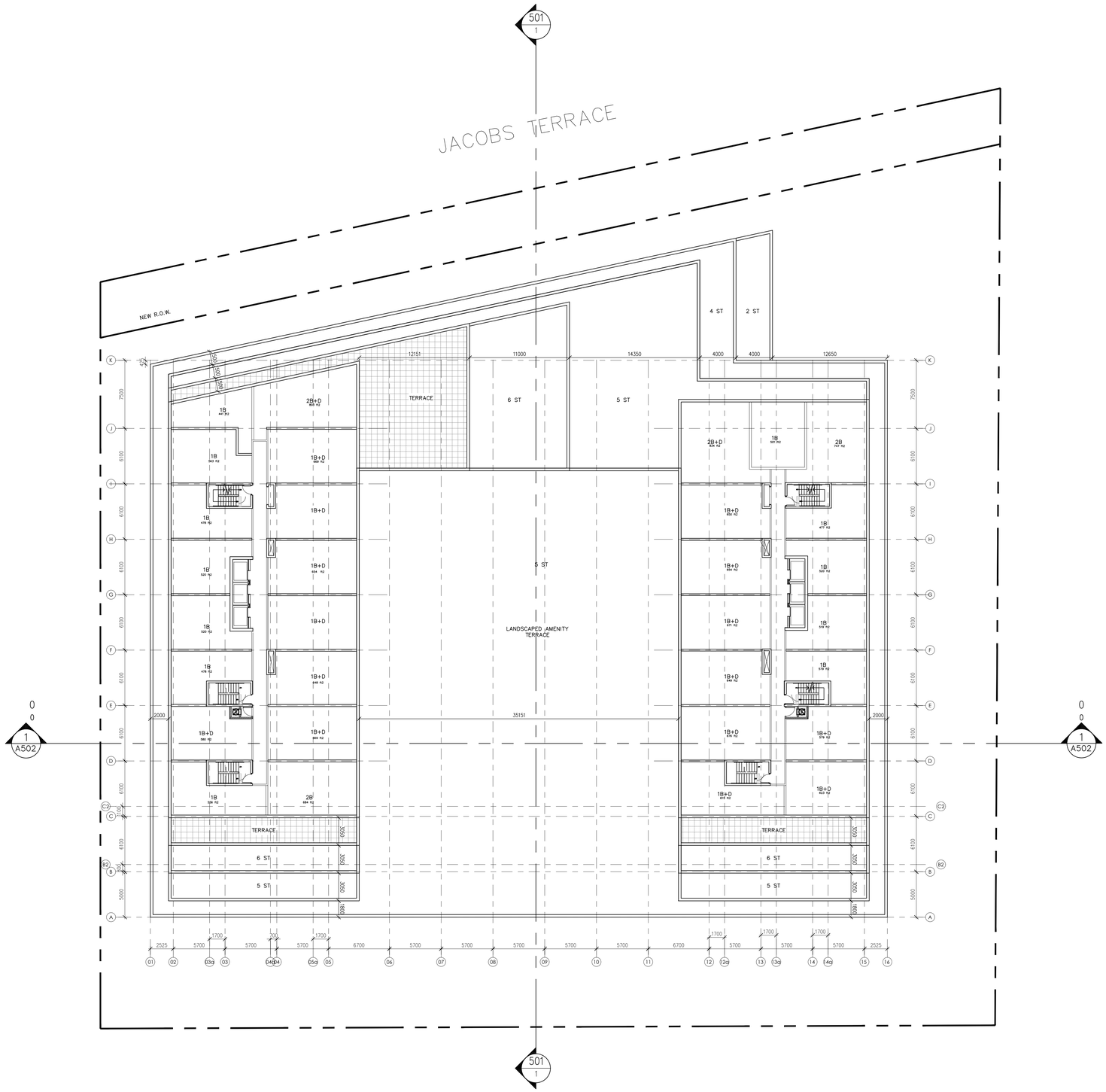

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tel: (416)601.5416 info@unfolded.ca

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submissions:		yy.mm.dd

architectural team :
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ihab daakour
nour abboud

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site services:
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structural:
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430-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

8th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north
construction north

A308

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submissions:		yy.mm.dd

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4755 Hillcrest Drive, Unit 1, Mississauga, ON L5M 5M4

site services:
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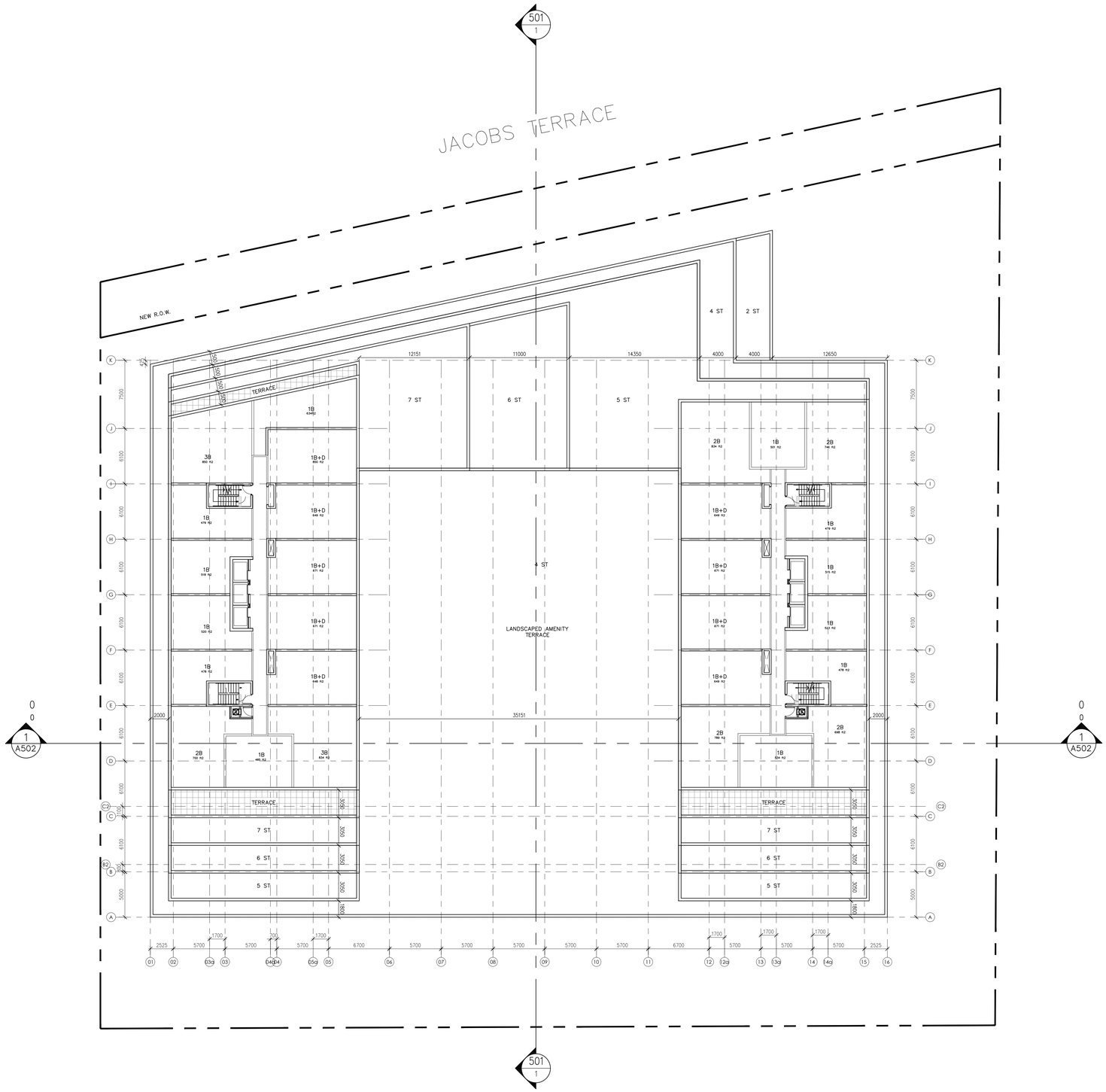
41 King Street, Unit 4, Barrie, ON, L4N 6E5

structural:
Jablonsky, Ast and Partners International
430-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario



9th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north

construction north

A309

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41 King Street, Unit 4, Barrie, ON, L4N 6E

structural:
Jablonsky, Ast and Partners International
430-5 Concorde Gate, Toronto, ON, M3C 3N7

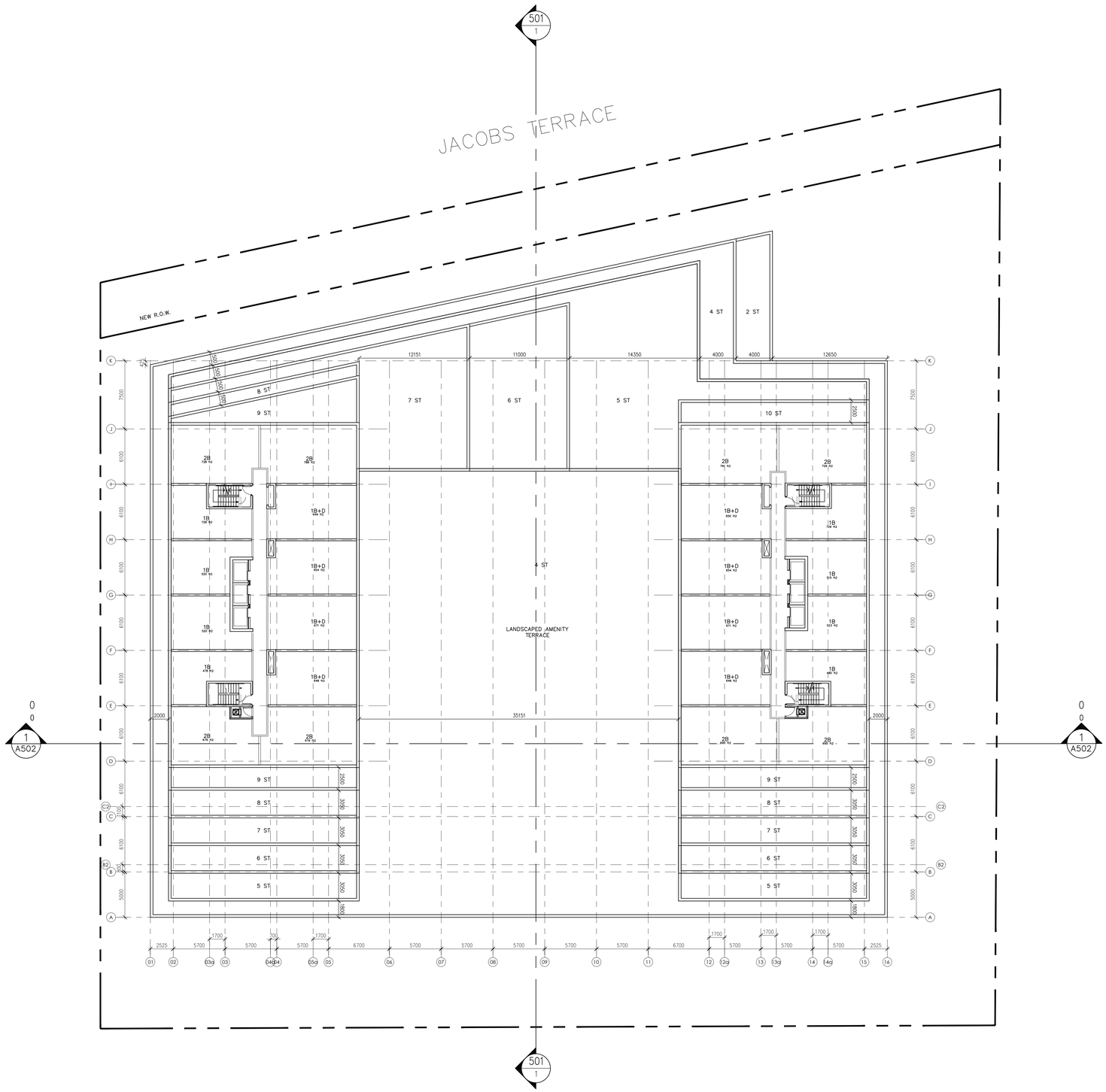
project:
17 Jacobs Terrace
barrie, ontario

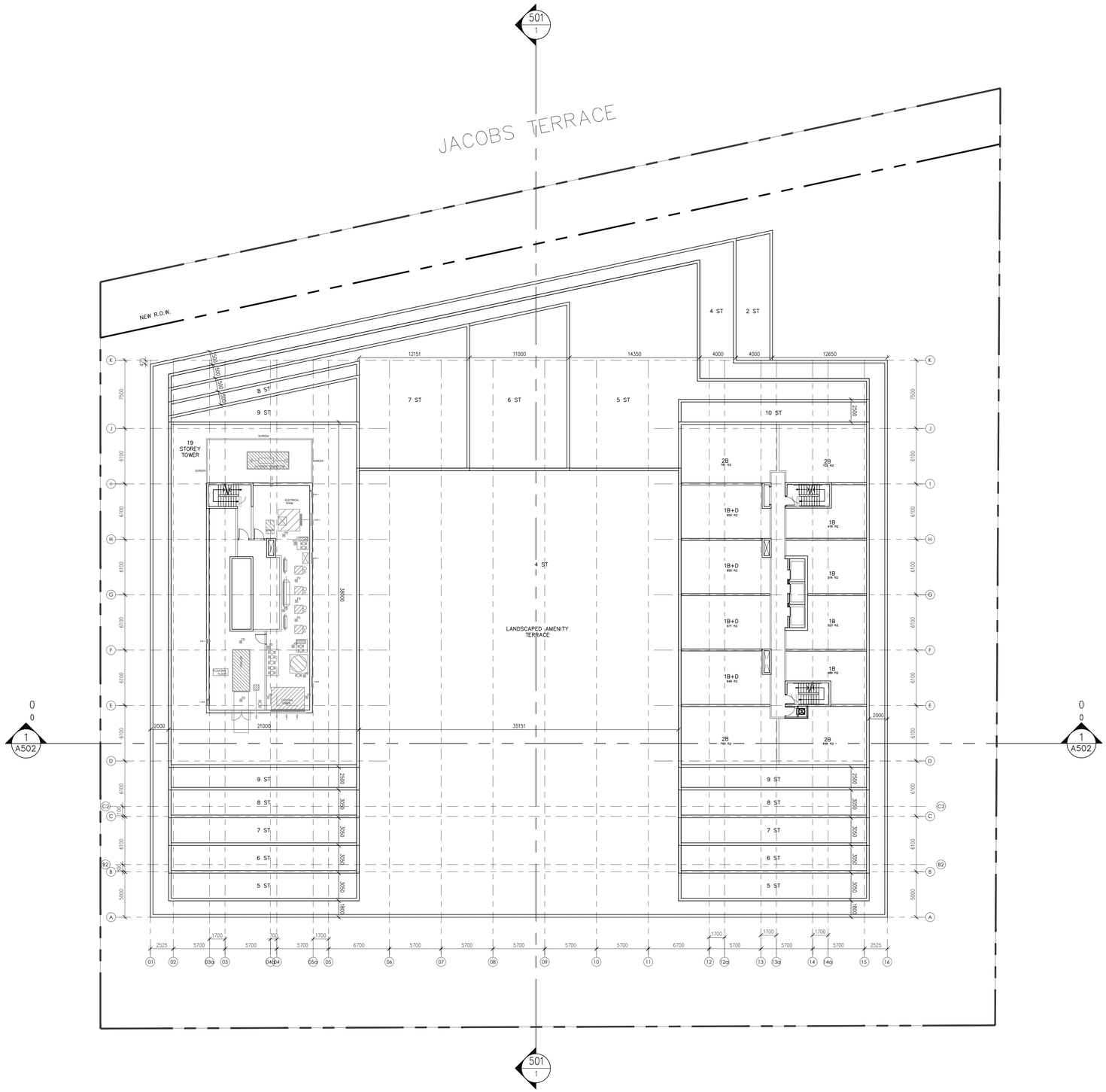
10th-19rd floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north / construction north

A310





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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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nour abboud

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41 King Street, Unit 4, Barrie, ON, L4N 6E5

structural:
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455-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

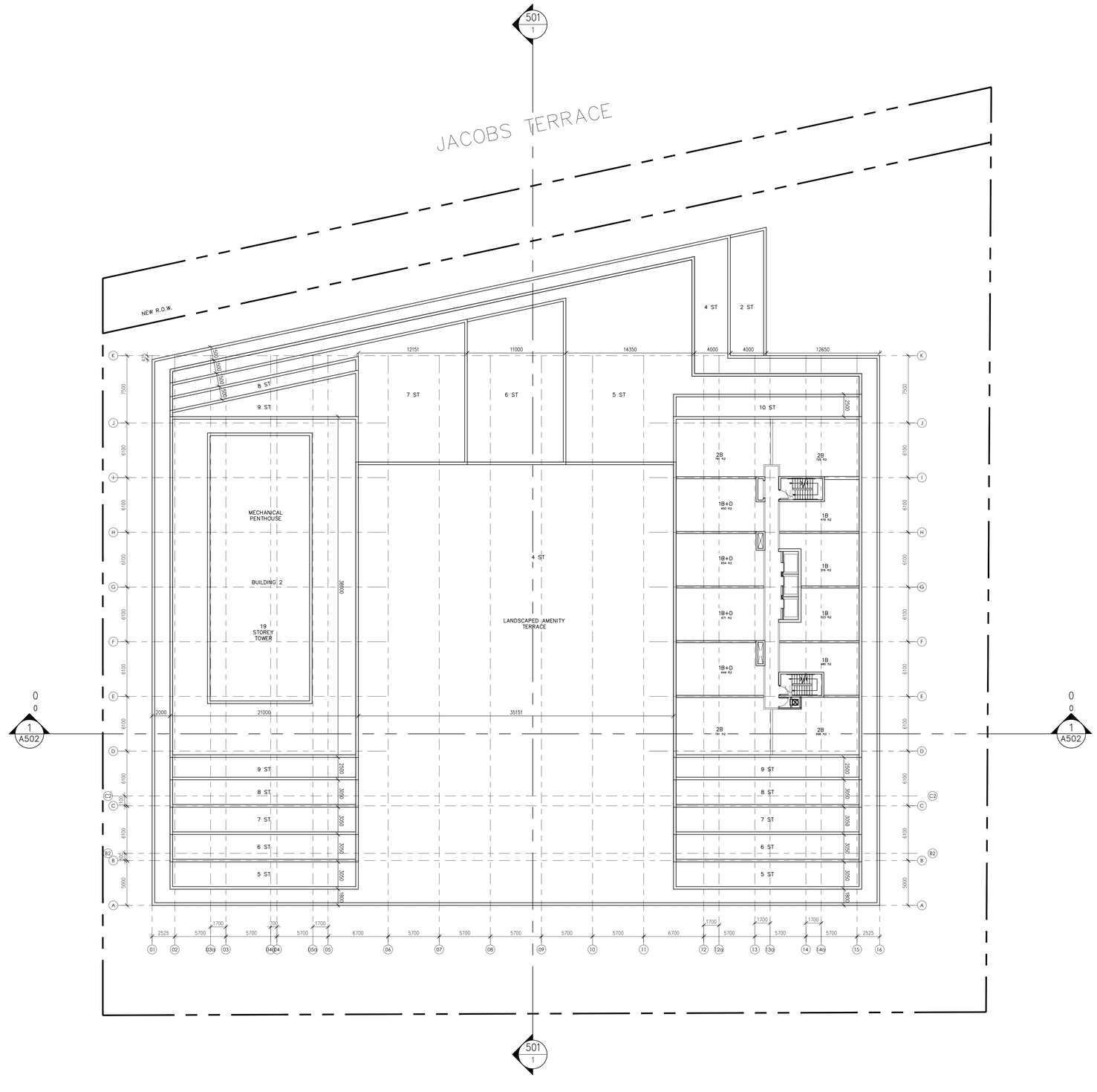
20th floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:

true north / construction north

drawing number:

A311



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structural:
Jablonsky, Ast and Partners International
4053 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

21st-23rd floor

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

true north
construction north

A312

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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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structural:
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400-3 Concorde Gate, Toronto, ON, M3C 3N7

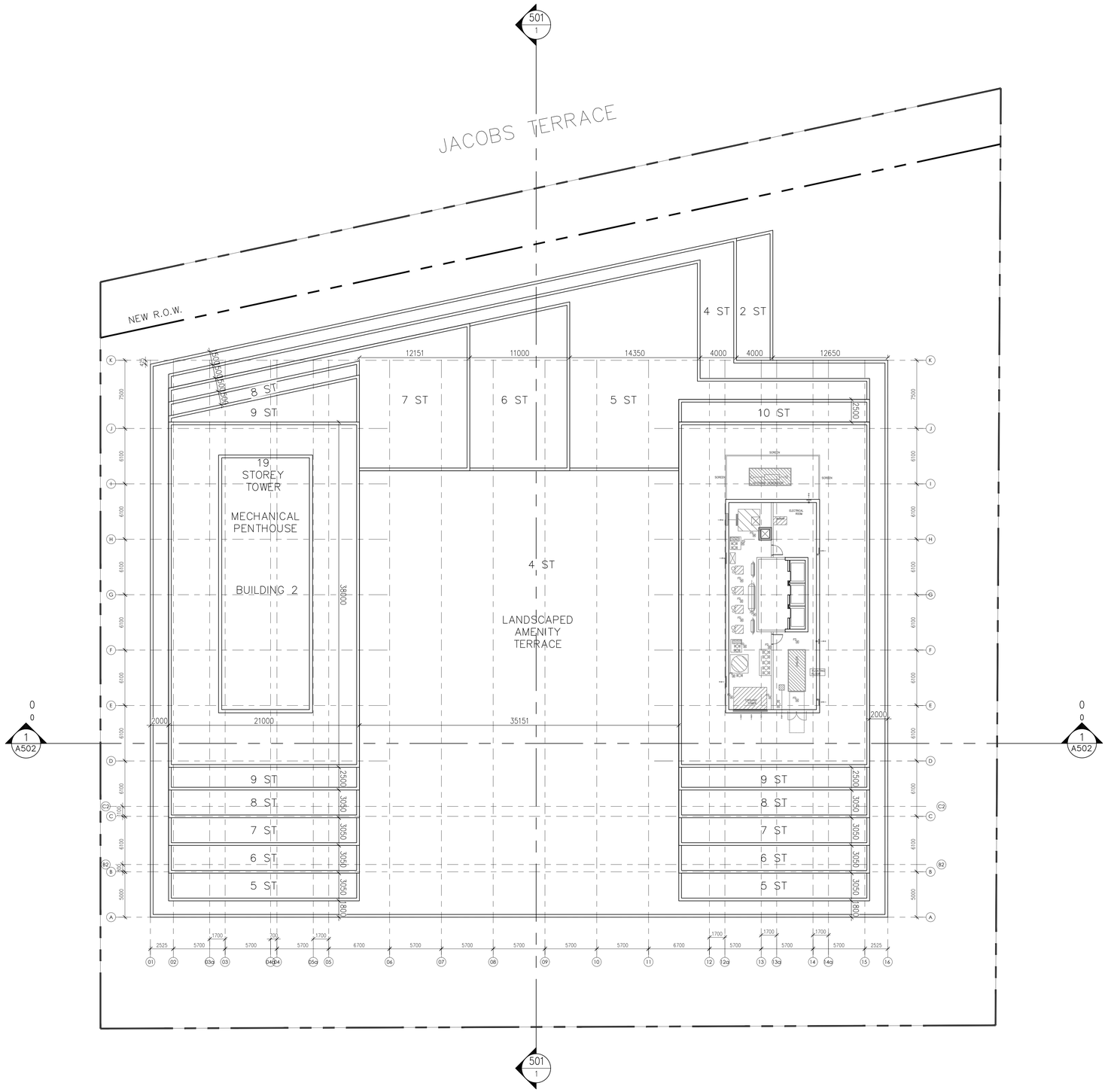
project:
17 Jacobs Terrace
barrie, ontario

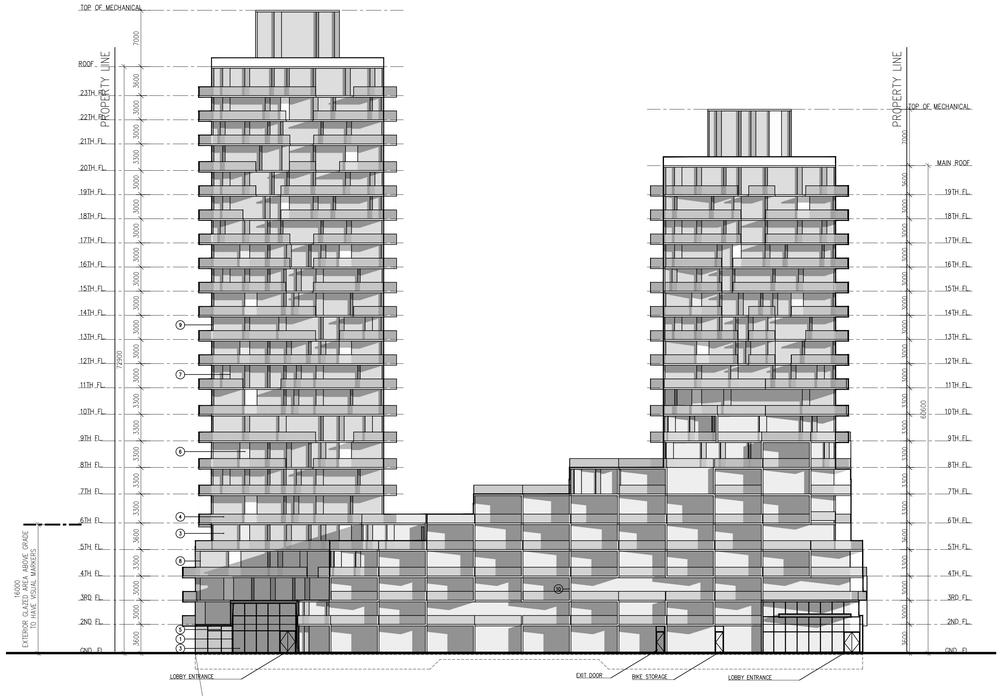
Mechanical Penthouse

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

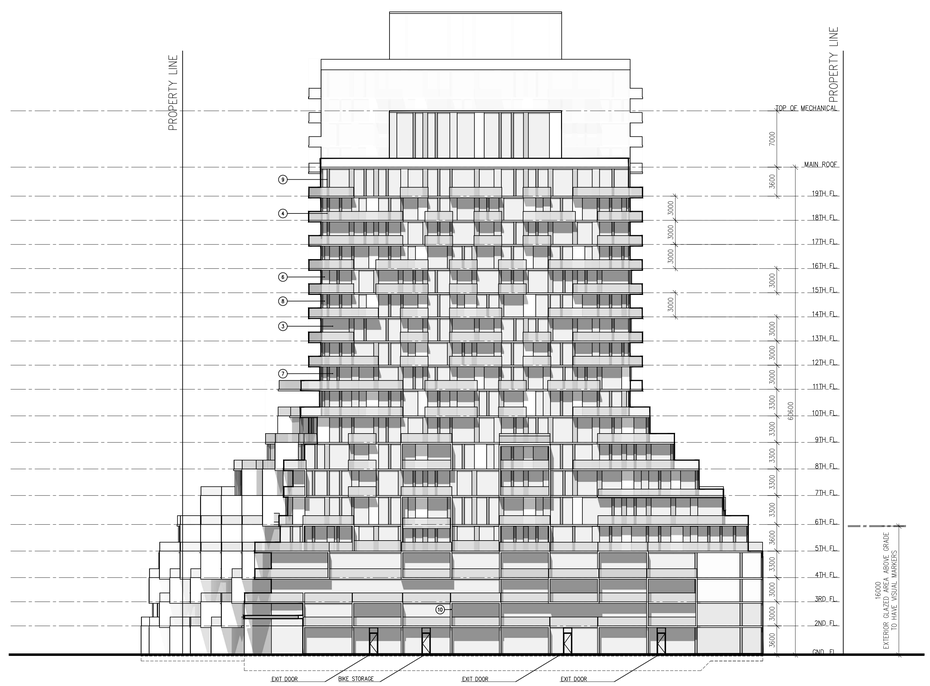
true north / construction north

A313

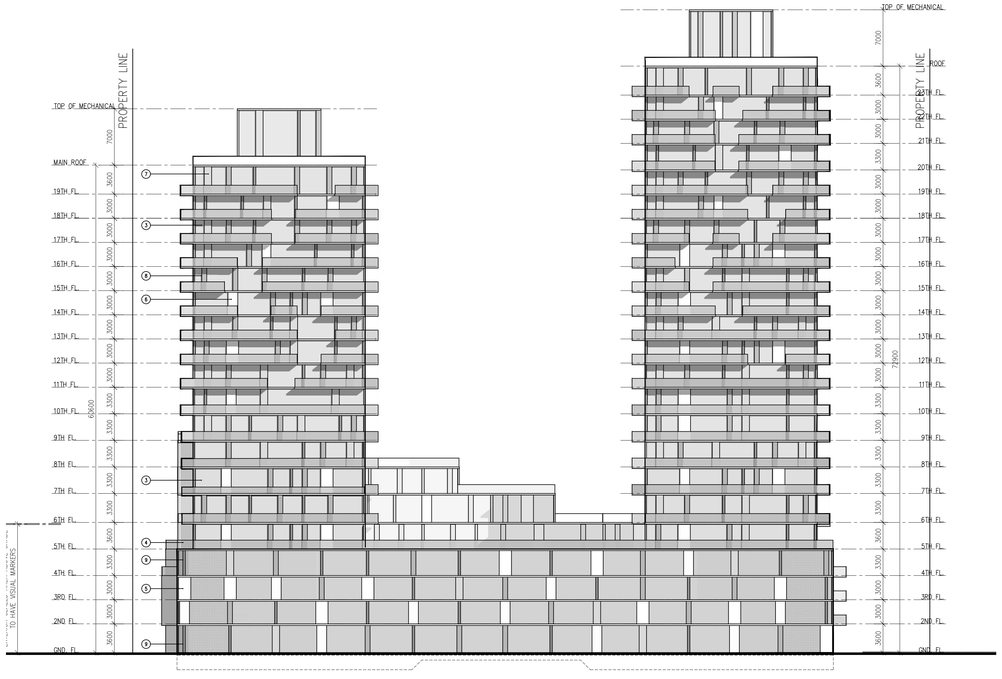




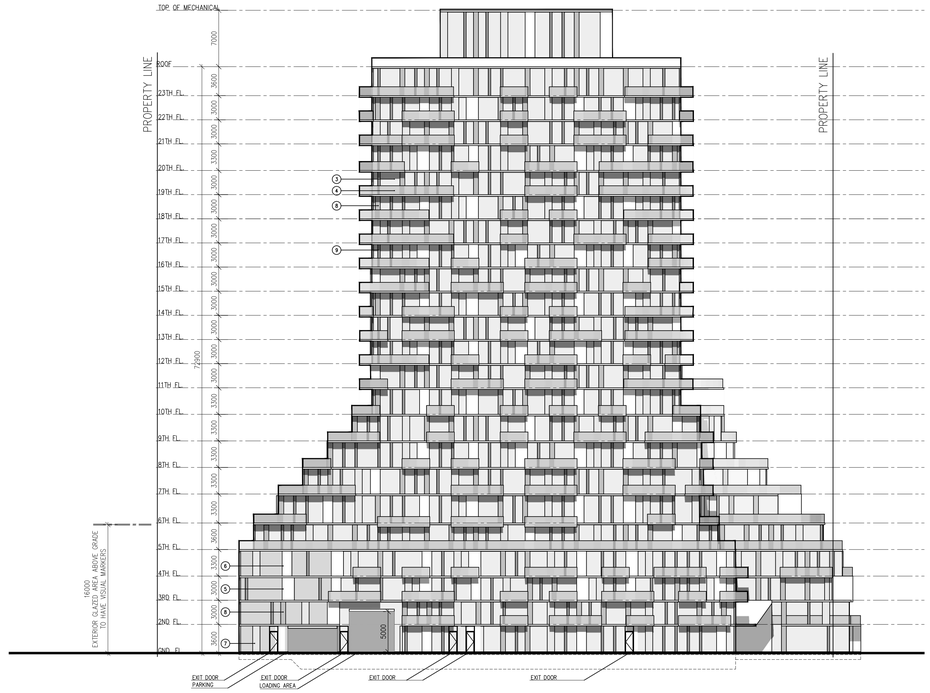
1 North Elevation



2 West Elevation



3 South Elevation



4 East Elevation

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notes:

MATERIALS LEGEND

1. MULLIONS – BONE WHITE
2. SPANDREL GLASS
3. CLEAR VISION GLASS
4. GLASS RAILING
5. PRECAST PANELS– WHITE – M01
6. PRECAST PANELS– LIGHT GRAY – M02
7. PRECAST PANELS– MEDIUM GRAY – M03
8. PRECAST PANELS– MEDIUM GRAY – M04
9. PRECAST PANELS– DARK GRAY – M05
10. PRECAST FRAME– WHITE

revisions: date

5	SPA submission	24.04.03
4	SPA submission	23.10.30
3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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site services:
Tatham Engineering
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structural:
Jablonsky, Ast and Partners International
405-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

elevations

2020	date:
1:300	scale:
20-50	project:
SS	drawn by:

drawing number:

A401

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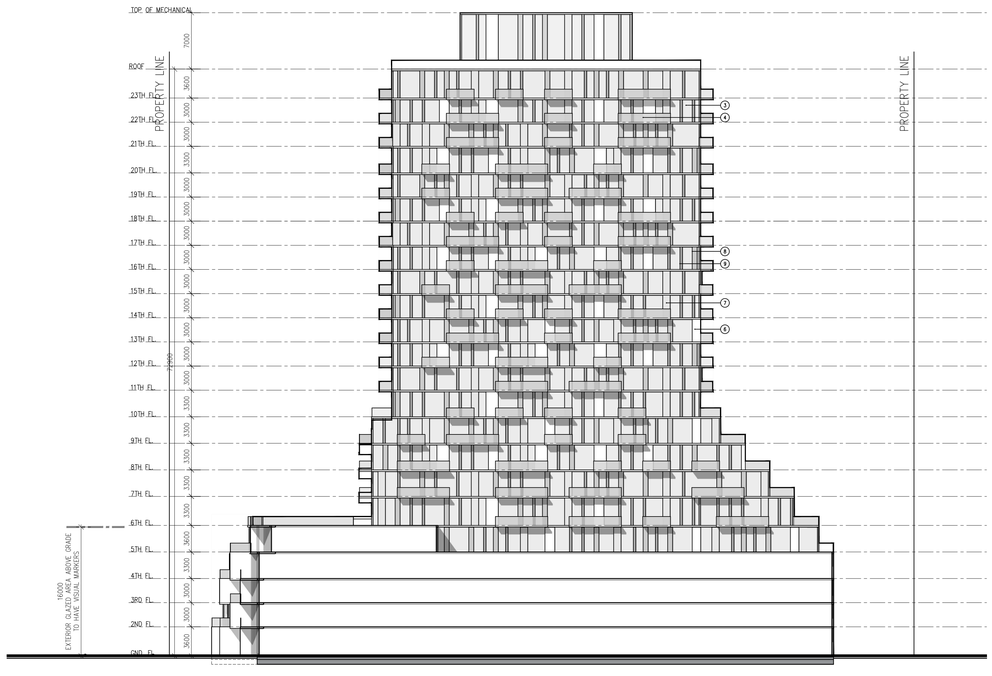
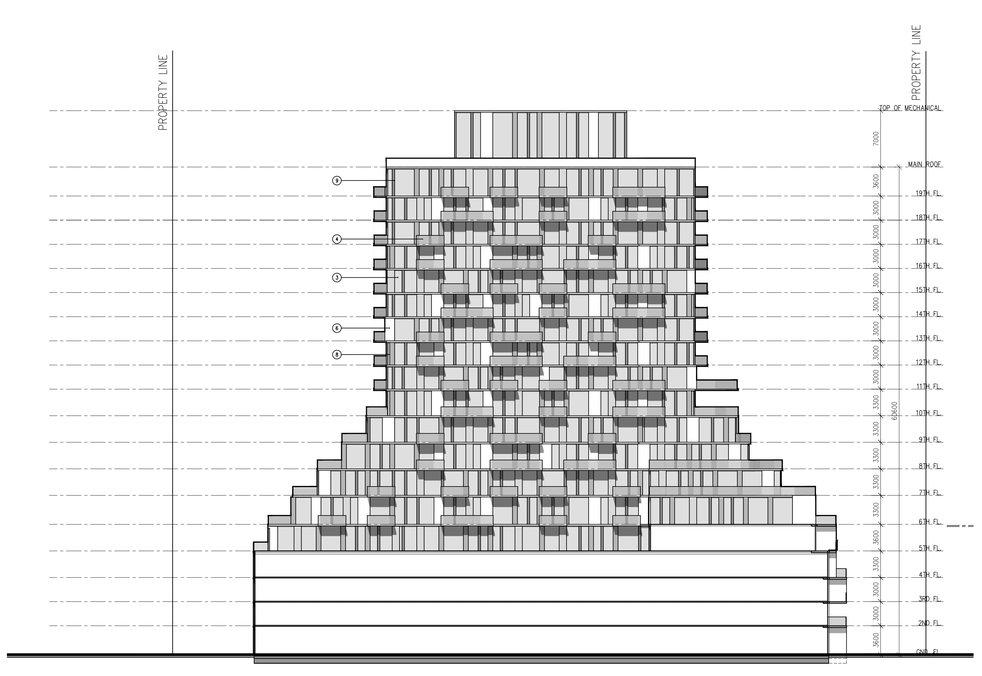
MATERIALS LEGEND
1 MULLIONS – BONE WHITE
2 SPANDREL GLASS
3 CLEAR VISION GLASS
4 GLASS RAILING
5 PRECAST PANELS– WHITE – M01
6 PRECAST PANELS– LIGHT GRAY – M02
7 PRECAST PANELS– MEDIUM GRAY – M03
8 PRECAST PANELS– MEDIUM GRAY – M04
9 PRECAST PANELS– DARK GRAY – M05
10 PRECAST FRAME– WHITE

revisions: date



1 West Elevation (Internal)



2 East Elevation (Internal)

5	SPA submission	24.04.03
4	SPA submission	23.10.30
3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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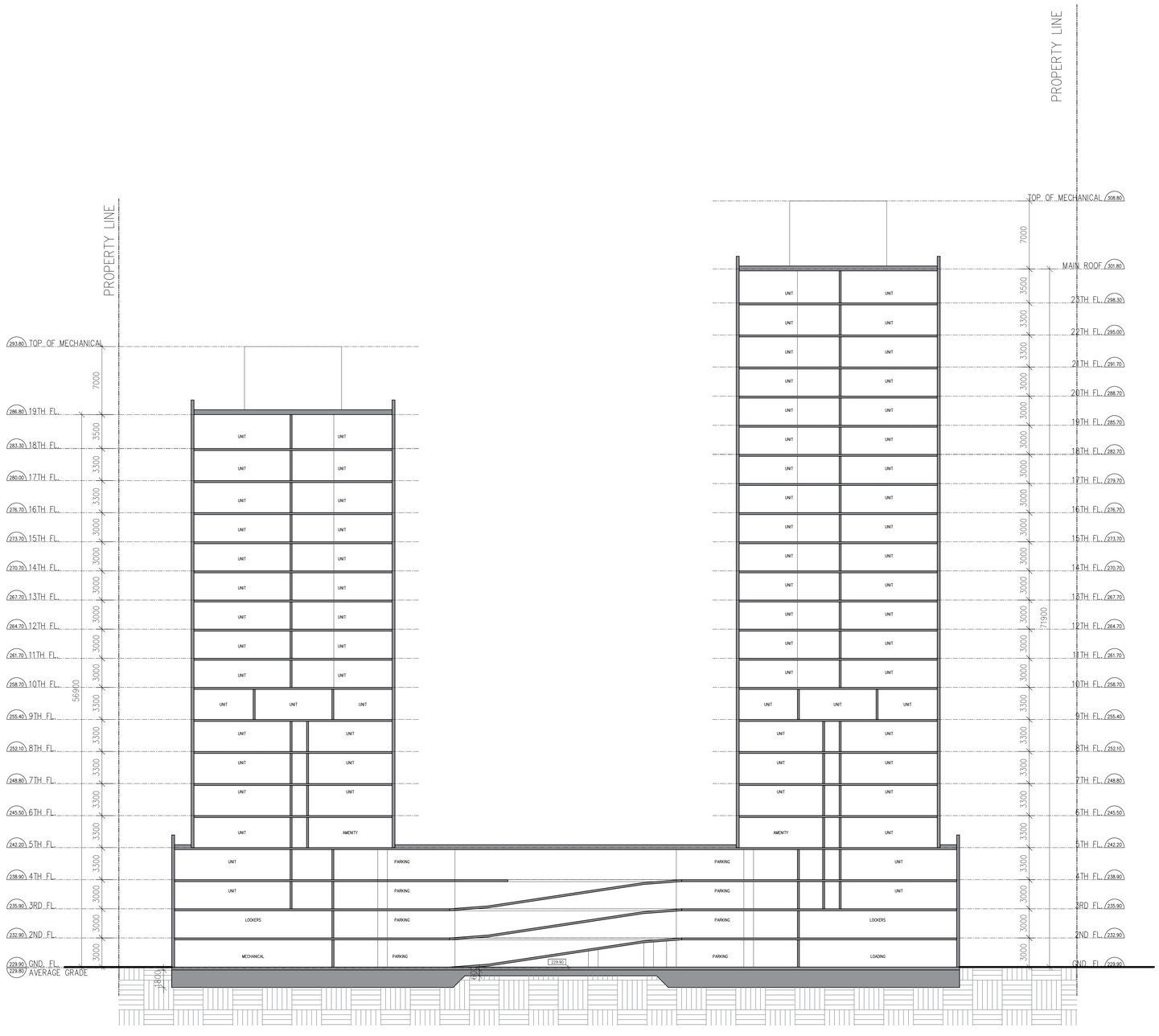
project:
17 Jacobs Terrace
barrie, ontario

elevations

2020	date:
1:300	scale:
20-50	project:
SS	drawn by:

drawing number:

A402



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1 ZBA submission 21.08.25
submissions: yy.mm.dd

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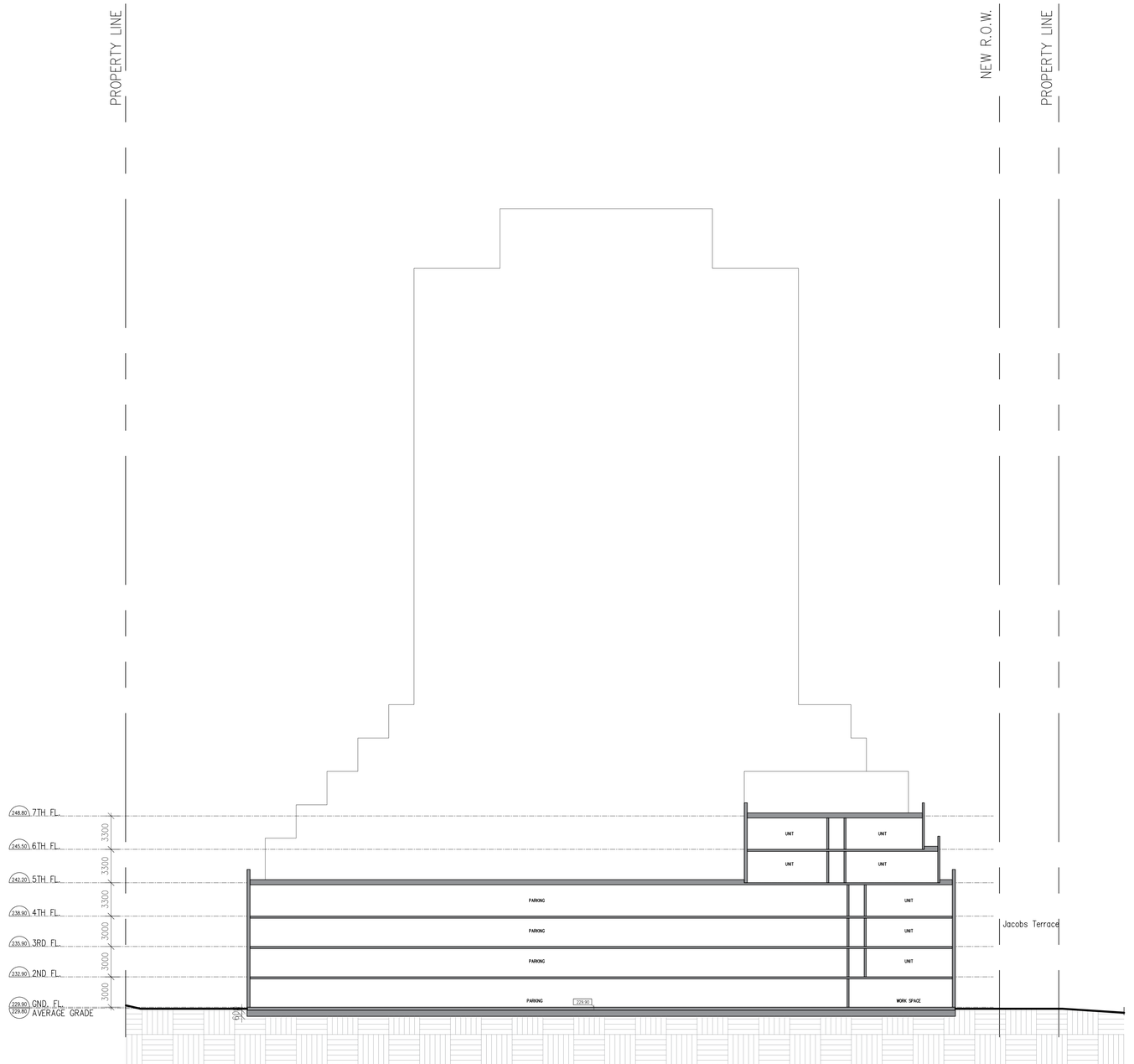
project:
17 Jacobs Terrace
barrie, ontario

section 2

2020 date:
1:200 scale:
20-50 project:
SS drawn by:

drawing number:

A502



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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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nour abboud

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barrie, ontario

section 1

2020	date:
1:200	scale:
20-50	project:
SS	drawn by:
	drawing number:

A501

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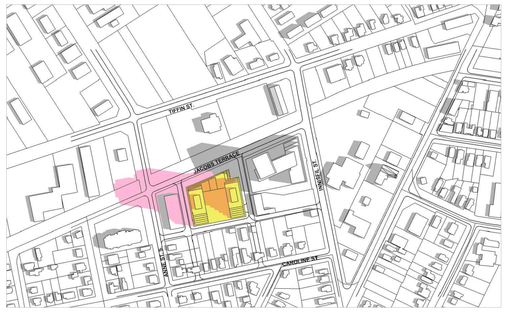
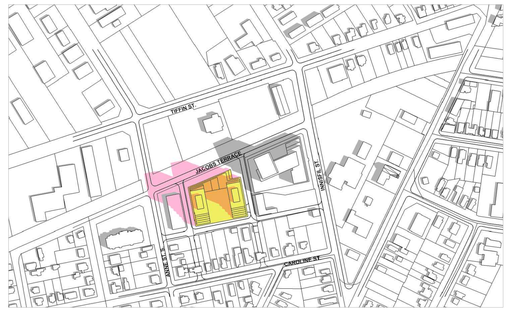
348 dufferin street, toronto, on, m6k 1z8

April 21st, Time–08.00 a.m



April 21st, Time–09.00 a.m

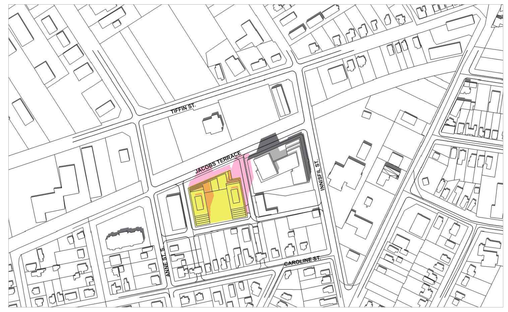


April 21st, Time–10.00 a.m

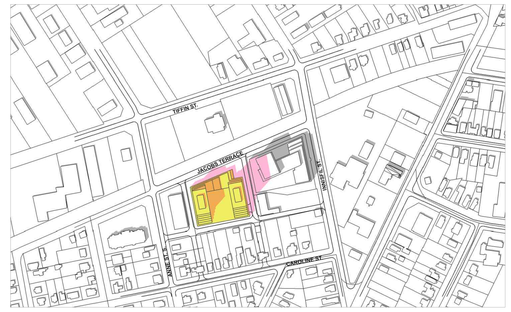
April 21st, Time–11.00 a.m

April 21st, Time–12.00 p.m

April 21st, Time–1.00 p.m



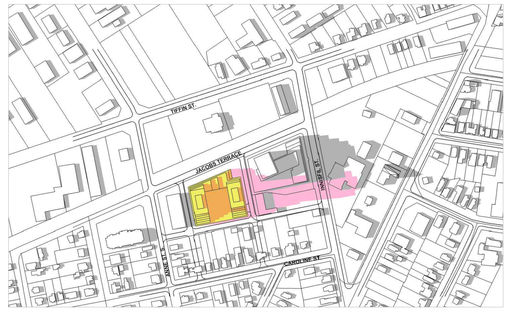
April 21st, Time–2.00 p.m



April 21st, Time–3.00 p.m

April 21st, Time–4.00 p.m

April 21st, Time–5.00 p.m



April 21st, Time–6.00 p.m

April 21st, Time–6.40 p.m

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revisions: date

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4	SPA submission	23.10.30
3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

architectural team :

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nour abboud

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structural:
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project:
17 Jacobs Terrace
barrie, ontario

shadow study

2020	date:
1:4000	scale:
20-50	project:
SS	drawn by:

drawing number:

A601

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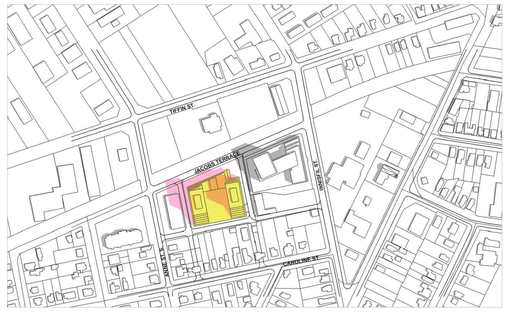
June 21st, Time–07:00 a.m

June 21st, Time–08:00 a.m

June 21st, Time–09:00 a.m

June 21st, Time–10:00 a.m



June 21st, Time–11:00 a.m

June 21st, Time–12:00 p.m

June 21st, Time–01:00 p.m

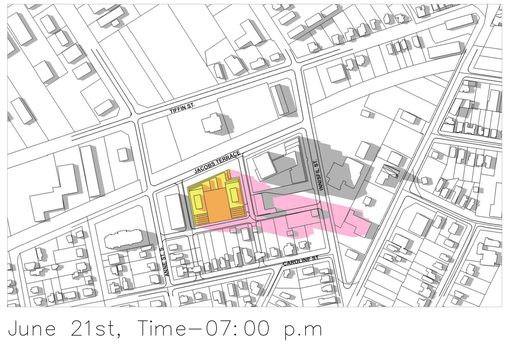
June 21st, Time–02:00 p.m

June 21st, Time–03:00 p.m

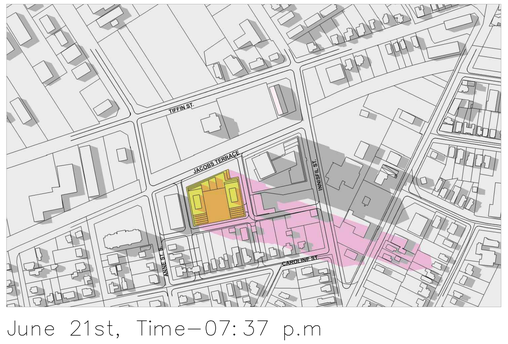
June 21st, Time–04:00 p.m

June 21st, Time–05:00 p.m

June 21st, Time–06:00 p.m



June 21st, Time–07:00 p.m



June 21st, Time–07:37 p.m

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revisions:

		date
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4	SPA submission	23.10.30
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1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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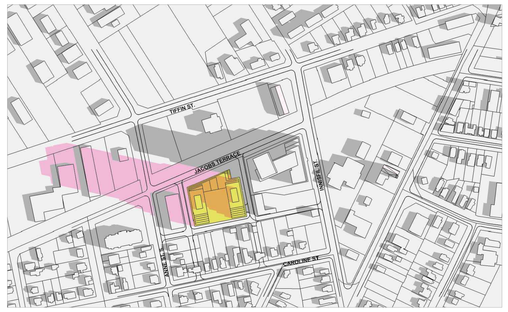
project:
17 Jacobs Terrace
barrie, ontario

shadow study

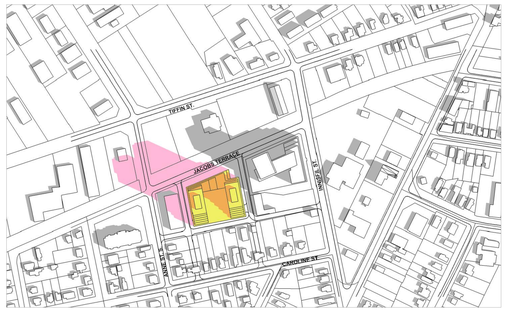
2020	date:
1:4000	scale:
20-50	project:
SS	drawn by:

drawing number:

A602



September 21st, Time–08:30 a.m



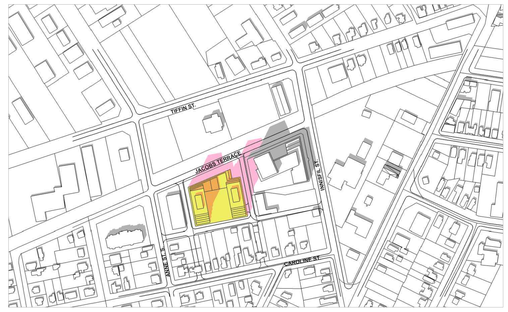
September 21st, Time–09:30 a.m

September 21st, Time–10:30 a.m

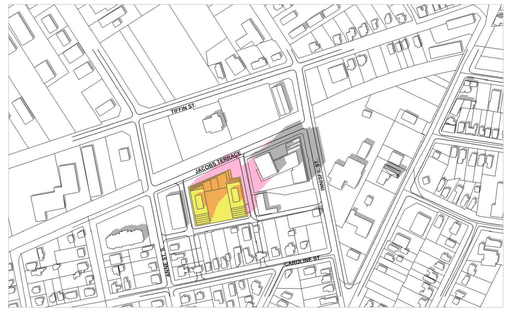
September 21st, Time–11:30 a.m

September 21st, Time–12:30 p.m

September 21st, Time–01:30 p.m



September 21st, Time–02:30 p.m



September 21st, Time–03:30 p.m

September 21st, Time–04:30 p.m

September 21st, Time–05:30 p.m

September 21st, Time–05:50 p.m

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3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

architecture**unfolded**

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landscape:
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20 Champlain Blvd., Suite 102, Toronto, ON, M3H 2Z1, Canada

traffic:
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6705 Millcreek Drive, Unit 1, Mississauga, ON L5N 5M4

site services:
Tatham Engineering
41 King Street, Unit 4, Barrie, ON, L4N 6B5

structural:
Jablonsky, Ast and Partners International
400-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

shadow study

2020	date:
1:4300	scale:
20-50	project:
SS	drawn by:

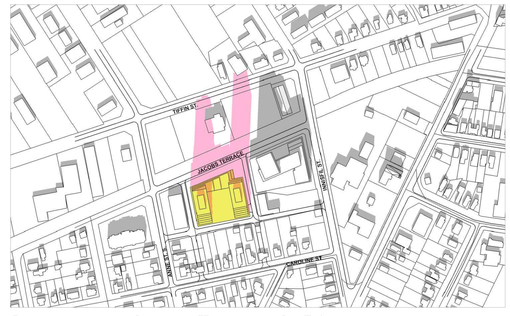
drawing number:

A603

December 21st, Time–09: 30 a.m

December 21st, Time–10: 30 a.m

December 21st, Time–11: 30 a.m



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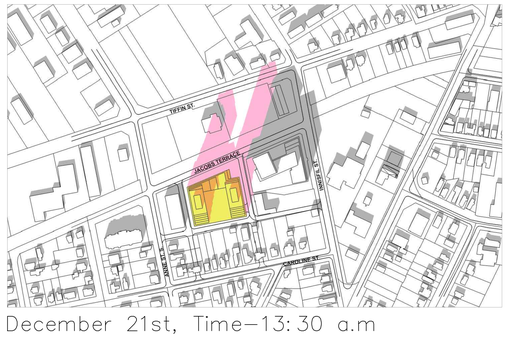

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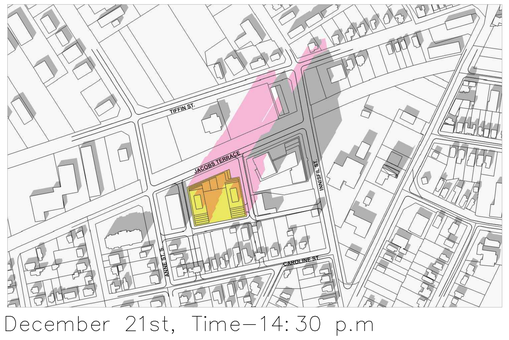
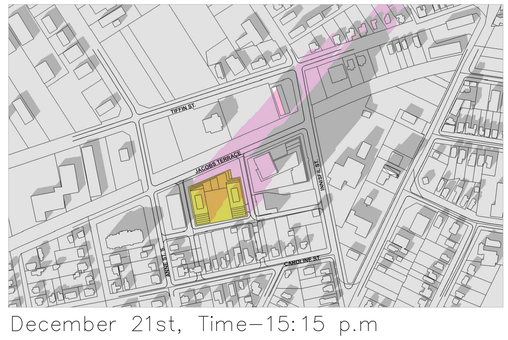


December 21st, Time–14: 30 p.m



December 21st, Time–15: 15 p.m

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Drawings are not to be scaled for construction. Contractor to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the architect before commencing work.

Positions of exposed or finished mechanical or electrical devices, fittings, and fixtures are indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the architect.

These drawings are not to be used for construction unless noted below as "Issued for Construction"

All work to be carried out in conformance with the Code and bylaws of the authorities having jurisdiction.

The Designer of these plans and specifications gives no warranty or representation to any party about the constructability of the represented by them, all contractors or subcontractors must satisfy themselves when bidding and at all times that they can properly construct the work represented by these plans.

notes:

revisions: date

5	SPA submission	24.04.03
4	SPA submission	23.10.30
3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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traffic:
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6705 Millcreek Drive, Unit 1, Mississauga, ON L5N 5M4

site services:
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structural:
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401-5 Concorde Gate, Toronto, ON, M3C 3N7

project:
17 Jacobs Terrace
barrie, ontario

shadow study

2020	date:
1:4300	scale:
20-50	project:
SS	drawn by:
	drawing number:

A604

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The Designer of these plans and specifications gives no warranty or representation to any party about the constructability of the represented by them, all contractors or subcontractors must satisfy themselves when bidding and at all times that they can properly construct the work represented by these plans.

notes:

Street View Looking South East

View Looking South

Aerial View Looking North

revisions: date

5	SPA submission	24.04.03
4	SPA submission	23.10.30
3	ZBA submission	23.02.24
2	ZBA submission	22.08.24
1	ZBA submission	21.08.25
submissions:		yy.mm.dd

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site services:
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structural:
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project:
17 Jacobs Terrace
barrie, ontario

renderings

2020	date:
NTS	scale:
20-50	project:
SS	drawn by:

drawing number:

A701

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Appendix B

Existing Traffic counts and Signal Timings

THE CORPORATION OF THE CITY OF BARRIE

July 02, 2021 File: T07-SI

Justin MacDonald
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

Dear Mr. MacDonald,

RE: **Traffic Signal Timings**

With respect to your inquiry on June 17, 2021, attached are the Signal Timings for the following intersections:

- Essa Road / Bradford Street & Tiffin Street
- Essa Road & Burton Avenue
- Essa Road & Gowan Street
- Essa Road & Innisfil Street

Signalized Intersections within the City of Barrie function as a semi-actuated; meaning the signals remain green on the major road/ main street until a vehicle is detected on the minor road/ side street or a pedestrian pushes the pushbutton to activate the pedestrian phase.

Vehicles on the minor road/side street are detected by electromagnetic wires, which are embedded in the pavement on the side street near the painted stop bar. Vehicle presence only on the side street would result in a possible green time of between the minimum and maximum times, as noted, depending on vehicle demand detected.

Pedestrians must push the pedestrian push button to be detected. Pedestrian “Walk” and “Flashing Don’t Walk” times on the side street, as noted, would be used in the event that the pedestrian push button was activated.

If you require any further information please feel free to contact me at (705) 739-4220 ext. 4937.

Sincerely,

Stephen Salis, C.E.T.
Transportation Systems Technologist

Essa Road / Bradford Street & Tiffin Street – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Bradford Street (main street)	Advanced Southbound Left Turn	7	12	3	1	N/A	N/A
Essa Street (main street)	Northbound	34	40	4	2	22	12
Bradford Street (main street)	Southbound	34	40	4	2	22	12
Tiffin Street (side street)	Advanced Westbound Left Turn	7	10	3	1	N/A	N/A
Tiffin Street (side street)	Eastbound	10	24	4	2	10	15
Tiffin Street (side street)	Westbound	10	24	4	2	10	15

NOTE: All times are recorded in seconds, based on full demand.

Essa Road / Bradford Street & Tiffin Street – AM WEEKDAY PLAN (5:00AM – 9:00AM)

Roadway	**Direction**	**Split Timings (Including Amber + All Red)**
Bradford Street (main street)	Advanced Southbound Left Turn	12
Essa Street (main street)	Northbound	43
Bradford Street (main street)	Southbound	55
Tiffin Street (side street)	Advanced Westbound Left Turn	12
Tiffin Street (side street)	Eastbound	33
Tiffin Street (side street)	Westbound	45
Total Cycle Length		100

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Essa Road / Bradford Street & Tiffin Street – NOON WEEKDAY PLAN (9:00AM – 3:30PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Bradford Street (main street)	Advanced Southbound Left Turn	12
Essa Street (main street)	Northbound	41
Bradford Street (main street)	Southbound	53
Tiffin Street (side street)	Advanced Westbound Left Turn	14
Tiffin Street (side street)	Eastbound	33
Tiffin Street (side street)	Westbound	47
Total Cycle Length		100

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Essa Road / Bradford Street & Tiffin Street – PM WEEKDAY PLAN (3:30PM – 9:00PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Bradford Street (main street)	Advanced Southbound Left Turn	12
Essa Street (main street)	Northbound	45
Bradford Street (main street)	Southbound	57
Tiffin Street (side street)	Advanced Westbound Left Turn	12
Tiffin Street (side street)	Eastbound	31
Tiffin Street (side street)	Westbound	43
Total Cycle Length		100

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Essa Road & Burton Avenue – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Essa Street (main street)	Advanced Southbound Left Turn	7	15	3	1	N/A	N/A
Essa Street (main street)	Northbound	44	44	4	2	33	11
Essa Street (main street)	Southbound	44	44	4	2	33	11
Burton Street (side street)	Westbound	15	24	4	2	7	10

NOTE: All times are recorded in seconds, based on full demand.

Essa Road & Gowan Street – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Essa Street (main street)	Advanced Southbound Left Turn	7	10	3	1	N/A	N/A
Essa Street (main street)	Northbound	80	80	4	2	65	15
Essa Street (main street)	Southbound	80	80	4	2	65	15
Gowan Street (side street)	Westbound	10	25	4	2	10	15

NOTE: All times are recorded in seconds, based on full demand.

Essa Road & Innisfil Street– FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Essa Street (main street)	Advanced Southbound Left Turn	7	15	3	1	N/A	N/A
Essa Street (main street)	Northbound	44	44	4	2	32	12
Essa Street (main street)	Southbound	44	44	4	2	32	12
Innisfil Street (side street)	Advanced Eastbound Left Turn	5	15	3	1	N/A	N/A
Innisfil Street (side street)	Eastbound	24	24	4	2	10	15
Innisfil Street (side street)	Westbound	24	24	4	2	10	15

NOTE: All times are recorded in seconds, based on full demand.

THE CORPORATION OF THE CITY OF BARRIE

June 16, 2021 File: T07-SI

Justin MacDonald
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

Dear Mr. MacDonald,

RE: **Traffic Signal Timings**

With respect to your inquiry on May 28, 2021, attached are the Signal Timings for the following intersections:

- Anne Street South & Tiffin Street
- Innisfil Street & Tiffin Street
- Anne Street & Essa Road

Signalized Intersections within the City of Barrie function as a semi-actuated; meaning the signals remain green on the major road/ main street until a vehicle is detected on the minor road/ side street or a pedestrian pushes the pushbutton to activate the pedestrian phase.

Vehicles on the minor road/side street are detected by electromagnetic wires, which are embedded in the pavement on the side street near the painted stop bar. Vehicle presence only on the side street would result in a possible green time of between the minimum and maximum times, as noted, depending on vehicle demand detected.

Pedestrians must push the pedestrian push button to be detected. Pedestrian “Walk” and “Flashing Don’t Walk” times on the side street, as noted, would be used in the event that the pedestrian push button was activated.

If you require any further information please feel free to contact me at (705) 739-4220 ext. 4937.

Sincerely,

Stephen Salis, C.E.T.
Transportation Systems Technologist

Anne Street & Tiffin Street – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Anne Street (main street)	Advanced Northbound Left Turn	10	10	3	1	N/A	N/A
Anne Street (main street)	Advanced Southbound Left Turn	7	7	3	1	N/A	N/A
Anne Street (main street)	Northbound	34	34	4	2	23	11
Anne Street (main street)	Southbound	34	34	4	2	23	11
Tiffin Street (side street)	Advanced Eastbound Left Turn	7	12	3	1	N/A	N/A
Tiffin Street (side street)	Advanced Westbound Left Turn	7	12	3	1	N/A	N/A
Tiffin Street (side street)	Eastbound	10	26	4	2	11	17
Tiffin Street (side street)	Westbound	10	26	4	2	11	17

NOTE: All times are recorded in seconds, based on full demand.

Innisfil Street & Tiffin Street – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Tiffin Street (main street)	Eastbound	34	34	4	2	12	12
Tiffin Street (main street)	Westbound	34	34	4	2	12	12
Innisfil Street (side street)	Northbound	10	30	4	2	8	12
Innisfil Street (side street)	Southbound	10	30	4	2	8	12

NOTE: All times are recorded in seconds, based on full demand.

Anne Street & Essa Road – FREE PLAN (NO COORDINATION)

		Vehicular Indications				Pedestrian Indications	
Roadway	**Direction**	**Minimum Green**	**Maximum Green**	**Amber**	**All Red**	**Walk**	**Flashing Don't Walk**
Essa Road (main street)	Advanced Northbound Left Turn	7	15	3	1	N/A	N/A
Essa Road (main street)	Northbound	34	34	4	2	13	21
Essa Road (main street)	Southbound	34	34	4	2	13	21
Anne Street (side street)	Eastbound	10	20	4	2	9	14
Anne Street (side street)	Westbound	10	20	4	2	9	14

NOTE: All times are recorded in seconds, based on full demand.

Anne Street & Essa Road – AM WEEKDAY PLAN (5:00AM – 9:00AM)

Roadway	**Direction**	**Split Timings (Including Amber + All Red)**
Essa Road (main street)	Advanced Northbound Left Turn	11
Essa Road (main street)	Northbound	58
Essa Road (main street)	Southbound	47
Anne Street (side street)	Eastbound	32
Anne Street (side street)	Westbound	32
Total Cycle Length		90

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Anne Street & Essa Road – NOON WEEKDAY PLAN (9:00AM – 3:30PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Essa Road (main street)	Advanced Northbound Left Turn	11
Essa Road (main street)	Northbound	65
Essa Road (main street)	Southbound	54
Anne Street (side street)	Eastbound	35
Anne Street (side street)	Westbound	35
Total Cycle Length		100

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Anne Street & Essa Road – PM WEEKDAY PLAN (3:30PM – 9:00PM)

Roadway	Direction	Split Timings (Including Amber + All Red)
Essa Road (main street)	Advanced Northbound Left Turn	11
Essa Road (main street)	Northbound	71
Essa Road (main street)	Southbound	60
Anne Street (side street)	Eastbound	29
Anne Street (side street)	Westbound	29
Total Cycle Length		100

NOTE: All times are recorded in seconds, based on full demand.

Refer to the FREE PLAN for the Walk and Flashing Don't Walk Timings

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #21-094 - GHD

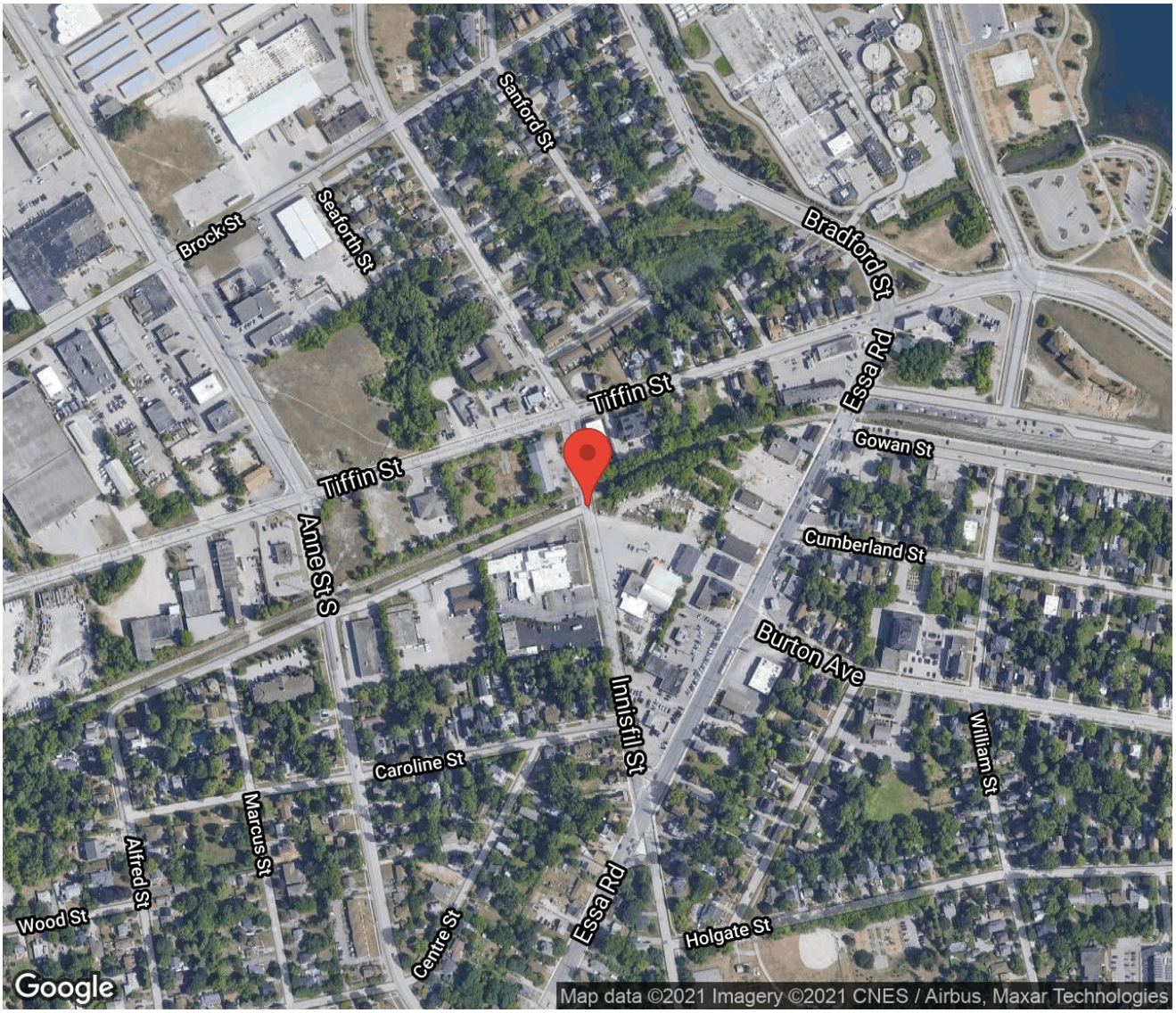
Intersection Count Report

Intersection:	Jacobs Terrace & Innisfil St
Municipality:	Barrie
Count Date:	Jun 09, 2021
Site Code:	2109400001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Jacobs Terrace & Innisfil St
Site Code:	2109400001
Municipality:	Barrie
Count Date:	Jun 09, 2021



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Jacobs Terrace & Innisfil St
Site Code:	2109400001
Municipality:	Barrie
Count Date:	Jun 09, 2021

Innisfil St - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	0	125	6	0	131	0	23	109	0	0	132	0	263
08:00 - 09:00	0	172	3	0	175	1	14	165	0	0	179	0	354
BREAK													
16:00 - 17:00	0	241	0	0	241	0	22	227	0	0	249	1	490
17:00 - 18:00	0	191	9	0	200	0	21	187	0	0	208	0	408
GRAND TOTAL	**0**	**729**	**18**	**0**	**747**	**1**	**80**	**688**	**0**	**0**	**768**	**1**	**1515**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

Commerical Entrance - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	0	2	1	0	3	0	9	3	10	0	22	1	25
08:00 - 09:00	1	0	0	0	1	0	4	1	13	0	18	6	19
BREAK													
16:00 - 17:00	0	0	4	0	4	3	5	1	18	0	24	2	28
17:00 - 18:00	0	0	1	0	1	1	4	1	11	0	16	3	17
GRAND TOTAL	**1**	**2**	**6**	**0**	**9**	**4**	**22**	**6**	**52**	**0**	**80**	**12**	**89**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

North Approach - Innisfil St

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	23	1	0	24	0	0	0	0	0	0	0	0	0	0	0
07:15	0	24	3	0	27	0	3	0	0	3	0	3	0	0	3	0
07:30	0	33	1	0	34	0	1	0	0	1	0	0	0	0	0	0
07:45	0	36	1	0	37	0	2	0	0	2	0	0	0	0	0	0
08:00	0	33	0	0	33	0	2	0	0	2	0	0	0	0	0	1
08:15	0	33	2	0	35	0	2	0	0	2	0	0	0	0	0	0
08:30	0	53	0	0	53	0	1	0	0	1	0	2	0	0	2	0
08:45	0	45	0	0	45	0	1	1	0	2	0	0	0	0	0	0
SUBTOTAL	0	280	8	0	288	0	12	1	0	13	0	5	0	0	5	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

North Approach - Innisfil St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
16:00	0	52	0	0	52	0	2	0	0	2	0	0	0	0	0	0
16:15	0	61	0	0	61	0	5	0	0	5	0	0	0	0	0	0
16:30	0	50	0	0	50	0	3	0	0	3	0	0	0	0	0	0
16:45	0	66	0	0	66	0	2	0	0	2	0	0	0	0	0	0
17:00	0	66	3	0	69	0	2	0	0	2	0	0	0	0	0	0
17:15	0	47	1	0	48	0	2	0	0	2	0	0	0	0	0	0
17:30	0	39	1	0	40	0	0	0	0	0	0	0	0	0	0	0
17:45	0	32	4	0	36	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	0	413	9	0	422	0	19	0	0	19	0	0	0	0	0	0
GRAND TOTAL	**0**	**693**	**17**	**0**	**710**	**0**	**31**	**1**	**0**	**32**	**0**	**5**	**0**	**0**	**5**	**1**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

South Approach - Innisfil St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	6	24	0	0	30	0	1	0	0	1	0	0	0	0	0	0
07:15	2	19	0	0	21	2	0	0	0	2	0	0	0	0	0	0
07:30	5	35	0	0	40	0	2	0	0	2	1	1	0	0	2	0
07:45	7	26	0	0	33	0	1	0	0	1	0	0	0	0	0	0
08:00	2	38	0	0	40	1	2	0	0	3	0	1	0	0	1	0
08:15	4	31	0	0	35	0	1	0	0	1	0	0	0	0	0	0
08:30	4	51	0	0	55	0	3	0	0	3	0	0	0	0	0	0
08:45	3	35	0	0	38	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	33	259	0	0	292	3	13	0	0	16	1	2	0	0	3	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

South Approach - Innisfil St

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	5	59	0	0	64	0	5	0	0	5	0	0	0	0	0	0
16:15	7	50	0	0	57	0	1	0	0	1	0	0	0	0	0	1
16:30	5	65	0	0	70	0	1	0	0	1	0	2	0	0	2	0
16:45	5	43	0	0	48	0	1	0	0	1	0	0	0	0	0	0
17:00	6	59	0	0	65	0	1	0	0	1	0	1	0	0	1	0
17:15	4	49	0	0	53	0	1	0	0	1	0	0	0	0	0	0
17:30	6	44	0	0	50	0	0	0	0	0	0	1	0	0	1	0
17:45	5	31	0	0	36	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	43	400	0	0	443	0	10	0	0	10	0	4	0	0	4	1
GRAND TOTAL	**76**	**659**	**0**	**0**	**735**	**3**	**23**	**0**	**0**	**26**	**1**	**6**	**0**	**0**	**7**	**1**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

East Approach - Commerical Entrance

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	1	1	0	2	1	1	0	0	2	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

East Approach - Commerical Entrance

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	4	0	4	0	0	1	0	1	0	0	0	0	0	4
GRAND TOTAL	0	1	5	0	6	1	1	1	0	3	0	0	0	0	0	4

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

West Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	3	1	1	0	5	0	0	0	0	0	0	0	0	0	0	0
07:15	2	2	3	0	7	1	0	0	0	1	0	0	0	0	0	0
07:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
07:45	2	0	4	0	6	1	0	0	0	1	0	0	0	0	0	1
08:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
08:15	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	2
08:30	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	2
08:45	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	11	4	23	0	38	2	0	0	0	2	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Municipality: Barrie
Count Date: Jun 09, 2021

West Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
16:15	2	1	3	0	6	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0
16:45	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1
17:30	2	1	3	0	6	0	0	0	0	0	0	0	0	0	0	0
17:45	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	9	2	29	0	40	0	0	0	0	0	0	0	0	0	0	5
GRAND TOTAL	20	6	52	0	78	2	0	0	0	2	0	0	0	0	0	12

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

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

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Count Date: Jun 09, 2021

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Innisfil St runs N/S

North Approach

	Out	In	Total
Cars	166	159	325
Trucks	7	9	16
Bicycles	2	1	3
	175	**169**	**344**

Innisfil St

Bicycles	0	2	0	0
Trucks	1	6	0	0
Cars	2	164	0	0
Totals	**3**	**172**	**0**	**0**

Peds: 1

East Approach

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

Jacobs Terrace

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	4	**4**
0	0	1	**1**
0	0	13	**13**

Peds: 6

Peds: 0

Commerical Entrance

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

Peds: 0

West Approach

	Out	In	Total
Cars	18	15	33
Trucks	0	2	2
Bicycles	0	0	0
	18	**17**	**35**

Innisfil St

Totals	**14**	**165**	**0**	**0**
Cars	13	155	0	0
Trucks	1	9	0	0
Bicycles	0	1	0	0

South Approach

	Out	In	Total
Cars	168	177	345
Trucks	10	7	17
Bicycles	1	2	3
	179	**186**	**365**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Count Date: Jun 09, 2021
Period: 07:00 - 09:00

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

Start Time	North Approach Innisfil St						South Approach Innisfil St						East Approach Commerical Entrance						West Approach Jacobs Terrace						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	35	0	0	1	35	3	41	0	0	0	44	0	0	0	0	0	0	0	0	5	0	0	5	84
08:15	0	35	2	0	0	37	4	32	0	0	0	36	0	0	0	0	0	0	1	0	3	0	2	4	77
08:30	0	56	0	0	0	56	4	54	0	0	0	58	0	0	0	0	0	0	1	0	4	0	2	5	119
08:45	0	46	1	0	0	47	3	38	0	0	0	41	1	0	0	0	0	1	2	1	1	0	2	4	93
Grand Total	**0**	**172**	**3**	**0**	**1**	**175**	**14**	**165**	**0**	**0**	**0**	**179**	**1**	**0**	**0**	**0**	**0**	**1**	**4**	**1**	**13**	**0**	**6**	**18**	**373**
Approach %	0	98.3	1.7	0		-	7.8	92.2	0	0		-	100	0	0	0		-	22.2	5.6	72.2	0		-	
Totals %	0	46.1	0.8	0		46.9	3.8	44.2	0	0		48	0.3	0	0	0		0.3	1.1	0.3	3.5	0		4.8	
PHF	**0**	**0.77**	**0.38**	**0**		**0.78**	**0.88**	**0.76**	**0**	**0**		**0.77**	**0.25**	**0**	**0**	**0**		**0.25**	**0.5**	**0.25**	**0.65**	**0**		**0.9**	**0.78**
Cars	0	164	2	0		166	13	155	0	0		168	0	0	0	0		0	4	1	13	0		18	352
% Cars	0	95.3	66.7	0		94.9	92.9	93.9	0	0		93.9	0	0	0	0		0	100	100	100	0		100	94.4
Trucks	0	6	1	0		7	1	9	0	0		10	1	0	0	0		1	0	0	0	0		0	18
% Trucks	0	3.5	33.3	0		4	7.1	5.5	0	0		5.6	100	0	0	0		100	0	0	0	0		0	4.8
Bicycles	0	2	0	0		2	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	3
% Bicycles	0	1.2	0	0		1.1	0	0.6	0	0		0.6	0	0	0	0		0	0	0	0	0		0	0.8
Peds					1	-					0	-					0	-					6	-	7
% Peds					14.3	-					0	-					0	-					85.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Count Date: Jun 09, 2021

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Innisfil St runs N/S

North Approach

	Out	In	Total
Cars	246	224	470
Trucks	12	4	16
Bicycles	0	3	3
	258	**231**	**489**

Innisfil St

Bicycles	0	0	0	0
Trucks	0	12	0	0
Cars	3	243	0	0
Totals	**3**	**255**	**0**	**0**

Peds: 0

East Approach

	Out	In	Total
Cars	3	1	4
Trucks	0	0	0
Bicycles	0	0	0
	3	**1**	**4**

Jacobs Terrace

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	4	**4**
0	0	1	**1**
0	0	16	**16**

Peds: 3

Peds: 3

Commerical Entrance

Totals	Cars	Trucks	Bicycles
0	0	0	0
3	3	0	0
0	0	0	0
0	0	0	0

Peds: 1

West Approach

	Out	In	Total
Cars	21	26	47
Trucks	0	0	0
Bicycles	0	0	0
	21	**26**	**47**

Innisfil St

Totals	**23**	**224**	**0**	**0**
Cars	23	217	0	0
Trucks	0	4	0	0
Bicycles	0	3	0	0

South Approach

	Out	In	Total
Cars	240	259	499
Trucks	4	12	16
Bicycles	3	0	3
	247	**271**	**518**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Jacobs Terrace & Innisfil St
Site Code: 2109400001
Count Date: Jun 09, 2021
Period: 16:00 - 18:00

Peak Hour Data (16:15 - 17:15)

Start Time	North Approach Innisfil St						South Approach Innisfil St						East Approach Commerical Entrance						West Approach Jacobs Terrace						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:15	0	66	0	0	0	66	7	51	0	0	1	58	0	0	0	0	0	0	2	1	3	0	0	6	130
16:30	0	53	0	0	0	53	5	68	0	0	0	73	0	0	0	0	0	0	0	0	7	0	0	7	133
16:45	0	68	0	0	0	68	5	44	0	0	0	49	0	0	3	0	3	3	2	0	4	0	2	6	126
17:00	0	68	3	0	0	71	6	61	0	0	0	67	0	0	0	0	0	0	0	0	2	0	1	2	140
Grand Total	**0**	**255**	**3**	**0**	**0**	**258**	**23**	**224**	**0**	**0**	**1**	**247**	**0**	**0**	**3**	**0**	**3**	**3**	**4**	**1**	**16**	**0**	**3**	**21**	**529**
Approach %	0	98.8	1.2	0		-	9.3	90.7	0	0		-	0	0	100	0		-	19	4.8	76.2	0		-	
Totals %	0	48.2	0.6	0		48.8	4.3	42.3	0	0		46.7	0	0	0.6	0		0.6	0.8	0.2	3	0		4	
PHF	**0**	**0.94**	**0.25**	**0**		**0.91**	**0.82**	**0.82**	**0**	**0**		**0.85**	**0**	**0**	**0.25**	**0**		**0.25**	**0.5**	**0.25**	**0.57**	**0**		**0.75**	**0.94**
Cars	0	243	3	0		246	23	217	0	0		240	0	0	3	0		3	4	1	16	0		21	510
% Cars	0	95.3	100	0		95.3	100	96.9	0	0		97.2	0	0	100	0		100	100	100	100	0		100	96.4
Trucks	0	12	0	0		12	0	4	0	0		4	0	0	0	0		0	0	0	0	0		0	16
% Trucks	0	4.7	0	0		4.7	0	1.8	0	0		1.6	0	0	0	0		0	0	0	0	0		0	3
Bicycles	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	3
% Bicycles	0	0	0	0		0	0	1.3	0	0		1.2	0	0	0	0		0	0	0	0	0		0	0.6
Peds					0	-					1	-					3	-					3	-	7
% Peds					0	-					14.3	-					42.9	-					42.9	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #21-094 - GHD

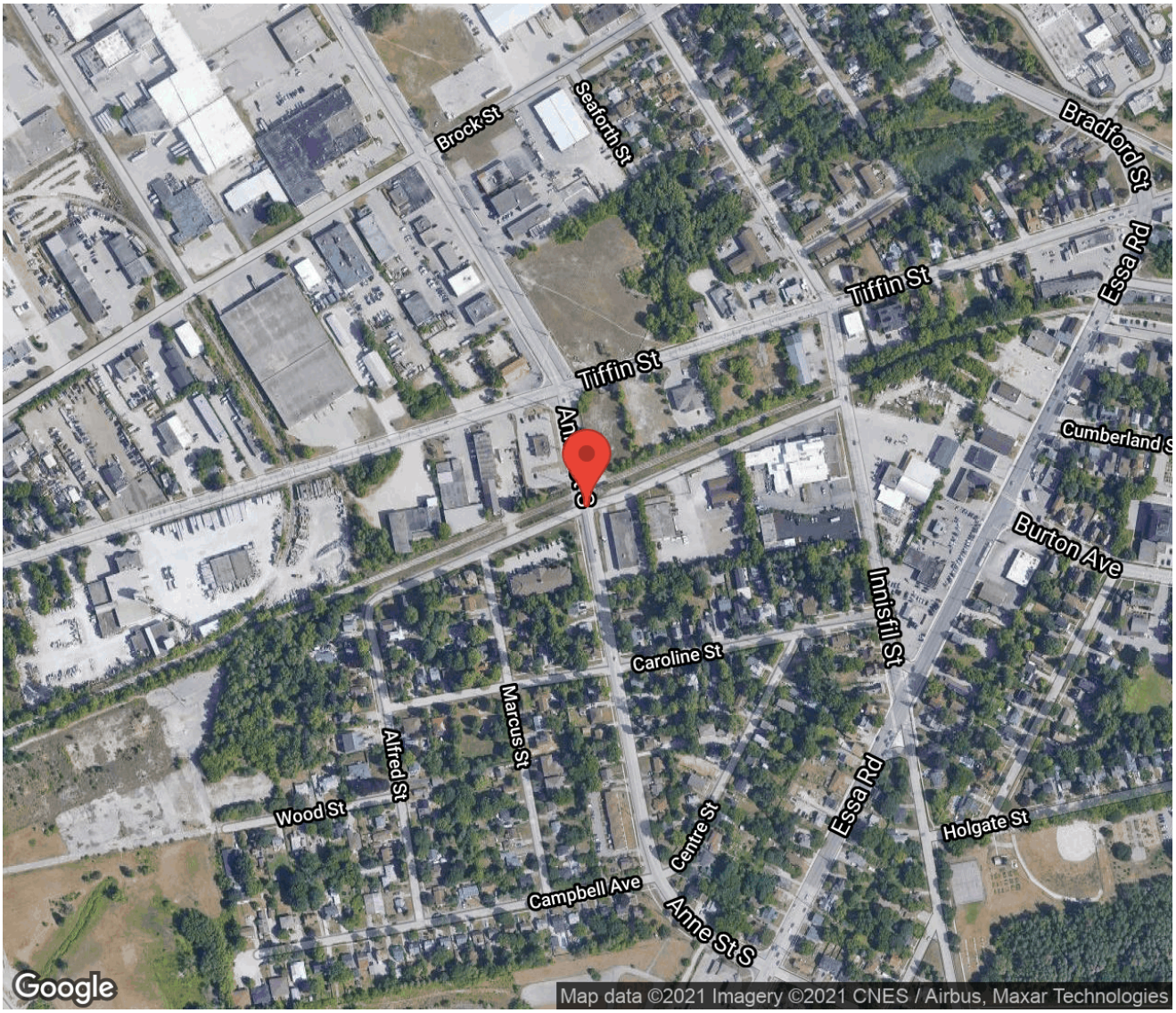
Intersection Count Report

Intersection:	Jacobs Terrace & Anne St S
Municipality:	Barrie
Count Date:	Jun 09, 2021
Site Code:	2109400002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Jacobs Terrace & Anne St S
Site Code:	2109400002
Municipality:	Barrie
Count Date:	Jun 09, 2021



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Jacobs Terrace & Anne St S
Site Code:	2109400002
Municipality:	Barrie
Count Date:	Jun 09, 2021

Anne St S - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	16	166	3	0	185	0	4	179	4	0	187	0	372
08:00 - 09:00	15	218	10	0	243	0	5	256	5	0	266	0	509
BREAK													
16:00 - 17:00	17	391	8	0	416	0	3	381	3	0	387	0	803
17:00 - 18:00	11	269	10	0	290	0	1	279	1	0	281	0	571
GRAND TOTAL	**59**	**1044**	**31**	**0**	**1134**	**0**	**13**	**1095**	**13**	**0**	**1121**	**0**	**2255**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Jacobs Terrace & Anne St S
Site Code:	2109400002
Municipality:	Barrie
Count Date:	Jun 09, 2021

Jacobs Terrace - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	1	5	29	0	35	0	9	5	3	0	17	1	52
08:00 - 09:00	2	1	14	0	17	0	2	0	8	0	10	2	27
BREAK													
16:00 - 17:00	1	0	25	0	26	1	3	2	1	0	6	3	32
17:00 - 18:00	2	2	25	0	29	0	9	3	5	0	17	3	46
GRAND TOTAL	**6**	**8**	**93**	**0**	**107**	**1**	**23**	**10**	**17**	**0**	**50**	**9**	**157**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

North Approach - Anne St S

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	2	31	0	0	33	0	1	0	0	1	0	0	0	0	0	0
07:15	5	30	0	0	35	0	6	0	0	6	0	0	0	0	0	0
07:30	2	41	1	0	44	0	4	0	0	4	0	0	0	0	0	0
07:45	6	47	1	0	54	1	6	1	0	8	0	0	0	0	0	0
08:00	5	48	1	0	54	0	3	0	0	3	0	0	0	0	0	0
08:15	4	45	1	0	50	0	4	0	0	4	0	0	0	0	0	0
08:30	4	46	6	0	56	0	7	0	0	7	1	0	0	0	1	0
08:45	1	62	2	0	65	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	29	350	12	0	391	1	34	1	0	36	1	0	0	0	1	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

North Approach - Anne St S

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	5	109	2	0	116	0	4	0	0	4	0	0	0	0	0	0
16:15	3	84	1	0	88	0	2	0	0	2	0	0	0	0	0	0
16:30	5	103	2	0	110	0	1	0	0	1	0	1	0	0	1	0
16:45	4	87	3	0	94	0	0	0	0	0	0	0	0	0	0	0
17:00	2	90	5	0	97	0	0	0	0	0	0	0	0	0	0	0
17:15	3	76	2	0	81	0	1	0	0	1	0	2	0	0	2	0
17:30	3	46	3	0	52	0	2	0	0	2	0	0	0	0	0	0
17:45	3	52	0	0	55	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	28	647	18	0	693	0	10	0	0	10	0	3	0	0	3	0
GRAND TOTAL	**57**	**997**	**30**	**0**	**1084**	**1**	**44**	**1**	**0**	**46**	**1**	**3**	**0**	**0**	**4**	**0**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

South Approach - Anne St S

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	29	1	0	30	0	5	0	0	5	0	0	0	0	0	0
07:15	0	34	0	0	34	0	5	1	0	6	0	0	0	0	0	0
07:30	1	43	1	0	45	1	2	0	0	3	0	2	0	0	2	0
07:45	2	53	0	0	55	0	6	1	0	7	0	0	0	0	0	0
08:00	1	57	2	0	60	0	7	0	0	7	0	0	0	0	0	0
08:15	1	64	2	0	67	2	4	0	0	6	0	0	0	0	0	0
08:30	1	59	1	0	61	0	2	0	0	2	0	1	0	0	1	0
08:45	0	59	0	0	59	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	6	398	7	0	411	3	34	2	0	39	0	3	0	0	3	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

South Approach - Anne St S

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	99	2	0	101	0	4	0	0	4	0	0	0	0	0	0
16:15	0	83	1	0	84	1	4	0	0	5	0	0	0	0	0	0
16:30	0	96	0	0	96	0	5	0	0	5	0	0	0	0	0	0
16:45	2	82	0	0	84	0	8	0	0	8	0	0	0	0	0	0
17:00	0	80	0	0	80	0	0	0	0	0	0	0	0	0	0	0
17:15	0	78	0	0	78	0	3	0	0	3	0	0	0	0	0	0
17:30	0	68	0	0	68	0	4	0	0	4	0	0	0	0	0	0
17:45	0	44	1	0	45	1	1	0	0	2	0	1	0	0	1	0
SUBTOTAL	2	630	4	0	636	2	29	0	0	31	0	1	0	0	1	0
GRAND TOTAL	8	1028	11	0	1047	5	63	2	0	70	0	4	0	0	4	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

East Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	0	7	0	7	1	0	0	0	1	0	0	0	0	0	0
07:15	0	3	4	0	7	0	0	2	0	2	0	0	0	0	0	0
07:30	0	0	5	0	5	0	0	1	0	1	0	0	1	0	1	0
07:45	0	2	8	0	10	0	0	1	0	1	0	0	0	0	0	0
08:00	0	1	3	0	4	0	0	1	0	1	0	0	0	0	0	0
08:15	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
08:30	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	6	37	0	45	1	0	5	0	6	0	0	1	0	1	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

East Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
16:00	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	1
16:15	1	0	8	0	9	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	6	0	6	0	0	0	0	0	0	0	1	0	1	0
17:15	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
17:30	1	1	6	0	8	0	0	0	0	0	0	0	0	0	0	0
17:45	1	1	7	0	9	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	3	2	49	0	54	0	0	0	0	0	0	0	1	0	1	1
GRAND TOTAL	5	8	86	0	99	1	0	5	0	6	0	0	2	0	2	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

West Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0
07:15	1	1	1	0	3	0	0	0	0	0	1	0	0	0	1	0
07:30	5	0	0	0	5	0	0	0	0	0	0	1	0	0	1	0
07:45	1	2	0	0	3	1	0	0	0	1	0	0	0	0	0	1
08:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:15	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	1
08:30	1	0	2	0	3	0	0	1	0	1	0	0	0	0	0	1
08:45	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	9	4	7	0	20	1	0	4	0	5	1	1	0	0	2	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Municipality: Barrie
Count Date: Jun 09, 2021

West Approach - Jacobs Terrace

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
16:15	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	2
17:15	3	1	2	0	6	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1
17:45	4	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	12	5	6	0	23	0	0	0	0	0	0	0	0	0	0	6
GRAND TOTAL	**21**	**9**	**13**	**0**	**43**	**1**	**0**	**4**	**0**	**5**	**1**	**1**	**0**	**0**	**2**	**9**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:45:00
To:	09:00:00	To:	08:45:00

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Count Date: Jun 09, 2021

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Anne St S runs N/S

North Approach

	Out	In	Total
Cars	214	253	467
Trucks	22	22	44
Bicycles	1	1	2
	237	**276**	**513**

Anne St S

Bicycles	0	0	1	0
Trucks	1	20	1	0
Cars	9	186	19	0
Totals	**10**	**206**	**21**	**0**

East Approach

	Out	In	Total
Cars	23	26	49
Trucks	2	2	4
Bicycles	0	1	1
	25	**29**	**54**

Jacobs Terrace

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	1	2	**3**
0	0	2	**2**
0	3	4	**7**

Peds: 3

N
W E
S

Peds: 0

Peds: 0

Jacobs Terrace

Totals	Cars	Trucks	Bicycles
0	0	0	0
20	18	2	0
3	3	0	0
2	2	0	0

West Approach

	Out	In	Total
Cars	8	17	25
Trucks	4	3	7
Bicycles	0	0	0
	12	**20**	**32**

Anne St S

Totals	**7**	**253**	**6**	**0**
Cars	5	233	5	0
Trucks	2	19	1	0
Bicycles	0	1	0	0

South Approach

	Out	In	Total
Cars	243	192	435
Trucks	22	23	45
Bicycles	1	0	1
	266	**215**	**481**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Count Date: Jun 09, 2021
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Anne St S						South Approach Anne St S						East Approach Jacobs Terrace						West Approach Jacobs Terrace						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	7	53	2	0	0	62	2	59	1	0	0	62	0	2	9	0	0	11	2	2	0	0	1	4	139
08:00	5	51	1	0	0	57	1	64	2	0	0	67	0	1	4	0	0	5	0	0	1	0	0	1	130
08:15	4	49	1	0	0	54	3	68	2	0	0	73	1	0	3	0	0	4	0	0	3	0	1	3	134
08:30	5	53	6	0	0	64	1	62	1	0	0	64	1	0	4	0	0	5	1	0	3	0	1	4	137
Grand Total	**21**	**206**	**10**	**0**	**0**	**237**	**7**	**253**	**6**	**0**	**0**	**266**	**2**	**3**	**20**	**0**	**0**	**25**	**3**	**2**	**7**	**0**	**3**	**12**	**540**
Approach %	8.9	86.9	4.2	0		-	2.6	95.1	2.3	0		-	8	12	80	0		-	25	16.7	58.3	0		-	
Totals %	3.9	38.1	1.9	0		43.9	1.3	46.9	1.1	0		49.3	0.4	0.6	3.7	0		4.6	0.6	0.4	1.3	0		2.2	
PHF	**0.75**	**0.97**	**0.42**	**0**		**0.93**	**0.58**	**0.93**	**0.75**	**0**		**0.91**	**0.5**	**0.38**	**0.56**	**0**		**0.57**	**0.38**	**0.25**	**0.58**	**0**		**0.75**	**0.97**
Cars	19	186	9	0		214	5	233	5	0		243	2	3	18	0		23	2	2	4	0		8	488
% Cars	90.5	90.3	90	0		90.3	71.4	92.1	83.3	0		91.4	100	100	90	0		92	66.7	100	57.1	0		66.7	90.4
Trucks	1	20	1	0		22	2	19	1	0		22	0	0	2	0		2	1	0	3	0		4	50
% Trucks	4.8	9.7	10	0		9.3	28.6	7.5	16.7	0		8.3	0	0	10	0		8	33.3	0	42.9	0		33.3	9.3
Bicycles	1	0	0	0		1	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	2
% Bicycles	4.8	0	0	0		0.4	0	0.4	0	0		0.4	0	0	0	0		0	0	0	0	0		0	0.4
Peds					0	-					0	-					0	-					3	-	3
% Peds					0	-					0	-					0	-					100	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

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

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Count Date: Jun 09, 2021

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Anne St S runs N/S

North Approach

	Out	In	Total
Cars	408	388	796
Trucks	7	21	28
Bicycles	1	0	1
	416	**409**	**825**

Anne St S

Bicycles	0	1	0	0
Trucks	0	7	0	0
Cars	8	383	17	0
Totals	**8**	**391**	**17**	**0**

East Approach

	Out	In	Total
Cars	26	22	48
Trucks	0	0	0
Bicycles	0	0	0
	26	**22**	**48**

Jacobs Terrace

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	3	**3**
0	0	2	**2**
0	0	1	**1**

Peds: 3

Peds: 0

N
W E
S

Peds: 1

Jacobs Terrace

Totals	Cars	Trucks	Bicycles
0	0	0	0
25	25	0	0
0	0	0	0
1	1	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	6	10	16
Trucks	0	1	1
Bicycles	0	0	0
	6	**11**	**17**

Totals	**3**	**381**	**3**	**0**
Cars	2	360	3	0
Trucks	1	21	0	0
Bicycles	0	0	0	0

Anne St S

South Approach

	Out	In	Total
Cars	365	385	750
Trucks	22	7	29
Bicycles	0	1	1
	387	**393**	**780**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Jacobs Terrace & Anne St S
Site Code: 2109400002
Count Date: Jun 09, 2021
Period: 16:00 - 18:00

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

Start Time	North Approach Anne St S						South Approach Anne St S						East Approach Jacobs Terrace						West Approach Jacobs Terrace						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	5	113	2	0	0	120	0	103	2	0	0	105	0	0	7	0	1	7	1	0	1	0	0	2	234
16:15	3	86	1	0	0	90	1	87	1	0	0	89	1	0	8	0	0	9	2	1	0	0	0	3	191
16:30	5	105	2	0	0	112	0	101	0	0	0	101	0	0	5	0	0	5	0	1	0	0	3	1	219
16:45	4	87	3	0	0	94	2	90	0	0	0	92	0	0	5	0	0	5	0	0	0	0	0	0	191
Grand Total	**17**	**391**	**8**	**0**	**0**	**416**	**3**	**381**	**3**	**0**	**0**	**387**	**1**	**0**	**25**	**0**	**1**	**26**	**3**	**2**	**1**	**0**	**3**	**6**	**835**
Approach %	4.1	94	1.9	0		-	0.8	98.4	0.8	0		-	3.8	0	96.2	0		-	50	33.3	16.7	0		-	
Totals %	2	46.8	1	0		49.8	0.4	45.6	0.4	0		46.3	0.1	0	3	0		3.1	0.4	0.2	0.1	0		0.7	
PHF	**0.85**	**0.87**	**0.67**	**0**		**0.87**	**0.38**	**0.92**	**0.38**	**0**		**0.92**	**0.25**	**0**	**0.78**	**0**		**0.72**	**0.38**	**0.5**	**0.25**	**0**		**0.5**	**0.89**
Cars	17	383	8	0		408	2	360	3	0		365	1	0	25	0		26	3	2	1	0		6	805
% Cars	100	98	100	0		98.1	66.7	94.5	100	0		94.3	100	0	100	0		100	100	100	100	0		100	96.4
Trucks	0	7	0	0		7	1	21	0	0		22	0	0	0	0		0	0	0	0	0		0	29
% Trucks	0	1.8	0	0		1.7	33.3	5.5	0	0		5.7	0	0	0	0		0	0	0	0	0		0	3.5
Bicycles	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0	0.3	0	0		0.2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0.1
Peds					0	-					0	-					1	-					3	-	4
% Peds					0	-					0	-					25	-					75	-	

Trans-Plan Transportation Inc.

Site ID Code:
Intersection Location: Anne Street and Tiffin Street
Municipality: Barrie, Ontario
Count Date: Wednesday, 26 April 2017
Weather and Temperature: Clear, 10C Degrees
Surveyor: TP

AM	NORTH APPROACH										Total	EAST APPROACH										Total	SOUTH APPROACH										Total	WEST APPROACH										Total	Grand Total
	CAR			TRUCKS			CYCLISTS			Peds		CAR			TRUCKS			CYCLISTS			Peds		CAR			TRUCKS			CYCLISTS			Peds		CAR			TRUCKS			CYCLISTS			Peds		
	L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			
7:15	21	44	19	2	2	0	0	0	0	1	89	5	43	23	0	2	0	0	2	0	0	75	25	39	0	2	2	0	0	0	0	0	68	9	43	16	0	5	3	0	0	0	0	76	308
7:30	26	37	16	2	3	0	0	0	0	0	84	4	68	25	0	2	0	0	1	0	0	100	12	42	1	1	2	0	0	1	0	0	59	10	48	24	0	2	4	0	0	0	0	88	331
7:45	23	59	32	1	3	0	0	0	0	2	120	2	70	26	0	2	0	0	0	0	1	101	23	55	1	1	4	0	0	0	0	0	84	19	78	34	1	3	0	0	1	0	2	138	443
8:00	33	48	36	3	3	0	0	0	0	0	123	2	69	45	0	1	2	0	0	0	0	119	31	68	1	3	5	0	0	1	0	0	109	31	47	26	3	4	1	0	0	0	2	114	465
8:15	35	60	23	1	2	0	0	1	0	0	122	6	53	28	0	4	1	0	0	0	0	92	19	67	1	1	5	0	0	0	0	0	93	26	73	22	0	5	1	0	0	0	1	128	435
8:30	26	51	16	0	7	0	0	0	0	1	101	2	64	38	1	5	0	0	0	0	2	112	20	56	2	0	4	0	0	0	0	2	84	28	81	20	0	3	2	0	0	0	3	137	434
8:45	28	62	21	1	6	2	0	0	0	1	121	4	63	26	1	3	0	0	0	0	0	97	19	62	1	1	4	0	0	0	0	0	87	23	99	24	0	8	1	0	0	0	2	157	462
9:00	25	54	30	0	2	1	0	0	0	1	113	6	46	52	0	2	3	0	0	0	0	109	13	59	6	2	5	0	0	0	0	0	85	41	76	21	1	6	3	0	0	0	1	149	456
MD																																													
11:15	28	90	20	2	3	2	0	0	0	1	145	0	50	31	0	2	0	0	0	0	0	83	24	75	3	3	3	0	0	0	0	4	108	14	49	19	1	5	2	0	0	0	2	90	426
11:30	33	79	22	2	7	2	0	0	0	0	145	3	47	27	0	4	3	0	0	0	1	84	19	63	2	0	6	0	0	0	0	2	90	28	52	23	3	2	1	0	0	0	4	109	428
11:45	51	74	25	0	7	0	0	1	0	1	158	1	60	44	0	1	0	0	0	0	2	106	19	76	8	1	3	0	0	0	0	2	107	18	50	23	2	3	0	0	2	0	0	98	469
12:00	49	83	28	1	4	1	0	0	0	4	166	9	69	56	0	2	4	0	0	0	1	140	9	72	3	1	0	0	0	0	0	1	85	21	69	24	1	2	2	0	1	0	1	120	511
12:15	35	83	36	0	1	0	0	0	0	1	155	7	55	30	0	2	1	0	0	0	3	95	26	75	1	0	1	1	0	0	0	4	104	28	71	25	0	5	3	0	0	0	4	132	486
12:30	30	92	24	1	4	0	0	0	0	2	151	3	60	45	0	2	1	0	0	0	0	111	17	69	2	2	2	0	0	0	0	1	92	27	51	22	1	4	0	1	0	0	2	106	460
12:45	37	94	30	0	4	2	0	0	0	1	167	2	48	33	0	5	1	0	0	0	2	89	20	84	2	2	1	0	0	0	0	2	109	42	67	17	1	4	2	0	0	0	1	133	498
13:00	22	79	31	0	1	0	0	0	0	1	133	3	56	41	0	7	1	0	1	0	0	109	17	70	3	0	5	0	0	0	0	1	95	30	71	13	1	4	2	0	1	0	4	122	459
13:15	32	79	29	1	3	0	0	0	0	3	144	3	47	36	1	2	0	0	0	0	1	89	17	73	1	1	2	0	0	0	0	1	94	38	60	16	2	3	0	0	0	0	4	119	446
13:30	37	82	21	1	2	1	0	0	0	0	144	1	47	34	0	4	0	0	3	0	1	89	15	77	1	4	0	0	0	0	0	0	97	18	52	15	1	6	0	0	0	0	1	92	422
13:45	44	78	34	1	2	1	0	1	0	0	161	3	55	40	1	2	2	1	0	0	0	104	24	85	4	2	3	0	0	0	0	0	118	13	55	30	2	5	1	1	0	0	0	107	490
14:00	34	88	18	1	2	2	0	1	0	0	146	3	38	36	0	2	1	0	1	0	0	81	18	132	2	0	3	0	0	1	0	0	156	22	54	19	1	3	4	0	0	0	0	103	486
PM																																													
15:15	54	99	24	0	2	0	0	0	0	4	183	1	80	32	0	2	1	0	0	1	0	117	31	102	1	2	3	0	0	0	0	3	142	26	74	20	0	3	2	0	0	0	1	126	568
15:30	41	80	31	3	5	0	0	0	0	3	163	4	61	33	0	3	2	0	0	0	1	104	16	95	4	1	4	0	0	0	0	2	122	30	74	19	0	3	0	0	0	0	4	130	519
15:45	50	106	37	1	4	1	0	0	0	3	202	4	62	39	1	3	1	0	0	0	1	111	32	99	2	0	7	0	0	0	0	1	141	33	83	28	2	1	2	0	0	0	2	151	605
16:00	54	97	27	1	3	0	0	0	0	1	183	2	65	46	0	3	0	0	0	0	0	116	21	87	3	0	1	0	0	1	0	0	113	35	92	37	1	4	3	0	0	0	2	174	586
16:15	48	112	39	1	5	1	0	0	0	1	207	4	68	34	0	6	0	0	0	0	1	113	31	87	3	1	3	0	0	0	0	1	126	35	80	29	1	1	0	0	0	0	4	150	596
16:30	46	98	31	1	2	0	0	0	0	1	179	3	58	38	0	4	3	0	0	0	1	107	30	80	6	0	1	0	0	0	0	2	119	31	82	26	0	3	3	0	0	0	0	145	550
16:45	56	116	45	0	1	0	0	1	0	0	219	4	79	38	0	1	2	0	0	0	0	124	28	78	6	1	3	0	0	1	0	0	117	49	104	35	0	1	1	0	0	0	0	190	650
17:00	50	110	29	1	2	0	0	1	0	1	194	6	72	44	0	3	1	1	0	0	0	127	30	112	2	0	3	0	0	0	0	2	149	43	95	29	0	2	0	0	1	0	3	173	643
17:15	64	133	32	1	2	1	0	0	0	0	233	3	80	39	0	1	1	0	0	0	1	125	34	110	3	4	2	0	0	0	0	1	154	48	98	32	1	2	1	0	1	0	0	183	695
17:30	48	100	25	0	2	0	0	0	0	1	176	2	62	41	0	1	0	0	1	0	0	107	29	85	0	0	1	0	0	0	0	0	115	33	88	38	0	4	0	0	0	0	0	163	561
17:45	28	85	22	0	3	1	0	0	0	1	140	4	72	25	0	1	0	0	0	0	1	103	21	97	1	1	0	0	0	0	0	0	120	36	103	20	1	2	3	0	0	0	0	165	528
18:00	39	65	20	0	1	0	0	0	0	1	126	3	45	30	0	2	0	0	0	0	0	80	15	84	1	0	1	0	0	0	0	0	101	24	76	23	0	1	1	0	1	0	0	126	433

TRANS-PLAN
transportation engineering

Turning Movement Count Diagram

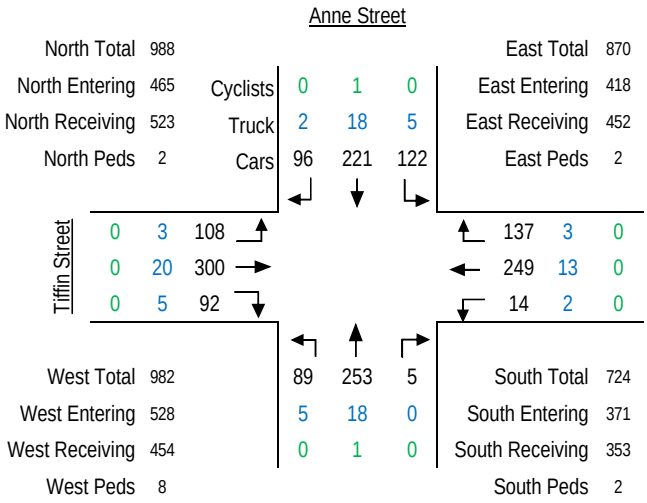
Intersection: Anne Street and Tiffin Street

Intersection ID:

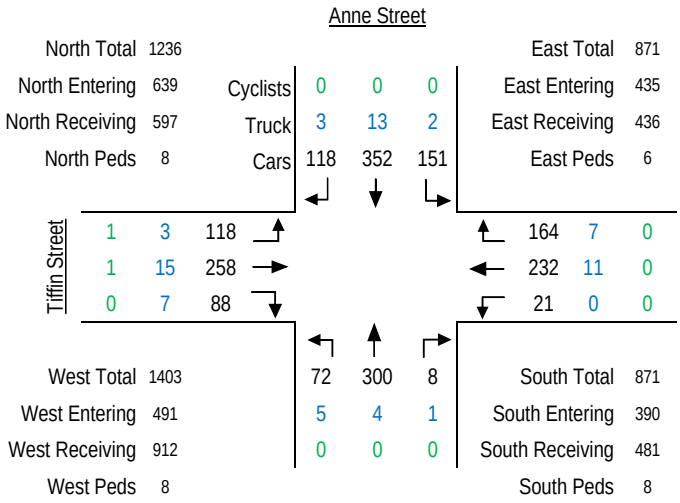
Municipality: Barrie, Ontario

Date: Wednesday, 26 April 2017

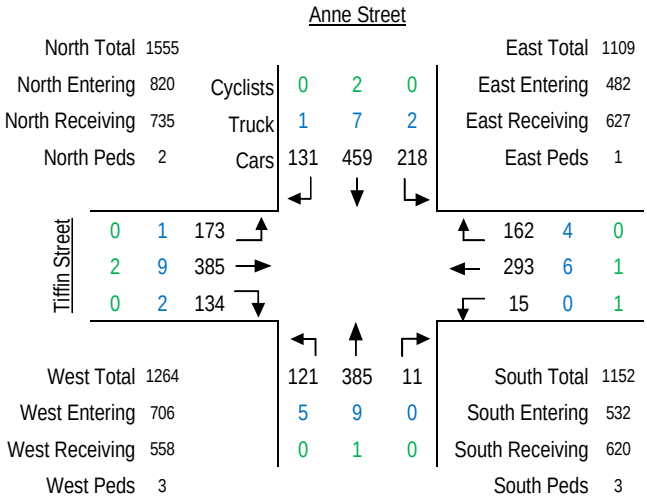
AM Peak Hour: 7:45 to 8:45



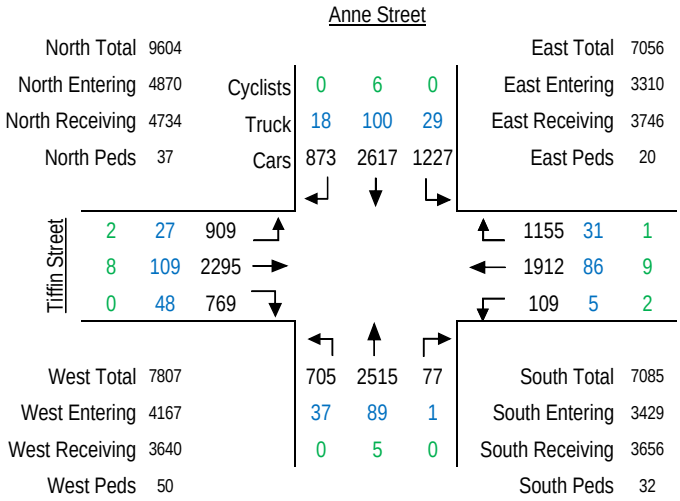
MD Peak Hour: 11:45 to 12:45



PM Peak Hour: 16:30 to 17:30



Total 8-Hour Count



Trans-Plan Transportation Inc.

Site ID Code:
Intersection Location: Essa Road & Anne Street
Municipality: Barrie, Ontario
Count Date: Tuesday April 9, 2019
Weather and Temperature: Cloudy, 7 Degrees
Surveyor: TP

AM	NORTH APPROACH											EAST APPROACH											SOUTH APPROACH											WEST APPROACH											Grand Total
	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	
	L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			
7:00	5	10	39	0	0	2	0	0	0	0	56	0	76	6	0	2	0	0	0	0	0	84	9	8	0	0	0	0	0	0	0	0	17	31	45	3	2	1	0	0	0	1	1	84	241
7:15	2	13	42	0	1	10	0	0	0	0	68	0	57	6	0	7	0	0	0	0	1	71	9	10	0	0	0	0	0	0	0	2	21	32	48	4	2	1	0	0	0	0	1	88	248
7:30	4	17	64	0	0	3	0	0	0	0	88	0	74	8	0	5	0	0	0	0	0	87	22	6	0	0	0	0	0	0	0	0	28	41	63	11	4	4	0	0	0	0	0	123	326
7:45	7	21	53	0	0	1	0	0	0	0	82	1	100	10	0	2	1	0	0	0	0	114	17	12	1	0	2	0	0	0	0	1	33	42	91	22	9	5	0	0	0	0	1	170	399
8:00	7	12	45	0	0	3	0	0	0	3	70	0	75	8	0	4	0	0	0	0	3	90	14	12	0	0	0	0	0	0	0	0	26	47	90	15	5	3	0	0	0	0	0	160	346
8:15	8	18	45	0	1	6	0	0	0	0	78	0	90	10	0	3	1	0	0	0	0	104	14	6	0	1	0	0	0	0	0	0	21	50	78	16	3	3	0	0	0	0	0	150	353
8:30	7	13	56	1	2	5	0	0	0	0	84	0	74	11	0	5	0	0	0	0	3	93	15	15	0	2	0	0	0	0	0	0	32	54	89	10	6	3	0	0	0	0	1	163	372
8:45	4	21	48	1	1	6	0	0	0	0	81	0	82	11	0	2	0	0	0	0	0	95	13	12	0	0	1	0	0	0	0	0	26	56	117	11	3	2	1	0	0	0	6	196	398
MD																																													
11:00	12	9	61	0	0	7	0	0	0	0	89	0	108	9	0	6	0	0	0	0	0	123	12	14	0	0	0	0	0	0	0	2	28	55	86	6	7	4	2	0	0	0	0	160	400
11:15	7	10	51	0	1	4	0	0	0	0	73	0	80	11	0	2	1	0	0	0	0	94	5	4	0	0	0	0	0	0	0	0	9	55	92	8	5	3	0	0	0	0	0	163	339
11:30	23	17	56	1	1	3	0	0	0	0	101	3	92	14	0	3	0	0	0	0	0	112	11	12	0	0	0	0	0	0	0	0	23	57	88	7	5	6	1	0	0	0	0	164	400
11:45	6	20	71	0	1	9	0	0	0	0	107	0	94	7	0	4	0	0	0	0	0	105	7	10	0	0	0	0	0	0	0	0	17	60	107	6	3	4	0	0	0	0	0	180	409
12:00	11	15	63	0	0	5	0	0	0	0	94	1	113	16	0	4	1	0	0	0	0	135	13	10	0	0	0	0	0	0	0	1	24	71	88	11	5	2	0	0	0	0	0	177	430
12:15	22	13	66	1	0	2	0	0	0	0	104	0	90	10	0	1	0	0	0	0	0	101	9	8	0	0	0	0	0	0	0	1	18	62	75	12	1	9	0	0	0	0	0	159	382
12:30	12	14	84	0	0	5	0	0	0	0	115	0	90	16	0	3	2	0	0	0	0	111	10	12	1	0	0	0	0	0	0	4	27	61	104	8	2	5	0	0	0	0	0	180	433
12:45	12	19	64	1	2	1	0	0	0	0	99	0	83	16	0	4	1	0	0	0	0	104	15	8	0	0	0	0	0	0	0	0	23	55	98	6	9	4	0	0	0	0	0	172	398
13:00	10	22	61	0	0	4	0	0	0	0	97	0	108	14	0	2	1	0	0	0	0	125	5	8	0	0	0	0	0	0	0	0	13	62	83	9	5	6	0	0	0	0	0	165	400
13:15	7	13	67	0	0	3	0	0	0	1	91	0	111	17	0	2	0	0	0	0	0	130	4	9	0	0	0	0	0	0	0	0	13	57	90	8	2	0	0	0	0	0	0	157	391
13:30	7	15	57	0	1	12	0	0	0	0	92	0	79	14	0	3	0	0	0	0	0	96	8	14	1	1	0	0	0	0	0	0	24	80	89	15	1	3	0	0	0	0	2	190	402
13:45	18	18	64	0	0	4	0	0	0	0	104	1	109	12	0	3	1	0	0	0	0	126	11	13	0	0	0	0	0	0	0	0	24	72	97	8	4	1	0	0	0	0	1	183	437
PM																																													
15:00	23	23	70	0	0	4	0	0	0	0	120	0	100	14	0	3	1	0	0	0	2	120	9	15	1	0	0	0	0	0	0	4	29	73	104	12	6	3	1	0	0	0	3	202	471
15:15	11	23	76	0	0	3	0	0	0	1	114	1	132	25	0	6	0	0	0	0	0	164	6	9	0	0	1	0	0	0	0	1	17	74	130	13	3	0	0	0	0	0	0	220	515
15:30	14	20	82	0	0	4	0	0	0	1	121	1	105	17	0	1	0	0	0	0	3	127	8	14	1	0	1	0	0	0	0	1	25	81	119	12	4	3	1	0	0	0	0	220	493
15:45	13	18	57	0	2	3	0	0	0	0	93	0	97	21	0	2	1	0	0	0	0	121	10	11	0	1	0	0	0	0	0	3	25	81	131	19	5	2	0	0	0	0	2	240	479
16:00	21	27	74	0	0	4	0	0	0	0	126	0	137	16	0	2	1	0	0	0	0	156	13	20	0	0	0	0	0	0	0	1	34	103	117	19	3	5	0	0	0	0	0	247	563
16:15	9	25	81	0	0	4	0	0	0	0	119	0	116	15	0	3	0	0	0	0	0	134	13	16	0	0	0	0	0	0	0	3	32	80	112	24	5	0	0	0	0	0	0	221	506
16:30	12	14	82	0	0	3	0	0	0	0	111	0	108	13	0	6	0	0	0	0	0	127	7	20	1	0	0	0	0	0	0	0	28	98	117	13	2	3	0	0	0	0	0	233	499
16:45	16	16	67	0	0	3	0	0	0	0	102	0	92	18	0	3	0	0	0	0	0	113	6	19	0	0	1	0	0	0	0	3	29	97	117	16	2	1	0	0	0	0	1	234	478
17:00	20	24	117	0	0	5	0	0	0	0	166	0	119	12	0	2	0	0	0	0	2	135	8	17	0	0	1	0	0	0	0	1	27	87	115	15	3	3	0	0	0	0	1	224	552
17:15	18	16	72	0	0	1	0	0	0	0	107	0	117	9	0	3	0	0	0	0	0	129	4	13	1	0	0	0	0	0	0	1	19	84	123	16	4	1	0	0	0	0	0	228	483
17:30	6	18	43	0	0	3	0	0	0	1	71	0	100	17	0	0	0	0	0	0	0	117	8	11	0	0	0	0	0	0	0	0	19	55	107	14	3	1	0	0	0	0	0	180	387
17:45	12	12	50	0	0	0	0	0	0	0	74	0	74	10	0	1	0	0	0	0	0	85	6	9	0	0	0	0	0	0	0	0	15	60	91	11	0	2	0	0	0	0	0	164	338

TRANS-PLAN
transportation engineering

Turning Movement Count Diagram

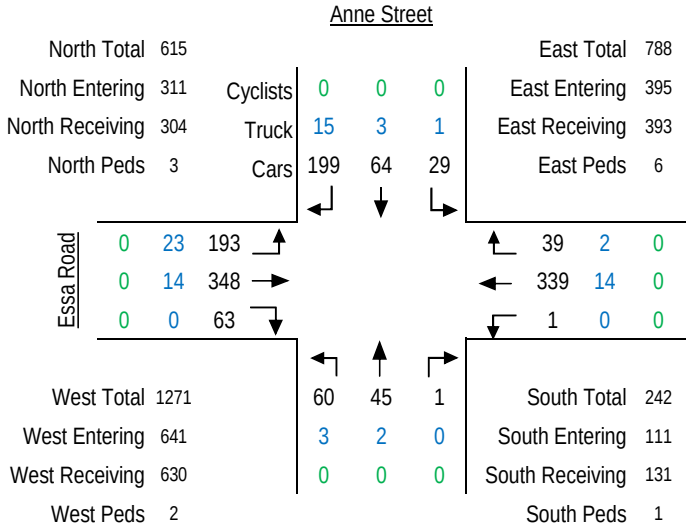
Intersection: Essa Road & Anne Street

Intersection ID:

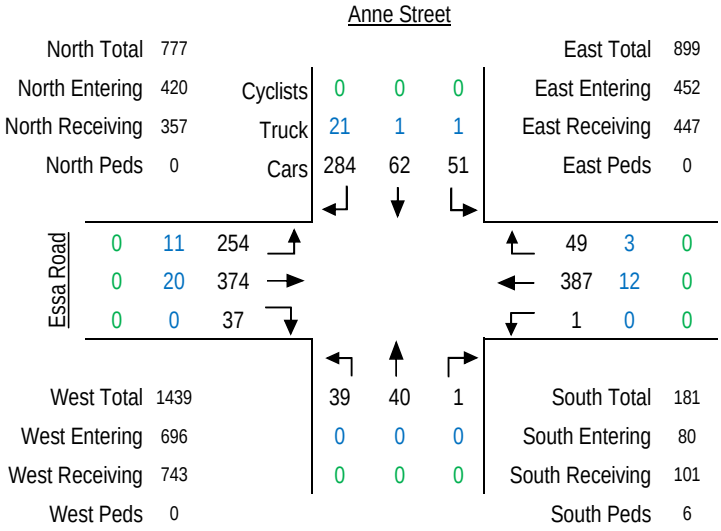
Municipality: Barrie, Ontario

Date: Tuesday April 9, 2019

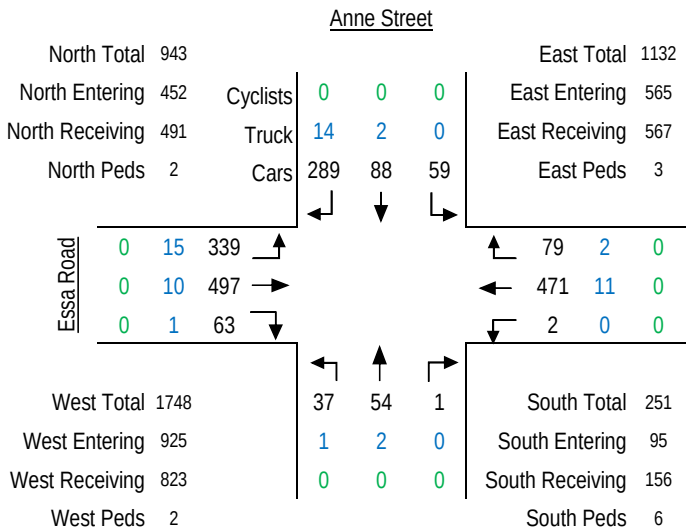
AM Peak Hour: 7:45 to 8:45



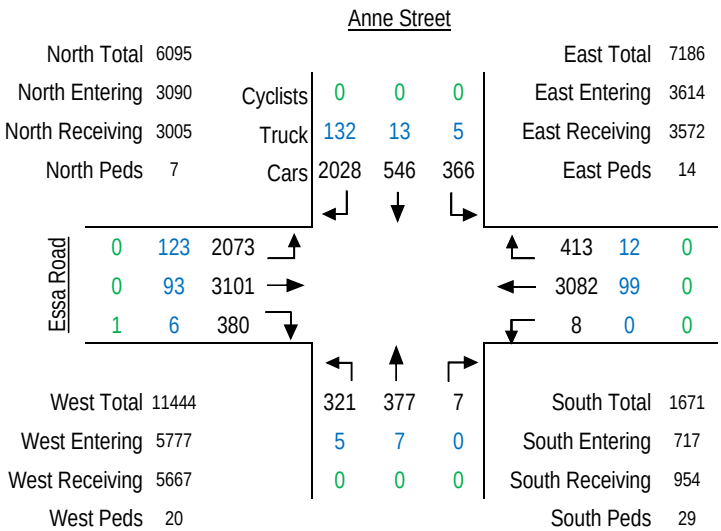
MD Peak Hour: 11:45 to 12:45



PM Peak Hour: 15:15 to 16:15



Total 8-Hour Count



Trans-Plan Transportation Inc.

Site ID Code:
Intersection Location: Essa Road & Innisfil Street
Municipality: Barrie, Ontario
Count Date: Thursday February 14, 2019
Weather and Temperature: Partly Cloudy, -1 Degree
Surveyor: TP

AM	NORTH APPROACH											EAST APPROACH											SOUTH APPROACH											WEST APPROACH											Grand Total
	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	
	L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			
7:00	4	14	10	1	0	0	0	0	0	1	30	5	38	9	0	1	0	0	0	0	1	54	3	16	2	0	2	0	0	0	0	0	23	2	26	2	0	3	0	0	0	0	1	34	141
7:15	3	30	4	0	1	2	0	0	0	0	40	1	61	21	0	3	1	0	0	0	0	87	1	15	2	1	0	0	0	0	0	0	19	2	44	5	0	1	0	0	0	0	0	52	198
7:30	7	24	15	0	3	0	0	0	0	1	50	2	56	17	0	5	1	0	0	0	0	81	6	18	3	0	1	0	0	0	0	0	28	2	48	4	0	3	0	0	0	0	0	57	216
7:45	10	33	13	0	1	0	0	0	0	0	57	5	93	15	0	3	1	0	0	0	0	117	5	23	2	0	0	0	0	0	0	0	30	9	60	10	0	5	0	0	0	0	0	84	288
8:00	15	33	8	0	1	0	0	0	0	0	57	3	73	19	0	2	0	0	0	0	0	97	4	26	4	0	0	0	0	0	0	0	34	6	57	10	1	5	0	0	0	0	0	79	267
8:15	7	20	9	0	1	0	0	0	0	0	37	3	75	14	0	6	0	0	0	0	0	98	3	19	9	1	2	1	0	0	0	0	35	6	102	7	1	3	1	0	0	0	0	120	290
8:30	13	23	5	1	1	0	0	0	0	1	44	2	66	16	1	6	0	0	0	0	0	91	4	16	3	0	0	0	0	0	0	0	23	5	69	4	0	2	0	0	0	0	0	80	238
8:45	8	33	5	0	2	0	0	0	0	0	48	5	61	12	0	2	1	0	0	0	1	82	7	25	6	0	3	0	0	0	0	0	41	7	118	8	0	5	0	0	0	0	0	138	309
MD																																													
11:00	12	17	14	0	1	0	0	0	0	0	44	5	87	16	1	5	0	0	0	0	0	114	5	23	4	0	1	0	0	0	0	0	33	10	75	5	0	2	0	0	0	0	0	92	283
11:15	9	20	11	0	0	0	0	0	0	0	40	3	73	17	1	3	0	0	0	0	0	97	3	19	7	0	0	1	0	0	0	0	30	7	80	8	0	3	1	0	0	0	1	100	267
11:30	22	24	13	0	0	1	0	0	0	0	60	2	73	24	0	2	0	0	0	0	0	101	2	22	6	0	2	0	0	0	0	0	32	11	74	8	0	3	0	0	0	0	0	96	289
11:45	14	23	16	0	1	0	0	0	0	1	55	4	75	19	0	4	0	0	0	0	0	102	4	21	6	0	2	0	0	0	0	0	33	12	82	2	0	1	0	0	0	0	0	97	287
12:00	14	20	14	0	2	0	0	0	0	1	51	2	102	20	0	3	2	0	0	0	0	129	4	24	4	0	1	1	0	0	1	0	35	12	85	8	0	3	0	0	0	0	0	108	323
12:15	13	28	18	1	2	1	0	0	0	1	64	3	95	17	0	3	0	0	0	0	0	118	7	33	3	0	1	0	0	0	0	2	46	9	73	2	0	2	0	0	0	0	1	87	315
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13:45	11	28	14	0	1	0	0	0	0	2	56	2	83	23	0	6	0	0	0	0	2	116	13	13	7	0	2	0	0	0	0	1	36	12	96	10	0	5	0	0	0	0	1	124	332
PM																																													
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16:00	20	32	29	0	0	0	0	0	0	0	81	6	138	23	0	4	2	0	0	0	0	173	4	36	8	0	1	0	0	0	0	0	49	18	99	8	0	3	0	0	0	0	2	130	433
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17:00	28	48	23	0	3	0	0	0	0	0	102	10	137	22	0	3	0	0	0	0	0	172	5	33	7	0	1	0	0	0	0	1	47	12	115	12	0	3	0	0	0	0	2	144	465
17:15	30	50	25	0	2	1	0	0	0	0	108	11	117	19	0	3	0	0	0	0	0	150	3	37	7	0	1	0	0	0	0	1	49	23	117	11	0	2	1	0	0	0	0	154	461
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TRANS-PLAN
transportation engineering

Turning Movement Count Diagram

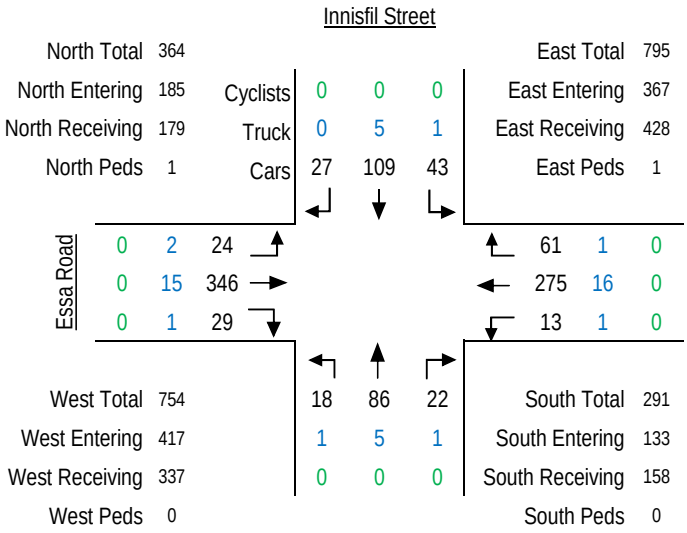
Intersection: Essa Road & Innisfil Street

Intersection ID:

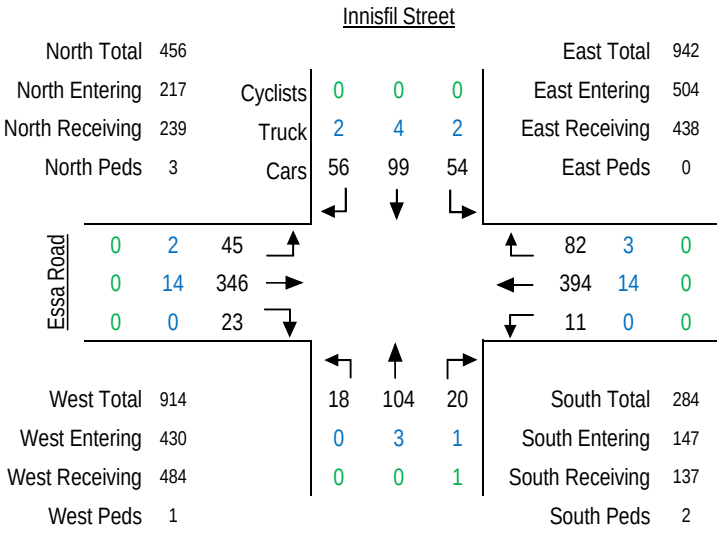
Municipality: Barrie, Ontario

Date: Thursday February 14, 2019

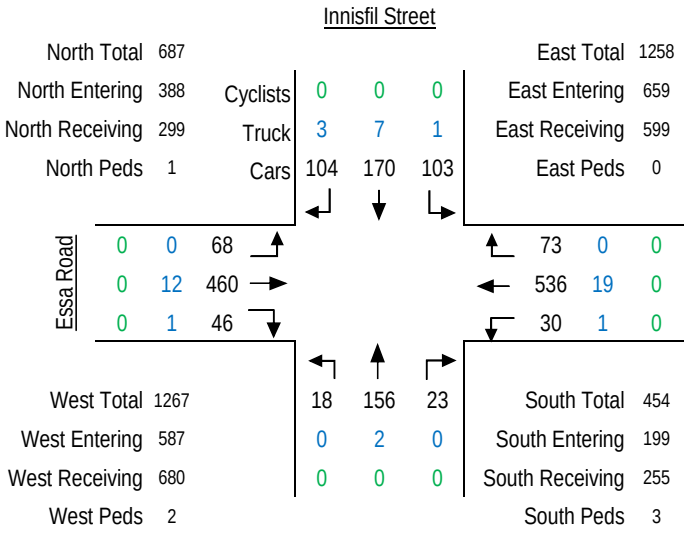
AM Peak Hour: 8:00 to 9:00



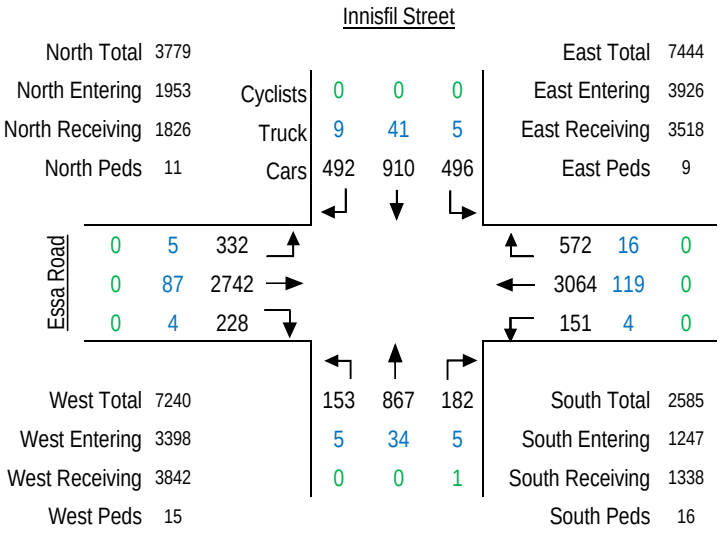
MD Peak Hour: 12:00 to 13:00



PM Peak Hour: 16:30 to 17:30



Total 8-Hour Count



Trans-Plan Transportation Inc.

Site ID Code:
Intersection Location: Tiffin Street and Innisfil Street
Municipality: Barrie, Ontario
Count Date: Wednesday, May 31 2017
Weather and Temperature: Clear 20 Degrees
Surveyor: TP

AM	NORTH APPROACH											EAST APPROACH											SOUTH APPROACH											WEST APPROACH											Grand Total
	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	CAR			TRUCKS			CYCLISTS			Peds	Total	
	L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			L	T	R	L	T	R	L	T	R			
7:15	4	22	5	0	0	0	0	0	0	0	31	1	36	6	0	4	0	0	0	0	0	47	10	18	0	0	1	0	0	0	0	0	29	5	39	8	0	2	1	0	0	0	1	56	163
7:30	5	18	4	0	0	0	0	0	0	1	28	3	44	7	0	5	0	0	1	0	0	60	12	19	0	0	0	0	0	0	0	0	31	6	41	10	0	1	0	0	0	0	2	60	179
7:45	4	44	6	0	0	0	0	0	0	1	55	1	63	8	0	5	0	0	1	0	0	78	17	35	0	0	1	0	0	0	1	0	54	8	55	14	0	5	1	0	0	0	1	84	271
8:00	7	26	8	0	1	0	0	1	0	2	45	1	75	8	0	6	0	0	0	0	1	91	11	27	1	0	1	0	0	0	0	2	42	12	79	9	0	4	0	0	2	0	1	107	285
8:15	4	36	6	0	0	0	1	0	0	0	47	3	53	4	0	1	0	0	0	0	1	62	16	31	1	1	0	0	0	1	0	0	50	8	63	21	0	4	2	0	0	0	0	98	257
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MD																																													
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13:45	6	84	13	0	5	2	0	1	0	1	111	10	34	11	0	0	0	0	1	0	1	56	3	51	12	0	5	0	0	0	0	1	71	12	44	10	0	0	1	0	0	0	0	67	305
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PM																																													
15:15	1	60	5	0	2	0	0	0	0	0	68	21	40	4	0	2	0	0	0	0	1	68	10	83	20	0	1	1	0	0	1	0	116	11	40	3	0	0	0	0	0	0	0	54	306
15:30	1	75	11	0	3	0	0	0	0	1	91	15	54	3	0	0	0	0	0	0	2	74	10	80	19	0	6	0	0	1	0	1	117	6	49	6	0	1	0	1	2	1	1	67	349
15:45	7	55	14	0	1	0	0	0	0	1	78	13	44	6	1	0	0	0	1	0	2	67	3	73	10	0	2	0	1	0	0	0	89	12	53	13	1	1	0	0	0	0	1	81	315
16:00	9	90	27	0	4	0	0	1	0	0	131	17	42	16	0	3	1	0	0	0	1	80	9	61	13	0	3	0	1	1	0	1	89	15	53	3	0	0	0	0	0	0	0	71	371
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17:00	10	107	18	0	1	0	1	1	0	1	139	8	54	6	0	0	0	0	1	0	2	71	2	85	6	0	4	0	0	0	0	2	99	23	84	6	0	1	0	0	0	0	2	116	425
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TRANS-PLAN
transportation engineering

Turning Movement Count Diagram

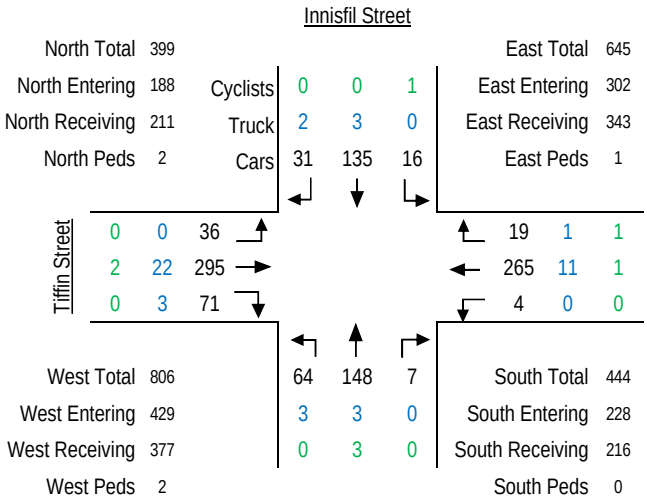
Intersection: Tiffin Street and Innisfil Street

Intersection ID:

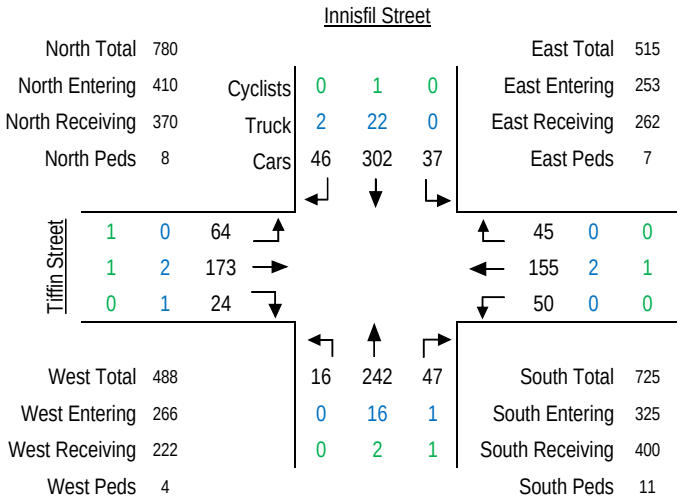
Municipality: Barrie, Ontario

Date: Wednesday, May 31 2017

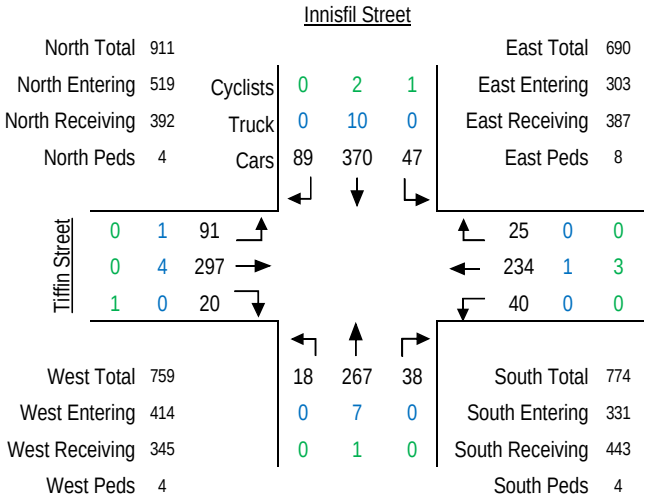
AM Peak Hour: 8:00 to 9:00



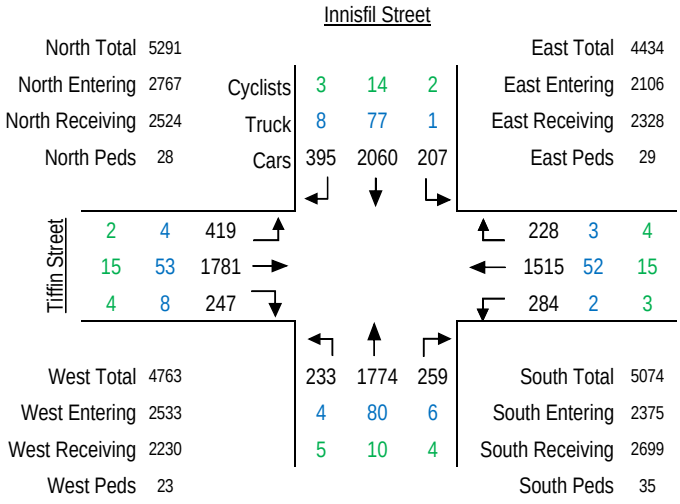
MD Peak Hour: 12:45 to 13:45



PM Peak Hour: 16:45 to 17:45



Total 8-Hour Count



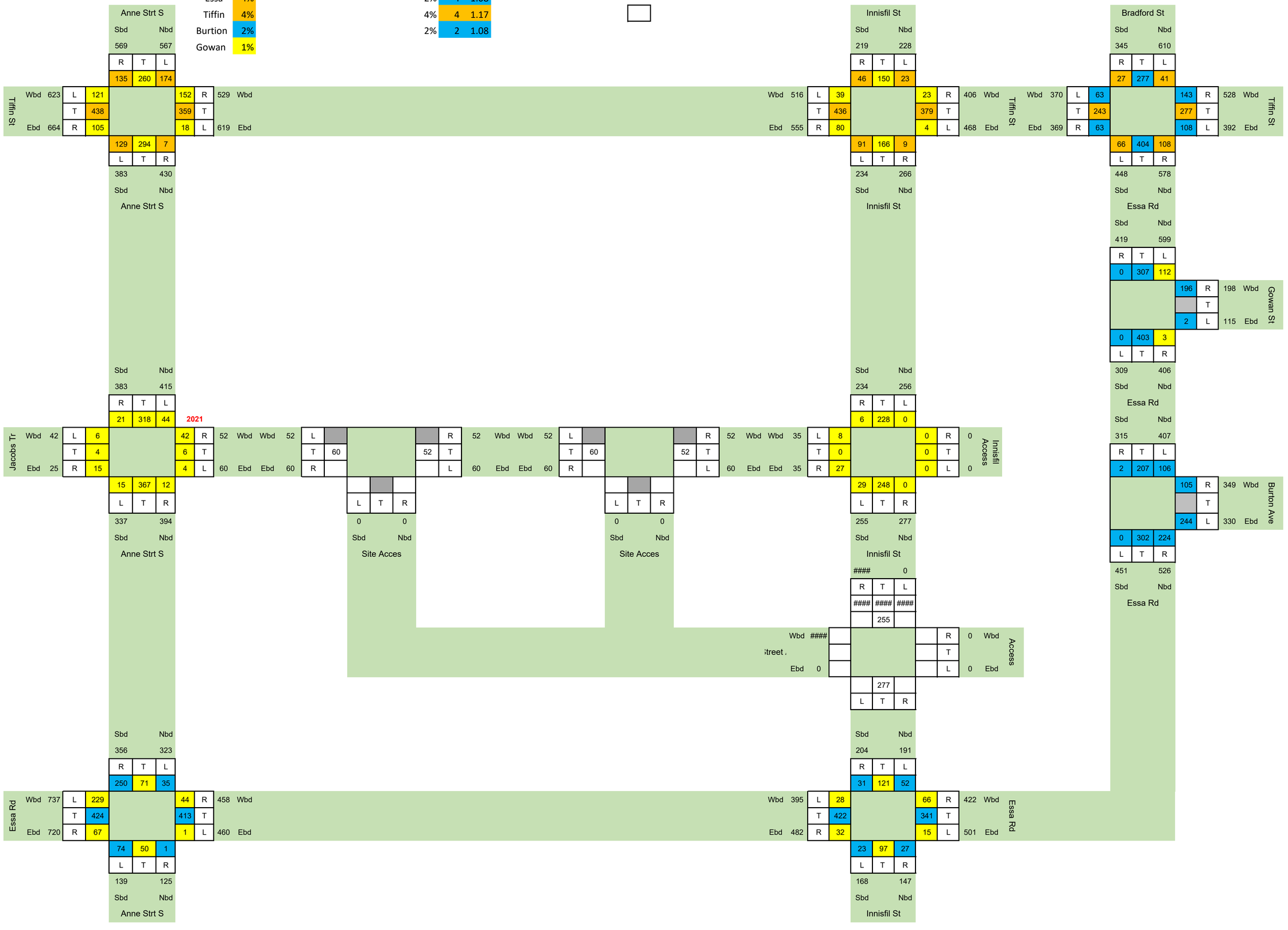
Appendix C

Background Traffic

AM Peak Hour

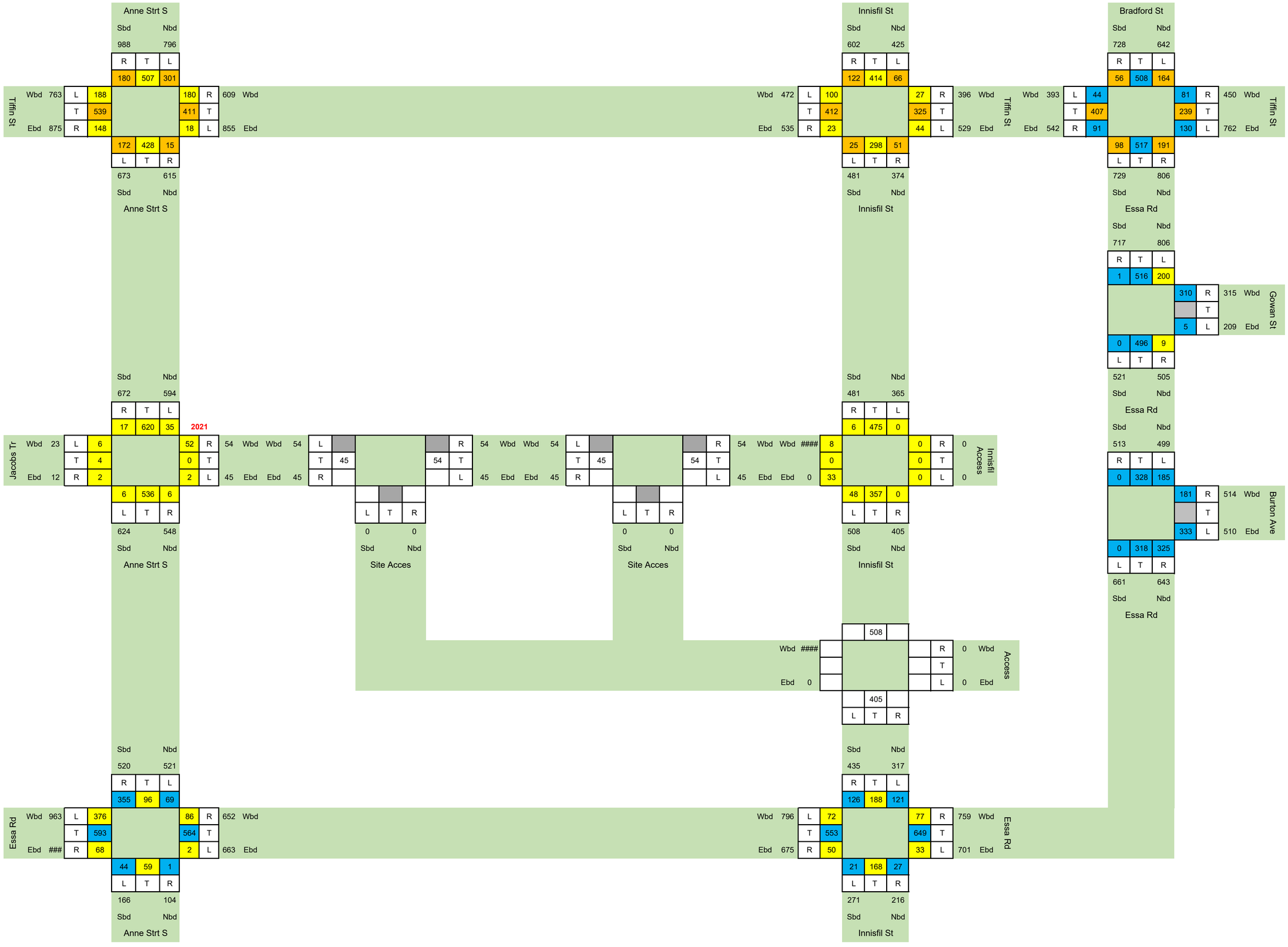
		yrs			2025	Diff
ANNE	1%					
Innisfil	1%					
Jacobs	1%	4	1.04	Growth 1%	2021	4
Essa	4%	4	1.04		2021	4
Tiffin	4%	4	1.08	2%		
Burtion	2%	4	1.17	4%		
Gowan	1%	2	1.08	2%		

Growth 2025



PM Peak Hour

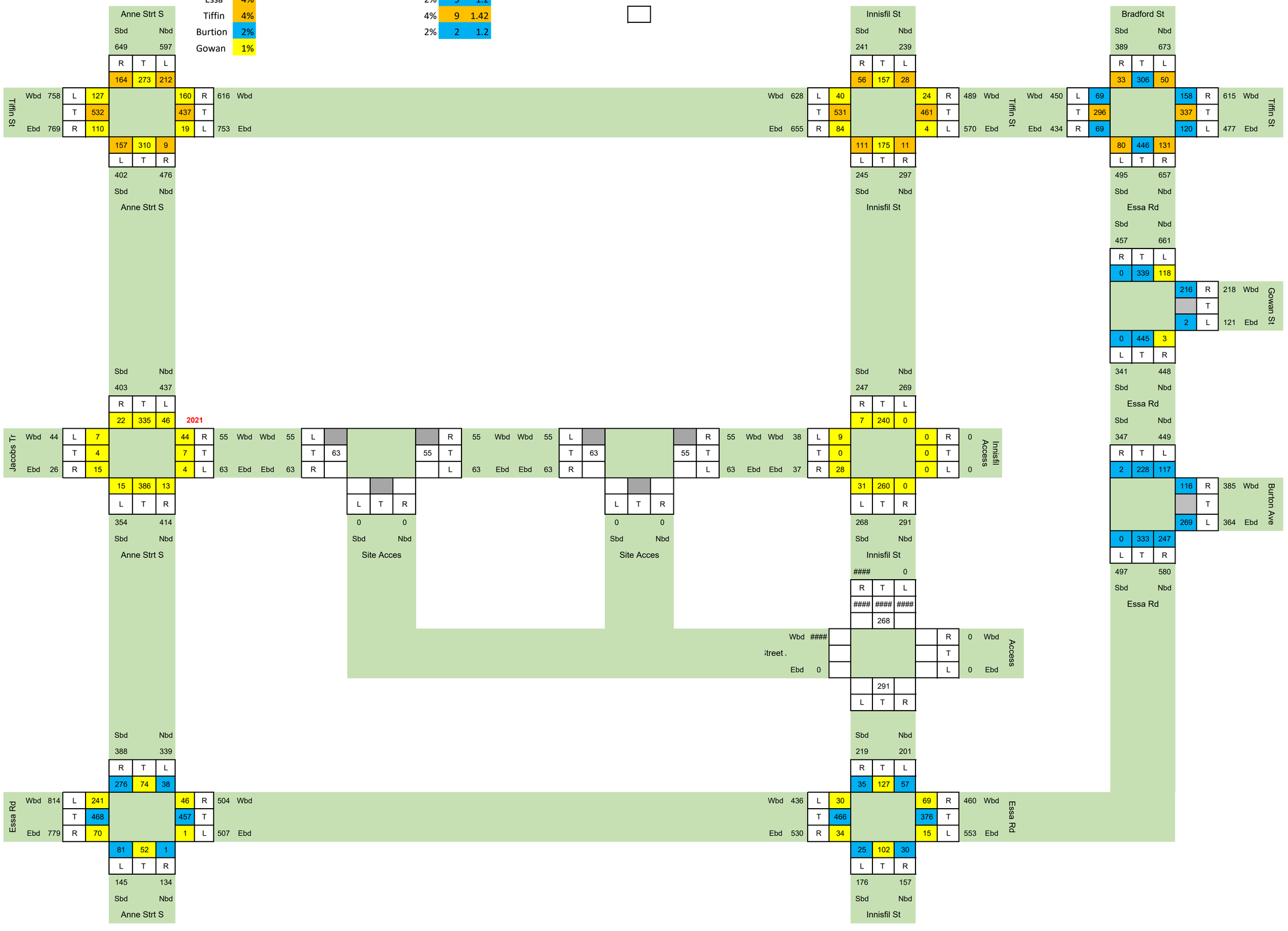
Growth 2025



AM Peak Hour

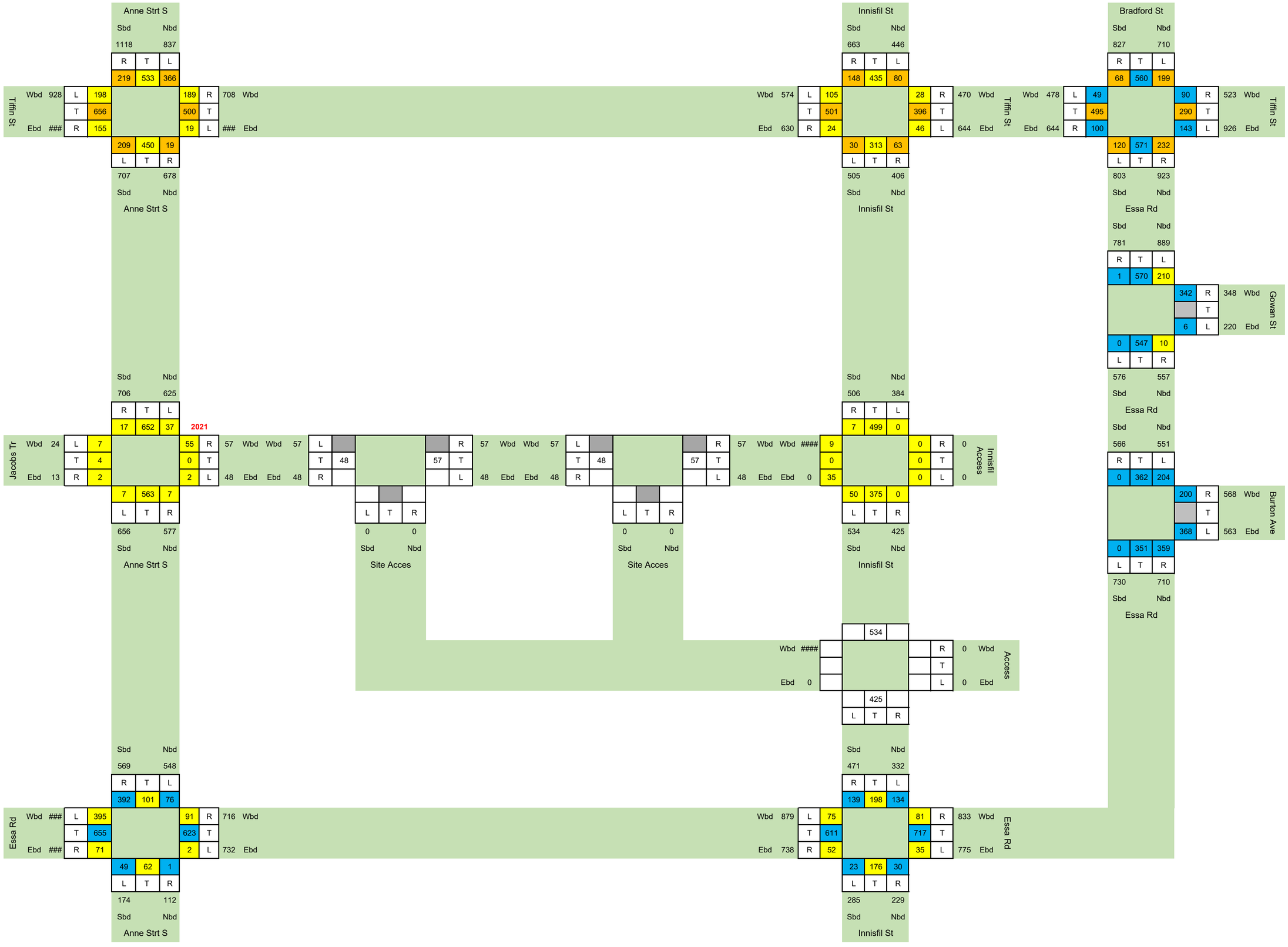
Growth 2030

			yrs		2030	Diff
ANNE	1%					
Innisfil	1%	Growth	1%	9 1.09	2021	9
Jacobs	1%			9 1.09	2021	9
Essa	4%		2%	9 1.2		
Tiffin	4%		4%	9 1.42		
Burtion	2%		2%	2 1.2		
Gowan	1%					



PM Peak Hour

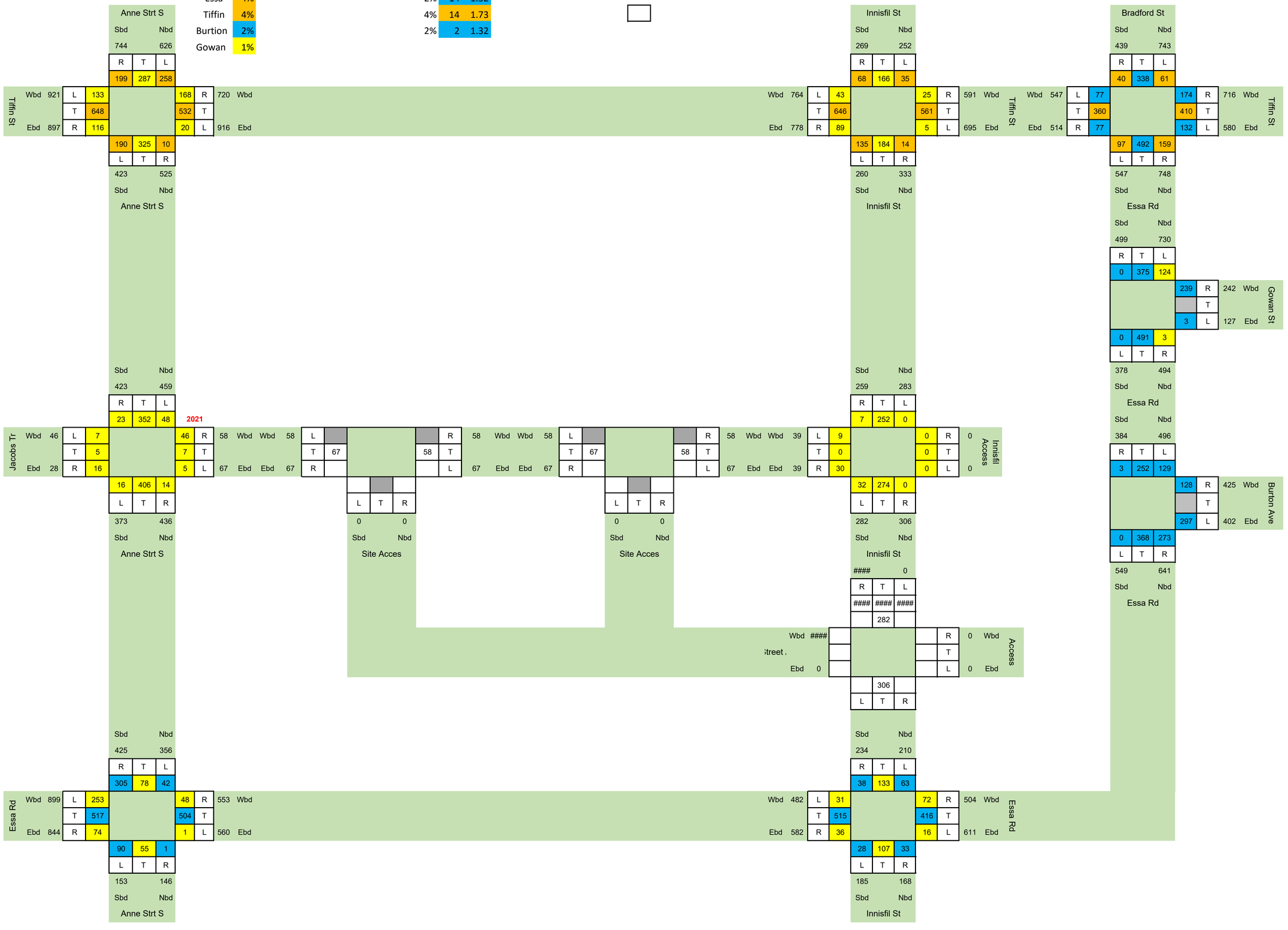
Growth 2030



AM Peak Hour

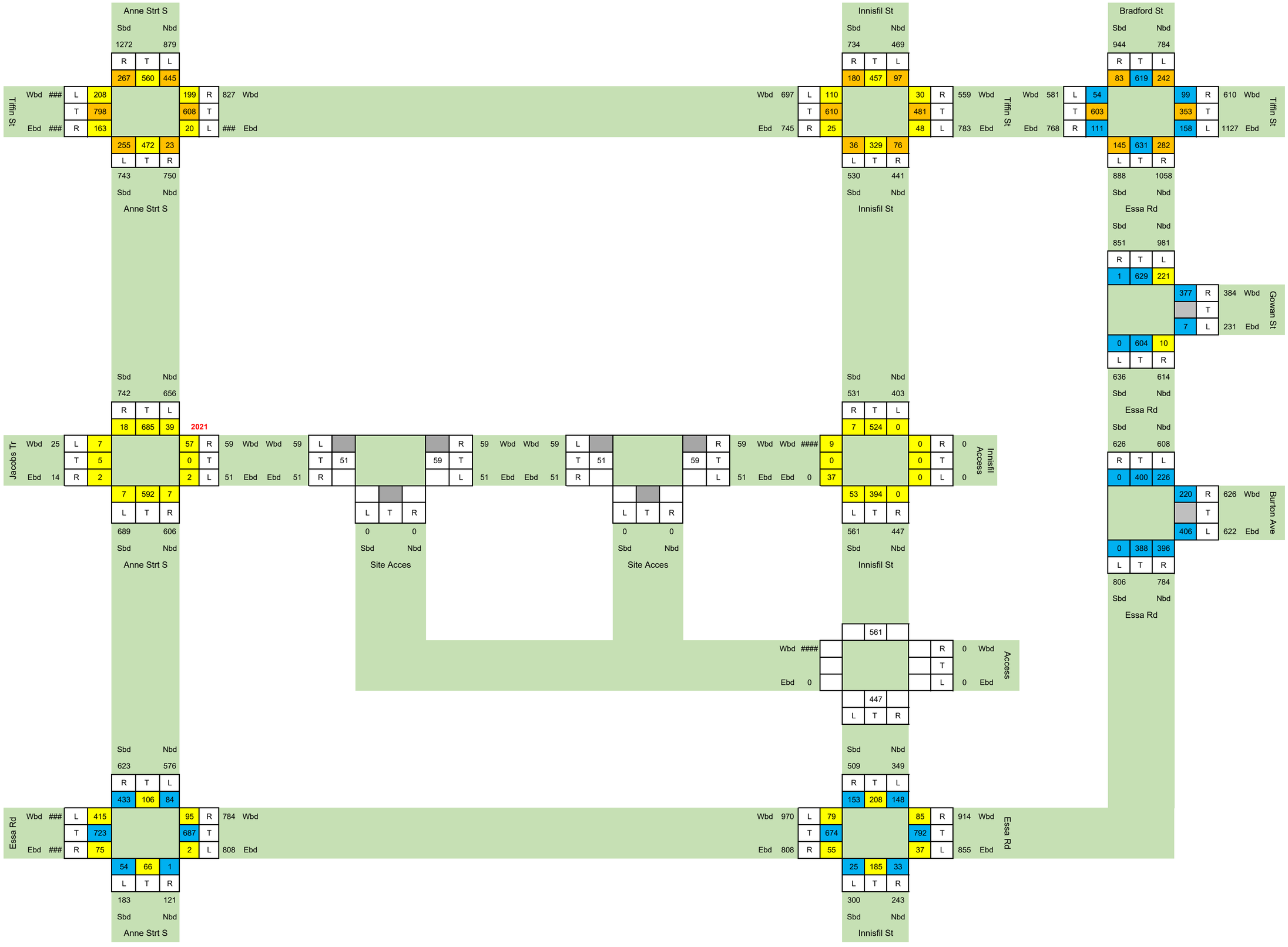
Growth 2035

ANNE	1%				2035	Diff
Innisfil	1%	Growth	1%	14 1.15	2021	14
Jacobs	1%			14 1.15	2021	14
Essa	4%		2%	14 1.32		
Tiffin	4%		4%	14 1.73		
Burtion	2%		2%	2 1.32		
Gowan	1%					



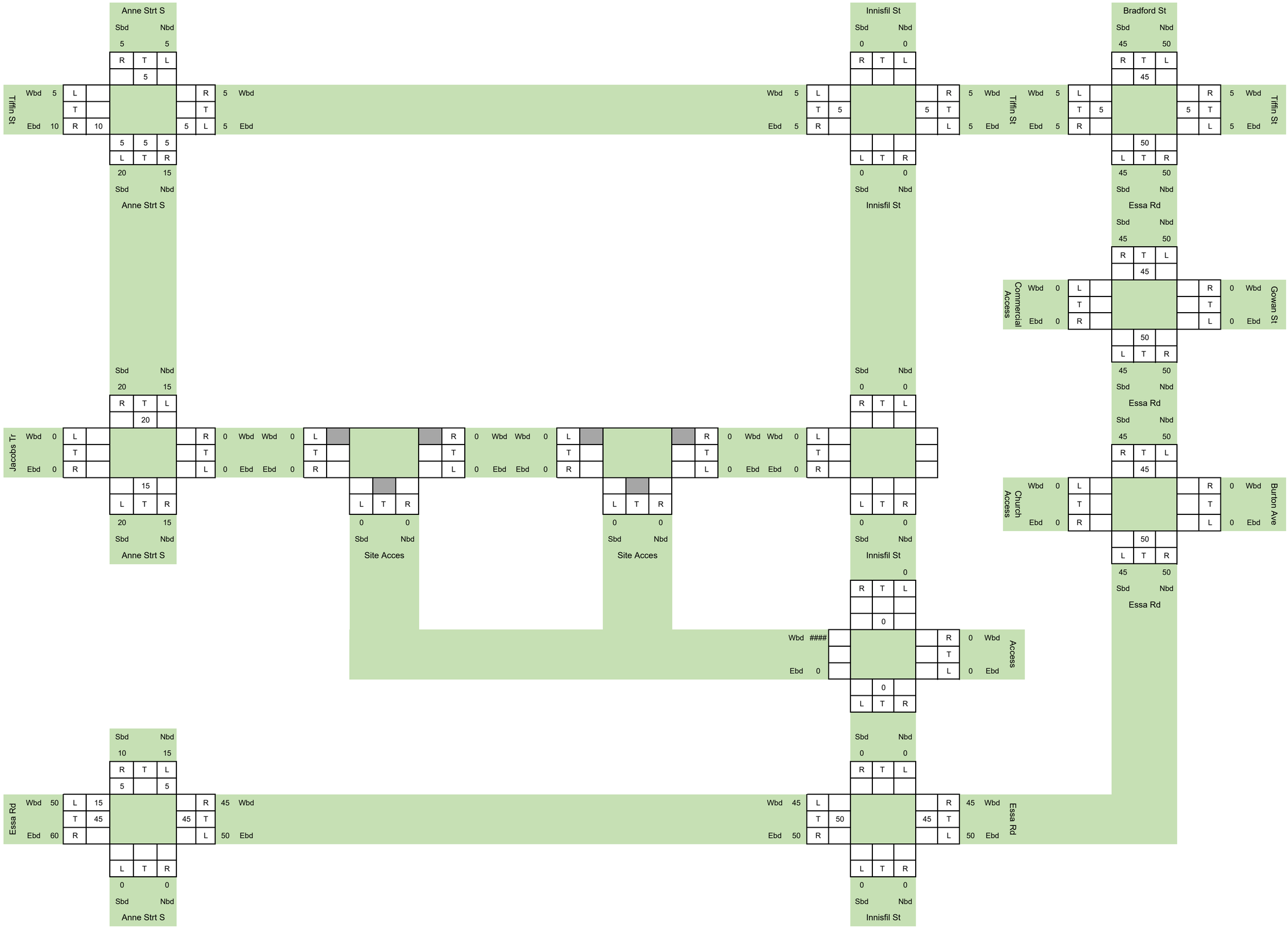
PM Peak Hour

Growth 2035



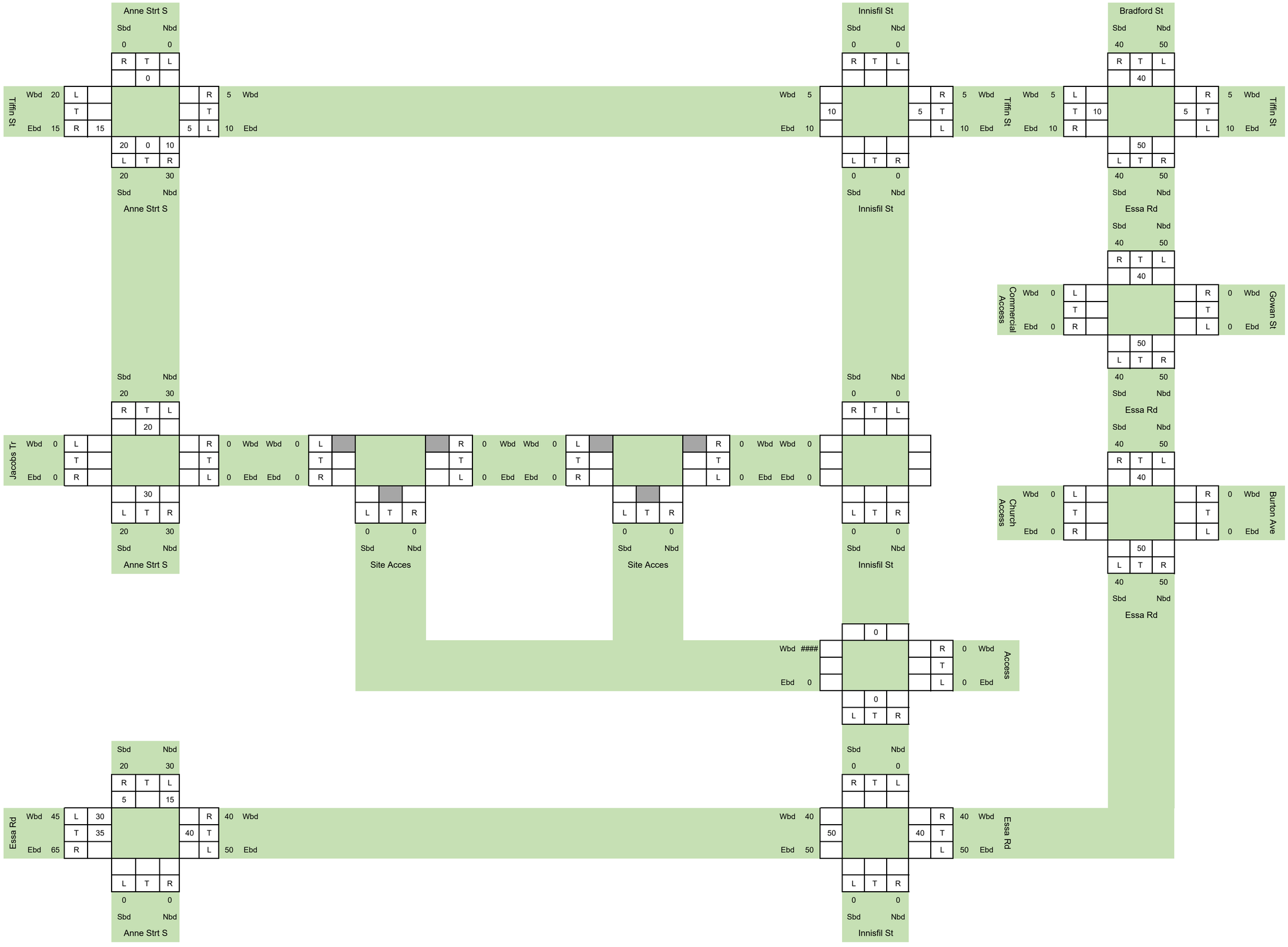
AM Peak Hour

199 ESSA



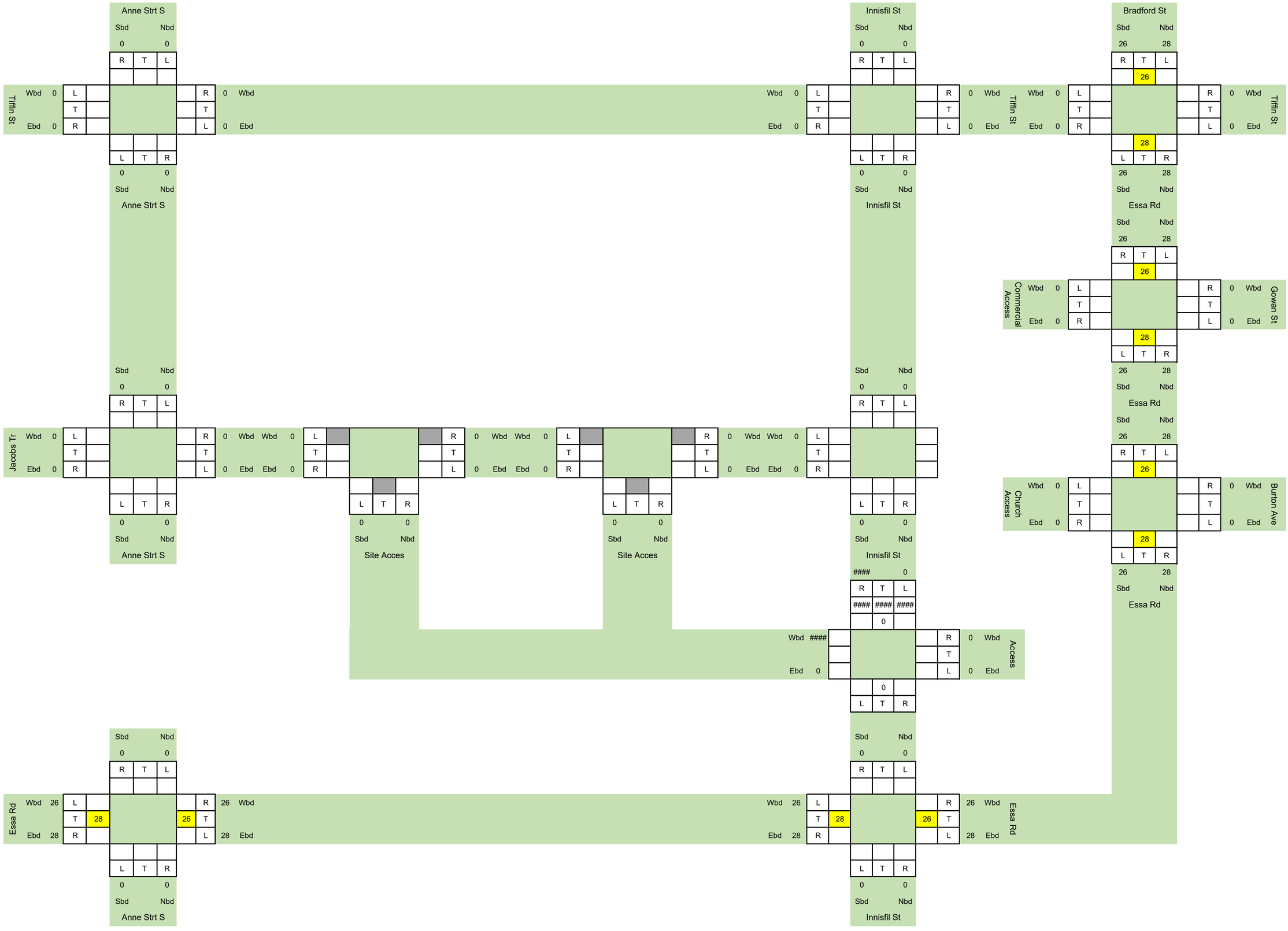
PM Peak Hour

199 ESSA



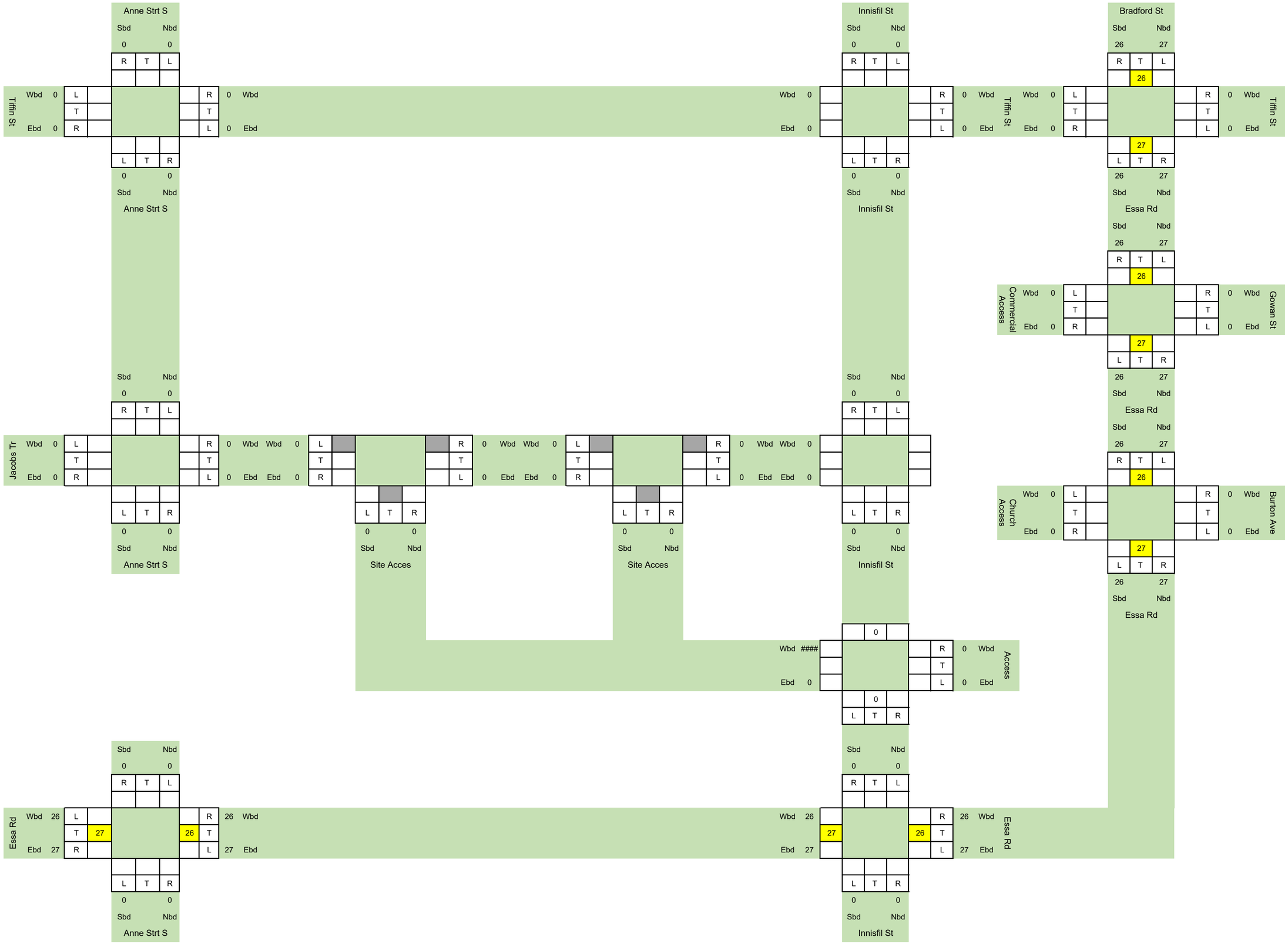
AM Peak Hour

220 Bradford



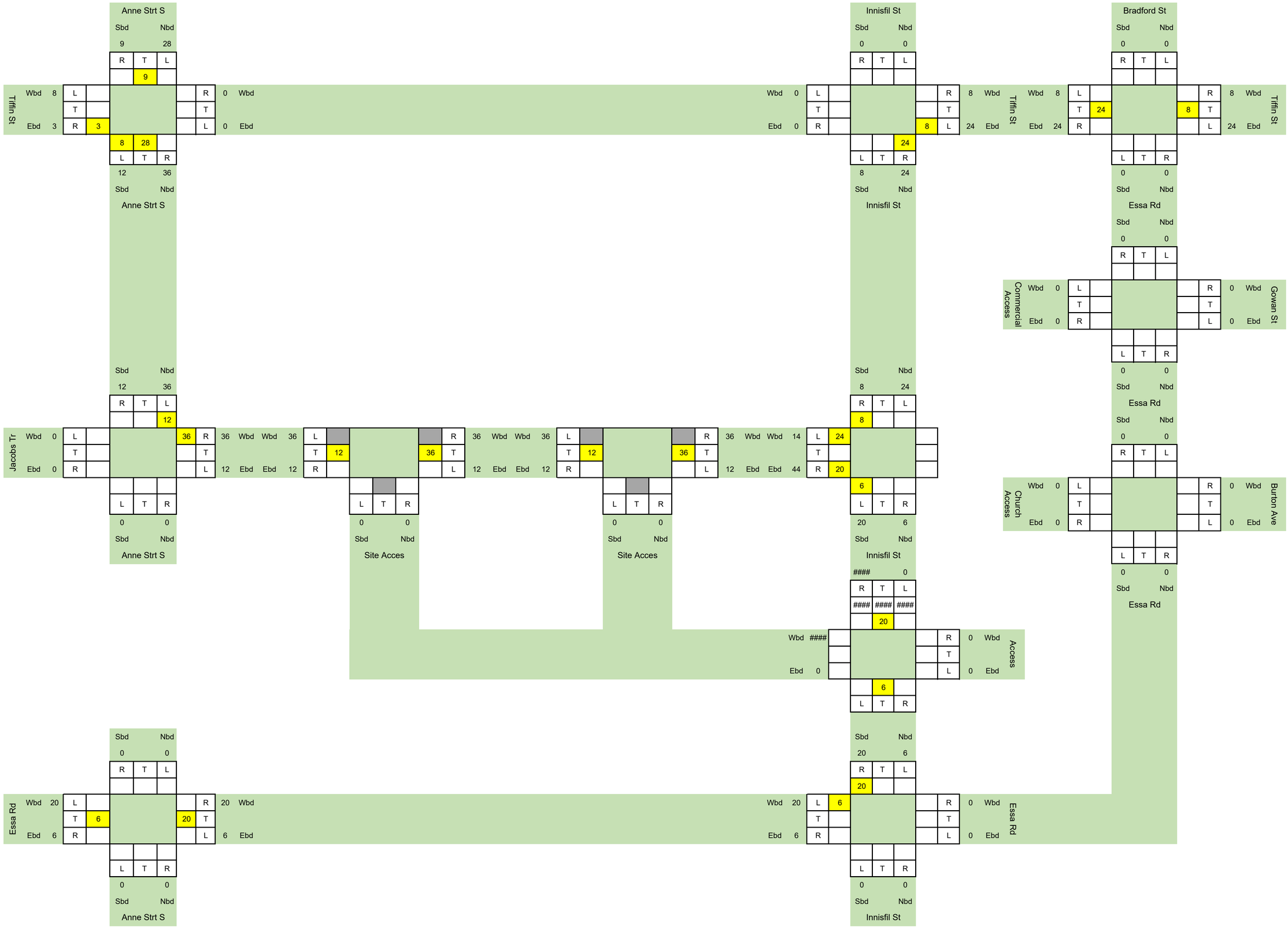
PM Peak Hour

220 Bradford



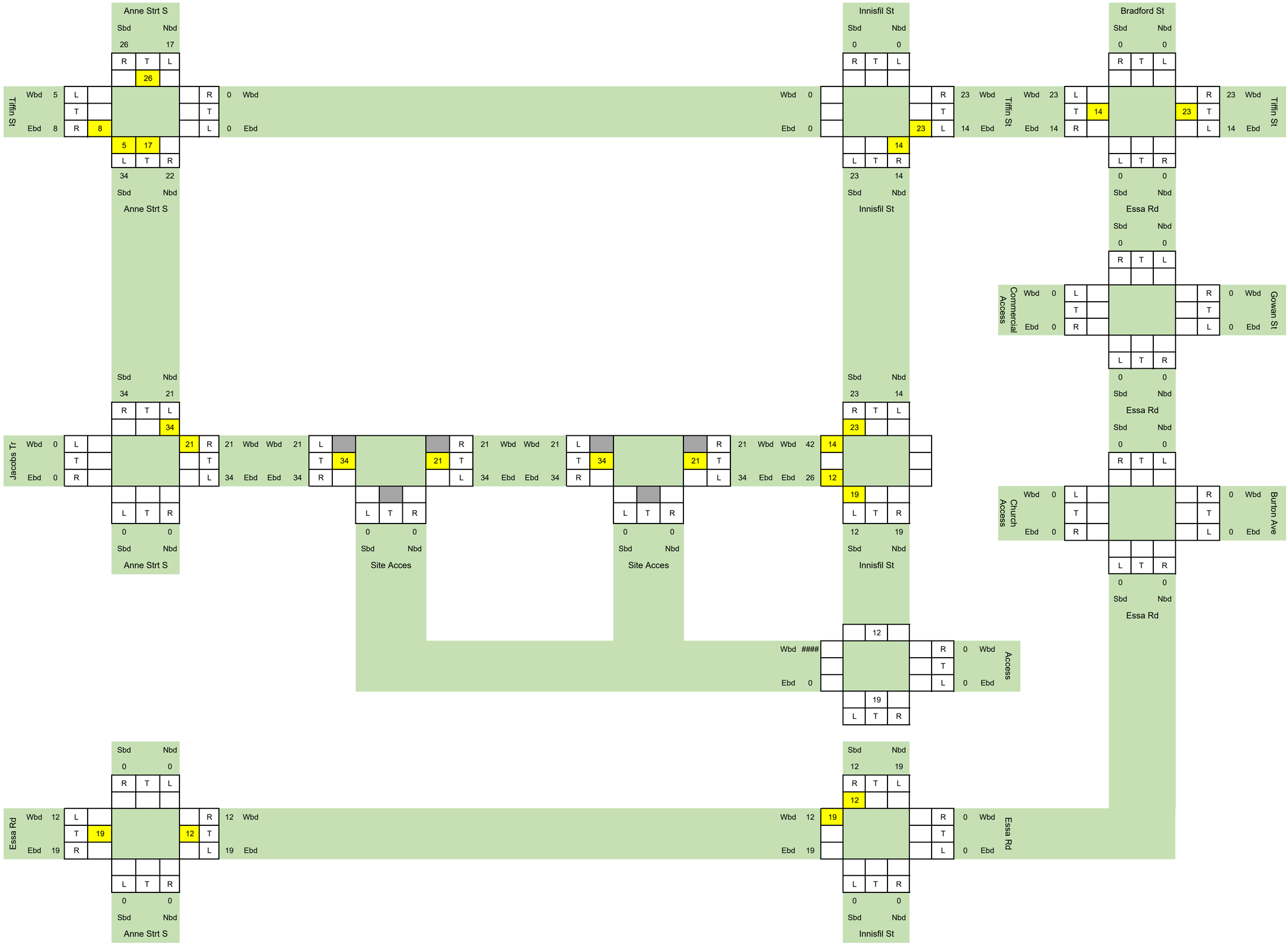
AM Peak Hour

272 Innisfil



PM Peak Hour

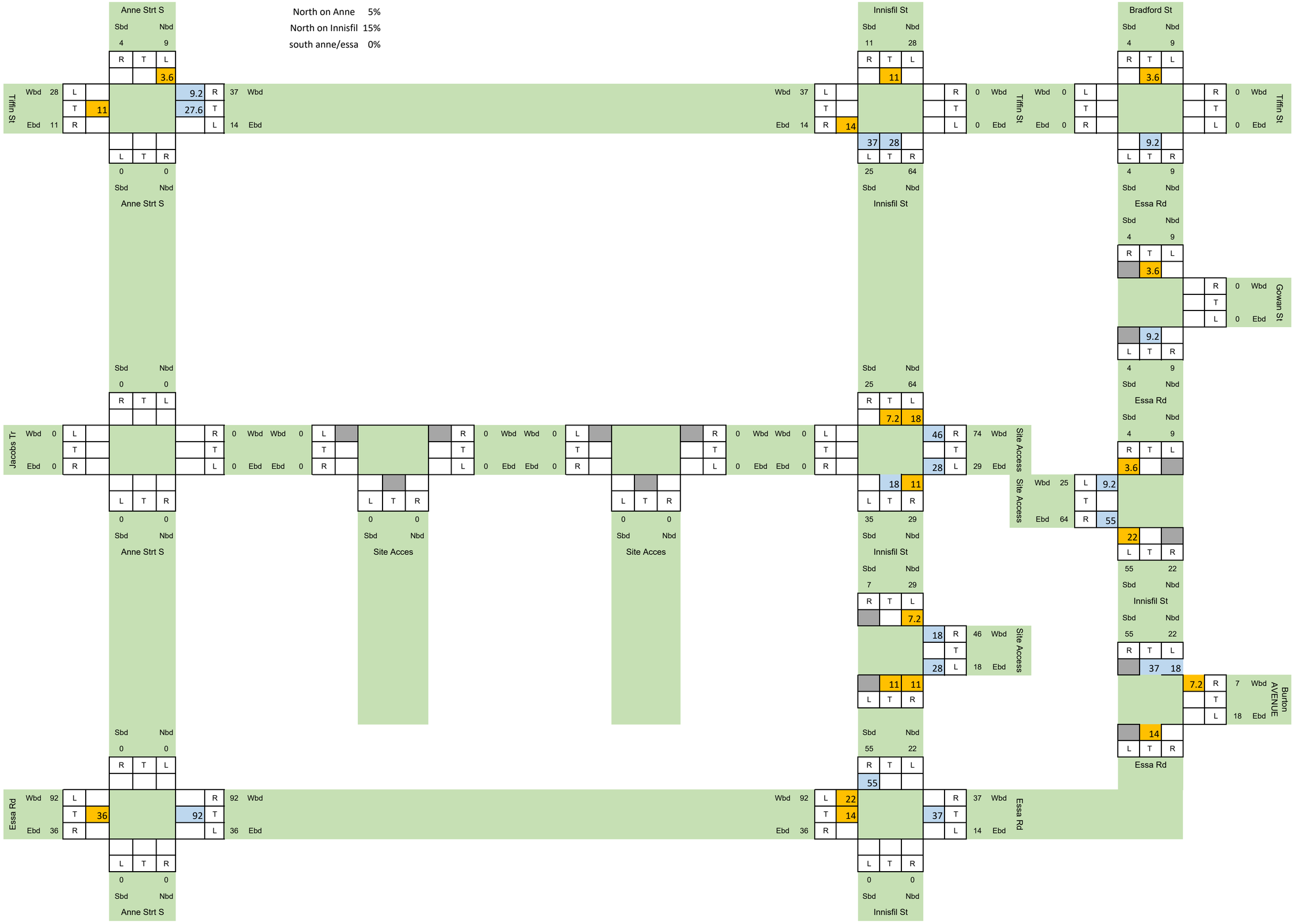
272 Innisfil



AM Peak Hour

West Essa	50%
East Essa	5%
East on Burton	10%
West on Tiffin	15%
North on Anne	5%
North on Innisfil	15%
south anne/essa	0%

43 Essa



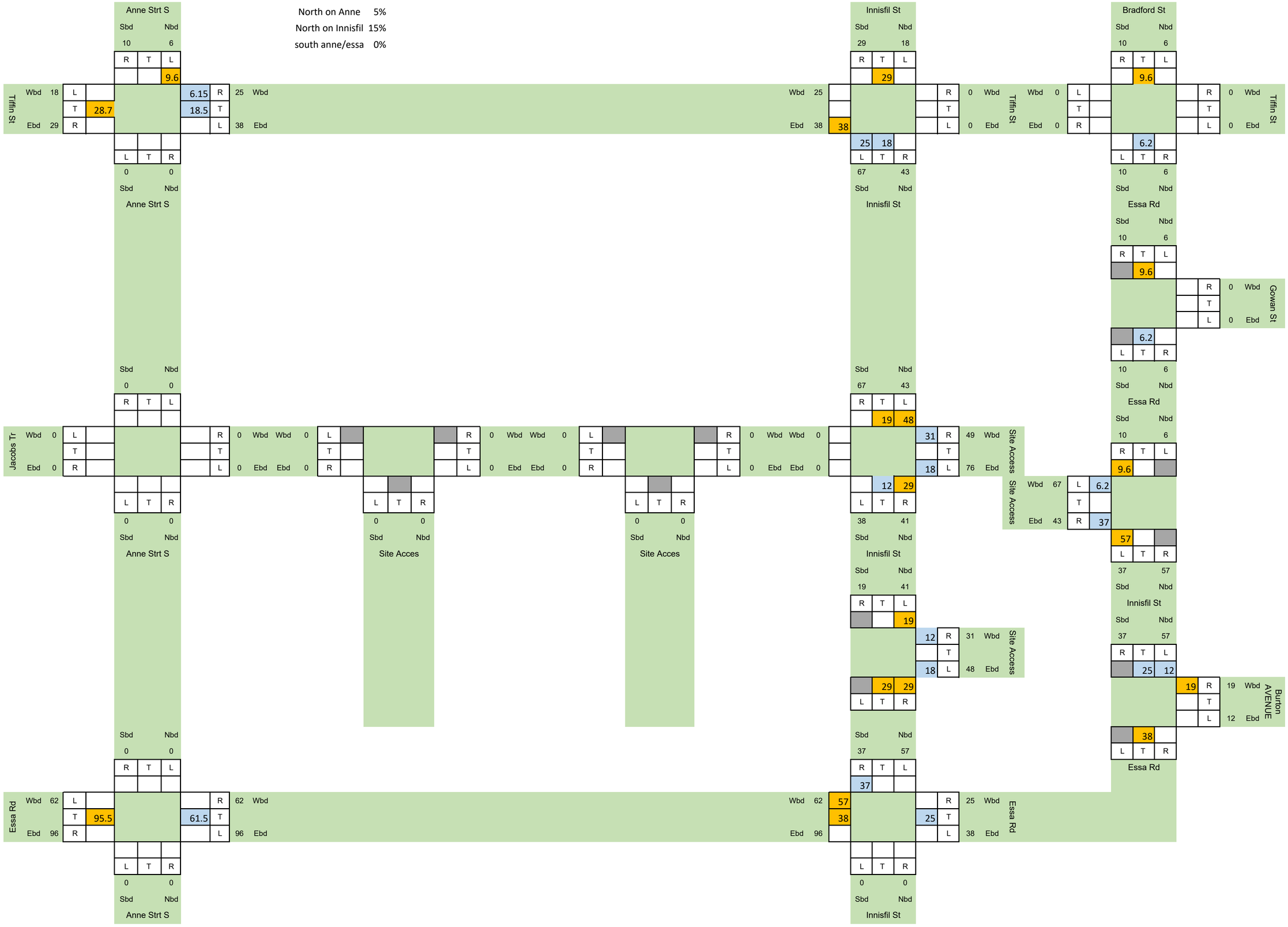
PM Peak Hour

43 Essa

1

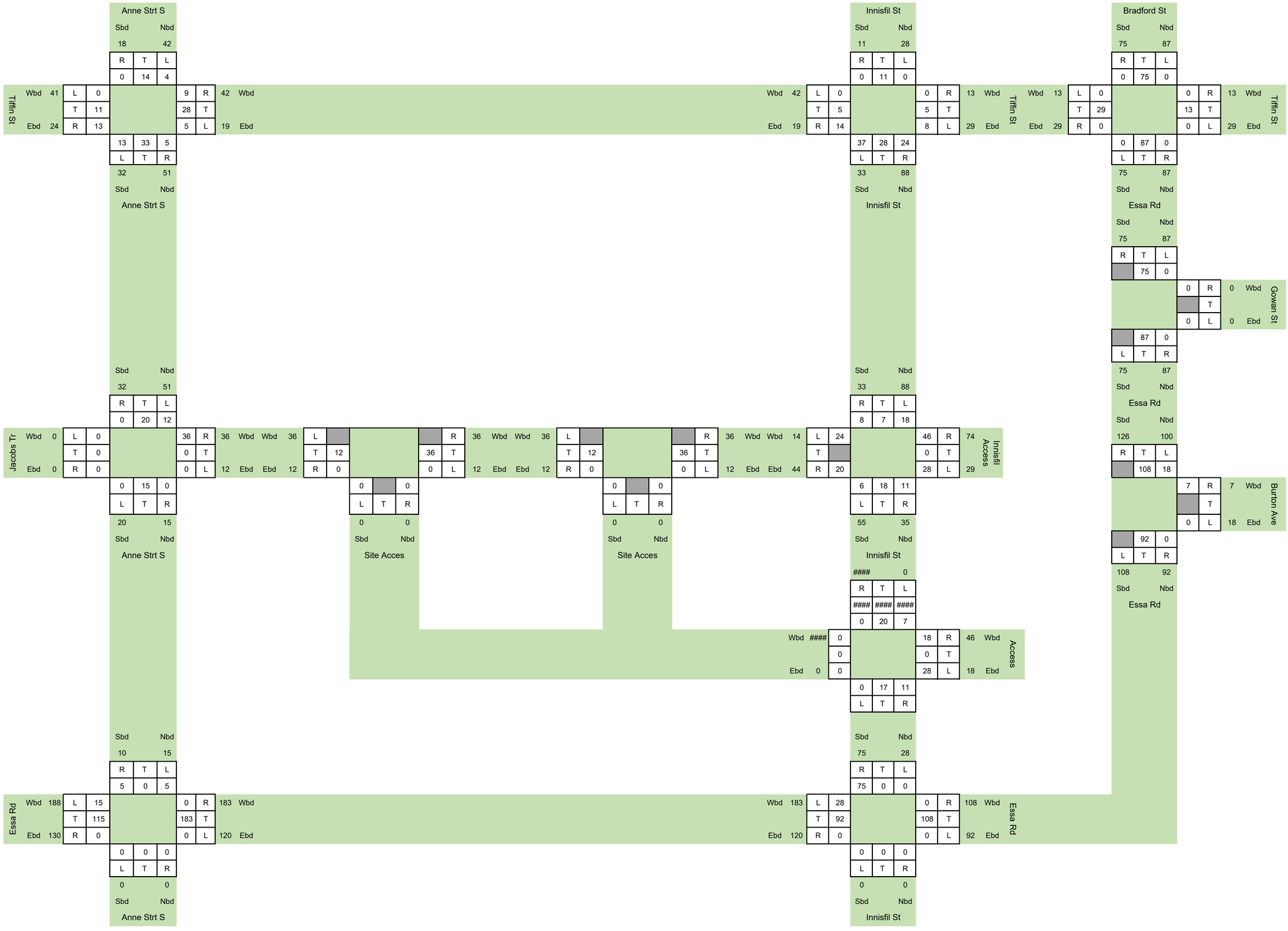
West Essa	50%
East Essa	5%
East on Burton	10%
West on Tiffin	15%
North on Anne	5%
North on Innisfil	15%
south anne/essa	0%

AM			PM		
IN	OUT	Total	IN	OUT	Total
72	184	256	191	123	314



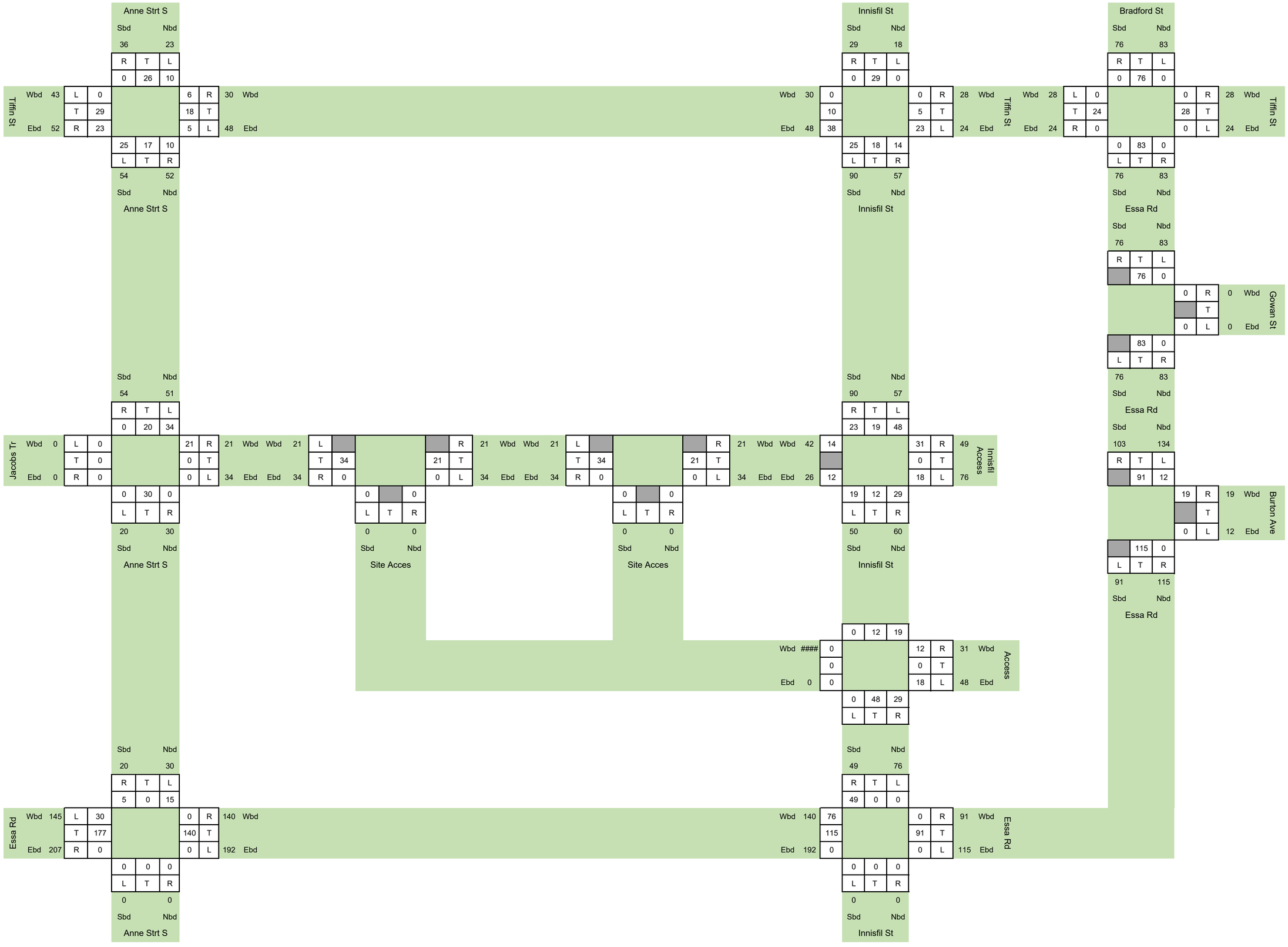
AM Peak Hour

Total Background



PM Peak Hour

Total Background



Appendix D

Trip Generation

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
222

LAND USE GROUP:
(200-299) Residential

LAND USE :
222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

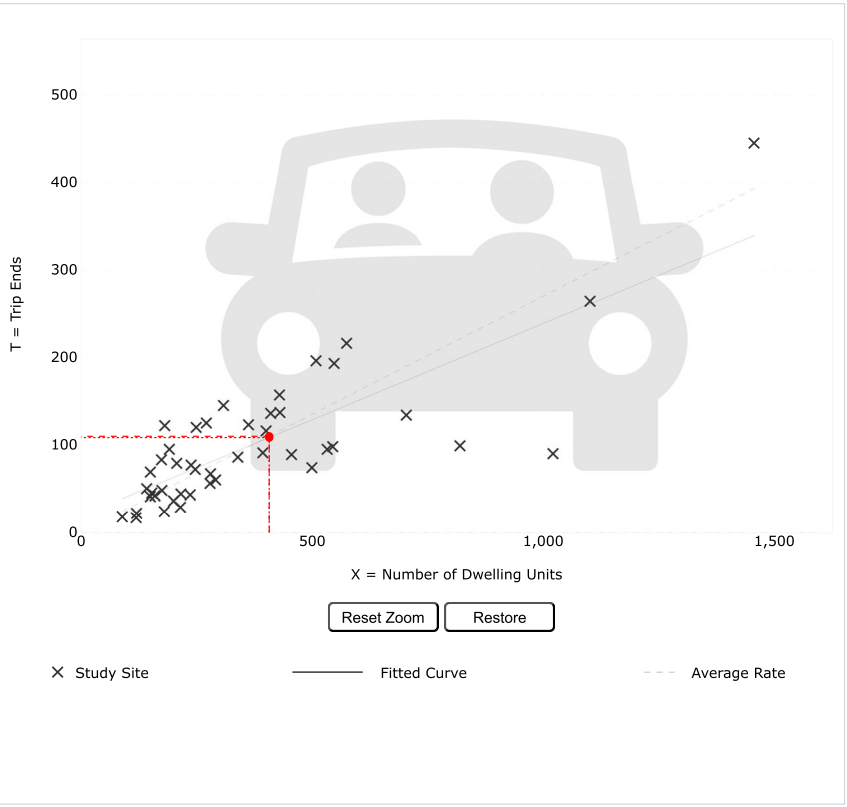
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic,

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
407 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (High-Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
45

Avg. Num. of Dwelling Units:
372

Average Rate:
0.27

Range of Rates:
0.09 - 0.67

Standard Deviation:
0.11

Fitted Curve Equation:
T = 0.22(X) + 18.85

R^2:
0.64

Directional Distribution:
26% entering, 74% exiting

Calculated Trip Ends:
Average Rate: 110 (Total), 29 (Entry), 81 (Exit)
Fitted Curve: 108 (Total), 28 (Entry), 80 (Exit)

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Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
222

LAND USE GROUP:
(200-299) Residential

LAND USE :
222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

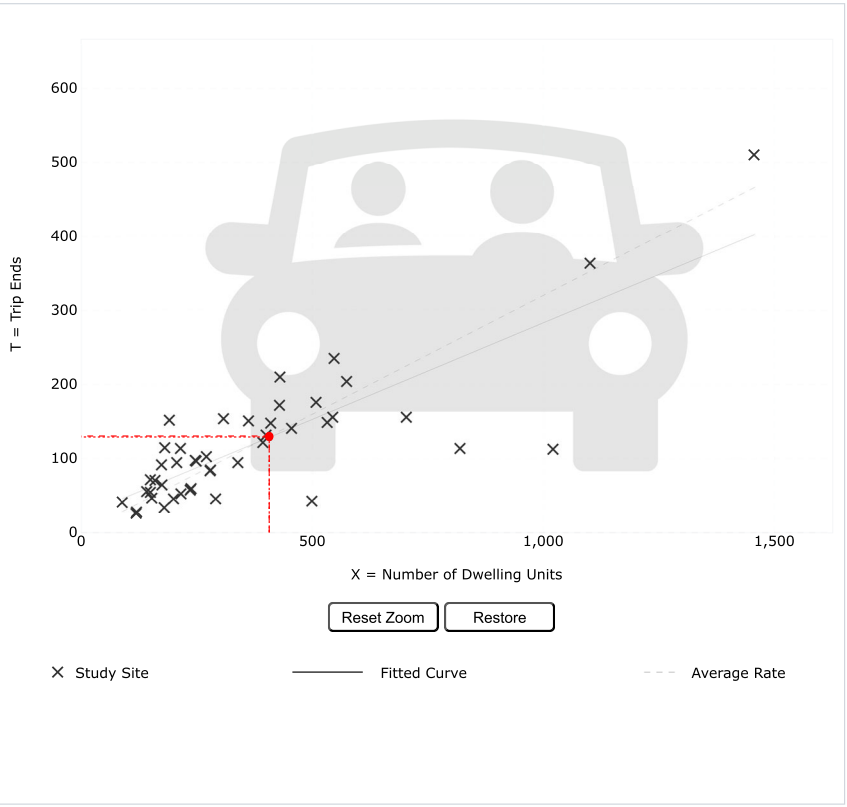
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic,

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
407 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (High-Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
45

Avg. Num. of Dwelling Units:
372

Average Rate:
0.32

Range of Rates:
0.09 - 0.80

Standard Deviation:
0.13

Fitted Curve Equation:
T = 0.26(X) + 23.12

R^2:
0.67

Directional Distribution:
62% entering, 38% exiting

Calculated Trip Ends:
Average Rate: 130 (Total), 81 (Entry), 49 (Exit)
Fitted Curve: 129 (Total), 80 (Entry), 49 (Exit)

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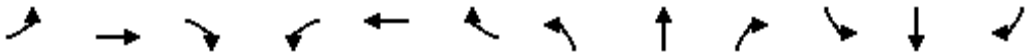
Appendix E

Capacity Analysis

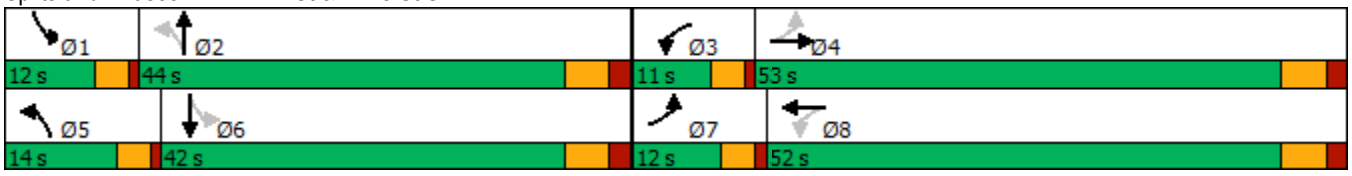


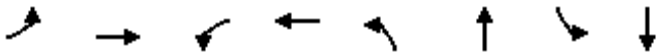
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	374	101	17	307	146	110	283	6	149	250	115
Future Volume (vph)	116	374	101	17	307	146	110	283	6	149	250	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		1.00	1.00		0.99	1.00		1.00	0.99	
Frt		0.968			0.951			0.997			0.953	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1749	0	1615	1748	0	1738	3404	0	1755	3243	0
Flt Permitted	0.192			0.285			0.456			0.570		
Satd. Flow (perm)	358	1749	0	484	1748	0	828	3404	0	1050	3243	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			23			2			65	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	120	386	104	18	316	151	113	292	6	154	258	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	490	0	18	467	0	113	298	0	154	377	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	12.0	53.0		11.0	52.0		14.0	44.0		12.0	42.0	
Total Split (%)	10.0%	44.2%		9.2%	43.3%		11.7%	36.7%		10.0%	35.0%	
Maximum Green (s)	8.0	47.0		7.0	46.0		10.0	38.0		8.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	45.4	40.5		41.7	32.6		50.6	38.5		46.2	36.3	
Actuated g/C Ratio	0.42	0.38		0.39	0.30		0.47	0.36		0.43	0.34	
v/c Ratio	0.47	0.73		0.07	0.85		0.24	0.24		0.31	0.33	
Control Delay	23.8	35.8		16.7	48.1		18.5	26.2		19.7	23.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.8	35.8		16.7	48.1		18.5	26.2		19.7	23.9	
LOS	C	D		B	D		B	C		B	C	
Approach Delay		33.5			47.0			24.1			22.7	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S



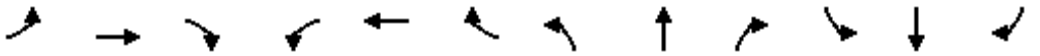


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	490	18	467	113	298	154	377
v/c Ratio	0.47	0.73	0.07	0.85	0.24	0.24	0.31	0.33
Control Delay	23.8	35.8	16.7	48.1	18.5	26.2	19.7	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	35.8	16.7	48.1	18.5	26.2	19.7	23.9
Queue Length 50th (m)	14.7	78.1	2.1	86.6	12.3	22.3	17.1	24.6
Queue Length 95th (m)	25.3	132.8	5.9	124.4	27.6	39.0	36.3	43.7
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	258	781	262	770	477	1225	507	1142
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	0.47	0.63	0.07	0.61	0.24	0.24	0.30	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	374	101	17	307	146	110	283	6	149	250	115
Future Volume (vph)	116	374	101	17	307	146	110	283	6	149	250	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.97		1.00	0.95		1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	1749		1615	1749		1733	3404		1753	3243	
Flt Permitted	0.19	1.00		0.28	1.00		0.46	1.00		0.57	1.00	
Satd. Flow (perm)	357	1749		484	1749		831	3404		1051	3243	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	120	386	104	18	316	151	113	292	6	154	258	119
RTOR Reduction (vph)	0	8	0	0	16	0	0	1	0	0	43	0
Lane Group Flow (vph)	120	482	0	18	451	0	113	297	0	154	334	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	47.1	40.5		37.8	35.2		48.6	38.5		44.2	36.3	
Effective Green, g (s)	47.1	40.5		37.8	35.2		48.6	38.5		44.2	36.3	
Actuated g/C Ratio	0.43	0.37		0.35	0.32		0.44	0.35		0.40	0.33	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	646		193	562		452	1196		474	1075	
v/s Ratio Prot	c0.03	c0.28		0.00	c0.26		c0.02	0.09		c0.02	0.10	
v/s Ratio Perm	0.17			0.03			0.09			c0.11		
v/c Ratio	0.47	0.75		0.09	0.80		0.25	0.25		0.32	0.31	
Uniform Delay, d1	22.1	30.0		24.7	34.0		18.3	25.2		21.3	27.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	4.7		0.2	8.1		0.3	0.5		0.4	0.8	
Delay (s)	23.5	34.7		24.9	42.1		18.6	25.7		21.7	28.0	
Level of Service	C	C		C	D		B	C		C	C	
Approach Delay (s)		32.5			41.5			23.7			26.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	109.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

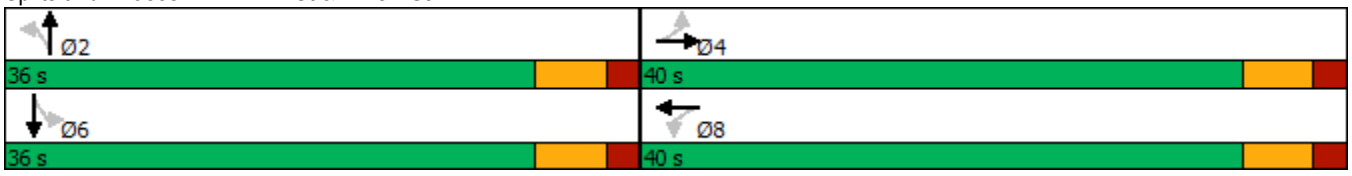


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	373	77	4	324	22	78	160	8	20	144	39
Future Volume (vph)	37	373	77	4	324	22	78	160	8	20	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			1.00	
Frt		0.974			0.991			0.996			0.974	
Flt Protected	0.950			0.950				0.984			0.995	
Satd. Flow (prot)	1825	1744	0	1825	1821	0	0	1811	0	0	1796	0
Flt Permitted	0.513			0.418				0.800			0.953	
Satd. Flow (perm)	984	1744	0	803	1821	0	0	1471	0	0	1720	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			6			3			19	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	41	410	85	4	356	24	86	176	9	22	158	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	495	0	4	380	0	0	271	0	0	223	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.2	34.2		34.2	34.2			15.9			15.9	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.26			0.26	
v/c Ratio	0.08	0.51		0.01	0.38			0.72			0.49	
Control Delay	8.6	11.8		8.2	10.2			31.9			21.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.6	11.8		8.2	10.2			31.9			21.4	
LOS	A	B		A	B			C			C	
Approach Delay		11.6			10.2			31.9			21.4	
Approach LOS		B			B			C			C	

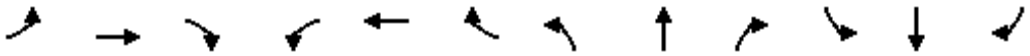
Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 62.1			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



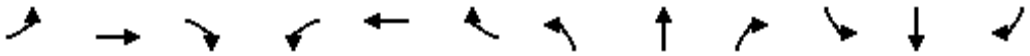
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	41	495	4	380	271	223
v/c Ratio	0.08	0.51	0.01	0.38	0.72	0.49
Control Delay	8.6	11.8	8.2	10.2	31.9	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	11.8	8.2	10.2	31.9	21.4
Queue Length 50th (m)	2.0	30.3	0.2	21.6	27.7	19.5
Queue Length 95th (m)	7.3	67.4	1.6	48.2	49.1	36.1
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	541	967	441	1004	715	845
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.51	0.01	0.38	0.38	0.26

Intersection Summary



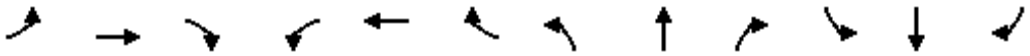
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	373	77	4	324	22	78	160	8	20	144	39
Future Volume (vph)	37	373	77	4	324	22	78	160	8	20	144	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			1.00			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1822	1744		1825	1820			1810			1797	
Flt Permitted	0.51	1.00		0.42	1.00			0.80			0.95	
Satd. Flow (perm)	985	1744		803	1820			1471			1720	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	41	410	85	4	356	24	86	176	9	22	158	43
RTOR Reduction (vph)	0	8	0	0	3	0	0	2	0	0	14	0
Lane Group Flow (vph)	41	487	0	4	377	0	0	269	0	0	209	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.2	34.2		34.2	34.2			15.9			15.9	
Effective Green, g (s)	34.2	34.2		34.2	34.2			15.9			15.9	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.26			0.26	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	542	960		442	1002			376			440	
v/s Ratio Prot		c0.28			0.21							
v/s Ratio Perm	0.04			0.00				c0.18			0.12	
v/c Ratio	0.08	0.51		0.01	0.38			0.71			0.47	
Uniform Delay, d1	6.5	8.7		6.3	7.9			21.0			19.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	1.9		0.0	1.1			6.3			0.8	
Delay (s)	6.8	10.6		6.3	9.0			27.4			20.4	
Level of Service	A	B		A	A			C			C	
Approach Delay (s)		10.3			9.0			27.4			20.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
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)	6	4	14	4	6	40	14	353	12	42	306	20
Future Volume (vph)	6	4	14	4	6	40	14	353	12	42	306	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921			0.891			0.996			0.993	
Flt Protected		0.988			0.996			0.998			0.994	
Satd. Flow (prot)	0	1652	0	0	1243	0	0	1751	0	0	1733	0
Flt Permitted		0.988			0.996			0.998			0.994	
Satd. Flow (perm)	0	1652	0	0	1243	0	0	1751	0	0	1733	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			279.5			548.1			132.7	
Travel Time (s)		8.1			21.0			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	6	4	14	4	6	41	14	364	12	43	315	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	51	0	0	390	0	0	379	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

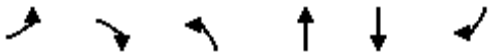
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	14	4	6	40	14	353	12	42	306	20
Future Volume (Veh/h)	6	4	14	4	6	40	14	353	12	42	306	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	6	4	14	4	6	41	14	364	12	43	315	21
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	860	822	332	826	826	371	342			376		
vC1, stage 1 conf vol	418	418		398	398							
vC2, stage 2 conf vol	443	404		428	428							
vCu, unblocked vol	792	749	206	753	753	371	217			376		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	99	99	98	99	99	93	99			96		
cM capacity (veh/h)	434	462	731	433	469	592	1084			1166		

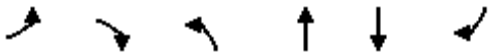
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	51	390	379
Volume Left	6	4	14	43
Volume Right	14	41	12	21
cSH	577	559	1084	1166
Volume to Capacity	0.04	0.09	0.01	0.04
Queue Length 95th (m)	1.0	2.3	0.3	0.9
Control Delay (s)	11.5	12.1	0.4	1.3
Lane LOS	B	B	A	A
Approach Delay (s)	11.5	12.1	0.4	1.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	26	28	238	219	6
Future Volume (vph)	8	26	28	238	219	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	0.896				0.996	
Flt Protected	0.989			0.995		
Satd. Flow (prot)	1702	0	0	1802	1826	0
Flt Permitted	0.989			0.995		
Satd. Flow (perm)	1702	0	0	1802	1826	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	279.5			300.5	111.6	
Travel Time (s)	21.0			22.5	8.4	
Confl. Peds. (#/hr)	1		6			6
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	7%	6%	4%	33%
Adj. Flow (vph)	10	33	36	305	281	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	341	289	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	26	28	238	219	6
Future Volume (Veh/h)	8	26	28	238	219	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	10	33	36	305	281	8
Pedestrians	6				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				301	112	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	669	291	295			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	633	239	243			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	98	96	97			
cM capacity (veh/h)	413	767	1234			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	43	341	289
Volume Left	10	36	0
Volume Right	33	0	8
cSH	640	1234	1700
Volume to Capacity	0.07	0.03	0.17
Queue Length 95th (m)	1.6	0.7	0.0
Control Delay (s)	11.0	1.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.0	1.1	0.0
Approach LOS	B		

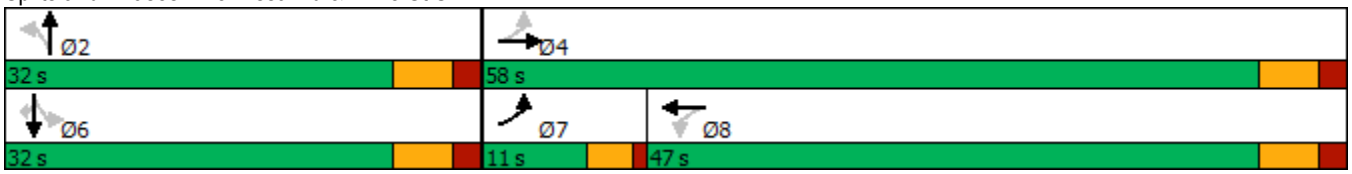
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	392	64	1	382	42	68	48	1	32	68	231
Future Volume (vph)	220	392	64	1	382	42	68	48	1	32	68	231
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		0.0	0.0		25.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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	0.99
Frt		0.986			0.985			0.999				0.850
Flt Protected		0.984						0.972			0.984	
Satd. Flow (prot)	0	3337	0	0	3446	0	0	1784	0	0	1823	1526
Flt Permitted		0.682			0.954			0.759			0.869	
Satd. Flow (perm)	0	2312	0	0	3287	0	0	1391	0	0	1607	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			17							251
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	239	426	70	1	415	46	74	52	1	35	74	251
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	735	0	0	462	0	0	127	0	0	109	251
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	58.0		47.0	47.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.2%	64.4%		52.2%	52.2%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	7.0	52.0		41.0	41.0		26.0	26.0		26.0	26.0	26.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)		52.1			52.1			12.7			12.7	12.7
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
v/c Ratio		0.47			0.21			0.55			0.41	0.55
Control Delay		7.2			5.0			39.0			33.4	9.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		7.2			5.0			39.0			33.4	9.0
LOS		A			A			D			C	A
Approach Delay		7.2			5.0			39.0			16.4	
Approach LOS		A			A			D			B	

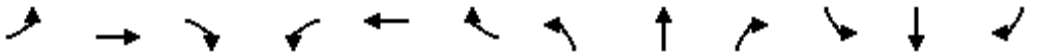
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.0		Intersection LOS: B	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S



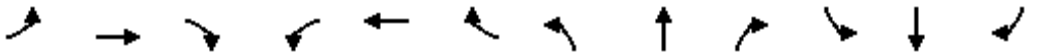
Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	735	462	127	109	251
v/c Ratio	0.47	0.21	0.55	0.41	0.55
Control Delay	7.2	5.0	39.0	33.4	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	5.0	39.0	33.4	9.0
Queue Length 50th (m)	20.7	10.3	17.1	14.3	0.0
Queue Length 95th (m)	39.4	19.6	32.9	28.2	17.6
Internal Link Dist (m)	80.6	313.1	99.5	524.1	
Turn Bay Length (m)					25.0
Base Capacity (vph)	1574	2235	471	545	676
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.21	0.27	0.20	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	392	64	1	382	42	68	48	1	32	68	231
Future Volume (vph)	220	392	64	1	382	42	68	48	1	32	68	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	6.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			1.00			1.00	0.85
Flt Protected		0.98			1.00			0.97			0.98	1.00
Satd. Flow (prot)		3335			3446			1782			1821	1505
Flt Permitted		0.68			0.95			0.76			0.87	1.00
Satd. Flow (perm)		2311			3289			1392			1608	1505
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)	239	426	70	1	415	46	74	52	1	35	74	251
RTOR Reduction (vph)	0	7	0	0	5	0	0	0	0	0	0	209
Lane Group Flow (vph)	0	728	0	0	457	0	0	127	0	0	109	42
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		52.1			52.1			12.7			12.7	12.7
Effective Green, g (s)		52.1			52.1			12.7			12.7	12.7
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1567			2231			230			265	248
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.14			c0.09			0.07	0.03
v/c Ratio		0.46			0.20			0.55			0.41	0.17
Uniform Delay, d1		5.8			4.6			29.4			28.7	27.5
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.2			0.2			2.9			1.0	0.3
Delay (s)		6.0			4.8			32.3			29.7	27.8
Level of Service		A			A			C			C	C
Approach Delay (s)		6.0			4.8			32.3			28.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

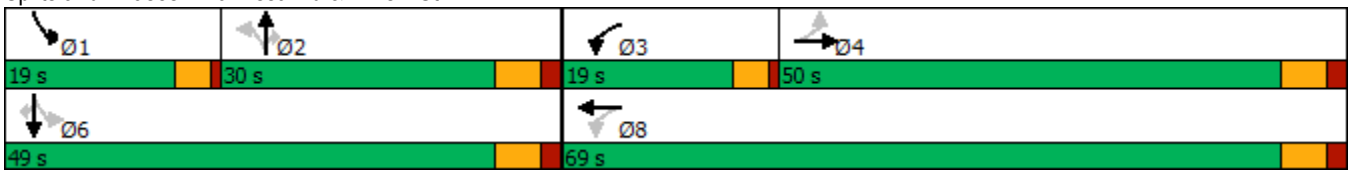


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	390	31	14	315	63	21	93	25	48	116	29
Future Volume (vph)	27	390	31	14	315	63	21	93	25	48	116	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.99		1.00	
Frt		0.990			0.976				0.850			0.850
Flt Protected		0.997			0.998			0.991			0.986	
Satd. Flow (prot)	0	3459	0	0	3388	0	0	1813	1570	0	1832	1633
Flt Permitted		0.908			0.931			0.918			0.867	
Satd. Flow (perm)	0	3150	0	0	3160	0	0	1680	1548	0	1610	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			29				102			65
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			300.5	
Travel Time (s)		25.3			14.7			10.0			22.5	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Adj. Flow (vph)	30	438	35	16	354	71	24	104	28	54	130	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	503	0	0	441	0	0	128	28	0	184	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
v/c Ratio		0.25			0.22			0.31	0.06		0.47	0.07
Control Delay		8.1			7.4			33.4	0.3		36.8	2.3
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		8.1			7.4			33.4	0.3		36.8	2.3
LOS		A			A			C	A		D	A
Approach Delay		8.1			7.4			27.4			31.6	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 99			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



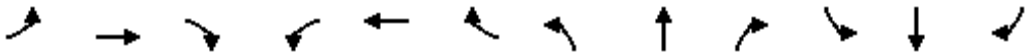
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	503	441	128	28	184	33
v/c Ratio	0.25	0.22	0.31	0.06	0.47	0.07
Control Delay	8.1	7.4	33.4	0.3	36.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	7.4	33.4	0.3	36.8	2.3
Queue Length 50th (m)	19.6	15.8	20.2	0.0	30.2	0.0
Queue Length 95th (m)	26.6	22.2	35.7	0.0	50.2	2.2
Internal Link Dist (m)	313.1	171.7	108.7		276.5	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	2007	2021	407	452	699	746
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.22	0.31	0.06	0.26	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	390	31	14	315	63	21	93	25	48	116	29
Future Volume (vph)	27	390	31	14	315	63	21	93	25	48	116	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		0.99	1.00
Satd. Flow (prot)		3457			3388			1813	1549		1830	1633
Flt Permitted		0.91			0.93			0.92	1.00		0.87	1.00
Satd. Flow (perm)		3149			3159			1680	1549		1611	1633
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	30	438	35	16	354	71	24	104	28	54	130	33
RTOR Reduction (vph)	0	3	0	0	11	0	0	0	21	0	0	25
Lane Group Flow (vph)	0	500	0	0	430	0	0	128	7	0	184	8
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.0			63.0			24.0	24.0		24.0	24.0
Effective Green, g (s)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2003			2010			407	375		390	395
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.14			0.08	0.00		c0.11	0.00
v/c Ratio		0.25			0.21			0.31	0.02		0.47	0.02
Uniform Delay, d1		7.8			7.6			30.8	28.5		32.1	28.5
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3			0.1			0.4	0.0		0.9	0.0
Delay (s)		8.1			7.6			31.2	28.6		33.0	28.6
Level of Service		A			A			C	C		C	C
Approach Delay (s)		8.1			7.6			30.7			32.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

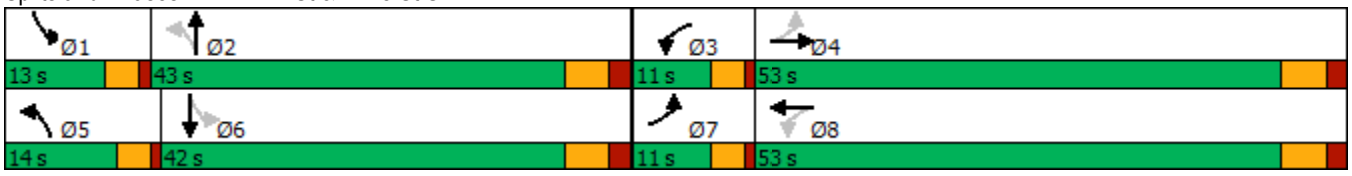


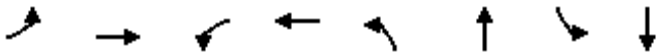
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	438	118	23	359	152	142	327	12	174	274	135
Future Volume (vph)	121	438	118	23	359	152	142	327	12	174	274	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99			1.00		0.99	1.00		1.00	0.99	
Frt		0.968			0.955			0.995			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1749	0	1615	1755	0	1738	3399	0	1755	3234	0
Flt Permitted	0.167			0.181			0.424			0.523		
Satd. Flow (perm)	311	1749	0	308	1755	0	770	3399	0	964	3234	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			21			3			72	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	125	452	122	24	370	157	146	337	12	179	282	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	574	0	24	527	0	146	349	0	179	421	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	11.0	53.0		11.0	53.0		14.0	43.0		13.0	42.0	
Total Split (%)	9.2%	44.2%		9.2%	44.2%		11.7%	35.8%		10.8%	35.0%	
Maximum Green (s)	7.0	47.0		7.0	47.0		10.0	37.0		9.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	48.9	43.0		47.1	38.1		49.6	37.5		47.1	36.3	
Actuated g/C Ratio	0.44	0.39		0.42	0.34		0.44	0.34		0.42	0.33	
v/c Ratio	0.55	0.84		0.11	0.86		0.34	0.30		0.38	0.38	
Control Delay	26.6	43.9		16.8	47.3		21.6	29.7		22.7	26.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.6	43.9		16.8	47.3		21.6	29.7		22.7	26.3	
LOS	C	D		B	D		C	C		C	C	
Approach Delay		40.8			46.0			27.3			25.2	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 111.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 90.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





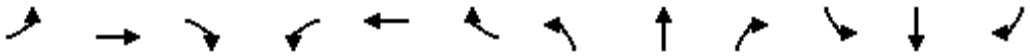
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	125	574	24	527	146	349	179	421
v/c Ratio	0.55	0.84	0.11	0.86	0.34	0.30	0.38	0.38
Control Delay	26.6	43.9	16.8	47.3	21.6	29.7	22.7	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	43.9	16.8	47.3	21.6	29.7	22.7	26.3
Queue Length 50th (m)	15.4	117.9	2.8	101.9	19.8	31.5	24.7	32.7
Queue Length 95th (m)	26.2	#176.8	7.2	144.9	34.7	45.7	41.8	48.7
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	228	749	212	756	429	1145	472	1099
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	0.55	0.77	0.11	0.70	0.34	0.30	0.38	0.38

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	438	118	23	359	152	142	327	12	174	274	135
Future Volume (vph)	121	438	118	23	359	152	142	327	12	174	274	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	1749		1615	1755		1734	3399		1753	3237	
Flt Permitted	0.17	1.00		0.18	1.00		0.42	1.00		0.52	1.00	
Satd. Flow (perm)	312	1749		308	1755		773	3399		965	3237	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	452	122	24	370	157	146	337	12	179	282	139
RTOR Reduction (vph)	0	8	0	0	14	0	0	2	0	0	49	0
Lane Group Flow (vph)	125	566	0	24	513	0	146	347	0	179	372	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.1	43.0		43.7	39.8		47.7	37.6		45.1	36.3	
Effective Green, g (s)	50.1	43.0		43.7	39.8		47.7	37.6		45.1	36.3	
Actuated g/C Ratio	0.44	0.38		0.39	0.35		0.42	0.33		0.40	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	663		163	616		411	1128		445	1037	
v/s Ratio Prot	c0.03	c0.32		0.01	0.29		c0.03	0.10		0.03	0.11	
v/s Ratio Perm	0.21			0.05			0.12			c0.13		
v/c Ratio	0.55	0.85		0.15	0.83		0.36	0.31		0.40	0.36	
Uniform Delay, d1	22.9	32.3		24.3	33.7		20.9	28.2		22.9	29.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	10.4		0.4	9.5		0.5	0.7		0.6	1.0	
Delay (s)	25.5	42.7		24.7	43.2		21.5	28.9		23.5	30.5	
Level of Service	C	D		C	D		C	C		C	C	
Approach Delay (s)		39.6			42.4			26.7			28.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	113.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

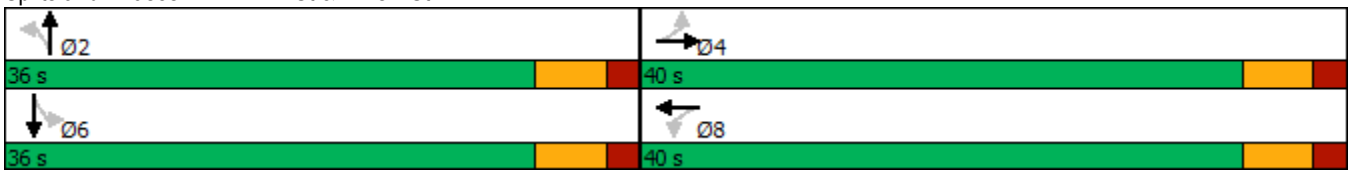


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	441	80	12	384	23	91	166	33	23	150	46
Future Volume (vph)	39	441	80	12	384	23	91	166	33	23	150	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			0.99	
Frt		0.977			0.992			0.985			0.972	
Flt Protected	0.950			0.950				0.985			0.995	
Satd. Flow (prot)	1825	1748	0	1825	1824	0	0	1796	0	0	1790	0
Flt Permitted	0.450			0.348				0.790			0.945	
Satd. Flow (perm)	863	1748	0	669	1824	0	0	1439	0	0	1700	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			5			10			21	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	42	479	87	13	417	25	99	180	36	25	163	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	566	0	13	442	0	0	315	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3			18.2			18.2	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.28			0.28	
v/c Ratio	0.09	0.60		0.04	0.46			0.76			0.48	
Control Delay	10.3	15.1		10.2	12.6			33.1			20.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.3	15.1		10.2	12.6			33.1			20.4	
LOS	B	B		B	B			C			C	
Approach Delay		14.8			12.5			33.1			20.4	
Approach LOS		B			B			C			C	

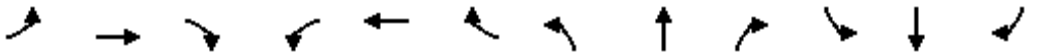
Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 64.5			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



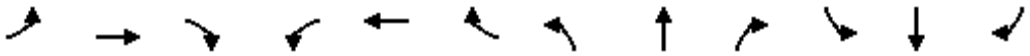
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	42	566	13	442	315	238
v/c Ratio	0.09	0.60	0.04	0.46	0.76	0.48
Control Delay	10.3	15.1	10.2	12.6	33.1	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	15.1	10.2	12.6	33.1	20.4
Queue Length 50th (m)	2.2	40.5	0.7	29.0	32.8	21.0
Queue Length 95th (m)	8.5	93.4	3.8	66.3	56.8	37.9
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	458	936	355	970	679	807
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.60	0.04	0.46	0.46	0.29

Intersection Summary



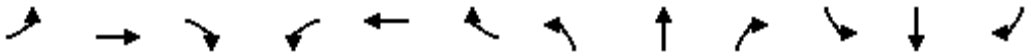
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	441	80	12	384	23	91	166	33	23	150	46
Future Volume (vph)	39	441	80	12	384	23	91	166	33	23	150	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1823	1748		1825	1823			1793			1789	
Flt Permitted	0.45	1.00		0.35	1.00			0.79			0.95	
Satd. Flow (perm)	863	1748		669	1823			1439			1701	
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)	42	479	87	13	417	25	99	180	36	25	163	50
RTOR Reduction (vph)	0	7	0	0	2	0	0	7	0	0	15	0
Lane Group Flow (vph)	42	559	0	13	440	0	0	308	0	0	223	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.3	34.3		34.3	34.3			18.2			18.2	
Effective Green, g (s)	34.3	34.3		34.3	34.3			18.2			18.2	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.28			0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	458	929		355	969			406			479	
v/s Ratio Prot		c0.32			0.24							
v/s Ratio Perm	0.05			0.02				c0.21			0.13	
v/c Ratio	0.09	0.60		0.04	0.45			0.76			0.47	
Uniform Delay, d1	7.4	10.4		7.2	9.3			21.1			19.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	2.9		0.2	1.5			7.9			0.7	
Delay (s)	7.8	13.3		7.4	10.9			29.0			19.8	
Level of Service	A	B		A	B			C			B	
Approach Delay (s)		12.9			10.8			29.0			19.8	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.5%	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)	6	4	15	4	6	78	15	382	12	56	338	21
Future Volume (vph)	6	4	15	4	6	78	15	382	12	56	338	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.880			0.996			0.993	
Flt Protected		0.988			0.998			0.998			0.993	
Satd. Flow (prot)	0	1646	0	0	1208	0	0	1752	0	0	1733	0
Flt Permitted		0.988			0.998			0.998			0.993	
Satd. Flow (perm)	0	1646	0	0	1208	0	0	1752	0	0	1733	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			149.2			548.1			132.7	
Travel Time (s)		8.1			11.2			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	6	4	15	4	6	80	15	394	12	58	348	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	90	0	0	421	0	0	428	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

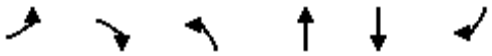
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	15	4	6	78	15	382	12	56	338	21
Future Volume (Veh/h)	6	4	15	4	6	78	15	382	12	56	338	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	6	4	15	4	6	80	15	394	12	58	348	22
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	995	917	365	922	922	401	376			406		
vC1, stage 1 conf vol	481	481		430	430							
vC2, stage 2 conf vol	514	436		492	492							
vCu, unblocked vol	932	844	224	850	850	401	236			406		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	98	99	98	99	99	86	99			95		
cM capacity (veh/h)	352	422	704	392	431	568	1050			1137		

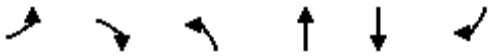
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	90	421	428
Volume Left	6	4	15	58
Volume Right	15	80	12	22
cSH	523	546	1050	1137
Volume to Capacity	0.05	0.16	0.01	0.05
Queue Length 95th (m)	1.1	4.5	0.3	1.2
Control Delay (s)	12.2	12.9	0.5	1.6
Lane LOS	B	B	A	A
Approach Delay (s)	12.2	12.9	0.5	1.6
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	56.0%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	47	35	248	228	14
Future Volume (vph)	32	47	35	248	228	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			15.0
Storage Lanes	1	0	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.920				0.992	
Flt Protected	0.980			0.994		
Satd. Flow (prot)	1732	0	0	1799	1804	0
Flt Permitted	0.980			0.994		
Satd. Flow (perm)	1732	0	0	1799	1804	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	130.3			300.5	111.6	
Travel Time (s)	9.8			22.5	8.4	
Confl. Peds. (#/hr)	1		6			6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	7%	6%	4%	33%
Adj. Flow (vph)	35	51	38	270	248	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	0	308	263	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	47	35	248	228	14
Future Volume (Veh/h)	32	47	35	248	228	14
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)	35	51	38	270	248	15
Pedestrians	6				1	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	1				0	
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				301	112	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	608	262	269			
vC1, stage 1 conf vol	262					
vC2, stage 2 conf vol	347					
vCu, unblocked vol	570	209	217			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.3			
p0 queue free %	94	94	97			
cM capacity (veh/h)	624	798	1262			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	86	308	263
Volume Left	35	38	0
Volume Right	51	0	15
cSH	717	1262	1700
Volume to Capacity	0.12	0.03	0.15
Queue Length 95th (m)	3.1	0.7	0.0
Control Delay (s)	10.7	1.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.7	1.2	0.0
Approach LOS	B		

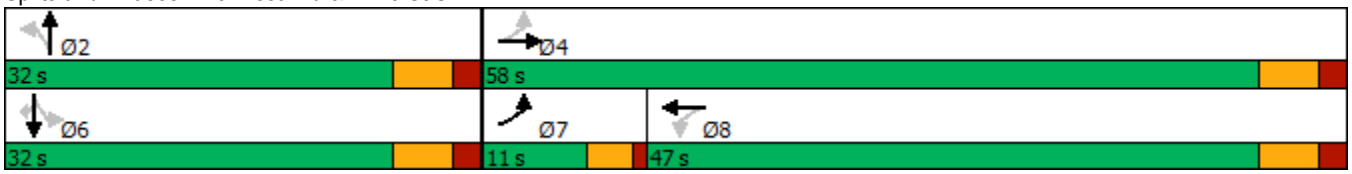
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	503	67	1	504	44	74	50	1	40	71	255
Future Volume (vph)	244	503	67	1	504	44	74	50	1	40	71	255
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		0.0	0.0		25.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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	0.99
Frt		0.988			0.988			0.999				0.850
Flt Protected		0.985						0.971			0.982	
Satd. Flow (prot)	0	3353	0	0	3458	0	0	1782	0	0	1820	1526
Flt Permitted		0.654			0.954			0.750			0.846	
Satd. Flow (perm)	0	2225	0	0	3299	0	0	1375	0	0	1565	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			13							277
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	265	547	73	1	548	48	80	54	1	43	77	277
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	885	0	0	597	0	0	135	0	0	120	277
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	58.0		47.0	47.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.2%	64.4%		52.2%	52.2%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	7.0	52.0		41.0	41.0		26.0	26.0		26.0	26.0	26.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)		52.1			52.1			13.2			13.2	13.2
Actuated g/C Ratio		0.67			0.67			0.17			0.17	0.17
v/c Ratio		0.59			0.27			0.57			0.45	0.57
Control Delay		9.2			5.6			39.5			34.2	8.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		9.2			5.6			39.5			34.2	8.8
LOS		A			A			D			C	A
Approach Delay		9.2			5.6			39.5			16.5	
Approach LOS		A			A			D			B	

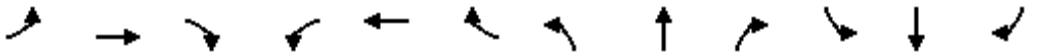
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 86.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S



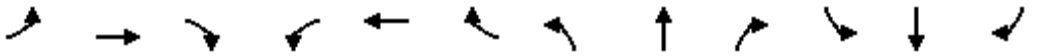
Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	885	597	135	120	277
v/c Ratio	0.59	0.27	0.57	0.45	0.57
Control Delay	9.2	5.6	39.5	34.2	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	5.6	39.5	34.2	8.8
Queue Length 50th (m)	29.5	14.6	18.3	15.9	0.0
Queue Length 95th (m)	56.9	27.2	34.7	30.5	18.2
Internal Link Dist (m)	80.6	313.1	99.5	524.1	
Turn Bay Length (m)					25.0
Base Capacity (vph)	1504	2226	463	527	690
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.27	0.29	0.23	0.40

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	503	67	1	504	44	74	50	1	40	71	255
Future Volume (vph)	244	503	67	1	504	44	74	50	1	40	71	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	6.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.97			0.98	1.00
Satd. Flow (prot)		3351			3458			1781			1818	1505
Flt Permitted		0.65			0.95			0.75			0.85	1.00
Satd. Flow (perm)		2223			3300			1375			1566	1505
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)	265	547	73	1	548	48	80	54	1	43	77	277
RTOR Reduction (vph)	0	6	0	0	4	0	0	0	0	0	0	230
Lane Group Flow (vph)	0	879	0	0	593	0	0	135	0	0	120	47
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		52.1			52.1			13.2			13.2	13.2
Effective Green, g (s)		52.1			52.1			13.2			13.2	13.2
Actuated g/C Ratio		0.67			0.67			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1498			2224			234			267	256
v/s Ratio Prot												
v/s Ratio Perm		c0.40			0.18			c0.10			0.08	0.03
v/c Ratio		0.59			0.27			0.58			0.45	0.18
Uniform Delay, d1		6.8			5.0			29.5			28.8	27.4
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.6			0.3			3.4			1.2	0.4
Delay (s)		7.4			5.3			32.9			30.0	27.8
Level of Service		A			A			C			C	C
Approach Delay (s)		7.4			5.3			32.9			28.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

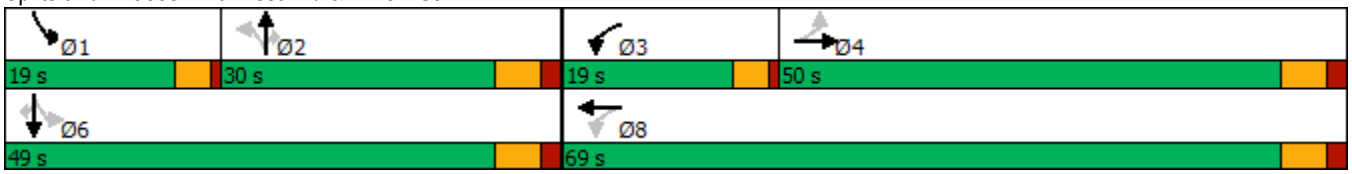


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	500	32	15	412	66	23	97	27	52	121	51
Future Volume (vph)	34	500	32	15	412	66	23	97	27	52	121	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.99		1.00	
Frt		0.991			0.980				0.850			0.850
Flt Protected		0.997			0.999			0.990			0.985	
Satd. Flow (prot)	0	3462	0	0	3405	0	0	1811	1570	0	1830	1633
Flt Permitted		0.893			0.930			0.914			0.862	
Satd. Flow (perm)	0	3100	0	0	3170	0	0	1672	1548	0	1601	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			22				102			65
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			300.5	
Travel Time (s)		25.3			14.7			10.0			22.5	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Adj. Flow (vph)	37	543	35	16	448	72	25	105	29	57	132	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	615	0	0	536	0	0	130	29	0	189	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
v/c Ratio		0.31			0.26			0.32	0.06		0.49	0.12
Control Delay		8.6			7.9			33.5	0.3		37.2	6.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		8.6			7.9			33.5	0.3		37.2	6.9
LOS		A			A			C	A		D	A
Approach Delay		8.6			7.9			27.4			30.4	
Approach LOS		A			A			C			C	

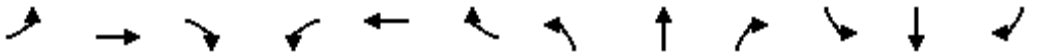
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 99			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	615	536	130	29	189	55
v/c Ratio	0.31	0.26	0.32	0.06	0.49	0.12
Control Delay	8.6	7.9	33.5	0.3	37.2	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	7.9	33.5	0.3	37.2	6.9
Queue Length 50th (m)	25.2	20.4	20.6	0.0	31.2	0.0
Queue Length 95th (m)	34.1	28.2	36.7	0.0	52.3	7.7
Internal Link Dist (m)	313.1	171.7	108.7		276.5	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1974	2025	405	452	695	746
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.26	0.32	0.06	0.27	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	500	32	15	412	66	23	97	27	52	121	51
Future Volume (vph)	34	500	32	15	412	66	23	97	27	52	121	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		0.99	1.00
Satd. Flow (prot)		3463			3403			1812	1549		1830	1633
Flt Permitted		0.89			0.93			0.91	1.00		0.86	1.00
Satd. Flow (perm)		3103			3170			1673	1549		1600	1633
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)	37	543	35	16	448	72	25	105	29	57	132	55
RTOR Reduction (vph)	0	2	0	0	8	0	0	0	22	0	0	42
Lane Group Flow (vph)	0	613	0	0	528	0	0	130	7	0	189	13
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.0			63.0			24.0	24.0		24.0	24.0
Effective Green, g (s)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1974			2017			405	375		387	395
v/s Ratio Prot												
v/s Ratio Perm		c0.20			0.17			0.08	0.00		c0.12	0.01
v/c Ratio		0.31			0.26			0.32	0.02		0.49	0.03
Uniform Delay, d1		8.2			7.9			30.8	28.5		32.2	28.6
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4			0.1			0.5	0.0		1.0	0.0
Delay (s)		8.6			7.9			31.3	28.6		33.2	28.7
Level of Service		A			A			C	C		C	C
Approach Delay (s)		8.6			7.9			30.8			32.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

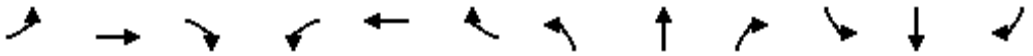
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	72	0	0	88	0	0
Future Volume (vph)	72	0	0	88	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	149.2			130.3	56.9	
Travel Time (s)	11.2			9.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	0	0	96	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	0	96	0	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 8.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	72	0	0	88	0	0
Future Volume (Veh/h)	72	0	0	88	0	0
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)	78	0	0	96	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			78		174	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			78		174	78
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	100
cM capacity (veh/h)			1520		816	983

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	78	96	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1520	1700
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.0%	ICU Level of Service	A
Analysis Period (min)	15		

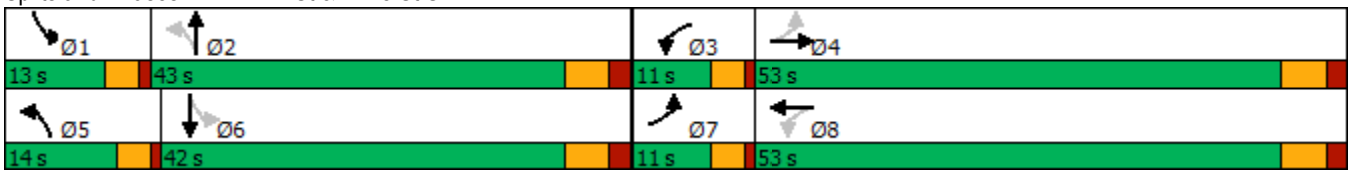


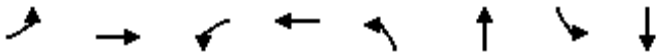
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	438	121	23	359	152	149	334	12	174	277	135
Future Volume (vph)	121	438	121	23	359	152	149	334	12	174	277	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99			1.00		0.99	1.00		1.00	0.99	
Frt		0.968			0.955			0.995			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1749	0	1615	1755	0	1738	3399	0	1755	3237	0
Flt Permitted	0.167			0.178			0.421			0.517		
Satd. Flow (perm)	311	1749	0	303	1755	0	765	3399	0	953	3237	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			21			3			70	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	125	452	125	24	370	157	154	344	12	179	286	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	577	0	24	527	0	154	356	0	179	425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	11.0	53.0		11.0	53.0		14.0	43.0		13.0	42.0	
Total Split (%)	9.2%	44.2%		9.2%	44.2%		11.7%	35.8%		10.8%	35.0%	
Maximum Green (s)	7.0	47.0		7.0	47.0		10.0	37.0		9.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	49.0	43.0		47.2	38.1		49.6	37.6		47.1	36.3	
Actuated g/C Ratio	0.44	0.38		0.42	0.34		0.44	0.34		0.42	0.32	
v/c Ratio	0.55	0.85		0.11	0.86		0.36	0.31		0.39	0.39	
Control Delay	26.6	44.1		16.8	47.2		22.0	29.8		22.8	26.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.6	44.1		16.8	47.2		22.0	29.8		22.8	26.6	
LOS	C	D		B	D		C	C		C	C	
Approach Delay		41.0			45.9			27.4			25.5	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 111.7			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 90.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





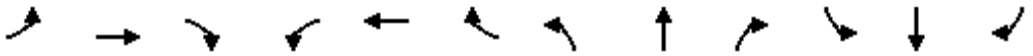
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	125	577	24	527	154	356	179	425
v/c Ratio	0.55	0.85	0.11	0.86	0.36	0.31	0.39	0.39
Control Delay	26.6	44.1	16.8	47.2	22.0	29.8	22.8	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	44.1	16.8	47.2	22.0	29.8	22.8	26.6
Queue Length 50th (m)	15.4	118.6	2.8	101.9	21.1	32.4	24.8	33.5
Queue Length 95th (m)	26.2	#178.0	7.2	144.9	36.3	46.6	41.8	49.5
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	228	749	210	756	427	1145	469	1098
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	0.55	0.77	0.11	0.70	0.36	0.31	0.38	0.39

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	438	121	23	359	152	149	334	12	174	277	135
Future Volume (vph)	121	438	121	23	359	152	149	334	12	174	277	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	1748		1615	1755		1734	3399		1753	3238	
Flt Permitted	0.17	1.00		0.18	1.00		0.42	1.00		0.52	1.00	
Satd. Flow (perm)	312	1748		302	1755		767	3399		953	3238	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	125	452	125	24	370	157	154	344	12	179	286	139
RTOR Reduction (vph)	0	9	0	0	14	0	0	2	0	0	48	0
Lane Group Flow (vph)	125	568	0	24	513	0	154	354	0	179	377	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.1	43.0		43.7	39.8		47.7	37.6		45.1	36.3	
Effective Green, g (s)	50.1	43.0		43.7	39.8		47.7	37.6		45.1	36.3	
Actuated g/C Ratio	0.44	0.38		0.39	0.35		0.42	0.33		0.40	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	663		161	616		409	1128		441	1037	
v/s Ratio Prot	c0.03	c0.33		0.01	0.29		c0.03	0.10		0.03	0.12	
v/s Ratio Perm	0.21			0.05			0.12			c0.13		
v/c Ratio	0.55	0.86		0.15	0.83		0.38	0.31		0.41	0.36	
Uniform Delay, d1	22.9	32.3		24.3	33.7		21.0	28.2		22.9	29.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	10.6		0.4	9.5		0.6	0.7		0.6	1.0	
Delay (s)	25.5	43.0		24.7	43.2		21.6	29.0		23.5	30.6	
Level of Service	C	D		C	D		C	C		C	C	
Approach Delay (s)		39.9			42.4			26.7			28.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	113.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

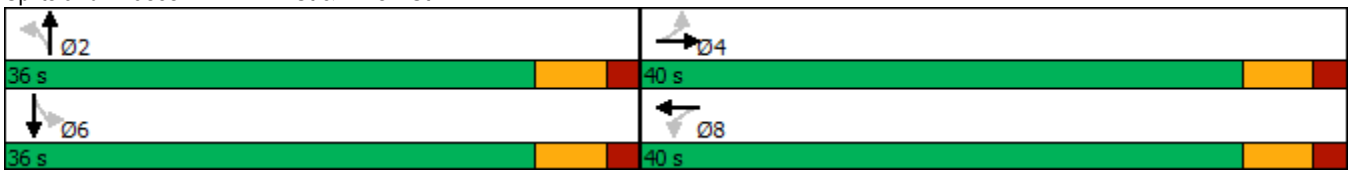


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	441	80	15	384	23	91	173	40	23	153	46
Future Volume (vph)	39	441	80	15	384	23	91	173	40	23	153	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			0.99	
Frt		0.977			0.992			0.982			0.972	
Flt Protected	0.950			0.950				0.985			0.995	
Satd. Flow (prot)	1825	1748	0	1825	1824	0	0	1791	0	0	1791	0
Flt Permitted	0.447			0.345				0.796			0.945	
Satd. Flow (perm)	858	1748	0	663	1824	0	0	1446	0	0	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			5			12			20	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	42	479	87	16	417	25	99	188	43	25	166	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	566	0	16	442	0	0	330	0	0	241	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3			18.8			18.8	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.29			0.29	
v/c Ratio	0.09	0.61		0.05	0.46			0.78			0.48	
Control Delay	10.7	15.6		10.6	13.0			33.2			20.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.7	15.6		10.6	13.0			33.2			20.2	
LOS	B	B		B	B			C			C	
Approach Delay		15.3			12.9			33.2			20.2	
Approach LOS		B			B			C			C	

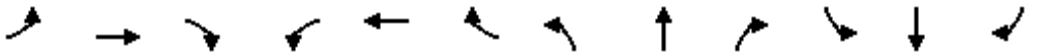
Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 65.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 76.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



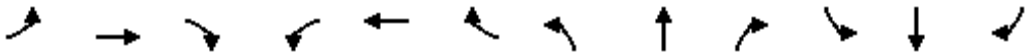
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	42	566	16	442	330	241
v/c Ratio	0.09	0.61	0.05	0.46	0.78	0.48
Control Delay	10.7	15.6	10.6	13.0	33.2	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	15.6	10.6	13.0	33.2	20.2
Queue Length 50th (m)	2.3	41.8	0.9	29.8	34.6	21.4
Queue Length 95th (m)	8.8	95.7	4.5	67.8	59.5	38.3
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	451	926	348	961	677	799
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.61	0.05	0.46	0.49	0.30

Intersection Summary



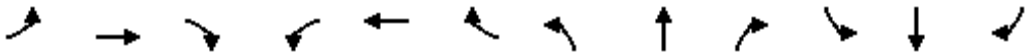
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	441	80	15	384	23	91	173	40	23	153	46
Future Volume (vph)	39	441	80	15	384	23	91	173	40	23	153	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1823	1748		1825	1823			1791			1790	
Flt Permitted	0.45	1.00		0.34	1.00			0.80			0.94	
Satd. Flow (perm)	858	1748		662	1823			1447			1701	
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)	42	479	87	16	417	25	99	188	43	25	166	50
RTOR Reduction (vph)	0	8	0	0	2	0	0	9	0	0	14	0
Lane Group Flow (vph)	42	558	0	16	440	0	0	321	0	0	227	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.3	34.3		34.3	34.3			18.8			18.8	
Effective Green, g (s)	34.3	34.3		34.3	34.3			18.8			18.8	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.29			0.29	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	452	920		348	960			417			491	
v/s Ratio Prot		c0.32			0.24							
v/s Ratio Perm	0.05			0.02				c0.22			0.13	
v/c Ratio	0.09	0.61		0.05	0.46			0.77			0.46	
Uniform Delay, d1	7.7	10.7		7.5	9.6			21.2			19.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.4	3.0		0.2	1.6			8.6			0.7	
Delay (s)	8.1	13.7		7.7	11.2			29.7			19.7	
Level of Service	A	B		A	B			C			B	
Approach Delay (s)		13.3			11.1			29.7			19.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	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)	6	4	15	11	6	92	15	382	15	61	338	21
Future Volume (vph)	6	4	15	11	6	92	15	382	15	61	338	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.885			0.995			0.993	
Flt Protected		0.988			0.995			0.998			0.993	
Satd. Flow (prot)	0	1646	0	0	1211	0	0	1749	0	0	1734	0
Flt Permitted		0.988			0.995			0.998			0.993	
Satd. Flow (perm)	0	1646	0	0	1211	0	0	1749	0	0	1734	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			149.2			548.1			132.7	
Travel Time (s)		8.1			11.2			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	6	4	15	11	6	95	15	394	15	63	348	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	112	0	0	424	0	0	433	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

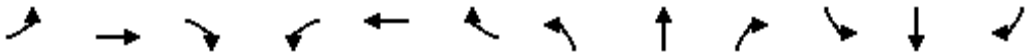
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	15	11	6	92	15	382	15	61	338	21
Future Volume (Veh/h)	6	4	15	11	6	92	15	382	15	61	338	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	6	4	15	11	6	95	15	394	15	63	348	22
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1022	930	365	934	934	402	376			409		
vC1, stage 1 conf vol	491	491		432	432							
vC2, stage 2 conf vol	530	439		502	502							
vCu, unblocked vol	961	858	222	862	862	402	234			409		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	98	99	98	97	99	83	99			94		
cM capacity (veh/h)	330	415	705	386	426	567	1050			1134		

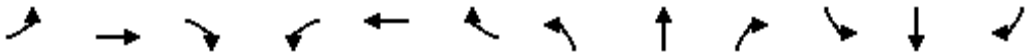
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	112	424	433
Volume Left	6	11	15	63
Volume Right	15	95	15	22
cSH	509	533	1050	1134
Volume to Capacity	0.05	0.21	0.01	0.06
Queue Length 95th (m)	1.2	6.0	0.3	1.3
Control Delay (s)	12.4	13.5	0.5	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.4	13.5	0.5	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	60.1%	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)	46	0	83	0	0	0	48	248	0	0	228	19
Future Volume (vph)	46	0	83	0	0	0	48	248	0	0	228	19
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	50.0		0.0	15.0		15.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.913									0.989	
Flt Protected		0.982						0.992				
Satd. Flow (prot)	0	1722	0	0	1883	0	0	1795	0	0	1788	0
Flt Permitted		0.982						0.992				
Satd. Flow (perm)	0	1722	0	0	1883	0	0	1795	0	0	1788	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		130.3			55.2			118.2			111.6	
Travel Time (s)		9.8			4.1			8.9			8.4	
Confl. Peds. (#/hr)	1						6					6
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%	2%	0%	2%	2%	2%	7%	6%	2%	2%	4%	33%
Adj. Flow (vph)	50	0	90	0	0	0	52	270	0	0	248	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	0	0	0	322	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

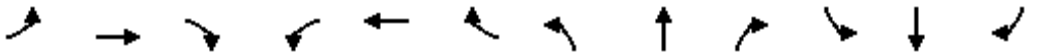
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	0	83	0	0	0	48	248	0	0	228	19
Future Volume (Veh/h)	46	0	83	0	0	0	48	248	0	0	228	19
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)	50	0	90	0	0	0	52	270	0	0	248	21
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.96	0.96	0.96	0.96	0.96		0.96					
vC, conflicting volume	640	638	264	722	649	271	275			270		
vC1, stage 1 conf vol	264	264		374	374							
vC2, stage 2 conf vol	375	374		348	275							
vCu, unblocked vol	600	599	208	687	610	271	219			270		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	91	100	89	100	100	100	96			100		
cM capacity (veh/h)	561	533	796	474	519	767	1256			1293		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	140	0	322	269
Volume Left	50	0	52	0
Volume Right	90	0	0	21
cSH	692	1700	1256	1700
Volume to Capacity	0.20	0.00	0.04	0.16
Queue Length 95th (m)	5.7	0.0	1.0	0.0
Control Delay (s)	11.5	0.0	1.6	0.0
Lane LOS	B	A	A	
Approach Delay (s)	11.5	0.0	1.6	0.0
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	46.6%	ICU Level of Service	A	
Analysis Period (min)	15			

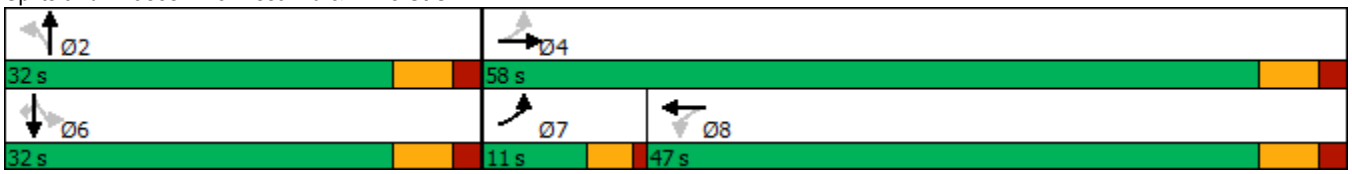


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	516	67	1	540	44	74	50	1	40	71	262
Future Volume (vph)	247	516	67	1	540	44	74	50	1	40	71	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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	0.99
Frt		0.988			0.989			0.999				0.850
Flt Protected		0.985						0.971			0.982	
Satd. Flow (prot)	0	3353	0	0	3463	0	0	1782	0	0	1820	1526
Flt Permitted		0.644			0.954			0.750			0.846	
Satd. Flow (perm)	0	2191	0	0	3303	0	0	1375	0	0	1565	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			12							285
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	268	561	73	1	587	48	80	54	1	43	77	285
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	902	0	0	636	0	0	135	0	0	120	285
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	58.0		47.0	47.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.2%	64.4%		52.2%	52.2%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	7.0	52.0		41.0	41.0		26.0	26.0		26.0	26.0	26.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)		52.1			52.1			13.2			13.2	13.2
Actuated g/C Ratio		0.67			0.67			0.17			0.17	0.17
v/c Ratio		0.61			0.29			0.57			0.45	0.58
Control Delay		9.6			5.8			39.5			34.2	8.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		9.6			5.8			39.5			34.2	8.9
LOS		A			A			D			C	A
Approach Delay		9.6			5.8			39.5			16.4	
Approach LOS		A			A			D			B	

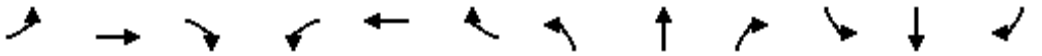
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.3			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 86.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S



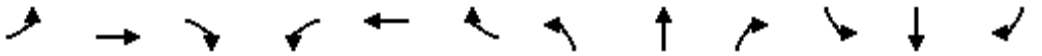
Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	902	636	135	120	285
v/c Ratio	0.61	0.29	0.57	0.45	0.58
Control Delay	9.6	5.8	39.5	34.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	5.8	39.5	34.2	8.9
Queue Length 50th (m)	30.9	15.8	18.3	15.9	0.0
Queue Length 95th (m)	59.8	29.3	34.7	30.5	18.3
Internal Link Dist (m)	80.6	313.1	99.5	524.1	
Turn Bay Length (m)					25.0
Base Capacity (vph)	1481	2229	463	527	695
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.29	0.29	0.23	0.41

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	516	67	1	540	44	74	50	1	40	71	262
Future Volume (vph)	247	516	67	1	540	44	74	50	1	40	71	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	6.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.99			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.97			0.98	1.00
Satd. Flow (prot)		3352			3461			1781			1818	1505
Flt Permitted		0.64			0.95			0.75			0.85	1.00
Satd. Flow (perm)		2192			3303			1375			1566	1505
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)	268	561	73	1	587	48	80	54	1	43	77	285
RTOR Reduction (vph)	0	6	0	0	4	0	0	0	0	0	0	236
Lane Group Flow (vph)	0	896	0	0	632	0	0	135	0	0	120	49
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		52.1			52.1			13.2			13.2	13.2
Effective Green, g (s)		52.1			52.1			13.2			13.2	13.2
Actuated g/C Ratio		0.67			0.67			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1477			2226			234			267	256
v/s Ratio Prot												
v/s Ratio Perm		c0.41			0.19			c0.10			0.08	0.03
v/c Ratio		0.61			0.28			0.58			0.45	0.19
Uniform Delay, d1		7.0			5.1			29.5			28.8	27.5
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.7			0.3			3.4			1.2	0.4
Delay (s)		7.7			5.4			32.9			30.0	27.8
Level of Service		A			A			C			C	C
Approach Delay (s)		7.7			5.4			32.9			28.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

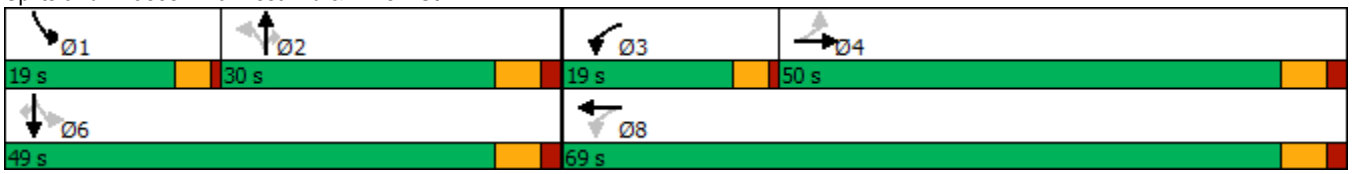


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	500	32	15	412	66	23	97	27	52	121	87
Future Volume (vph)	47	500	32	15	412	66	23	97	27	52	121	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.99		1.00	
Frt		0.992			0.980				0.850			0.850
Flt Protected		0.996			0.999			0.990			0.985	
Satd. Flow (prot)	0	3459	0	0	3405	0	0	1811	1570	0	1830	1633
Flt Permitted		0.864			0.930			0.914			0.862	
Satd. Flow (perm)	0	3000	0	0	3170	0	0	1672	1548	0	1601	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			22				102			88
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			182.3	
Travel Time (s)		25.3			14.7			10.0			13.7	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Adj. Flow (vph)	51	543	35	16	448	72	25	105	29	57	132	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	629	0	0	536	0	0	130	29	0	189	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
v/c Ratio		0.33			0.26			0.32	0.06		0.49	0.21
Control Delay		8.8			7.9			33.5	0.3		37.2	8.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		8.8			7.9			33.5	0.3		37.2	8.9
LOS		A			A			C	A		D	A
Approach Delay		8.8			7.9			27.4			27.8	
Approach LOS		A			A			C			C	

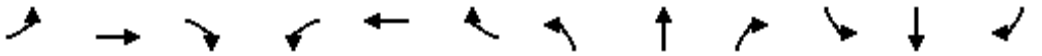
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 99			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	629	536	130	29	189	95
v/c Ratio	0.33	0.26	0.32	0.06	0.49	0.21
Control Delay	8.8	7.9	33.5	0.3	37.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	7.9	33.5	0.3	37.2	8.9
Queue Length 50th (m)	26.2	20.4	20.6	0.0	31.2	1.0
Queue Length 95th (m)	35.4	28.2	36.7	0.0	52.3	13.1
Internal Link Dist (m)	313.1	171.7	108.7		158.3	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1911	2025	405	452	695	759
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.26	0.32	0.06	0.27	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	500	32	15	412	66	23	97	27	52	121	87
Future Volume (vph)	47	500	32	15	412	66	23	97	27	52	121	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		0.99	1.00
Satd. Flow (prot)		3457			3403			1812	1549		1830	1633
Flt Permitted		0.86			0.93			0.91	1.00		0.86	1.00
Satd. Flow (perm)		2999			3168			1673	1549		1600	1633
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)	51	543	35	16	448	72	25	105	29	57	132	95
RTOR Reduction (vph)	0	2	0	0	8	0	0	0	22	0	0	67
Lane Group Flow (vph)	0	627	0	0	528	0	0	130	7	0	189	28
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.0			63.0			24.0	24.0		24.0	24.0
Effective Green, g (s)		63.0			63.0			24.0	24.0		24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1908			2016			405	375		387	395
v/s Ratio Prot												
v/s Ratio Perm		c0.21			0.17			0.08	0.00		c0.12	0.02
v/c Ratio		0.33			0.26			0.32	0.02		0.49	0.07
Uniform Delay, d1		8.3			7.9			30.8	28.5		32.2	28.9
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5			0.1			0.5	0.0		1.0	0.1
Delay (s)		8.7			7.9			31.3	28.6		33.2	29.0
Level of Service		A			A			C	C		C	C
Approach Delay (s)		8.7			7.9			30.8			31.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

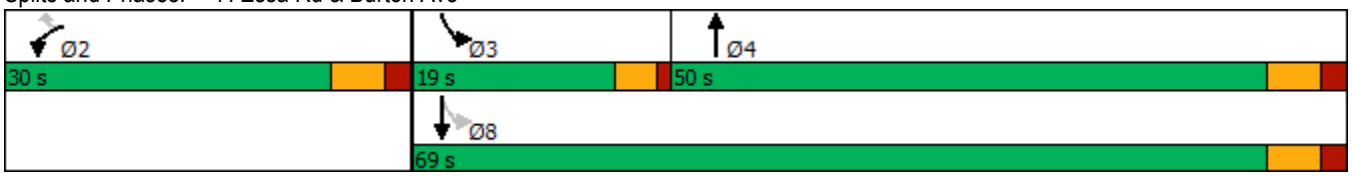
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	244	106	380	224	110	278
Future Volume (vph)	244	106	380	224	110	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	35.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99	0.99			1.00
Frt		0.850	0.944			
Flt Protected	0.950					0.986
Satd. Flow (prot)	1738	1498	3291	0	0	3377
Flt Permitted	0.950					0.658
Satd. Flow (perm)	1738	1478	3291	0	0	2253
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		115	156			
Link Speed (k/h)	48		48			48
Link Distance (m)	133.2		195.7			221.2
Travel Time (s)	10.0		14.7			16.6
Confl. Peds. (#/hr)		1		4	4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	9%	3%	5%	13%	4%
Adj. Flow (vph)	265	115	413	243	120	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	115	656	0	0	422
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (m)	6.1	6.1	30.5		6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8		6.1	1.8
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2			8	
Detector Phase	2	2	4		3	8
Switch Phase						
Minimum Initial (s)	15.0	15.0	44.0		7.0	44.0
Minimum Split (s)	23.0	23.0	50.0		11.0	50.0
Total Split (s)	30.0	30.0	50.0		19.0	69.0
Total Split (%)	30.3%	30.3%	50.5%		19.2%	69.7%
Maximum Green (s)	24.0	24.0	44.0		15.0	63.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	33.0			33.0
Flash Dont Walk (s)	10.0	10.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	19.4	19.4	63.1			63.1
Actuated g/C Ratio	0.21	0.21	0.67			0.67
v/c Ratio	0.74	0.29	0.29			0.28
Control Delay	48.7	8.0	5.5			7.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	48.7	8.0	5.5			7.4
LOS	D	A	A			A
Approach Delay	36.4		5.5			7.4
Approach LOS	D		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 99			
Actuated Cycle Length: 94.5			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 101.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 7: Essa Rd & Burton Ave



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	265	115	656	422
v/c Ratio	0.74	0.29	0.29	0.28
Control Delay	48.7	8.0	5.5	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	48.7	8.0	5.5	7.4
Queue Length 50th (m)	45.5	0.0	16.6	14.6
Queue Length 95th (m)	71.5	13.0	28.0	25.0
Internal Link Dist (m)	109.2		171.7	197.2
Turn Bay Length (m)		35.0		
Base Capacity (vph)	441	461	2249	1504
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	0.60	0.25	0.29	0.28

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	244	106	380	224	110	278
Future Volume (vph)	244	106	380	224	110	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	0.95			0.95
Frpb, ped/bikes	1.00	0.99	0.99			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	0.94			1.00
Flt Protected	0.95	1.00	1.00			0.99
Satd. Flow (prot)	1738	1478	3293			3376
Flt Permitted	0.95	1.00	1.00			0.66
Satd. Flow (perm)	1738	1478	3293			2254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	115	413	243	120	302
RTOR Reduction (vph)	0	91	52	0	0	0
Lane Group Flow (vph)	265	24	604	0	0	422
Confl. Peds. (#/hr)		1		4	4	
Heavy Vehicles (%)	5%	9%	3%	5%	13%	4%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2			8	
Actuated Green, G (s)	19.4	19.4	63.1			63.1
Effective Green, g (s)	19.4	19.4	63.1			63.1
Actuated g/C Ratio	0.21	0.21	0.67			0.67
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	356	303	2198			1505
v/s Ratio Prot	c0.15		0.18			
v/s Ratio Perm		0.02				c0.19
v/c Ratio	0.74	0.08	0.27			0.28
Uniform Delay, d1	35.2	30.3	6.4			6.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	8.2	0.1	0.3			0.1
Delay (s)	43.4	30.4	6.7			6.5
Level of Service	D	C	A			A
Approach Delay (s)	39.5		6.7			6.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

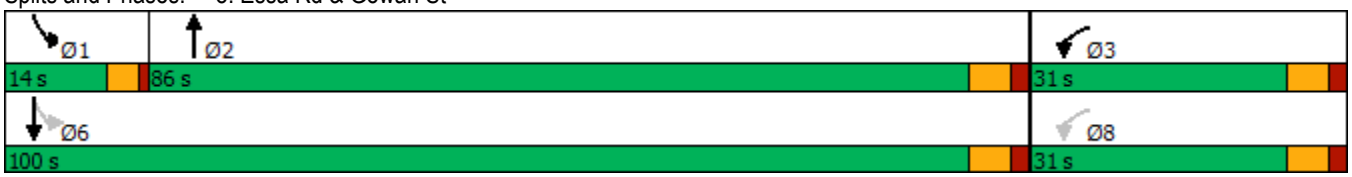
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations							
Traffic Volume (vph)	2	196	482	3	112	382	
Future Volume (vph)	2	196	482	3	112	382	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.99		1.00				
Frt	0.866		0.999				
Flt Protected						0.989	
Satd. Flow (prot)	1601	0	3507	0	0	3383	
Flt Permitted						0.712	
Satd. Flow (perm)	1601	0	3507	0	0	2435	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	213		1				
Link Speed (k/h)	48		48			48	
Link Distance (m)	165.5		221.2			124.5	
Travel Time (s)	12.4		16.6			9.3	
Confl. Bikes (#/hr)		2		5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	50%	2%	4%	0%	2%	7%	
Bus Blockages (#/hr)	0	0	0	0	0	4	
Adj. Flow (vph)	2	213	524	3	122	415	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	215	0	527	0	0	537	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	1.6		1.6			1.6	
Two way Left Turn Lane							
Headway Factor	0.99	0.99	0.99	0.99	0.99	1.00	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	6.1		30.5		6.1	30.5	
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)	6.1		1.8		6.1	1.8	
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)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	pm+pt		NA		pm+pt	NA	
Protected Phases	3		2		1	6	8

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Permitted Phases	8				6		
Detector Phase	3		2		1	6	
Switch Phase							
Minimum Initial (s)	10.0		80.0		7.0	80.0	10.0
Minimum Split (s)	27.0		86.0		11.0	86.0	27.0
Total Split (s)	31.0		86.0		14.0	100.0	31.0
Total Split (%)	23.7%		65.6%		10.7%	76.3%	24%
Maximum Green (s)	25.0		80.0		10.0	94.0	25.0
Yellow Time (s)	4.0		4.0		3.0	4.0	4.0
All-Red Time (s)	2.0		2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		Max		None	Max	None
Walk Time (s)	10.0		65.0			65.0	10.0
Flash Dont Walk (s)	11.0		15.0			15.0	11.0
Pedestrian Calls (#/hr)	0		0			0	0
Act Effct Green (s)	10.7		94.0			94.0	
Actuated g/C Ratio	0.09		0.80			0.80	
v/c Ratio	0.63		0.19			0.27	
Control Delay	15.8		2.8			3.3	
Queue Delay	0.0		0.0			0.4	
Total Delay	15.8		2.8			3.7	
LOS	B		A			A	
Approach Delay	15.8		2.8			3.7	
Approach LOS	B		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 131			
Actuated Cycle Length: 116.8			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 5.4		Intersection LOS: A	
Intersection Capacity Utilization 116.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: Essa Rd & Gowan St

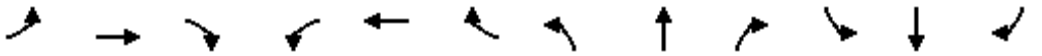


Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	215	527	537
v/c Ratio	0.63	0.19	0.27
Control Delay	15.8	2.8	3.3
Queue Delay	0.0	0.0	0.4
Total Delay	15.8	2.8	3.7
Queue Length 50th (m)	0.4	11.0	12.2
Queue Length 95th (m)	22.7	17.8	20.4
Internal Link Dist (m)	141.5	197.2	100.5
Turn Bay Length (m)			
Base Capacity (vph)	510	2824	1960
Starvation Cap Reductn	0	0	875
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.19	0.49

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	196	482	3	112	382
Future Volume (vph)	2	196	482	3	112	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.87		1.00			1.00
Flt Protected	1.00		1.00			0.99
Satd. Flow (prot)	1597		3507			3382
Flt Permitted	1.00		1.00			0.71
Satd. Flow (perm)	1597		3507			2434
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	213	524	3	122	415
RTOR Reduction (vph)	193	0	0	0	0	0
Lane Group Flow (vph)	22	0	527	0	0	537
Confl. Bikes (#/hr)		2		5		
Heavy Vehicles (%)	50%	2%	4%	0%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	4
Turn Type	pm+pt		NA		pm+pt	NA
Protected Phases	3		2		1	6
Permitted Phases	8				6	
Actuated Green, G (s)	10.7		94.0			94.0
Effective Green, g (s)	10.7		94.0			94.0
Actuated g/C Ratio	0.09		0.81			0.81
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	146		2824			1960
v/s Ratio Prot	c0.01		0.15			
v/s Ratio Perm						c0.22
v/c Ratio	0.15		0.19			0.27
Uniform Delay, d1	48.8		2.6			2.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.5		0.1			0.1
Delay (s)	49.3		2.7			2.9
Level of Service	D		A			A
Approach Delay (s)	49.3		2.7			2.9
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	116.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

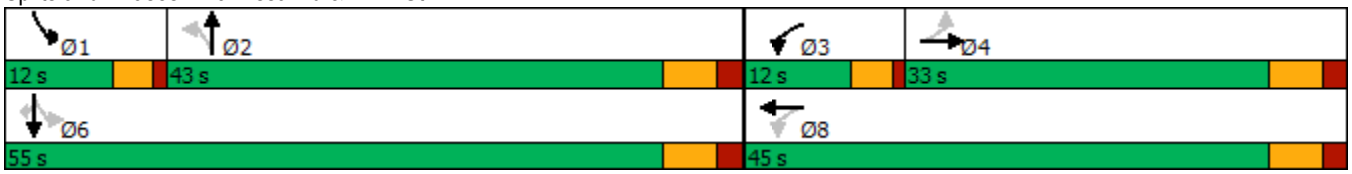


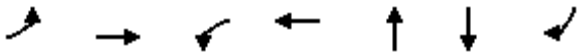
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	272	67	108	290	143	67	482	108	41	348	28
Future Volume (vph)	67	272	67	108	290	143	67	482	108	41	348	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	25.0		30.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Frt		0.970			0.950			0.975				0.850
Flt Protected	0.950			0.950				0.995			0.995	
Satd. Flow (prot)	1825	1780	0	1706	1753	0	0	3407	0	0	3447	1633
Flt Permitted	0.495			0.325				0.850			0.821	
Satd. Flow (perm)	950	1780	0	583	1753	0	0	2910	0	0	2843	1596
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			29			26				76
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		328.8			105.3			124.5			69.7	
Travel Time (s)		24.7			7.9			9.3			5.2	
Confl. Peds. (#/hr)	1		2	2		1	2		6	6		2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	4%	6%	7%	3%	5%	4%	3%	5%	0%	6%	0%
Adj. Flow (vph)	72	292	72	116	312	154	72	518	116	44	374	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	364	0	116	466	0	0	706	0	0	418	30
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		3	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		34.0	34.0		7.0	34.0	34.0
Minimum Split (s)	31.0	31.0		11.0	31.0		40.0	40.0		11.0	40.0	40.0
Total Split (s)	33.0	33.0		12.0	45.0		43.0	43.0		12.0	55.0	55.0
Total Split (%)	33.0%	33.0%		12.0%	45.0%		43.0%	43.0%		12.0%	55.0%	55.0%
Maximum Green (s)	27.0	27.0		8.0	39.0		37.0	37.0		8.0	49.0	49.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		None	Max		None	None		None	None	None
Walk Time (s)	10.0	10.0			10.0		22.0	22.0			22.0	22.0
Flash Dont Walk (s)	15.0	15.0			15.0		12.0	12.0			12.0	12.0
Pedestrian Calls (#/hr)	0	0			0		0	0			0	0
Act Effct Green (s)	27.3	27.3		41.0	39.0			34.0			34.0	34.0
Actuated g/C Ratio	0.32	0.32		0.48	0.46			0.40			0.40	0.40
v/c Ratio	0.24	0.63		0.30	0.57			0.60			0.37	0.04
Control Delay	24.1	29.6		14.5	19.0			21.9			19.1	0.1
Queue Delay	0.0	0.0		0.0	0.0			0.1			0.0	0.0
Total Delay	24.1	29.6		14.5	19.0			22.0			19.1	0.1
LOS	C	C		B	B			C			B	A
Approach Delay		28.7			18.1			22.0			17.8	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 85			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 109.0%		ICU Level of Service H	
Analysis Period (min) 15			

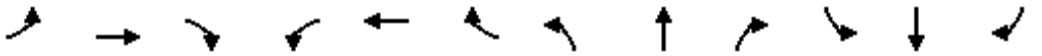
Splits and Phases: 9: Essa Rd & Tiffin St





Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	72	364	116	466	706	418	30
v/c Ratio	0.24	0.63	0.30	0.57	0.60	0.37	0.04
Control Delay	24.1	29.6	14.5	19.0	21.9	19.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	24.1	29.6	14.5	19.0	22.0	19.1	0.1
Queue Length 50th (m)	8.6	48.4	10.0	49.9	44.6	24.5	0.0
Queue Length 95th (m)	19.1	76.7	19.0	78.1	62.1	35.8	0.4
Internal Link Dist (m)		304.8		81.3	100.5	45.7	
Turn Bay Length (m)	20.0		20.0				30.0
Base Capacity (vph)	304	578	386	820	1281	1638	952
Starvation Cap Reductn	0	0	0	0	45	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.63	0.30	0.57	0.57	0.26	0.03

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	272	67	108	290	143	67	482	108	41	348	28
Future Volume (vph)	67	272	67	108	290	143	67	482	108	41	348	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.95			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1824	1781		1705	1754			3409			3445	1596
Flt Permitted	0.50	1.00		0.32	1.00			0.85			0.82	1.00
Satd. Flow (perm)	951	1781		583	1754			2911			2845	1596
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	72	292	72	116	312	154	72	518	116	44	374	30
RTOR Reduction (vph)	0	8	0	0	16	0	0	16	0	0	0	18
Lane Group Flow (vph)	72	356	0	116	450	0	0	690	0	0	418	12
Confl. Peds. (#/hr)	1		2	2		1	2		6	6		2
Heavy Vehicles (%)	0%	4%	6%	7%	3%	5%	4%	3%	5%	0%	6%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	27.3	27.3		39.0	39.0			34.0			34.0	34.0
Effective Green, g (s)	27.3	27.3		39.0	39.0			34.0			34.0	34.0
Actuated g/C Ratio	0.32	0.32		0.46	0.46			0.40			0.40	0.40
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	305	572		369	804			1164			1138	638
v/s Ratio Prot		c0.20		0.03	c0.26							
v/s Ratio Perm	0.08			0.12				c0.24			0.15	0.01
v/c Ratio	0.24	0.62		0.31	0.56			0.59			0.37	0.02
Uniform Delay, d1	21.2	24.5		14.4	16.8			20.1			17.9	15.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	1.8	5.0		0.5	2.8			0.8			0.2	0.0
Delay (s)	23.0	29.5		14.9	19.6			20.9			18.1	15.4
Level of Service	C	C		B	B			C			B	B
Approach Delay (s)		28.4			18.6			20.9			18.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

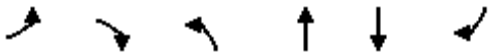
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	72	8	18	88	22	50
Future Volume (vph)	72	8	18	88	22	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.986				0.907	
Flt Protected				0.991	0.985	
Satd. Flow (prot)	1857	0	0	1866	1683	0
Flt Permitted				0.991	0.985	
Satd. Flow (perm)	1857	0	0	1866	1683	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	149.2			130.3	56.9	
Travel Time (s)	11.2			9.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	9	20	96	24	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	0	116	78	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	72	8	18	88	22	50
Future Volume (Veh/h)	72	8	18	88	22	50
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)	78	9	20	96	24	54
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			87		218	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		218	82
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	94
cM capacity (veh/h)			1509		759	977

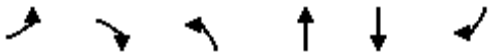
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	87	116	78
Volume Left	0	20	24
Volume Right	9	0	54
cSH	1700	1509	898
Volume to Capacity	0.05	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.2
Control Delay (s)	0.0	1.4	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	1.4	9.4
Approach LOS			A

Intersection Summary			
Average Delay		3.2	
Intersection Capacity Utilization		23.3%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	283	275	0
Future Volume (vph)	0	0	0	283	275	0
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						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	43.6			182.3	118.2	
Travel Time (s)	3.3			13.7	8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	308	299	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	308	299	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

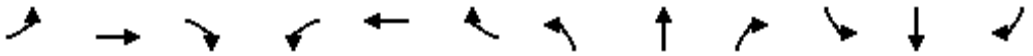
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	283	275	0
Future Volume (Veh/h)	0	0	0	283	275	0
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	308	299	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				182	230	
pX, platoon unblocked	0.99					
vC, conflicting volume	607	299	299			
vC1, stage 1 conf vol	299					
vC2, stage 2 conf vol	308					
vCu, unblocked vol	597	299	299			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	638	741	1262			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	308	299
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1262	1700
Volume to Capacity	0.00	0.00	0.18
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		18.2%	ICU Level of Service
Analysis Period (min)		15	

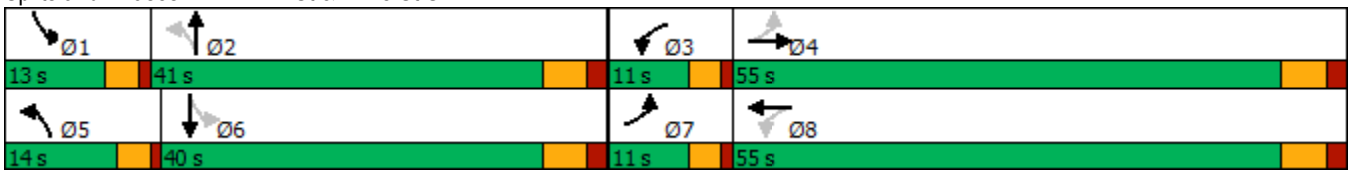


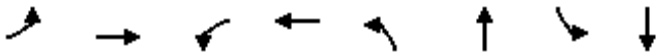
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	542	123	24	464	169	170	343	14	215	287	164
Future Volume (vph)	127	542	123	24	464	169	170	343	14	215	287	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00		0.99	1.00		1.00	0.99	
Frt		0.972			0.960			0.994			0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1757	0	1615	1763	0	1738	3396	0	1755	3220	0
Flt Permitted	0.105			0.119			0.372			0.486		
Satd. Flow (perm)	196	1757	0	202	1763	0	676	3396	0	896	3220	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			18			3			93	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	131	559	127	25	478	174	175	354	14	222	296	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	686	0	25	652	0	175	368	0	222	465	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	11.0	55.0		11.0	55.0		14.0	41.0		13.0	40.0	
Total Split (%)	9.2%	45.8%		9.2%	45.8%		11.7%	34.2%		10.8%	33.3%	
Maximum Green (s)	7.0	49.0		7.0	49.0		10.0	35.0		9.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	55.9	49.9		54.3	45.2		47.1	35.1		45.1	34.1	
Actuated g/C Ratio	0.48	0.43		0.47	0.39		0.40	0.30		0.39	0.29	
v/c Ratio	0.69	0.90		0.14	0.94		0.48	0.36		0.54	0.46	
Control Delay	36.9	48.4		16.1	55.5		27.1	33.5		29.4	28.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.9	48.4		16.1	55.5		27.1	33.5		29.4	28.9	
LOS	D	D		B	E		C	C		C	C	
Approach Delay		46.6			54.0			31.5			29.0	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 116.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 41.0		Intersection LOS: D	
Intersection Capacity Utilization 98.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S

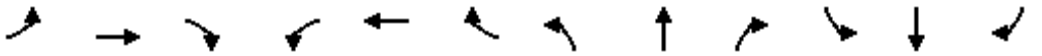




Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	686	25	652	175	368	222	465
v/c Ratio	0.69	0.90	0.14	0.94	0.48	0.36	0.54	0.46
Control Delay	36.9	48.4	16.1	55.5	27.1	33.5	29.4	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	48.4	16.1	55.5	27.1	33.5	29.4	28.9
Queue Length 50th (m)	15.5	151.5	2.8	137.8	26.3	35.9	34.4	37.9
Queue Length 95th (m)	#36.8	#228.3	7.2	#207.9	42.3	49.5	52.9	53.7
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	189	767	179	754	365	1025	413	1008
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	0.69	0.89	0.14	0.86	0.48	0.36	0.54	0.46

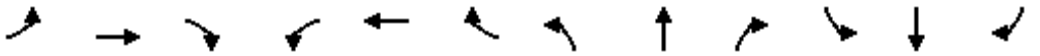
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	542	123	24	464	169	170	343	14	215	287	164
Future Volume (vph)	127	542	123	24	464	169	170	343	14	215	287	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	1757		1615	1763		1734	3397		1753	3222	
Flt Permitted	0.10	1.00		0.12	1.00		0.37	1.00		0.49	1.00	
Satd. Flow (perm)	196	1757		202	1763		678	3397		897	3222	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	131	559	127	25	478	174	175	354	14	222	296	169
RTOR Reduction (vph)	0	7	0	0	11	0	0	2	0	0	66	0
Lane Group Flow (vph)	131	679	0	25	641	0	175	366	0	222	399	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	56.8	49.8		51.0	46.9		45.1	35.1		43.1	34.1	
Effective Green, g (s)	56.8	49.8		51.0	46.9		45.1	35.1		43.1	34.1	
Actuated g/C Ratio	0.48	0.42		0.43	0.40		0.38	0.30		0.37	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	741		136	700		348	1010		392	931	
v/s Ratio Prot	c0.04	c0.39		0.01	0.36		0.04	0.11		c0.04	0.12	
v/s Ratio Perm	0.29			0.07			0.15			c0.16		
v/c Ratio	0.70	0.92		0.18	0.92		0.50	0.36		0.57	0.43	
Uniform Delay, d1	24.2	32.1		24.1	33.7		25.4	32.6		27.8	34.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.2	16.0		0.7	16.7		1.1	1.0		1.9	1.4	
Delay (s)	35.4	48.1		24.8	50.3		26.5	33.6		29.7	35.5	
Level of Service	D	D		C	D		C	C		C	D	
Approach Delay (s)		46.1			49.4			31.4			33.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

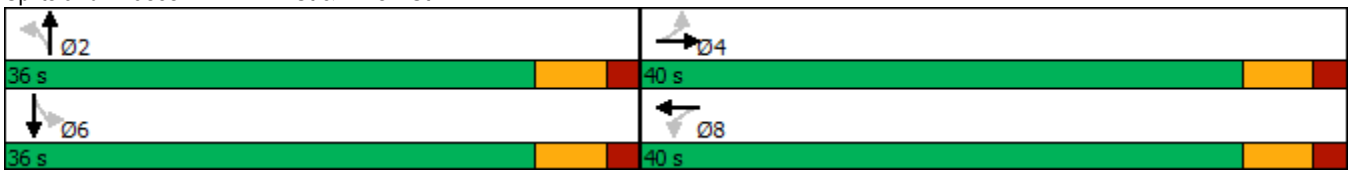


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	536	98	12	466	24	147	202	35	28	167	56
Future Volume (vph)	40	536	98	12	466	24	147	202	35	28	167	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			0.99	
Frt		0.977			0.993			0.988			0.970	
Flt Protected	0.950			0.950				0.981			0.995	
Satd. Flow (prot)	1825	1748	0	1825	1827	0	0	1793	0	0	1785	0
Flt Permitted	0.335			0.202				0.736			0.932	
Satd. Flow (perm)	643	1748	0	388	1827	0	0	1344	0	0	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4			8			23	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	43	583	107	13	507	26	160	220	38	30	182	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	690	0	13	533	0	0	418	0	0	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)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.2	34.2		34.2	34.2			25.1			25.1	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.35			0.35	
v/c Ratio	0.14	0.82		0.07	0.61			0.87			0.45	
Control Delay	13.7	27.0		13.3	18.4			41.8			18.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.7	27.0		13.3	18.4			41.8			18.5	
LOS	B	C		B	B			D			B	
Approach Delay		26.2			18.3			41.8			18.5	
Approach LOS		C			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 71.4			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

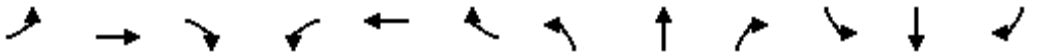
Splits and Phases: 2: Tiffin St & Innisfil St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	690	13	533	418	273
v/c Ratio	0.14	0.82	0.07	0.61	0.87	0.45
Control Delay	13.7	27.0	13.3	18.4	41.8	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	27.0	13.3	18.4	41.8	18.5
Queue Length 50th (m)	3.3	79.1	1.0	53.2	50.1	24.9
Queue Length 95th (m)	9.5	#149.3	4.3	88.8	#95.9	43.5
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	308	845	185	877	573	720
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.82	0.07	0.61	0.73	0.38

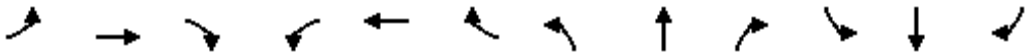
Intersection Summary

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



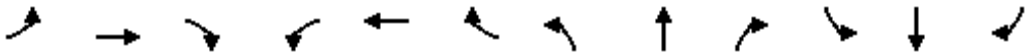
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	536	98	12	466	24	147	202	35	28	167	56
Future Volume (vph)	40	536	98	12	466	24	147	202	35	28	167	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1823	1747		1825	1827			1792			1784	
Flt Permitted	0.33	1.00		0.20	1.00			0.74			0.93	
Satd. Flow (perm)	643	1747		388	1827			1343			1672	
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)	43	583	107	13	507	26	160	220	38	30	182	61
RTOR Reduction (vph)	0	8	0	0	2	0	0	5	0	0	15	0
Lane Group Flow (vph)	43	682	0	13	531	0	0	413	0	0	258	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.2	34.2		34.2	34.2			25.1			25.1	
Effective Green, g (s)	34.2	34.2		34.2	34.2			25.1			25.1	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.35			0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	308	837		186	876			472			588	
v/s Ratio Prot		c0.39			0.29							
v/s Ratio Perm	0.07			0.03				c0.31			0.15	
v/c Ratio	0.14	0.81		0.07	0.61			0.87			0.44	
Uniform Delay, d1	10.3	15.8		10.0	13.6			21.6			17.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	8.6		0.7	3.1			16.3			0.5	
Delay (s)	11.3	24.4		10.7	16.7			38.0			18.2	
Level of Service	B	C		B	B			D			B	
Approach Delay (s)		23.6			16.6			38.0			18.2	
Approach LOS		C			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.0%	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)	7	4	15	4	7	80	15	401	13	58	355	22
Future Volume (vph)	7	4	15	4	7	80	15	401	13	58	355	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.922			0.881			0.996			0.993	
Flt Protected		0.987			0.998			0.998			0.993	
Satd. Flow (prot)	0	1653	0	0	1212	0	0	1752	0	0	1733	0
Flt Permitted		0.987			0.998			0.998			0.993	
Satd. Flow (perm)	0	1653	0	0	1212	0	0	1752	0	0	1733	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			149.2			548.1			132.7	
Travel Time (s)		8.1			11.2			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	7	4	15	4	7	82	15	413	13	60	366	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	93	0	0	441	0	0	449	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

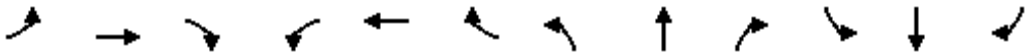
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	15	4	7	80	15	401	13	58	355	22
Future Volume (Veh/h)	7	4	15	4	7	80	15	401	13	58	355	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	7	4	15	4	7	82	15	413	13	60	366	23
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87		0.87					
vC, conflicting volume	1040	960	384	964	964	420	395			426		
vC1, stage 1 conf vol	504	504		450	450							
vC2, stage 2 conf vol	536	456		514	515							
vCu, unblocked vol	973	881	222	886	887	420	235			426		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	98	99	98	99	98	85	99			95		
cM capacity (veh/h)	335	408	693	378	418	553	1032			1117		

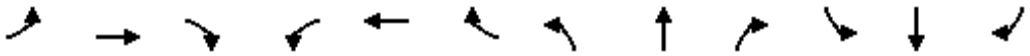
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	93	441	449
Volume Left	7	4	15	60
Volume Right	15	82	13	23
cSH	497	530	1032	1117
Volume to Capacity	0.05	0.18	0.01	0.05
Queue Length 95th (m)	1.3	4.8	0.3	1.3
Control Delay (s)	12.7	13.2	0.5	1.6
Lane LOS	B	B	A	A
Approach Delay (s)	12.7	13.2	0.5	1.6
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	58.5%	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)	33	0	48	27	0	46	37	278	10	18	247	15
Future Volume (vph)	33	0	48	27	0	46	37	278	10	18	247	15
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	50.0		0.0	15.0		15.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.920			0.915			0.996			0.993	
Flt Protected		0.980			0.982			0.994			0.997	
Satd. Flow (prot)	0	1732	0	0	1692	0	0	1794	0	0	1805	0
Flt Permitted		0.980			0.982			0.994			0.997	
Satd. Flow (perm)	0	1732	0	0	1692	0	0	1794	0	0	1805	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		130.3			55.2			118.5			111.6	
Travel Time (s)		9.8			4.1			8.9			8.4	
Confl. Peds. (#/hr)	1						6					6
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%	2%	0%	2%	2%	2%	7%	6%	2%	2%	4%	33%
Adj. Flow (vph)	36	0	52	29	0	50	40	302	11	20	268	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	79	0	0	353	0	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

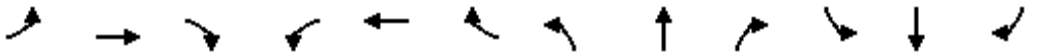
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	48	27	0	46	37	278	10	18	247	15
Future Volume (Veh/h)	33	0	48	27	0	46	37	278	10	18	247	15
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)	36	0	52	29	0	50	40	302	11	20	268	16
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	760	715	282	756	718	308	290			313		
vC1, stage 1 conf vol	322	322		388	388							
vC2, stage 2 conf vol	438	393		368	330							
vCu, unblocked vol	723	675	219	717	677	308	228			313		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	92	100	93	94	100	93	97			98		
cM capacity (veh/h)	470	499	780	480	496	731	1240			1247		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	88	79	353	304
Volume Left	36	29	40	20
Volume Right	52	50	11	16
cSH	615	613	1240	1247
Volume to Capacity	0.14	0.13	0.03	0.02
Queue Length 95th (m)	3.8	3.3	0.8	0.4
Control Delay (s)	11.8	11.7	1.2	0.7
Lane LOS	B	B	A	A
Approach Delay (s)	11.8	11.7	1.2	0.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	39.8%	ICU Level of Service	A	
Analysis Period (min)	15			

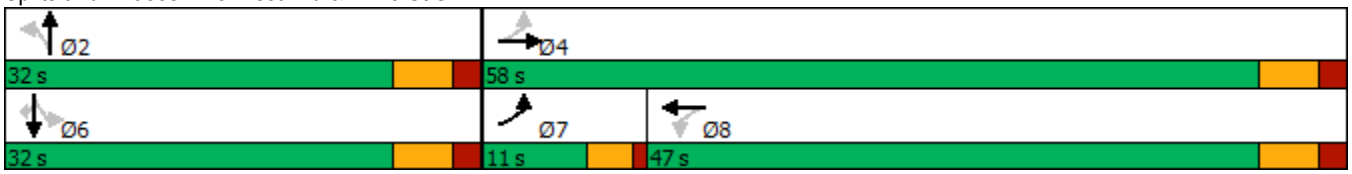


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	583	70	1	640	46	81	52	1	43	74	281
Future Volume (vph)	256	583	70	1	640	46	81	52	1	43	74	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		0.99		0.99
Frt		0.984			0.990			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1644	3460	0	1825	3467	0	1738	1842	0	1772	1847	1526
Flt Permitted	0.305			0.382			0.705			0.719		
Satd. Flow (perm)	527	3460	0	734	3467	0	1287	1842	0	1332	1847	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			11			1				281
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	278	634	76	1	696	50	88	57	1	47	80	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	278	710	0	1	746	0	88	58	0	47	80	305
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	58.0		47.0	47.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.2%	64.4%		52.2%	52.2%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	7.0	52.0		41.0	41.0		26.0	26.0		26.0	26.0	26.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	54.1	52.1		41.1	41.1		12.0	12.0		12.0	12.0	12.0
Actuated g/C Ratio	0.71	0.68		0.54	0.54		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.58	0.30		0.00	0.40		0.44	0.20		0.22	0.28	0.64
Control Delay	9.9	5.3		9.0	11.3		35.9	28.8		30.3	30.4	12.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	9.9	5.3		9.0	11.3		35.9	28.8		30.3	30.4	12.0
LOS	A	A		A	B		D	C		C	C	B
Approach Delay		6.6			11.3			33.0			17.4	
Approach LOS		A			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S

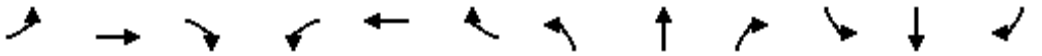


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	278	710	1	746	88	58	47	80	305
v/c Ratio	0.58	0.30	0.00	0.40	0.44	0.20	0.22	0.28	0.64
Control Delay	9.9	5.3	9.0	11.3	35.9	28.8	30.3	30.4	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	5.3	9.0	11.3	35.9	28.8	30.3	30.4	12.0
Queue Length 50th (m)	10.1	15.5	0.1	28.3	11.6	7.2	6.0	10.2	3.0
Queue Length 95th (m)	25.7	31.3	0.8	49.3	24.2	16.6	14.7	21.4	23.7
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0						25.0
Base Capacity (vph)	477	2375	396	1876	440	631	456	632	699
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	0.58	0.30	0.00	0.40	0.20	0.09	0.10	0.13	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	583	70	1	640	46	81	52	1	43	74	281
Future Volume (vph)	256	583	70	1	640	46	81	52	1	43	74	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1644	3460		1824	3467		1735	1843		1762	1847	1505
Flt Permitted	0.31	1.00		0.38	1.00		0.70	1.00		0.72	1.00	1.00
Satd. Flow (perm)	528	3460		733	3467		1288	1843		1334	1847	1505
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)	278	634	76	1	696	50	88	57	1	47	80	305
RTOR Reduction (vph)	0	8	0	0	5	0	0	1	0	0	0	237
Lane Group Flow (vph)	278	702	0	1	741	0	88	57	0	47	80	68
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	52.1	52.1		41.1	41.1		12.0	12.0		12.0	12.0	12.0
Effective Green, g (s)	52.1	52.1		41.1	41.1		12.0	12.0		12.0	12.0	12.0
Actuated g/C Ratio	0.68	0.68		0.54	0.54		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	464	2368		395	1872		203	290		210	291	237
v/s Ratio Prot	c0.06	0.20			0.21			0.03			0.04	
v/s Ratio Perm	c0.36			0.00			c0.07			0.04		0.05
v/c Ratio	0.60	0.30		0.00	0.40		0.43	0.20		0.22	0.27	0.29
Uniform Delay, d1	5.3	4.7		8.1	10.2		29.0	27.9		28.0	28.2	28.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.3		0.0	0.6		1.5	0.3		0.5	0.5	0.7
Delay (s)	7.3	5.1		8.1	10.9		30.5	28.2		28.5	28.7	29.0
Level of Service	A	A		A	B		C	C		C	C	C
Approach Delay (s)		5.7			10.9			29.6			28.9	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

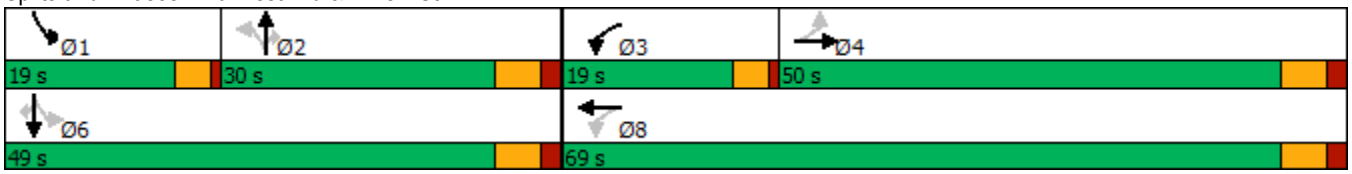


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	558	34	15	483	69	25	102	30	57	127	110
Future Volume (vph)	57	558	34	15	483	69	25	102	30	57	127	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.99		1.00	
Frt		0.992			0.982				0.850			0.850
Flt Protected		0.996			0.999			0.990			0.985	
Satd. Flow (prot)	0	3458	0	0	3412	0	0	1811	1570	0	1830	1633
Flt Permitted		0.836			0.930			0.909			0.853	
Satd. Flow (perm)	0	2902	0	0	3176	0	0	1663	1548	0	1584	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20				102			105
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			182.0	
Travel Time (s)		25.3			14.7			10.0			13.7	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Adj. Flow (vph)	62	607	37	16	525	75	27	111	33	62	138	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	706	0	0	616	0	0	138	33	0	200	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.0			63.0			24.1	24.1		24.1	24.1
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
v/c Ratio		0.38			0.30			0.34	0.07		0.52	0.25
Control Delay		9.4			8.3			33.8	0.3		38.1	9.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		9.4			8.3			33.8	0.3		38.1	9.4
LOS		A			A			C	A		D	A
Approach Delay		9.4			8.3			27.4			27.4	
Approach LOS		A			A			C			C	

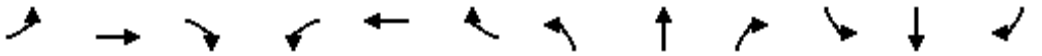
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 99.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 97.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	706	616	138	33	200	120
v/c Ratio	0.38	0.30	0.34	0.07	0.52	0.25
Control Delay	9.4	8.3	33.8	0.3	38.1	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	8.3	33.8	0.3	38.1	9.4
Queue Length 50th (m)	30.8	24.4	21.9	0.0	33.3	2.2
Queue Length 95th (m)	42.0	33.7	38.7	0.0	55.3	15.5
Internal Link Dist (m)	313.1	171.7	108.7		158.0	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1846	2026	404	453	687	767
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.30	0.34	0.07	0.29	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	558	34	15	483	69	25	102	30	57	127	110
Future Volume (vph)	57	558	34	15	483	69	25	102	30	57	127	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3457			3410			1812	1549		1829	1633
Flt Permitted		0.84			0.93			0.91	1.00		0.85	1.00
Satd. Flow (perm)		2902			3175			1663	1549		1584	1633
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)	62	607	37	16	525	75	27	111	33	62	138	120
RTOR Reduction (vph)	0	2	0	0	7	0	0	0	25	0	0	79
Lane Group Flow (vph)	0	704	0	0	609	0	0	138	8	0	200	41
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.0			63.0			24.1	24.1		24.1	24.1
Effective Green, g (s)		63.0			63.0			24.1	24.1		24.1	24.1
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1844			2018			404	376		385	397
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.19			0.08	0.01		c0.13	0.02
v/c Ratio		0.38			0.30			0.34	0.02		0.52	0.10
Uniform Delay, d1		8.7			8.1			31.0	28.5		32.5	29.1
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6			0.1			0.5	0.0		1.2	0.1
Delay (s)		9.3			8.2			31.5	28.6		33.7	29.2
Level of Service		A			A			C	C		C	C
Approach Delay (s)		9.3			8.2			30.9			32.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

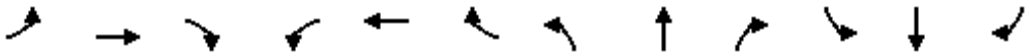
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	75	0	0	91	0	0
Future Volume (vph)	75	0	0	91	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	149.2			130.3	56.9	
Travel Time (s)	11.2			9.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	0	0	99	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	0	99	0	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 8.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	75	0	0	91	0	0
Future Volume (Veh/h)	75	0	0	91	0	0
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)	82	0	0	99	0	0
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			82		181	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			82		181	82
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	100
cM capacity (veh/h)			1515		808	978

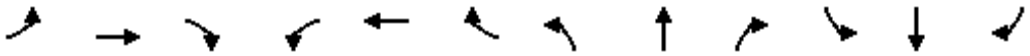
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	82	99	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1515	1700
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.1%	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)	75	0	0	0	0	91	0	0	0	0	0	0
Future Volume (vph)	75	0	0	0	0	91	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865							
Flt Protected		0.950										
Satd. Flow (prot)	0	1789	0	0	1629	0	0	1883	0	0	1883	0
Flt Permitted		0.950										
Satd. Flow (perm)	0	1789	0	0	1629	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		41.4			40.2			182.0			118.5	
Travel Time (s)		3.1			3.0			13.7			8.9	
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
Adj. Flow (vph)	82	0	0	0	0	99	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	99	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

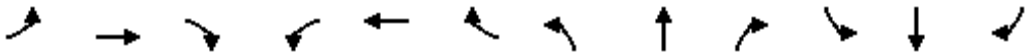
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	0	0	0	0	91	0	0	0	0	0	0
Future Volume (Veh/h)	75	0	0	0	0	91	0	0	0	0	0	0
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)	82	0	0	0	0	99	0	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								182			230	
pX, platoon unblocked												
vC, conflicting volume	99	0	0	0	0	0	0			0		
vC1, stage 1 conf vol	0	0		0	0							
vC2, stage 2 conf vol	99	0		0	0							
vCu, unblocked vol	99	0	0	0	0	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	100	100	100	91	100			100		
cM capacity (veh/h)	805	896	1085	1023	896	1085	1623			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	82	99	0	0
Volume Left	82	0	0	0
Volume Right	0	99	0	0
cSH	805	1085	1700	1700
Volume to Capacity	0.10	0.09	0.00	0.00
Queue Length 95th (m)	2.6	2.3	0.0	0.0
Control Delay (s)	10.0	8.7	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	10.0	8.7	0.0	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	14.2%	ICU Level of Service	A	
Analysis Period (min)	15			

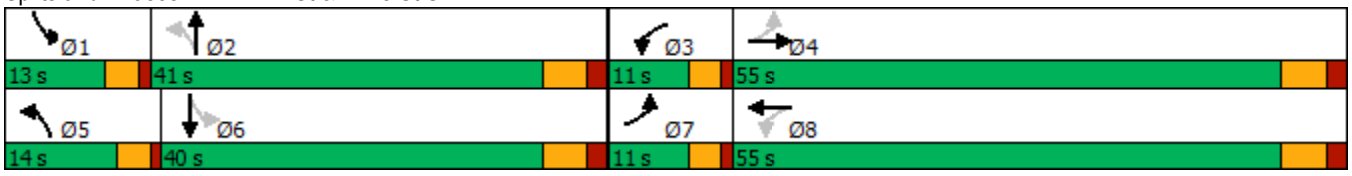


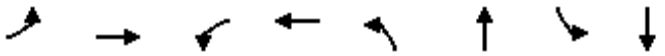
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	542	126	24	464	169	177	350	14	215	290	164
Future Volume (vph)	127	542	126	24	464	169	177	350	14	215	290	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00		0.99	1.00		1.00	0.99	
Frt		0.972			0.960			0.994			0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	1757	0	1615	1763	0	1738	3396	0	1755	3223	0
Flt Permitted	0.105			0.116			0.369			0.479		
Satd. Flow (perm)	196	1757	0	197	1763	0	671	3396	0	883	3223	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			18			3			92	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	131	559	130	25	478	174	182	361	14	222	299	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	689	0	25	652	0	182	375	0	222	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	11.0	55.0		11.0	55.0		14.0	41.0		13.0	40.0	
Total Split (%)	9.2%	45.8%		9.2%	45.8%		11.7%	34.2%		10.8%	33.3%	
Maximum Green (s)	7.0	49.0		7.0	49.0		10.0	35.0		9.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	55.9	49.9		54.3	45.2		47.1	35.1		45.1	34.1	
Actuated g/C Ratio	0.48	0.43		0.47	0.39		0.40	0.30		0.39	0.29	
v/c Ratio	0.69	0.91		0.14	0.94		0.50	0.37		0.54	0.46	
Control Delay	36.9	48.9		16.2	55.5		27.7	33.6		29.6	29.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.9	48.9		16.2	55.5		27.7	33.6		29.6	29.0	
LOS	D	D		B	E		C	C		C	C	
Approach Delay		47.0			54.0			31.7			29.2	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 116.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 41.1		Intersection LOS: D	
Intersection Capacity Utilization 99.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





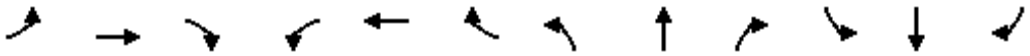
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	689	25	652	182	375	222	468
v/c Ratio	0.69	0.91	0.14	0.94	0.50	0.37	0.54	0.46
Control Delay	36.9	48.9	16.2	55.5	27.7	33.6	29.6	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	48.9	16.2	55.5	27.7	33.6	29.6	29.0
Queue Length 50th (m)	15.5	152.8	2.8	137.8	27.5	36.6	34.4	38.4
Queue Length 95th (m)	#36.8	#229.8	7.2	#207.9	44.0	50.4	52.9	54.4
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	189	767	177	754	363	1025	409	1008
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	0.69	0.90	0.14	0.86	0.50	0.37	0.54	0.46

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	542	126	24	464	169	177	350	14	215	290	164
Future Volume (vph)	127	542	126	24	464	169	177	350	14	215	290	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	1756		1615	1763		1734	3398		1753	3223	
Flt Permitted	0.10	1.00		0.12	1.00		0.37	1.00		0.48	1.00	
Satd. Flow (perm)	196	1756		197	1763		674	3398		884	3223	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	131	559	130	25	478	174	182	361	14	222	299	169
RTOR Reduction (vph)	0	7	0	0	11	0	0	2	0	0	65	0
Lane Group Flow (vph)	131	682	0	25	641	0	182	373	0	222	403	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	56.8	49.8		51.0	46.9		45.1	35.1		43.1	34.1	
Effective Green, g (s)	56.8	49.8		51.0	46.9		45.1	35.1		43.1	34.1	
Actuated g/C Ratio	0.48	0.42		0.43	0.40		0.38	0.30		0.37	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	741		134	700		347	1010		389	931	
v/s Ratio Prot	c0.04	c0.39		0.01	0.36		c0.04	0.11		0.04	0.12	
v/s Ratio Perm	0.29			0.07			0.16			c0.16		
v/c Ratio	0.70	0.92		0.19	0.92		0.52	0.37		0.57	0.43	
Uniform Delay, d1	24.2	32.2		24.2	33.7		25.5	32.7		27.8	34.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.2	16.7		0.7	16.7		1.4	1.0		2.0	1.5	
Delay (s)	35.4	48.9		24.9	50.3		27.0	33.8		29.9	35.6	
Level of Service	D	D		C	D		C	C		C	D	
Approach Delay (s)		46.8			49.4			31.5			33.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

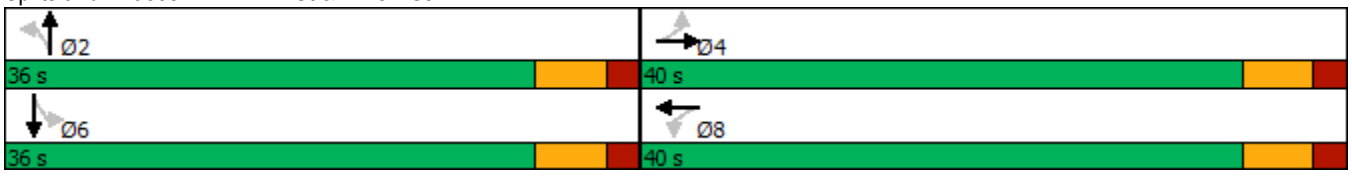


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	536	98	15	466	24	147	209	42	28	170	56
Future Volume (vph)	40	536	98	15	466	24	147	209	42	28	170	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			1.00			0.99	
Frt		0.977			0.993			0.986			0.970	
Flt Protected	0.950			0.950				0.982			0.995	
Satd. Flow (prot)	1825	1748	0	1825	1827	0	0	1792	0	0	1785	0
Flt Permitted	0.331			0.197				0.741			0.931	
Satd. Flow (perm)	635	1748	0	378	1827	0	0	1351	0	0	1670	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4			9			22	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	43	583	107	16	507	26	160	227	46	30	185	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	690	0	16	533	0	0	433	0	0	276	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.2	34.2		34.2	34.2			25.8			25.8	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.36			0.36	
v/c Ratio	0.14	0.82		0.09	0.61			0.89			0.45	
Control Delay	13.8	27.8		13.8	18.8			43.0			18.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.8	27.8		13.8	18.8			43.0			18.5	
LOS	B	C		B	B			D			B	
Approach Delay		26.9			18.6			43.0			18.5	
Approach LOS		C			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 72			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



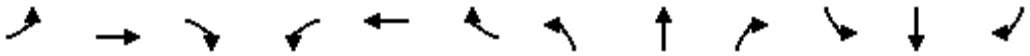
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	690	16	533	433	276
v/c Ratio	0.14	0.82	0.09	0.61	0.89	0.45
Control Delay	13.8	27.8	13.8	18.8	43.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	27.8	13.8	18.8	43.0	18.5
Queue Length 50th (m)	3.4	82.0	1.3	55.1	52.6	25.3
Queue Length 95th (m)	9.6	#149.3	4.9	88.8	#100.9	44.2
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	301	838	179	869	571	712
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.82	0.09	0.61	0.76	0.39

Intersection Summary

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

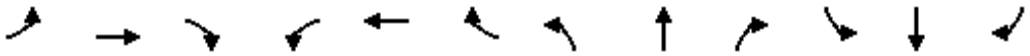
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	536	98	15	466	24	147	209	42	28	170	56
Future Volume (vph)	40	536	98	15	466	24	147	209	42	28	170	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.99			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1823	1747		1825	1827			1789			1785	
Flt Permitted	0.33	1.00		0.20	1.00			0.74			0.93	
Satd. Flow (perm)	636	1747		379	1827			1350			1671	
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)	43	583	107	16	507	26	160	227	46	30	185	61
RTOR Reduction (vph)	0	8	0	0	2	0	0	6	0	0	14	0
Lane Group Flow (vph)	43	682	0	16	531	0	0	427	0	0	262	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.2	34.2		34.2	34.2			25.7			25.7	
Effective Green, g (s)	34.2	34.2		34.2	34.2			25.7			25.7	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	302	830		180	869			482			597	
v/s Ratio Prot		c0.39			0.29							
v/s Ratio Perm	0.07			0.04				c0.32			0.16	
v/c Ratio	0.14	0.82		0.09	0.61			0.89			0.44	
Uniform Delay, d1	10.6	16.2		10.3	13.9			21.7			17.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	9.0		1.0	3.2			17.5			0.5	
Delay (s)	11.6	25.2		11.3	17.1			39.3			18.1	
Level of Service	B	C		B	B			D			B	
Approach Delay (s)		24.4			17.0			39.3			18.1	
Approach LOS		C			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	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)	7	4	15	11	7	94	15	401	16	63	355	22
Future Volume (vph)	7	4	15	11	7	94	15	401	16	63	355	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.922			0.886			0.995			0.993	
Flt Protected		0.987			0.995			0.998			0.993	
Satd. Flow (prot)	0	1653	0	0	1215	0	0	1750	0	0	1733	0
Flt Permitted		0.987			0.995			0.998			0.993	
Satd. Flow (perm)	0	1653	0	0	1215	0	0	1750	0	0	1733	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			149.2			548.1			132.7	
Travel Time (s)		8.1			11.2			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	7	4	15	11	7	97	15	413	16	65	366	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	115	0	0	444	0	0	454	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

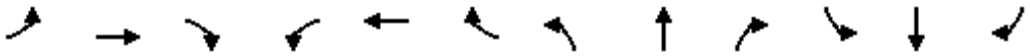
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	15	11	7	94	15	401	16	63	355	22
Future Volume (Veh/h)	7	4	15	11	7	94	15	401	16	63	355	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	7	4	15	11	7	97	15	413	16	65	366	23
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.87	0.87	0.87	0.87	0.87		0.87					
vC, conflicting volume	1066	972	384	976	976	422	395			429		
vC1, stage 1 conf vol	514	514		451	451							
vC2, stage 2 conf vol	552	459		524	525							
vCu, unblocked vol	1003	895	220	899	899	422	233			429		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	98	99	98	97	98	82	99			94		
cM capacity (veh/h)	313	401	694	372	412	552	1033			1115		

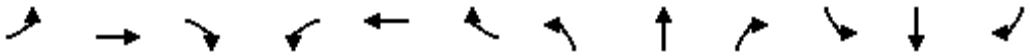
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	115	444	454
Volume Left	7	11	15	65
Volume Right	15	97	16	23
cSH	482	518	1033	1115
Volume to Capacity	0.05	0.22	0.01	0.06
Queue Length 95th (m)	1.3	6.4	0.3	1.4
Control Delay (s)	12.9	13.9	0.4	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	12.9	13.9	0.4	1.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	62.6%	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)	47	0	84	27	0	46	50	278	10	18	247	20
Future Volume (vph)	47	0	84	27	0	46	50	278	10	18	247	20
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	50.0		0.0	15.0		15.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.913			0.915			0.996			0.990	
Flt Protected		0.982			0.982			0.993			0.997	
Satd. Flow (prot)	0	1722	0	0	1692	0	0	1792	0	0	1790	0
Flt Permitted		0.982			0.982			0.993			0.997	
Satd. Flow (perm)	0	1722	0	0	1692	0	0	1792	0	0	1790	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		130.3			55.2			118.5			111.6	
Travel Time (s)		9.8			4.1			8.9			8.4	
Confl. Peds. (#/hr)	1						6					6
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%	2%	0%	2%	2%	2%	7%	6%	2%	2%	4%	33%
Adj. Flow (vph)	51	0	91	29	0	50	54	302	11	20	268	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	79	0	0	367	0	0	310	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

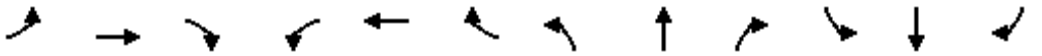
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	0	84	27	0	46	50	278	10	18	247	20
Future Volume (Veh/h)	47	0	84	27	0	46	50	278	10	18	247	20
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)	51	0	91	29	0	50	54	302	11	20	268	22
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	792	746	285	826	752	308	296			313		
vC1, stage 1 conf vol	325	325		416	416							
vC2, stage 2 conf vol	466	421		410	336							
vCu, unblocked vol	753	705	219	789	711	308	231			313		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	89	100	88	93	100	93	96			98		
cM capacity (veh/h)	451	482	779	426	476	731	1234			1247		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	142	79	367	310
Volume Left	51	29	54	20
Volume Right	91	50	11	22
cSH	618	579	1234	1247
Volume to Capacity	0.23	0.14	0.04	0.02
Queue Length 95th (m)	6.7	3.6	1.0	0.4
Control Delay (s)	12.6	12.2	1.6	0.7
Lane LOS	B	B	A	A
Approach Delay (s)	12.6	12.2	1.6	0.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			

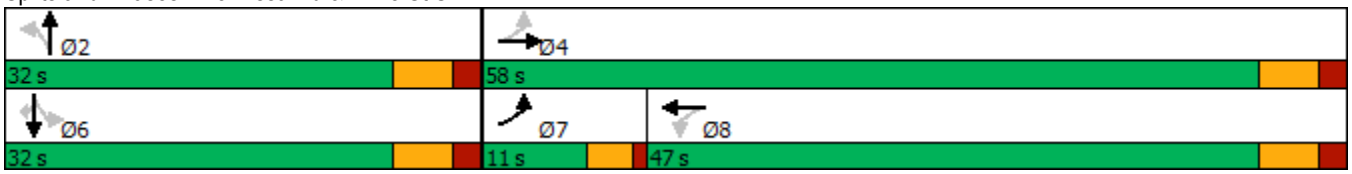


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	596	70	1	676	46	81	52	1	43	74	288
Future Volume (vph)	259	596	70	1	676	46	81	52	1	43	74	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		0.99		0.99
Frt		0.984			0.990			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1644	3460	0	1825	3467	0	1738	1842	0	1772	1847	1526
Flt Permitted	0.288			0.376			0.705			0.719		
Satd. Flow (perm)	498	3460	0	722	3467	0	1287	1842	0	1332	1847	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			10			1				268
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	282	648	76	1	735	50	88	57	1	47	80	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	724	0	1	785	0	88	58	0	47	80	313
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	58.0		47.0	47.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	12.2%	64.4%		52.2%	52.2%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	7.0	52.0		41.0	41.0		26.0	26.0		26.0	26.0	26.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	54.1	52.1		41.1	41.1		12.3	12.3		12.3	12.3	12.3
Actuated g/C Ratio	0.71	0.68		0.54	0.54		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.62	0.31		0.00	0.42		0.43	0.20		0.22	0.27	0.67
Control Delay	11.6	5.5		10.0	11.8		35.2	28.5		29.9	30.1	14.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	11.6	5.5		10.0	11.8		35.2	28.5		29.9	30.1	14.0
LOS	B	A		A	B		D	C		C	C	B
Approach Delay		7.2			11.7			32.5			18.6	
Approach LOS		A			B			C			B	

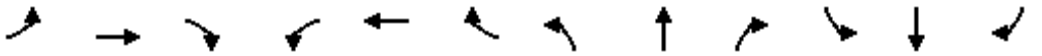
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 76.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S



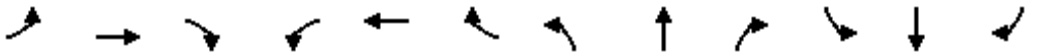
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	282	724	1	785	88	58	47	80	313
v/c Ratio	0.62	0.31	0.00	0.42	0.43	0.20	0.22	0.27	0.67
Control Delay	11.6	5.5	10.0	11.8	35.2	28.5	29.9	30.1	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	5.5	10.0	11.8	35.2	28.5	29.9	30.1	14.0
Queue Length 50th (m)	10.3	15.8	0.1	30.3	11.6	7.2	6.0	10.2	5.7
Queue Length 95th (m)	27.6	33.9	0.9	54.6	24.0	16.4	14.6	21.3	27.8
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0						25.0
Base Capacity (vph)	457	2365	388	1867	438	628	454	629	689
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	0.62	0.31	0.00	0.42	0.20	0.09	0.10	0.13	0.45

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	596	70	1	676	46	81	52	1	43	74	288
Future Volume (vph)	259	596	70	1	676	46	81	52	1	43	74	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1644	3461		1824	3469		1735	1843		1762	1847	1505
Flt Permitted	0.29	1.00		0.38	1.00		0.70	1.00		0.72	1.00	1.00
Satd. Flow (perm)	498	3461		723	3469		1288	1843		1334	1847	1505
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)	282	648	76	1	735	50	88	57	1	47	80	313
RTOR Reduction (vph)	0	8	0	0	5	0	0	1	0	0	0	225
Lane Group Flow (vph)	282	716	0	1	780	0	88	57	0	47	80	88
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	52.1	52.1		41.1	41.1		12.3	12.3		12.3	12.3	12.3
Effective Green, g (s)	52.1	52.1		41.1	41.1		12.3	12.3		12.3	12.3	12.3
Actuated g/C Ratio	0.68	0.68		0.54	0.54		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	444	2360		388	1866		207	296		214	297	242
v/s Ratio Prot	c0.06	0.21			0.22			0.03			0.04	
v/s Ratio Perm	c0.37			0.00			c0.07			0.04		0.06
v/c Ratio	0.64	0.30		0.00	0.42		0.43	0.19		0.22	0.27	0.36
Uniform Delay, d1	5.5	4.9		8.2	10.5		28.9	27.8		27.9	28.1	28.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.3		0.0	0.7		1.4	0.3		0.5	0.5	0.9
Delay (s)	8.5	5.2		8.2	11.2		30.3	28.1		28.4	28.6	29.5
Level of Service	A	A		A	B		C	C		C	C	C
Approach Delay (s)		6.1			11.2			29.4			29.2	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

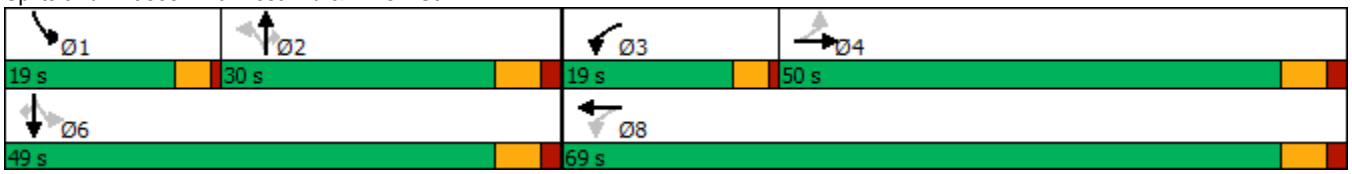


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	558	34	15	483	69	25	102	30	57	127	146
Future Volume (vph)	70	558	34	15	483	69	25	102	30	57	127	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.99		1.00	
Frt		0.992			0.982				0.850			0.850
Flt Protected		0.995			0.999			0.990			0.985	
Satd. Flow (prot)	0	3452	0	0	3412	0	0	1811	1570	0	1830	1633
Flt Permitted		0.808			0.929			0.909			0.853	
Satd. Flow (perm)	0	2803	0	0	3173	0	0	1663	1548	0	1584	1633
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20				102			139
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			182.0	
Travel Time (s)		25.3			14.7			10.0			13.7	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Adj. Flow (vph)	76	607	37	16	525	75	27	111	33	62	138	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	720	0	0	616	0	0	138	33	0	200	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.0			63.0			24.1	24.1		24.1	24.1
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
v/c Ratio		0.40			0.30			0.34	0.07		0.52	0.32
Control Delay		9.6			8.3			33.8	0.3		38.1	9.1
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		9.6			8.3			33.8	0.3		38.1	9.1
LOS		A			A			C	A		D	A
Approach Delay		9.6			8.3			27.4			25.3	
Approach LOS		A			A			C			C	

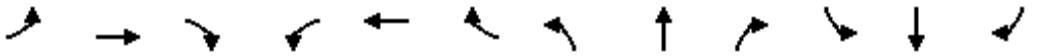
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 99.1			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 108.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	720	616	138	33	200	159
v/c Ratio	0.40	0.30	0.34	0.07	0.52	0.32
Control Delay	9.6	8.3	33.8	0.3	38.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	8.3	33.8	0.3	38.1	9.1
Queue Length 50th (m)	32.1	24.4	21.9	0.0	33.3	3.0
Queue Length 95th (m)	43.7	33.7	38.7	0.0	55.3	18.4
Internal Link Dist (m)	313.1	171.7	108.7		158.0	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1783	2024	404	453	687	786
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.30	0.34	0.07	0.29	0.20

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	558	34	15	483	69	25	102	30	57	127	146
Future Volume (vph)	70	558	34	15	483	69	25	102	30	57	127	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3452			3410			1812	1549		1829	1633
Flt Permitted		0.81			0.93			0.91	1.00		0.85	1.00
Satd. Flow (perm)		2803			3173			1663	1549		1584	1633
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)	76	607	37	16	525	75	27	111	33	62	138	159
RTOR Reduction (vph)	0	2	0	0	7	0	0	0	25	0	0	105
Lane Group Flow (vph)	0	718	0	0	609	0	0	138	8	0	200	54
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.0			63.0			24.1	24.1		24.1	24.1
Effective Green, g (s)		63.0			63.0			24.1	24.1		24.1	24.1
Actuated g/C Ratio		0.64			0.64			0.24	0.24		0.24	0.24
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1781			2017			404	376		385	397
v/s Ratio Prot												
v/s Ratio Perm		c0.26			0.19			0.08	0.01		c0.13	0.03
v/c Ratio		0.40			0.30			0.34	0.02		0.52	0.14
Uniform Delay, d1		8.8			8.1			31.0	28.5		32.5	29.3
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7			0.1			0.5	0.0		1.2	0.2
Delay (s)		9.5			8.2			31.5	28.6		33.7	29.5
Level of Service		A			A			C	C		C	C
Approach Delay (s)		9.5			8.2			30.9			31.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

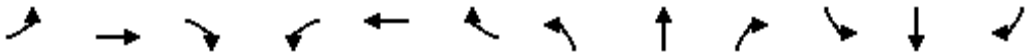
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	75	8	18	91	22	50
Future Volume (vph)	75	8	18	91	22	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987				0.907	
Flt Protected				0.992	0.985	
Satd. Flow (prot)	1859	0	0	1868	1683	0
Flt Permitted				0.992	0.985	
Satd. Flow (perm)	1859	0	0	1868	1683	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	149.2			130.3	56.9	
Travel Time (s)	11.2			9.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	9	20	99	24	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	0	119	78	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	75	8	18	91	22	50
Future Volume (Veh/h)	75	8	18	91	22	50
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)	82	9	20	99	24	54
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			91		226	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		226	86
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	94
cM capacity (veh/h)			1504		753	972

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	91	119	78
Volume Left	0	20	24
Volume Right	9	0	54
cSH	1700	1504	892
Volume to Capacity	0.05	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.2
Control Delay (s)	0.0	1.3	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.4
Approach LOS			A

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		23.4%	ICU Level of Service A
Analysis Period (min)		15	

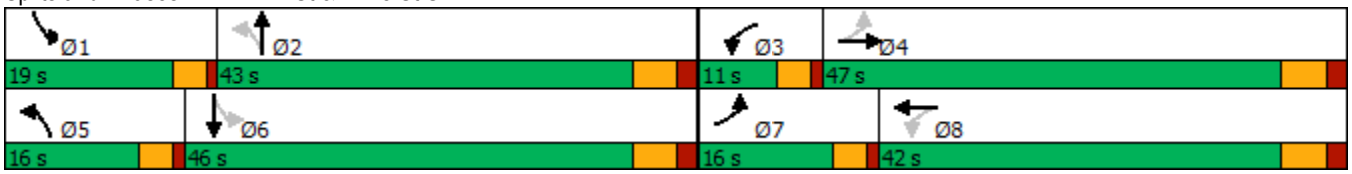


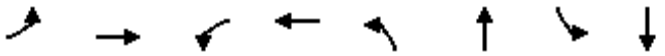
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	658	132	25	559	177	210	365	15	261	304	199
Future Volume (vph)	133	658	132	25	559	177	210	365	15	261	304	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Frt		0.975			0.964			0.994			0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3349	0	1615	3363	0	1738	3398	0	1755	3226	0
Flt Permitted	0.147			0.226			0.396			0.447		
Satd. Flow (perm)	274	3349	0	384	3363	0	722	3398	0	825	3226	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			36			3			136	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	137	678	136	26	576	182	216	376	15	269	313	205
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	814	0	26	758	0	216	391	0	269	518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	16.0	47.0		11.0	42.0		16.0	43.0		19.0	46.0	
Total Split (%)	13.3%	39.2%		9.2%	35.0%		13.3%	35.8%		15.8%	38.3%	
Maximum Green (s)	12.0	41.0		7.0	36.0		12.0	37.0		15.0	40.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	46.9	38.6		39.2	30.2		51.7	38.2		55.6	40.2	
Actuated g/C Ratio	0.42	0.34		0.35	0.27		0.46	0.34		0.49	0.36	
v/c Ratio	0.54	0.70		0.12	0.82		0.50	0.34		0.52	0.42	
Control Delay	28.5	35.6		20.5	44.7		21.4	30.1		21.1	21.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.5	35.6		20.5	44.7		21.4	30.1		21.1	21.9	
LOS	C	D		C	D		C	C		C	C	
Approach Delay		34.6			43.9			27.0			21.6	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 112.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 32.2		Intersection LOS: C	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S



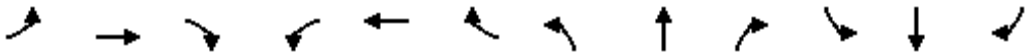


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	814	26	758	216	391	269	518
v/c Ratio	0.54	0.70	0.12	0.82	0.50	0.34	0.52	0.42
Control Delay	28.5	35.6	20.5	44.7	21.4	30.1	21.1	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	35.6	20.5	44.7	21.4	30.1	21.1	21.9
Queue Length 50th (m)	18.8	84.8	3.4	79.5	26.2	34.6	33.7	33.4
Queue Length 95th (m)	31.5	107.2	8.6	102.6	45.2	51.2	56.4	51.9
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	274	1245	210	1104	444	1155	542	1238
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	0.50	0.65	0.12	0.69	0.49	0.34	0.50	0.42

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	658	132	25	559	177	210	365	15	261	304	199
Future Volume (vph)	133	658	132	25	559	177	210	365	15	261	304	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1772	3349		1615	3363		1736	3398		1754	3225	
Flt Permitted	0.15	1.00		0.23	1.00		0.40	1.00		0.45	1.00	
Satd. Flow (perm)	275	3349		384	3363		724	3398		825	3225	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	137	678	136	26	576	182	216	376	15	269	313	205
RTOR Reduction (vph)	0	14	0	0	26	0	0	2	0	0	88	0
Lane Group Flow (vph)	137	800	0	26	732	0	216	389	0	269	430	0
Confl. Peds. (#/hr)	2		2	2		2	8		2	2		8
Heavy Vehicles (%)	3%	6%	5%	13%	5%	2%	5%	7%	0%	4%	8%	2%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.6	38.6		36.0	32.0		49.8	38.3		53.6	40.2	
Effective Green, g (s)	46.6	38.6		36.0	32.0		49.8	38.3		53.6	40.2	
Actuated g/C Ratio	0.41	0.34		0.31	0.28		0.44	0.34		0.47	0.35	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	250	1130		164	941		417	1138		495	1134	
v/s Ratio Prot	c0.05	0.24		0.01	c0.22		0.05	0.11		c0.06	0.13	
v/s Ratio Perm	0.17			0.04			0.17			c0.19		
v/c Ratio	0.55	0.71		0.16	0.78		0.52	0.34		0.54	0.38	
Uniform Delay, d1	24.2	32.9		27.8	37.9		21.0	28.5		19.2	27.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	2.1		0.5	4.1		1.1	0.8		1.2	1.0	
Delay (s)	26.7	35.0		28.3	42.0		22.0	29.4		20.5	28.7	
Level of Service	C	C		C	D		C	C		C	C	
Approach Delay (s)		33.8			41.5			26.8			25.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

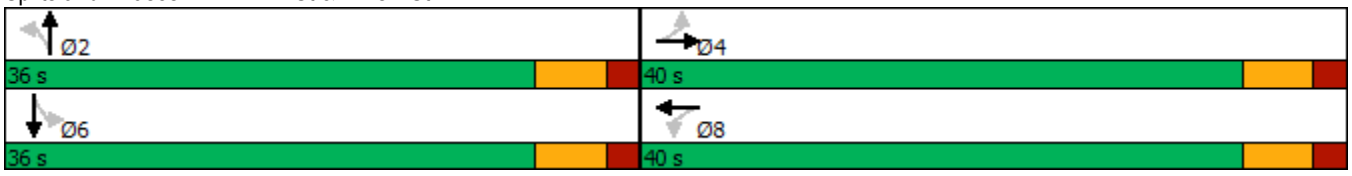


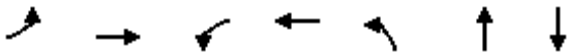
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	651	103	16	566	25	171	218	45	35	179	68
Future Volume (vph)	43	651	103	16	566	25	171	218	45	35	179	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
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	
Frt		0.980			0.994			0.974			0.967	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1825	3329	0	1825	3477	0	1755	1807	0	0	1779	0
Flt Permitted	0.397			0.308			0.486				0.921	
Satd. Flow (perm)	762	3329	0	592	3477	0	897	1807	0	0	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			7			16			25	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	2					2	2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	47	708	112	17	615	27	186	237	49	38	195	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	820	0	17	642	0	186	286	0	0	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3		17.9	17.9			17.9	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.28	0.28			0.28	
v/c Ratio	0.12	0.46		0.05	0.35		0.75	0.56			0.64	
Control Delay	10.9	11.2		10.8	10.4		39.3	22.4			24.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	10.9	11.2		10.8	10.4		39.3	22.4			24.7	
LOS	B	B		B	B		D	C			C	
Approach Delay		11.2			10.4			29.1			24.7	
Approach LOS		B			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 64.4			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 80.7%		ICU Level of Service D	
Analysis Period (min) 15			

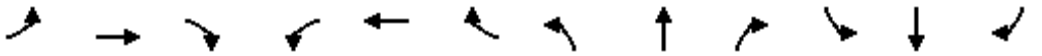
Splits and Phases: 2: Tiffin St & Innisfil St





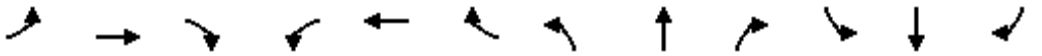
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	47	820	17	642	186	286	307
v/c Ratio	0.12	0.46	0.05	0.35	0.75	0.56	0.64
Control Delay	10.9	11.2	10.8	10.4	39.3	22.4	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	11.2	10.8	10.4	39.3	22.4	24.7
Queue Length 50th (m)	2.5	27.4	0.9	20.5	19.8	26.9	28.9
Queue Length 95th (m)	9.9	56.7	4.8	42.9	39.5	45.6	49.7
Internal Link Dist (m)		250.0		304.8		87.6	52.6
Turn Bay Length (m)	20.0		20.0		50.0		
Base Capacity (vph)	406	1789	315	1857	421	858	788
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.46	0.05	0.35	0.44	0.33	0.39

Intersection Summary



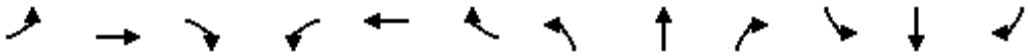
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	651	103	16	566	25	171	218	45	35	179	68
Future Volume (vph)	43	651	103	16	566	25	171	218	45	35	179	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	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	
Frt	1.00	0.98		1.00	0.99		1.00	0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1823	3327		1825	3476		1753	1808			1779	
Flt Permitted	0.40	1.00		0.31	1.00		0.49	1.00			0.92	
Satd. Flow (perm)	762	3327		592	3476		896	1808			1649	
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)	47	708	112	17	615	27	186	237	49	38	195	74
RTOR Reduction (vph)	0	14	0	0	3	0	0	12	0	0	18	0
Lane Group Flow (vph)	47	806	0	17	639	0	186	274	0	0	289	0
Confl. Peds. (#/hr)	2					2	2		1	1		2
Heavy Vehicles (%)	0%	8%	4%	0%	4%	10%	4%	4%	0%	6%	2%	6%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.4	34.4		34.4	34.4		17.9	17.9			17.9	
Effective Green, g (s)	34.4	34.4		34.4	34.4		17.9	17.9			17.9	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.28	0.28			0.28	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	407	1779		316	1859		249	503			459	
v/s Ratio Prot		c0.24			0.18			0.15				
v/s Ratio Perm	0.06			0.03			c0.21				0.18	
v/c Ratio	0.12	0.45		0.05	0.34		0.75	0.55			0.63	
Uniform Delay, d1	7.4	9.2		7.2	8.5		21.1	19.7			20.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.6	0.8		0.3	0.5		11.5	1.2			2.7	
Delay (s)	8.0	10.0		7.5	9.0		32.7	21.0			23.0	
Level of Service	A	B		A	A		C	C			C	
Approach Delay (s)		9.9			9.0			25.6			23.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	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)	7	5	16	12	7	96	16	421	17	65	372	23
Future Volume (vph)	7	5	16	12	7	96	16	421	17	65	372	23
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	15.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.923			0.887			0.994			0.991	
Flt Protected		0.988			0.995		0.950			0.950		
Satd. Flow (prot)	0	1657	0	0	1216	0	1415	1762	0	1738	1731	0
Flt Permitted		0.988			0.995		0.950			0.950		
Satd. Flow (perm)	0	1657	0	0	1216	0	1415	1762	0	1738	1731	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			70.7			548.1			132.7	
Travel Time (s)		8.1			5.3			41.1			10.0	
Confl. Peds. (#/hr)	1					1	6					6
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	29%	8%	17%	5%	10%	10%
Adj. Flow (vph)	7	5	16	12	7	99	16	434	18	67	384	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	118	0	16	452	0	67	408	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

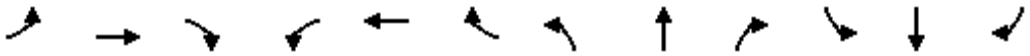
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	16	12	7	96	16	421	17	65	372	23
Future Volume (Veh/h)	7	5	16	12	7	96	16	421	17	65	372	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	7	5	16	12	7	99	16	434	18	67	384	24
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											133	
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88		0.88					
vC, conflicting volume	1106	1020	402	1012	1023	444	414			452		
vC1, stage 1 conf vol	536	536		475	475							
vC2, stage 2 conf vol	570	484		536	548							
vCu, unblocked vol	1054	957	258	947	960	444	271			452		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.4			4.1		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.5			2.2		
p0 queue free %	98	99	98	97	98	82	98			94		
cM capacity (veh/h)	298	385	669	358	397	536	1012			1093		

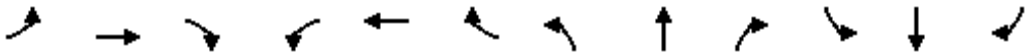
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	118	16	452	67	408
Volume Left	7	12	16	0	67	0
Volume Right	16	99	0	18	0	24
cSH	464	500	1012	1700	1093	1700
Volume to Capacity	0.06	0.24	0.02	0.27	0.06	0.24
Queue Length 95th (m)	1.5	6.9	0.4	0.0	1.5	0.0
Control Delay (s)	13.3	14.4	8.6	0.0	8.5	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	13.3	14.4	0.3		1.2	
Approach LOS	B	B				

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	0	86	27	0	46	51	292	10	18	259	20
Future Volume (vph)	47	0	86	27	0	46	51	292	10	18	259	20
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	50.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.913			0.915			0.995			0.989	
Flt Protected		0.983			0.982		0.950			0.950		
Satd. Flow (prot)	0	1724	0	0	1692	0	1706	1806	0	1789	1791	0
Flt Permitted		0.983			0.982		0.950			0.950		
Satd. Flow (perm)	0	1724	0	0	1692	0	1706	1806	0	1789	1791	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		138.2			56.9			109.5			111.6	
Travel Time (s)		10.4			4.3			8.2			8.4	
Confl. Peds. (#/hr)	1						6					6
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%	2%	0%	2%	2%	2%	7%	6%	2%	2%	4%	33%
Adj. Flow (vph)	51	0	93	29	0	50	55	317	11	20	282	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	144	0	0	79	0	55	328	0	20	304	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

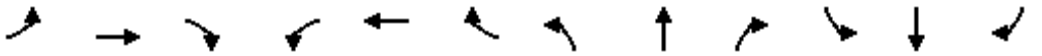
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	0	86	27	0	46	51	292	10	18	259	20
Future Volume (Veh/h)	47	0	86	27	0	46	51	292	10	18	259	20
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)	51	0	93	29	0	50	55	317	11	20	282	22
Pedestrians		6									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		1									0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	817	777	299	848	782	324	310			328		
vC1, stage 1 conf vol	339	339		432	432							
vC2, stage 2 conf vol	478	438		415	350							
vCu, unblocked vol	800	759	270	832	765	324	281			328		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.2		
p0 queue free %	88	100	88	93	100	93	95			98		
cM capacity (veh/h)	440	470	751	413	464	717	1216			1232		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	144	79	55	328	20	304
Volume Left	51	29	55	0	20	0
Volume Right	93	50	0	11	0	22
cSH	601	564	1216	1700	1232	1700
Volume to Capacity	0.24	0.14	0.05	0.19	0.02	0.18
Queue Length 95th (m)	7.1	3.7	1.1	0.0	0.4	0.0
Control Delay (s)	12.9	12.4	8.1	0.0	8.0	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	12.9	12.4	1.2		0.5	
Approach LOS	B	B				

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	39.4%	ICU Level of Service		A
Analysis Period (min)	15			

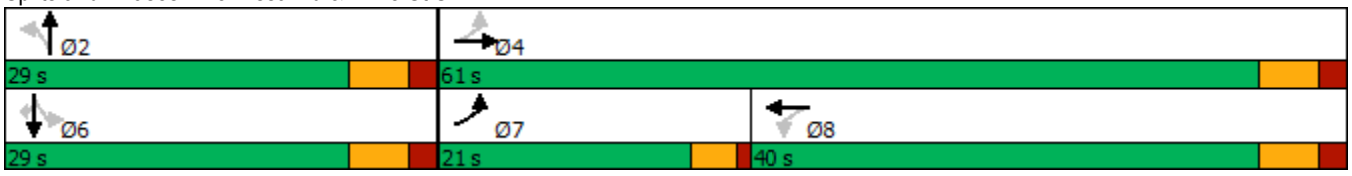


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	645	74	1	723	48	90	55	1	47	78	317
Future Volume (vph)	271	645	74	1	723	48	90	55	1	47	78	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	15.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		0.99		0.99
Frt		0.985			0.991			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1644	3463	0	1825	3471	0	1738	1844	0	1772	1847	1526
Flt Permitted	0.254			0.356			0.702			0.717		
Satd. Flow (perm)	439	3463	0	684	3471	0	1282	1844	0	1329	1847	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			9			1				345
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	295	701	80	1	786	52	98	60	1	51	85	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	295	781	0	1	838	0	98	61	0	51	85	345
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	21.0	61.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	23.3%	67.8%		44.4%	44.4%		32.2%	32.2%		32.2%	32.2%	32.2%
Maximum Green (s)	17.0	55.0		34.0	34.0		23.0	23.0		23.0	23.0	23.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	57.1	55.1		40.0	40.0		12.4	12.4		12.4	12.4	12.4
Actuated g/C Ratio	0.72	0.69		0.50	0.50		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.61	0.32		0.00	0.48		0.49	0.21		0.25	0.30	0.66
Control Delay	10.1	5.4		14.0	15.2		39.3	30.3		32.1	32.2	10.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	10.1	5.4		14.0	15.2		39.3	30.3		32.1	32.2	10.2
LOS	B	A		B	B		D	C		C	C	B
Approach Delay		6.7			15.2			35.8			16.4	
Approach LOS		A			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 79.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S

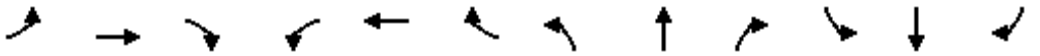


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	295	781	1	838	98	61	51	85	345
v/c Ratio	0.61	0.32	0.00	0.48	0.49	0.21	0.25	0.30	0.66
Control Delay	10.1	5.4	14.0	15.2	39.3	30.3	32.1	32.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	5.4	14.0	15.2	39.3	30.3	32.1	32.2	10.2
Queue Length 50th (m)	11.6	18.5	0.1	37.9	13.7	8.0	6.8	11.5	0.0
Queue Length 95th (m)	27.1	34.7	1.1	72.6	27.7	18.0	16.1	23.5	21.3
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0				15.0		25.0
Base Capacity (vph)	573	2406	343	1750	371	535	384	535	680
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	0.51	0.32	0.00	0.48	0.26	0.11	0.13	0.16	0.51

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	645	74	1	723	48	90	55	1	47	78	317
Future Volume (vph)	271	645	74	1	723	48	90	55	1	47	78	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1644	3462		1824	3470		1735	1843		1762	1847	1505
Flt Permitted	0.25	1.00		0.36	1.00		0.70	1.00		0.72	1.00	1.00
Satd. Flow (perm)	439	3462		684	3470		1282	1843		1330	1847	1505
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)	295	701	80	1	786	52	98	60	1	51	85	345
RTOR Reduction (vph)	0	8	0	0	4	0	0	1	0	0	0	291
Lane Group Flow (vph)	295	773	0	1	834	0	98	60	0	51	85	54
Confl. Peds. (#/hr)	3		1	1		3	2		6	6		2
Heavy Vehicles (%)	11%	4%	0%	0%	4%	5%	5%	4%	0%	3%	4%	7%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	55.1	55.1		40.0	40.0		12.4	12.4		12.4	12.4	12.4
Effective Green, g (s)	55.1	55.1		40.0	40.0		12.4	12.4		12.4	12.4	12.4
Actuated g/C Ratio	0.69	0.69		0.50	0.50		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	472	2399		344	1745		199	287		207	288	234
v/s Ratio Prot	c0.09	0.22			0.24			0.03			0.05	
v/s Ratio Perm	c0.35			0.00			c0.08			0.04		0.04
v/c Ratio	0.62	0.32		0.00	0.48		0.49	0.21		0.25	0.30	0.23
Uniform Delay, d1	6.1	4.8		9.8	12.9		30.7	29.3		29.4	29.7	29.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.4		0.0	0.9		1.9	0.4		0.6	0.6	0.5
Delay (s)	8.6	5.2		9.8	13.9		32.6	29.6		30.1	30.3	29.9
Level of Service	A	A		A	B		C	C		C	C	C
Approach Delay (s)		6.1			13.9			31.5			30.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

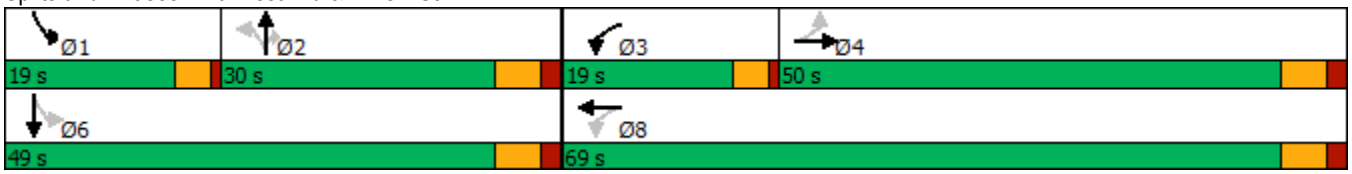


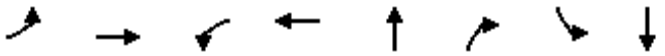
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	607	36	16	523	72	28	107	33	63	133	149
Future Volume (vph)	71	607	36	16	523	72	28	107	33	63	133	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	50.0		0.0	0.0		15.0	50.0		20.0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
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				0.99	1.00		
Frt		0.992			0.982				0.850		0.921	
Flt Protected	0.950			0.950				0.990		0.950		
Satd. Flow (prot)	1690	3484	0	1706	3417	0	0	1811	1558	1789	1737	0
Flt Permitted	0.406			0.313				0.874		0.526		
Satd. Flow (perm)	722	3484	0	562	3417	0	0	1599	1536	989	1737	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			19				102		54	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			191.0	
Travel Time (s)		25.3			14.7			10.0			14.3	
Confl. Peds. (#/hr)	1					1			1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	77	660	39	17	568	78	30	116	36	68	145	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	699	0	17	646	0	0	146	36	68	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
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)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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	Max	Max		None	Max		None	None	None	None	None	
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)	12.0	12.0			12.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0		0	
Act Effct Green (s)	58.9	58.9		65.2	63.2			24.1	24.1	36.2	34.2	
Actuated g/C Ratio	0.54	0.54		0.60	0.58			0.22	0.22	0.33	0.31	
v/c Ratio	0.20	0.37		0.04	0.33			0.42	0.09	0.18	0.53	
Control Delay	18.0	16.8		10.6	12.8			42.1	0.4	26.0	28.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	18.0	16.8		10.6	12.8			42.1	0.4	26.0	28.5	
LOS	B	B		B	B			D	A	C	C	
Approach Delay		16.9			12.7			33.8			28.1	
Approach LOS		B			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 109.4			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 98.9%		ICU Level of Service F	
Analysis Period (min) 15			

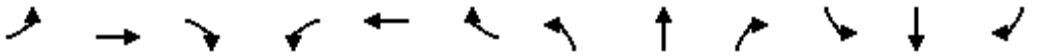
Splits and Phases: 6: Essa Rd & Innisfil St





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	77	699	17	646	146	36	68	307
v/c Ratio	0.20	0.37	0.04	0.33	0.42	0.09	0.18	0.53
Control Delay	18.0	16.8	10.6	12.8	42.1	0.4	26.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	16.8	10.6	12.8	42.1	0.4	26.0	28.5
Queue Length 50th (m)	7.7	40.7	1.5	36.2	27.6	0.0	10.0	43.9
Queue Length 95th (m)	20.9	69.3	4.7	50.2	48.1	0.0	19.8	69.9
Internal Link Dist (m)		313.1		171.7	108.7			167.0
Turn Bay Length (m)	50.0		50.0			15.0	50.0	
Base Capacity (vph)	388	1878	491	1980	351	417	437	717
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	0.20	0.37	0.03	0.33	0.42	0.09	0.16	0.43

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	607	36	16	523	72	28	107	33	63	133	149
Future Volume (vph)	71	607	36	16	523	72	28	107	33	63	133	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
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	0.99	1.00	1.00	
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	0.98			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1689	3482		1706	3416			1811	1536	1788	1736	
Flt Permitted	0.41	1.00		0.31	1.00			0.87	1.00	0.53	1.00	
Satd. Flow (perm)	723	3482		563	3416			1599	1536	991	1736	
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)	77	660	39	17	568	78	30	116	36	68	145	162
RTOR Reduction (vph)	0	3	0	0	8	0	0	0	28	0	37	0
Lane Group Flow (vph)	77	696	0	17	638	0	0	146	8	68	270	0
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	8%	4%	3%	7%	5%	2%	5%	5%	4%	2%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	58.9	58.9		65.6	65.6			24.1	24.1	35.1	35.1	
Effective Green, g (s)	58.9	58.9		65.6	65.6			24.1	24.1	35.1	35.1	
Actuated g/C Ratio	0.52	0.52		0.58	0.58			0.21	0.21	0.31	0.31	
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	1819		355	1988			341	328	358	540	
v/s Ratio Prot		c0.20		0.00	c0.19					0.01	c0.16	
v/s Ratio Perm	0.11			0.03				0.09	0.01	0.05		
v/c Ratio	0.20	0.38		0.05	0.32			0.43	0.02	0.19	0.50	
Uniform Delay, d1	14.4	16.1		10.6	12.1			38.3	35.0	27.9	31.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.6		0.1	0.4			0.9	0.0	0.3	0.7	
Delay (s)	15.6	16.7		10.6	12.5			39.2	35.0	28.2	32.4	
Level of Service	B	B		B	B			D	D	C	C	
Approach Delay (s)		16.6			12.5			38.4			31.6	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

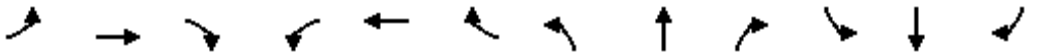
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	79	8	18	94	22	50
Future Volume (vph)	79	8	18	94	22	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987				0.907	
Flt Protected				0.992	0.985	
Satd. Flow (prot)	1859	0	0	1868	1683	0
Flt Permitted				0.992	0.985	
Satd. Flow (perm)	1859	0	0	1868	1683	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	70.6			138.2	37.3	
Travel Time (s)	5.3			10.4	2.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	9	20	102	24	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	0	0	122	78	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	79	8	18	94	22	50
Future Volume (Veh/h)	79	8	18	94	22	50
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)	86	9	20	102	24	54
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			95		232	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			95		232	90
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	94
cM capacity (veh/h)			1499		746	967

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	95	122	78
Volume Left	0	20	24
Volume Right	9	0	54
cSH	1700	1499	886
Volume to Capacity	0.06	0.01	0.09
Queue Length 95th (m)	0.0	0.3	2.2
Control Delay (s)	0.0	1.3	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.5
Approach LOS			A

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		23.6%	ICU Level of Service A
Analysis Period (min)		15	

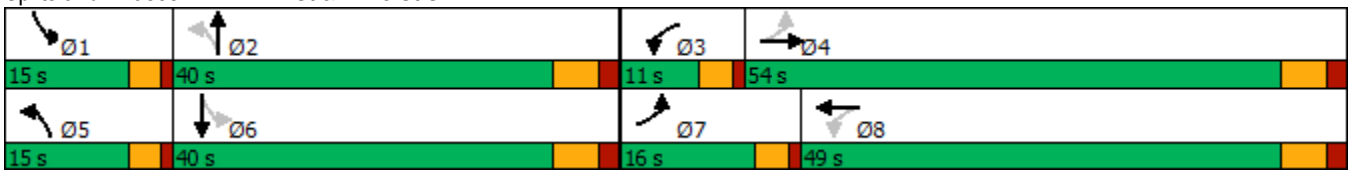


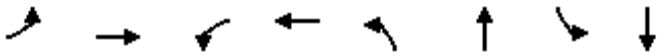
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	461	142	17	351	173	147	411	13	257	487	154
Future Volume (vph)	181	461	142	17	351	173	147	411	13	257	487	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	0.99	
Frt		0.965			0.951			0.995			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1810	0	1722	1783	0	1755	3527	0	1807	3437	0
Flt Permitted	0.118			0.174			0.217			0.383		
Satd. Flow (perm)	224	1810	0	315	1783	0	400	3527	0	728	3437	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			23			3			35	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	197	501	154	18	382	188	160	447	14	279	529	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	655	0	18	570	0	160	461	0	279	696	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	16.0	54.0		11.0	49.0		15.0	40.0		15.0	40.0	
Total Split (%)	13.3%	45.0%		9.2%	40.8%		12.5%	33.3%		12.5%	33.3%	
Maximum Green (s)	12.0	48.0		7.0	43.0		11.0	34.0		11.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	56.5	50.3		48.0	38.9		46.8	34.1		47.5	34.5	
Actuated g/C Ratio	0.49	0.43		0.41	0.34		0.40	0.29		0.41	0.30	
v/c Ratio	0.74	0.82		0.08	0.93		0.56	0.44		0.70	0.66	
Control Delay	36.8	39.3		15.9	58.1		29.2	35.3		34.5	38.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.8	39.3		15.9	58.1		29.2	35.3		34.5	38.2	
LOS	D	D		B	E		C	D		C	D	
Approach Delay		38.7			56.8			33.7			37.1	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 115.7			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 40.7		Intersection LOS: D	
Intersection Capacity Utilization 98.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





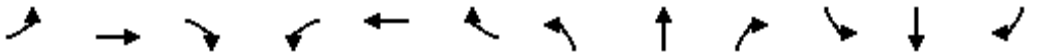
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	197	655	18	570	160	461	279	696
v/c Ratio	0.74	0.82	0.08	0.93	0.56	0.44	0.70	0.66
Control Delay	36.8	39.3	15.9	58.1	29.2	35.3	34.5	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	39.3	15.9	58.1	29.2	35.3	34.5	38.2
Queue Length 50th (m)	24.8	116.2	2.1	120.2	23.4	46.8	43.9	73.4
Queue Length 95th (m)	#52.9	#209.2	5.8	#183.0	38.3	62.5	#65.9	94.6
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	274	814	215	679	292	1042	402	1048
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	0.72	0.80	0.08	0.84	0.55	0.44	0.69	0.66

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	461	142	17	351	173	147	411	13	257	487	154
Future Volume (vph)	181	461	142	17	351	173	147	411	13	257	487	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.96		1.00	0.95		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	1810		1721	1782		1754	3528		1806	3437	
Flt Permitted	0.12	1.00		0.17	1.00		0.22	1.00		0.38	1.00	
Satd. Flow (perm)	224	1810		316	1782		400	3528		728	3437	
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)	197	501	154	18	382	188	160	447	14	279	529	167
RTOR Reduction (vph)	0	9	0	0	15	0	0	2	0	0	25	0
Lane Group Flow (vph)	197	646	0	18	555	0	160	459	0	279	671	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	56.9	50.2		44.1	41.4		44.9	34.2		45.5	34.5	
Effective Green, g (s)	56.9	50.2		44.1	41.4		44.9	34.2		45.5	34.5	
Actuated g/C Ratio	0.48	0.43		0.37	0.35		0.38	0.29		0.39	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	262	769		150	624		274	1021		380	1004	
v/s Ratio Prot	c0.07	c0.36		0.00	0.31		0.05	0.13		c0.07	0.20	
v/s Ratio Perm	0.29			0.04			0.17			c0.21		
v/c Ratio	0.75	0.84		0.12	0.89		0.58	0.45		0.73	0.67	
Uniform Delay, d1	24.0	30.4		25.9	36.2		26.2	34.3		28.0	36.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.5	8.2		0.4	14.5		3.2	1.4		7.2	3.5	
Delay (s)	35.5	38.6		26.3	50.7		29.4	35.7		35.2	40.3	
Level of Service	D	D		C	D		C	D		D	D	
Approach Delay (s)		37.9			50.0			34.1			38.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

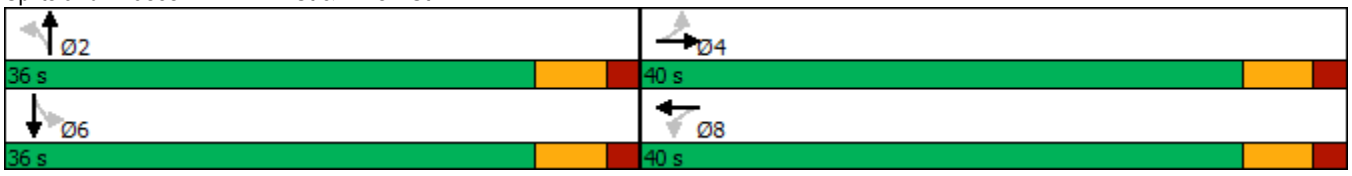


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	352	22	42	278	26	21	286	44	56	398	104
Future Volume (vph)	96	352	22	42	278	26	21	286	44	56	398	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00			0.99	
Frt		0.991			0.987			0.983			0.975	
Flt Protected	0.950			0.950				0.997			0.995	
Satd. Flow (prot)	1807	1878	0	1825	1858	0	0	1830	0	0	1812	0
Flt Permitted	0.535			0.465				0.957			0.929	
Satd. Flow (perm)	1014	1878	0	890	1858	0	0	1756	0	0	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			8			11			18	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	98	359	22	43	284	27	21	292	45	57	406	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	381	0	43	311	0	0	358	0	0	569	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	34.0	34.0		34.0	34.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.1	34.1		34.1	34.1			27.0			27.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.37			0.37	
v/c Ratio	0.21	0.43		0.10	0.36			0.55			0.90	
Control Delay	14.2	15.6		13.0	14.4			21.0			40.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	14.2	15.6		13.0	14.4			21.0			40.0	
LOS	B	B		B	B			C			D	
Approach Delay		15.3			14.3			21.0			40.0	
Approach LOS		B			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 76			
Actuated Cycle Length: 73.2			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 117.3%		ICU Level of Service H	
Analysis Period (min) 15			

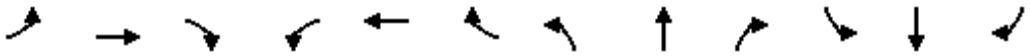
Splits and Phases: 2: Tiffin St & Innisfil St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	98	381	43	311	358	569
v/c Ratio	0.21	0.43	0.10	0.36	0.55	0.90
Control Delay	14.2	15.6	13.0	14.4	21.0	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	15.6	13.0	14.4	21.0	40.0
Queue Length 50th (m)	8.2	35.8	3.5	27.6	36.7	69.9
Queue Length 95th (m)	17.7	57.3	9.1	45.5	60.0	#125.5
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	472	878	415	870	728	706
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.43	0.10	0.36	0.49	0.81

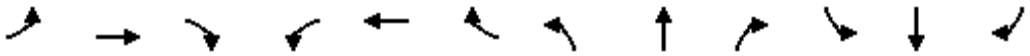
Intersection Summary

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



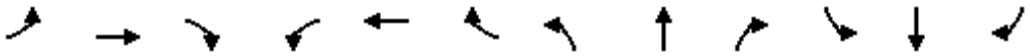
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	352	22	42	278	26	21	286	44	56	398	104
Future Volume (vph)	96	352	22	42	278	26	21	286	44	56	398	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	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			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)	1800	1878		1819	1858			1830			1810	
Flt Permitted	0.54	1.00		0.47	1.00			0.96			0.93	
Satd. Flow (perm)	1014	1878		891	1858			1756			1690	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	98	359	22	43	284	27	21	292	45	57	406	106
RTOR Reduction (vph)	0	3	0	0	4	0	0	7	0	0	11	0
Lane Group Flow (vph)	98	378	0	43	307	0	0	351	0	0	558	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.1	34.1		34.1	34.1			27.0			27.0	
Effective Green, g (s)	34.1	34.1		34.1	34.1			27.0			27.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.37			0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	473	876		415	866			648			624	
v/s Ratio Prot		c0.20			0.17							
v/s Ratio Perm	0.10			0.05				0.20			c0.33	
v/c Ratio	0.21	0.43		0.10	0.35			0.54			0.89	
Uniform Delay, d1	11.5	13.0		10.9	12.5			18.2			21.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.6		0.5	1.1			0.9			15.2	
Delay (s)	12.5	14.6		11.4	13.6			19.1			36.9	
Level of Service	B	B		B	B			B			D	
Approach Delay (s)		14.2			13.3			19.1			36.9	
Approach LOS		B			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.3%	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)	6	4	2	2	0	50	6	515	6	34	596	16
Future Volume (vph)	6	4	2	2	0	50	6	515	6	34	596	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.979			0.870			0.998			0.997	
Flt Protected		0.974			0.998			0.999			0.997	
Satd. Flow (prot)	0	1804	0	0	1169	0	0	1879	0	0	1780	0
Flt Permitted		0.974			0.998			0.999			0.997	
Satd. Flow (perm)	0	1804	0	0	1169	0	0	1879	0	0	1780	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			279.5			548.1			132.7	
Travel Time (s)		8.1			21.0			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	7	4	2	2	0	56	7	579	7	38	670	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	0	0	58	0	0	593	0	0	726	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

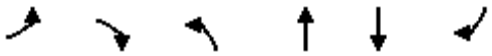
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	2	2	0	50	6	515	6	34	596	16
Future Volume (Veh/h)	6	4	2	2	0	50	6	515	6	34	596	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	7	4	2	2	0	56	7	579	7	38	670	18
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.79	0.79	0.79	0.79	0.79		0.79					
vC, conflicting volume	1410	1359	682	1356	1364	584	691			587		
vC1, stage 1 conf vol	758	758		598	598							
vC2, stage 2 conf vol	652	601		759	767							
vCu, unblocked vol	1387	1322	467	1319	1329	584	479			587		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	97	99	100	99	100	87	99			96		
cM capacity (veh/h)	269	308	458	272	310	442	864			851		

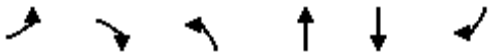
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	58	593	726
Volume Left	7	2	7	38
Volume Right	2	56	7	18
cSH	300	433	864	851
Volume to Capacity	0.04	0.13	0.01	0.04
Queue Length 95th (m)	1.0	3.5	0.2	1.1
Control Delay (s)	17.6	14.6	0.2	1.2
Lane LOS	C	B	A	A
Approach Delay (s)	17.6	14.6	0.2	1.2
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	63.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	32	46	343	456	6
Future Volume (vph)	8	32	46	343	456	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	0.893				0.998	
Flt Protected	0.990			0.994		
Satd. Flow (prot)	1698	0	0	1905	1827	0
Flt Permitted	0.990			0.994		
Satd. Flow (perm)	1698	0	0	1905	1827	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	279.5			300.5	111.6	
Travel Time (s)	21.0			22.5	8.4	
Confl. Peds. (#/hr)		1	1			3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	5%	0%
Adj. Flow (vph)	9	34	49	365	485	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	0	414	491	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

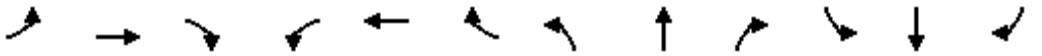
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	32	46	343	456	6
Future Volume (Veh/h)	8	32	46	343	456	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	34	49	365	485	6
Pedestrians	3			1		
Lane Width (m)	3.7			3.7		
Walking Speed (m/s)	1.1			1.1		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				301	112	
pX, platoon unblocked	0.77	0.75	0.75			
vC, conflicting volume	954	492	494			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	707	163	166			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	95	95			
cM capacity (veh/h)	296	666	1062			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	43	414	491
Volume Left	9	49	0
Volume Right	34	0	6
cSH	528	1062	1700
Volume to Capacity	0.08	0.05	0.29
Queue Length 95th (m)	2.0	1.1	0.0
Control Delay (s)	12.4	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	1.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

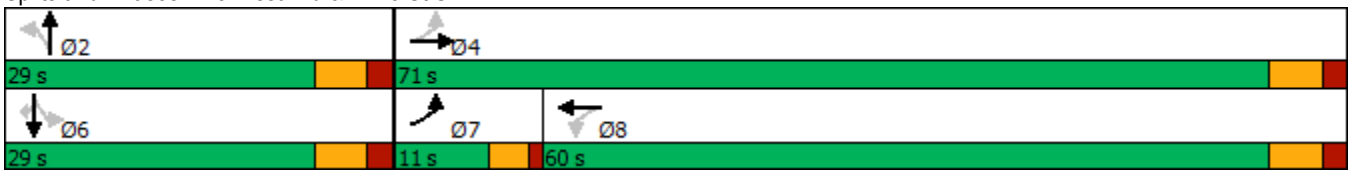


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	548	65	2	521	83	41	57	1	64	92	328
Future Volume (vph)	361	548	65	2	521	83	41	57	1	64	92	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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	0.99
Frt		0.990			0.980			0.999				0.850
Flt Protected		0.982						0.980			0.980	
Satd. Flow (prot)	0	3447	0	0	3496	0	0	1816	0	0	1861	1555
Flt Permitted		0.606			0.953			0.695			0.831	
Satd. Flow (perm)	0	2127	0	0	3332	0	0	1287	0	0	1576	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			27							360
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	397	602	71	2	573	91	45	63	1	70	101	360
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1070	0	0	666	0	0	109	0	0	171	360
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	11.0	71.0		60.0	60.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	11.0%	71.0%		60.0%	60.0%		29.0%	29.0%		29.0%	29.0%	29.0%
Maximum Green (s)	7.0	65.0		54.0	54.0		23.0	23.0		23.0	23.0	23.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)		65.2			65.2			15.9			15.9	15.9
Actuated g/C Ratio		0.70			0.70			0.17			0.17	0.17
v/c Ratio		0.72			0.28			0.50			0.64	0.64
Control Delay		12.7			5.9			42.6			46.7	9.5
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		12.7			5.9			42.6			46.7	9.5
LOS		B			A			D			D	A
Approach Delay		12.7			5.9			42.6			21.5	
Approach LOS		B			A			D			C	

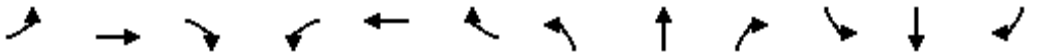
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 93.1			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S



Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	1070	666	109	171	360
v/c Ratio	0.72	0.28	0.50	0.64	0.64
Control Delay	12.7	5.9	42.6	46.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	5.9	42.6	46.7	9.5
Queue Length 50th (m)	52.0	19.4	17.9	28.8	0.0
Queue Length 95th (m)	97.0	34.2	33.7	48.9	22.5
Internal Link Dist (m)	80.6	313.1	99.5	524.1	
Turn Bay Length (m)					25.0
Base Capacity (vph)	1492	2340	318	390	650
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.72	0.28	0.34	0.44	0.55

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	548	65	2	521	83	41	57	1	64	92	328
Future Volume (vph)	361	548	65	2	521	83	41	57	1	64	92	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	6.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.99			0.98			1.00			1.00	0.85
Flt Protected		0.98			1.00			0.98			0.98	1.00
Satd. Flow (prot)		3445			3494			1814			1858	1533
Flt Permitted		0.61			0.95			0.70			0.83	1.00
Satd. Flow (perm)		2128			3331			1288			1575	1533
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	397	602	71	2	573	91	45	63	1	70	101	360
RTOR Reduction (vph)	0	4	0	0	8	0	0	0	0	0	0	299
Lane Group Flow (vph)	0	1066	0	0	658	0	0	109	0	0	171	61
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		65.2			65.2			15.9			15.9	15.9
Effective Green, g (s)		65.2			65.2			15.9			15.9	15.9
Actuated g/C Ratio		0.70			0.70			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1490			2332			219			268	261
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.20			0.08			c0.11	0.04
v/c Ratio		0.72			0.28			0.50			0.64	0.24
Uniform Delay, d1		8.4			5.2			35.0			35.9	33.3
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		1.7			0.3			1.8			4.9	0.5
Delay (s)		10.0			5.5			36.8			40.8	33.8
Level of Service		B			A			D			D	C
Approach Delay (s)		10.0			5.5			36.8			36.1	
Approach LOS		B			A			D			D	

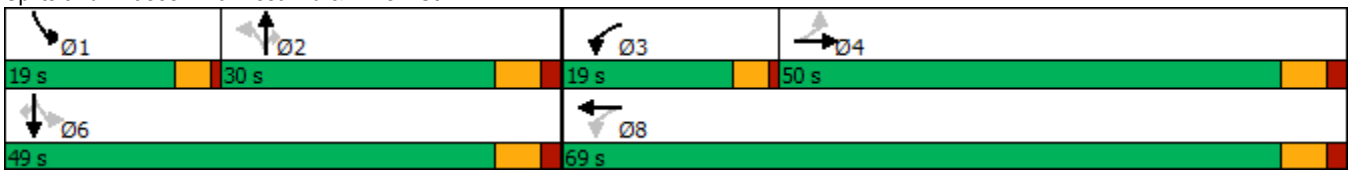
Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	511	48	32	600	74	19	161	25	112	181	116
Future Volume (vph)	69	511	48	32	600	74	19	161	25	112	181	116
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		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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				0.98
Frt		0.989			0.984				0.850			0.850
Flt Protected		0.995			0.998			0.995			0.981	
Satd. Flow (prot)	0	3495	0	0	3483	0	0	1895	1633	0	1832	1585
Flt Permitted		0.782			0.900			0.947			0.741	
Satd. Flow (perm)	0	2746	0	0	3141	0	0	1803	1633	0	1384	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			16				102			69
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			300.5	
Travel Time (s)		25.3			14.7			10.0			22.5	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Adj. Flow (vph)	70	516	48	32	606	75	19	163	25	113	183	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	634	0	0	713	0	0	182	25	0	296	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.3			63.3			34.8	34.8		34.8	34.8
Actuated g/C Ratio		0.57			0.57			0.32	0.32		0.32	0.32
v/c Ratio		0.40			0.39			0.32	0.04		0.68	0.22
Control Delay		14.8			14.4			29.6	0.1		40.9	12.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		14.8			14.4			29.6	0.1		40.9	12.9
LOS		B			B			C	A		D	B
Approach Delay		14.8			14.4			26.1			32.9	
Approach LOS		B			B			C			C	

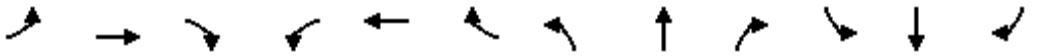
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 110.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 125.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	634	713	182	25	296	117
v/c Ratio	0.40	0.39	0.32	0.04	0.68	0.22
Control Delay	14.8	14.4	29.6	0.1	40.9	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	14.4	29.6	0.1	40.9	12.9
Queue Length 50th (m)	38.2	42.3	29.5	0.0	54.9	7.2
Queue Length 95th (m)	58.3	63.2	47.2	0.0	84.0	19.8
Internal Link Dist (m)	313.1	171.7	108.7		276.5	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1580	1811	570	586	542	653
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.39	0.32	0.04	0.55	0.18

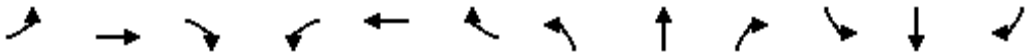
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	511	48	32	600	74	19	161	25	112	181	116
Future Volume (vph)	69	511	48	32	600	74	19	161	25	112	181	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			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
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3492			3483			1894	1633		1833	1561
Flt Permitted		0.78			0.90			0.95	1.00		0.74	1.00
Satd. Flow (perm)		2746			3140			1803	1633		1383	1561
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	70	516	48	32	606	75	19	163	25	113	183	117
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	17	0	0	47
Lane Group Flow (vph)	0	631	0	0	706	0	0	182	8	0	296	70
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.3			63.3			34.8	34.8		34.8	34.8
Effective Green, g (s)		63.3			63.3			34.8	34.8		34.8	34.8
Actuated g/C Ratio		0.57			0.57			0.32	0.32		0.32	0.32
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1578			1805			569	516		437	493
v/s Ratio Prot												
v/s Ratio Perm		c0.23			0.22			0.10	0.00		c0.21	0.04
v/c Ratio		0.40			0.39			0.32	0.02		0.68	0.14
Uniform Delay, d1		12.9			12.8			28.6	25.9		32.8	27.0
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8			0.1			0.3	0.0		4.1	0.1
Delay (s)		13.7			13.0			29.0	25.9		36.9	27.1
Level of Service		B			B			C	C		D	C
Approach Delay (s)		13.7			13.0			28.6			34.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	110.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	125.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

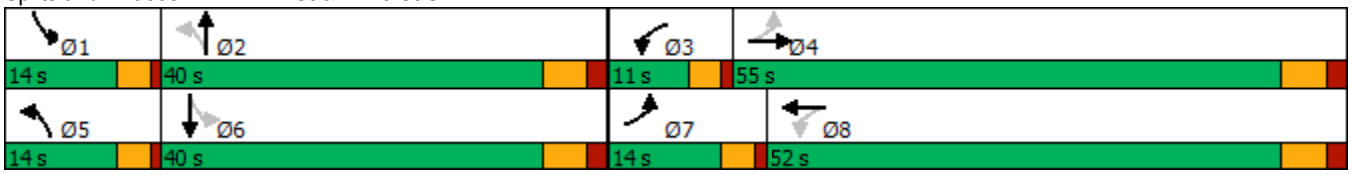


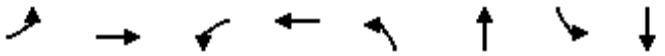
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	539	171	23	411	180	197	445	25	301	533	180
Future Volume (vph)	188	539	171	23	411	180	197	445	25	301	533	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	0.99	
Frt		0.964			0.954			0.992			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1808	0	1722	1789	0	1755	3517	0	1807	3429	0
Flt Permitted	0.087			0.088			0.158			0.341		
Satd. Flow (perm)	165	1808	0	159	1789	0	291	3517	0	648	3429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			21			5			39	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	204	586	186	25	447	196	214	484	27	327	579	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	772	0	25	643	0	214	511	0	327	775	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	14.0	55.0		11.0	52.0		14.0	40.0		14.0	40.0	
Total Split (%)	11.7%	45.8%		9.2%	43.3%		11.7%	33.3%		11.7%	33.3%	
Maximum Green (s)	10.0	49.0		7.0	46.0		10.0	34.0		10.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	59.1	51.2		52.7	43.7		46.1	34.1		46.1	34.1	
Actuated g/C Ratio	0.50	0.43		0.45	0.37		0.39	0.29		0.39	0.29	
v/c Ratio	0.92	0.97		0.15	0.95		0.90	0.50		0.93	0.76	
Control Delay	69.6	59.0		16.6	59.7		64.3	36.9		63.6	42.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	69.6	59.0		16.6	59.7		64.3	36.9		63.6	42.3	
LOS	E	E		B	E		E	D		E	D	
Approach Delay		61.2			58.1			45.0			48.6	
Approach LOS		E			E			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 117.8			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 53.2		Intersection LOS: D	
Intersection Capacity Utilization 106.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	204	772	25	643	214	511	327	775
v/c Ratio	0.92	0.97	0.15	0.95	0.90	0.50	0.93	0.76
Control Delay	69.6	59.0	16.6	59.7	64.3	36.9	63.6	42.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	59.0	16.6	59.7	64.3	36.9	63.6	42.3
Queue Length 50th (m)	30.5	~192.9	2.8	138.9	33.0	52.5	53.9	84.2
Queue Length 95th (m)	#75.8	#266.6	7.2	#210.4	#73.7	69.5	#108.2	107.2
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	222	795	164	712	238	1020	351	1018
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	0.92	0.97	0.15	0.90	0.90	0.50	0.93	0.76

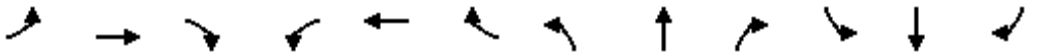
Intersection Summary

~ 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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	539	171	23	411	180	197	445	25	301	533	180
Future Volume (vph)	188	539	171	23	411	180	197	445	25	301	533	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.96		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	1808		1722	1789		1755	3517		1807	3429	
Flt Permitted	0.09	1.00		0.09	1.00		0.16	1.00		0.34	1.00	
Satd. Flow (perm)	165	1808		160	1789		292	3517		649	3429	
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)	204	586	186	25	447	196	214	484	27	327	579	196
RTOR Reduction (vph)	0	9	0	0	13	0	0	4	0	0	28	0
Lane Group Flow (vph)	204	763	0	25	630	0	214	507	0	327	747	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	59.3	51.2		49.4	45.3		44.0	34.0		44.0	34.0	
Effective Green, g (s)	59.3	51.2		49.4	45.3		44.0	34.0		44.0	34.0	
Actuated g/C Ratio	0.50	0.43		0.41	0.38		0.37	0.28		0.37	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	775		119	679		230	1002		336	977	
v/s Ratio Prot	c0.08	c0.42		0.01	0.35		0.08	0.14		c0.08	0.22	
v/s Ratio Perm	0.38			0.08			0.26			c0.28		
v/c Ratio	0.93	0.98		0.21	0.93		0.93	0.51		0.97	0.76	
Uniform Delay, d1	30.9	33.7		27.4	35.4		30.1	35.6		34.5	39.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.0	28.2		0.9	18.8		40.5	1.8		41.6	5.7	
Delay (s)	72.9	61.9		28.3	54.2		70.6	37.5		76.2	44.7	
Level of Service	E	E		C	D		E	D		E	D	
Approach Delay (s)		64.2			53.3			47.2			54.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

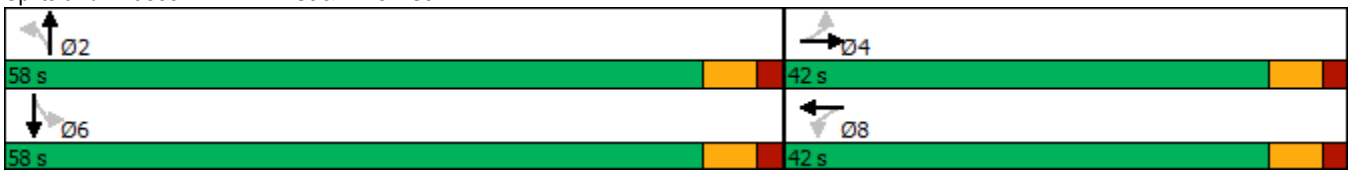


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	422	23	67	330	27	25	298	65	66	414	122
Future Volume (vph)	100	422	23	67	330	27	25	298	65	66	414	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99			0.99	
Frt		0.992			0.988			0.977			0.973	
Flt Protected	0.950			0.950				0.997			0.995	
Satd. Flow (prot)	1807	1880	0	1825	1860	0	0	1817	0	0	1807	0
Flt Permitted	0.453			0.363				0.946			0.914	
Satd. Flow (perm)	858	1880	0	695	1860	0	0	1724	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			15			19	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	102	431	23	68	337	28	26	304	66	67	422	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	454	0	68	365	0	0	396	0	0	613	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	42.0	42.0		42.0	42.0		58.0	58.0		58.0	58.0	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		52.0	52.0		52.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.5	36.5		36.5	36.5			35.6			35.6	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.42			0.42	
v/c Ratio	0.27	0.56		0.23	0.45			0.54			0.86	
Control Delay	21.6	23.4		21.5	21.3			19.6			34.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	21.6	23.4		21.5	21.3			19.6			34.1	
LOS	C	C		C	C			B			C	
Approach Delay		23.1			21.3			19.6			34.1	
Approach LOS		C			C			B			C	

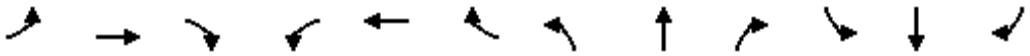
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.3			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 121.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



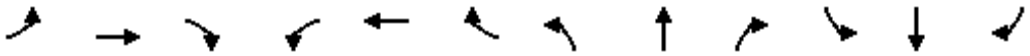
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	102	454	68	365	396	613
v/c Ratio	0.27	0.56	0.23	0.45	0.54	0.86
Control Delay	21.6	23.4	21.5	21.3	19.6	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	23.4	21.5	21.3	19.6	34.1
Queue Length 50th (m)	10.1	51.7	6.6	38.9	43.6	83.2
Queue Length 95th (m)	28.3	106.8	20.3	82.6	66.2	124.2
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	371	816	301	809	1084	1045
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.56	0.23	0.45	0.37	0.59

Intersection Summary



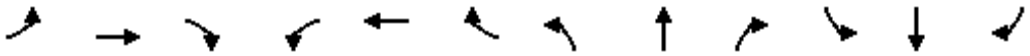
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	422	23	67	330	27	25	298	65	66	414	122
Future Volume (vph)	100	422	23	67	330	27	25	298	65	66	414	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1800	1881		1820	1861			1818			1805	
Flt Permitted	0.45	1.00		0.36	1.00			0.95			0.91	
Satd. Flow (perm)	858	1881		695	1861			1725			1658	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	431	23	68	337	28	26	304	66	67	422	124
RTOR Reduction (vph)	0	2	0	0	3	0	0	9	0	0	11	0
Lane Group Flow (vph)	102	452	0	68	362	0	0	387	0	0	602	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.5	36.5		36.5	36.5			35.6			35.6	
Effective Green, g (s)	36.5	36.5		36.5	36.5			35.6			35.6	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.42			0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	372	816		301	807			730			701	
v/s Ratio Prot		c0.24			0.19							
v/s Ratio Perm	0.12			0.10				0.22			c0.36	
v/c Ratio	0.27	0.55		0.23	0.45			0.53			0.86	
Uniform Delay, d1	15.3	17.7		14.9	16.7			18.0			22.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.8	2.7		1.7	1.8			0.7			10.2	
Delay (s)	17.1	20.4		16.7	18.5			18.8			32.2	
Level of Service	B	C		B	B			B			C	
Approach Delay (s)		19.8			18.2			18.8			32.2	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	121.8%	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)	6	4	2	2	0	73	6	566	6	69	640	17
Future Volume (vph)	6	4	2	2	0	73	6	566	6	69	640	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.979			0.868			0.998			0.997	
Flt Protected		0.974			0.999			0.999			0.995	
Satd. Flow (prot)	0	1804	0	0	1167	0	0	1879	0	0	1758	0
Flt Permitted		0.974			0.999			0.999			0.995	
Satd. Flow (perm)	0	1804	0	0	1167	0	0	1879	0	0	1758	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			165.3			548.1			132.7	
Travel Time (s)		8.1			12.4			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	7	4	2	2	0	79	7	615	7	75	696	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	0	0	81	0	0	629	0	0	789	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

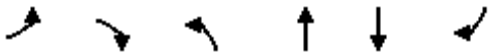
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	2	2	0	73	6	566	6	69	640	17
Future Volume (Veh/h)	6	4	2	2	0	73	6	566	6	69	640	17
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)	7	4	2	2	0	79	7	615	7	75	696	18
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.76	0.76	0.76	0.76	0.76		0.76					
vC, conflicting volume	1570	1495	708	1492	1500	620	717			623		
vC1, stage 1 conf vol	858	858		634	634							
vC2, stage 2 conf vol	712	637		859	867							
vCu, unblocked vol	1591	1493	460	1490	1501	620	472			623		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	97	98	100	99	100	81	99			91		
cM capacity (veh/h)	204	256	444	226	264	421	836			824		

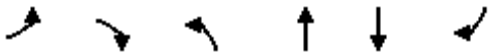
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	81	629	789
Volume Left	7	2	7	75
Volume Right	2	79	7	18
cSH	239	412	836	824
Volume to Capacity	0.05	0.20	0.01	0.09
Queue Length 95th (m)	1.3	5.5	0.2	2.3
Control Delay (s)	20.9	15.9	0.2	2.3
Lane LOS	C	C	A	A
Approach Delay (s)	20.9	15.9	0.2	2.3
Approach LOS	C	C		

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	83.6%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	45	67	357	475	29
Future Volume (vph)	22	45	67	357	475	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.909				0.992	
Flt Protected	0.984			0.992		
Satd. Flow (prot)	1718	0	0	1900	1820	0
Flt Permitted	0.984			0.992		
Satd. Flow (perm)	1718	0	0	1900	1820	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	114.3			300.5	111.6	
Travel Time (s)	8.6			22.5	8.4	
Confl. Peds. (#/hr)		1	1			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	0%	5%	0%
Adj. Flow (vph)	24	49	73	388	516	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	461	548	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

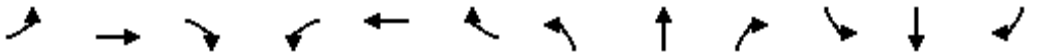
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	45	67	357	475	29
Future Volume (Veh/h)	22	45	67	357	475	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	49	73	388	516	32
Pedestrians	3			1		
Lane Width (m)	3.7			3.7		
Walking Speed (m/s)	1.1			1.1		
Percent Blockage	0			0		
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (m)				301	112	
pX, platoon unblocked	0.76	0.75	0.75			
vC, conflicting volume	1069	536	551			
vC1, stage 1 conf vol	535					
vC2, stage 2 conf vol	534					
vCu, unblocked vol	840	210	231			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	92	93			
cM capacity (veh/h)	455	622	997			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	73	461	548
Volume Left	24	73	0
Volume Right	49	0	32
cSH	555	997	1700
Volume to Capacity	0.13	0.07	0.32
Queue Length 95th (m)	3.4	1.8	0.0
Control Delay (s)	12.5	2.1	0.0
Lane LOS	B	A	
Approach Delay (s)	12.5	2.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

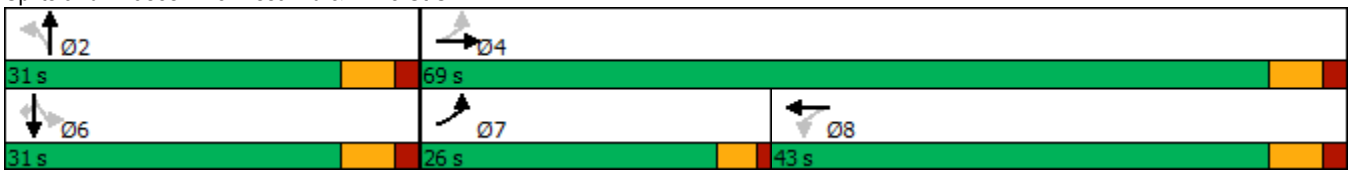


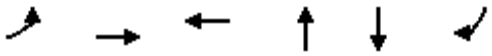
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	674	68	2	642	86	44	59	1	84	96	360
Future Volume (vph)	406	674	68	2	642	86	44	59	1	84	96	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	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	0.99
Frt		0.986			0.982			0.999				0.850
Flt Protected	0.950							0.979			0.977	
Satd. Flow (prot)	1755	1852	0	0	3505	0	0	1814	0	0	1857	1555
Flt Permitted	0.251				0.954			0.671			0.809	
Satd. Flow (perm)	463	1852	0	0	3344	0	0	1243	0	0	1536	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			16							391
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	441	733	74	2	698	93	48	64	1	91	104	391
Shared Lane Traffic (%)												
Lane Group Flow (vph)	441	807	0	0	793	0	0	113	0	0	195	391
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	26.0	69.0		43.0	43.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	26.0%	69.0%		43.0%	43.0%		31.0%	31.0%		31.0%	31.0%	31.0%
Maximum Green (s)	22.0	63.0		37.0	37.0		25.0	25.0		25.0	25.0	25.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	65.2	63.2			42.3			17.7			17.7	17.7
Actuated g/C Ratio	0.70	0.68			0.46			0.19			0.19	0.19
v/c Ratio	0.79	0.64			0.52			0.48			0.67	0.64
Control Delay	20.1	12.3			21.2			40.0			46.2	8.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	20.1	12.3			21.2			40.0			46.2	8.7
LOS	C	B			C			D			D	A
Approach Delay		15.0			21.2			40.0			21.2	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 96.3%		ICU Level of Service F	
Analysis Period (min) 15			

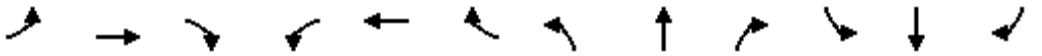
Splits and Phases: 5: Essa Rd & Anne St S





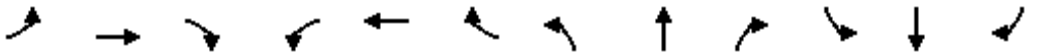
Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	441	807	793	113	195	391
v/c Ratio	0.79	0.64	0.52	0.48	0.67	0.64
Control Delay	20.1	12.3	21.2	40.0	46.2	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	12.3	21.2	40.0	46.2	8.7
Queue Length 50th (m)	27.1	70.8	51.8	18.1	32.6	0.0
Queue Length 95th (m)	69.8	134.2	84.2	33.9	54.4	22.7
Internal Link Dist (m)		80.6	313.1	99.5	524.1	
Turn Bay Length (m)						25.0
Base Capacity (vph)	631	1262	1530	335	414	699
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.64	0.52	0.34	0.47	0.56

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	674	68	2	642	86	44	59	1	84	96	360
Future Volume (vph)	406	674	68	2	642	86	44	59	1	84	96	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			6.0			6.0	6.0
Lane Util. Factor	1.00	1.00			0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.99			0.98			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98			0.98	1.00
Satd. Flow (prot)	1755	1853			3506			1813			1855	1533
Flt Permitted	0.25	1.00			0.95			0.67			0.81	1.00
Satd. Flow (perm)	463	1853			3344			1243			1535	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)	441	733	74	2	698	93	48	64	1	91	104	391
RTOR Reduction (vph)	0	3	0	0	9	0	0	0	0	0	0	317
Lane Group Flow (vph)	441	804	0	0	784	0	0	113	0	0	195	74
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	63.2	63.2			42.3			17.7			17.7	17.7
Effective Green, g (s)	63.2	63.2			42.3			17.7			17.7	17.7
Actuated g/C Ratio	0.68	0.68			0.46			0.19			0.19	0.19
Clearance Time (s)	4.0	6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	550	1260			1522			236			292	292
v/s Ratio Prot	c0.15	0.43										
v/s Ratio Perm	c0.40				0.23			0.09			c0.13	0.05
v/c Ratio	0.80	0.64			0.52			0.48			0.67	0.26
Uniform Delay, d1	9.3	8.4			18.0			33.5			34.9	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	8.2	2.5			1.3			1.5			5.7	0.5
Delay (s)	17.5	10.9			19.3			35.0			40.6	32.5
Level of Service	B	B			B			D			D	C
Approach Delay (s)		13.2			19.3			35.0			35.2	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

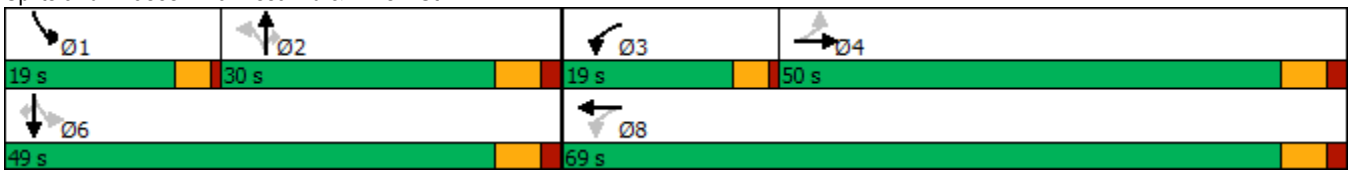


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	630	50	33	715	77	21	168	27	121	188	138
Future Volume (vph)	91	630	50	33	715	77	21	168	27	121	188	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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				0.98
Frt		0.990			0.986				0.850			0.850
Flt Protected		0.994			0.998			0.995			0.981	
Satd. Flow (prot)	0	3496	0	0	3490	0	0	1895	1633	0	1833	1585
Flt Permitted		0.698			0.892			0.942			0.726	
Satd. Flow (perm)	0	2455	0	0	3119	0	0	1793	1633	0	1356	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14				102			78
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			300.5	
Travel Time (s)		25.3			14.7			10.0			22.5	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Adj. Flow (vph)	92	636	51	33	722	78	21	170	27	122	190	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	779	0	0	833	0	0	191	27	0	312	139
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.3			63.3			36.5	36.5		36.5	36.5
Actuated g/C Ratio		0.57			0.57			0.33	0.33		0.33	0.33
v/c Ratio		0.56			0.47			0.33	0.04		0.71	0.25
Control Delay		18.3			16.1			29.5	0.1		42.1	13.3
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		18.3			16.1			29.5	0.1		42.1	13.3
LOS		B			B			C	A		D	B
Approach Delay		18.3			16.1			25.8			33.3	
Approach LOS		B			B			C			C	

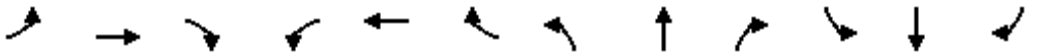
Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 111.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 133.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	779	833	191	27	312	139
v/c Ratio	0.56	0.47	0.33	0.04	0.71	0.25
Control Delay	18.3	16.1	29.5	0.1	42.1	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	16.1	29.5	0.1	42.1	13.3
Queue Length 50th (m)	59.0	58.2	31.1	0.0	59.1	9.3
Queue Length 95th (m)	80.8	77.2	49.4	0.0	90.2	23.1
Internal Link Dist (m)	313.1	171.7	108.7		276.5	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1392	1771	584	601	523	650
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.47	0.33	0.04	0.60	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	630	50	33	715	77	21	168	27	121	188	138
Future Volume (vph)	91	630	50	33	715	77	21	168	27	121	188	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			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
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3497			3490			1893	1633		1832	1561
Flt Permitted		0.70			0.89			0.94	1.00		0.73	1.00
Satd. Flow (perm)		2454			3117			1793	1633		1356	1561
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	92	636	51	33	722	78	21	170	27	122	190	139
RTOR Reduction (vph)	0	3	0	0	6	0	0	0	18	0	0	53
Lane Group Flow (vph)	0	776	0	0	827	0	0	191	9	0	312	86
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.3			63.3			36.5	36.5		36.5	36.5
Effective Green, g (s)		63.3			63.3			36.5	36.5		36.5	36.5
Actuated g/C Ratio		0.57			0.57			0.33	0.33		0.33	0.33
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1389			1764			585	533		442	509
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.27			0.11	0.01		c0.23	0.06
v/c Ratio		0.56			0.47			0.33	0.02		0.71	0.17
Uniform Delay, d1		15.4			14.3			28.4	25.5		33.0	26.8
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6			0.2			0.3	0.0		5.1	0.2
Delay (s)		17.0			14.5			28.7	25.5		38.0	27.0
Level of Service		B			B			C	C		D	C
Approach Delay (s)		17.0			14.5			28.3			34.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	111.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	133.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

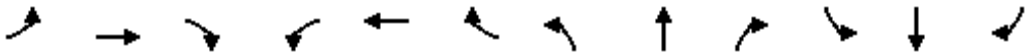
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	79	0	0	75	0	0
Future Volume (vph)	79	0	0	75	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	165.3			114.3	49.4	
Travel Time (s)	12.4			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	0	0	82	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	0	82	0	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 7.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	79	0	0	75	0	0
Future Volume (Veh/h)	79	0	0	75	0	0
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)	86	0	0	82	0	0
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			86		168	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			86		168	86
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	100
cM capacity (veh/h)			1510		822	973

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	86	82	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1510	1700
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.5%	ICU Level of Service	A
Analysis Period (min)	15		

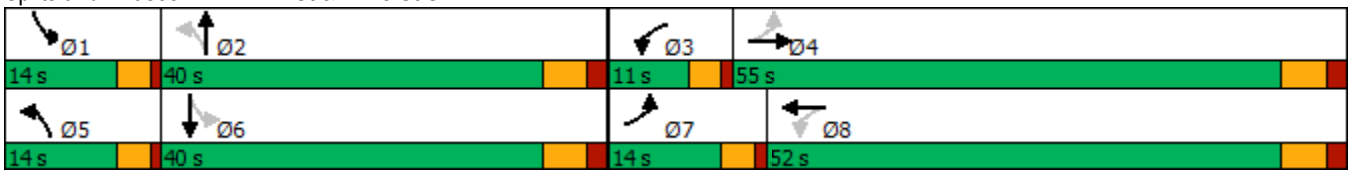


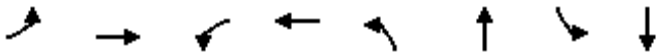
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	539	178	23	411	180	201	449	25	301	540	180
Future Volume (vph)	188	539	178	23	411	180	201	449	25	301	540	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	0.99	
Frt		0.963			0.954			0.992			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1806	0	1722	1789	0	1755	3517	0	1807	3429	0
Flt Permitted	0.087			0.088			0.153			0.338		
Satd. Flow (perm)	165	1806	0	159	1789	0	282	3517	0	642	3429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			21			5			38	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	204	586	193	25	447	196	218	488	27	327	587	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	779	0	25	643	0	218	515	0	327	783	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	14.0	55.0		11.0	52.0		14.0	40.0		14.0	40.0	
Total Split (%)	11.7%	45.8%		9.2%	43.3%		11.7%	33.3%		11.7%	33.3%	
Maximum Green (s)	10.0	49.0		7.0	46.0		10.0	34.0		10.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	59.1	51.2		52.7	43.7		46.1	34.1		46.1	34.1	
Actuated g/C Ratio	0.50	0.43		0.45	0.37		0.39	0.29		0.39	0.29	
v/c Ratio	0.92	0.98		0.15	0.95		0.93	0.50		0.93	0.77	
Control Delay	69.6	61.0		16.6	59.7		70.1	37.0		64.4	42.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	69.6	61.0		16.6	59.7		70.1	37.0		64.4	42.8	
LOS	E	E		B	E		E	D		E	D	
Approach Delay		62.8			58.1			46.9			49.1	
Approach LOS		E			E			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 117.8			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 54.2		Intersection LOS: D	
Intersection Capacity Utilization 106.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S



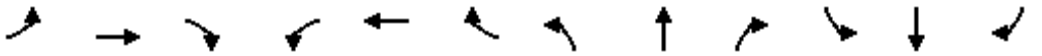


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	204	779	25	643	218	515	327	783
v/c Ratio	0.92	0.98	0.15	0.95	0.93	0.50	0.93	0.77
Control Delay	69.6	61.0	16.6	59.7	70.1	37.0	64.4	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	61.0	16.6	59.7	70.1	37.0	64.4	42.8
Queue Length 50th (m)	30.5	~196.3	2.8	138.9	33.7	53.1	53.9	85.5
Queue Length 95th (m)	#75.8	#270.0	7.2	#210.4	#77.6	69.9	#108.9	108.7
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	222	794	164	712	235	1020	350	1017
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	0.92	0.98	0.15	0.90	0.93	0.50	0.93	0.77

Intersection Summary

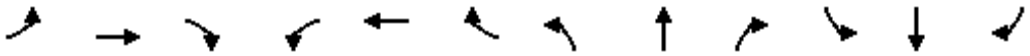
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	539	178	23	411	180	201	449	25	301	540	180
Future Volume (vph)	188	539	178	23	411	180	201	449	25	301	540	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.96		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	1806		1722	1789		1755	3517		1807	3431	
Flt Permitted	0.09	1.00		0.09	1.00		0.15	1.00		0.34	1.00	
Satd. Flow (perm)	165	1806		160	1789		283	3517		643	3431	
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)	204	586	193	25	447	196	218	488	27	327	587	196
RTOR Reduction (vph)	0	10	0	0	13	0	0	4	0	0	27	0
Lane Group Flow (vph)	204	769	0	25	630	0	218	511	0	327	756	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	59.3	51.2		49.4	45.3		44.0	34.0		44.0	34.0	
Effective Green, g (s)	59.3	51.2		49.4	45.3		44.0	34.0		44.0	34.0	
Actuated g/C Ratio	0.50	0.43		0.41	0.38		0.37	0.28		0.37	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	775		119	679		227	1002		334	977	
v/s Ratio Prot	c0.08	c0.43		0.01	0.35		0.08	0.15		c0.08	0.22	
v/s Ratio Perm	0.38			0.08			0.27			c0.28		
v/c Ratio	0.93	0.99		0.21	0.93		0.96	0.51		0.98	0.77	
Uniform Delay, d1	30.9	33.9		27.6	35.4		30.7	35.7		34.6	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.0	30.3		0.9	18.8		48.4	1.9		43.1	5.9	
Delay (s)	72.9	64.2		28.5	54.2		79.1	37.5		77.7	45.1	
Level of Service	E	E		C	D		E	D		E	D	
Approach Delay (s)		66.0			53.3			49.9			54.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

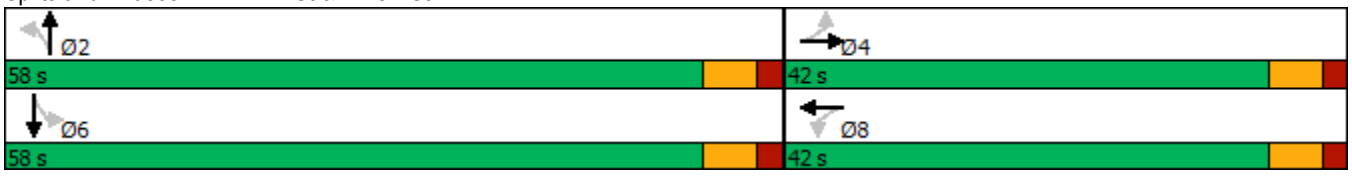


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	422	23	74	330	27	25	302	69	66	421	122
Future Volume (vph)	100	422	23	74	330	27	25	302	69	66	421	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99			0.99	
Frt		0.992			0.988			0.977			0.973	
Flt Protected	0.950			0.950				0.997			0.995	
Satd. Flow (prot)	1807	1880	0	1825	1860	0	0	1817	0	0	1807	0
Flt Permitted	0.451			0.361				0.946			0.913	
Satd. Flow (perm)	854	1880	0	691	1860	0	0	1724	0	0	1657	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			16			19	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	102	431	23	76	337	28	26	308	70	67	430	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	454	0	76	365	0	0	404	0	0	621	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	42.0	42.0		42.0	42.0		58.0	58.0		58.0	58.0	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		52.0	52.0		52.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.6	36.6		36.6	36.6			36.1			36.1	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43			0.43	
v/c Ratio	0.28	0.56		0.26	0.45			0.54			0.87	
Control Delay	21.8	23.7		22.4	21.5			19.7			34.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	21.8	23.7		22.4	21.5			19.7			34.6	
LOS	C	C		C	C			B			C	
Approach Delay		23.4			21.7			19.7			34.6	
Approach LOS		C			C			B			C	

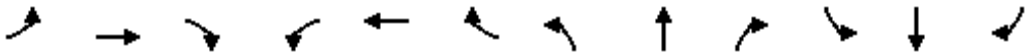
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 84.8			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 122.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 2: Tiffin St & Innisfil St



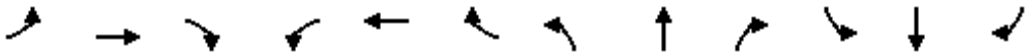
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	102	454	76	365	404	621
v/c Ratio	0.28	0.56	0.26	0.45	0.54	0.87
Control Delay	21.8	23.7	22.4	21.5	19.7	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	23.7	22.4	21.5	19.7	34.6
Queue Length 50th (m)	10.3	52.6	7.6	39.6	44.7	84.9
Queue Length 95th (m)	28.3	106.8	22.7	82.6	67.8	127.3
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	368	812	297	804	1079	1038
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.56	0.26	0.45	0.37	0.60

Intersection Summary



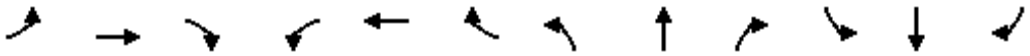
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	422	23	74	330	27	25	302	69	66	421	122
Future Volume (vph)	100	422	23	74	330	27	25	302	69	66	421	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1800	1881		1820	1861			1816			1806	
Flt Permitted	0.45	1.00		0.36	1.00			0.95			0.91	
Satd. Flow (perm)	855	1881		692	1861			1724			1658	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	431	23	76	337	28	26	308	70	67	430	124
RTOR Reduction (vph)	0	2	0	0	3	0	0	9	0	0	11	0
Lane Group Flow (vph)	102	452	0	76	362	0	0	395	0	0	610	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.5	36.5		36.5	36.5			36.0			36.0	
Effective Green, g (s)	36.5	36.5		36.5	36.5			36.0			36.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43			0.43	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	369	812		298	803			734			706	
v/s Ratio Prot		c0.24			0.19							
v/s Ratio Perm	0.12			0.11				0.23			c0.37	
v/c Ratio	0.28	0.56		0.26	0.45			0.54			0.86	
Uniform Delay, d1	15.5	18.0		15.3	16.9			18.1			22.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.9	2.7		2.1	1.8			0.8			10.7	
Delay (s)	17.3	20.7		17.4	18.8			18.8			32.7	
Level of Service	B	C		B	B			B			C	
Approach Delay (s)		20.1			18.5			18.8			32.7	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.4%	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)	6	4	2	6	0	82	6	566	13	83	640	17
Future Volume (vph)	6	4	2	6	0	82	6	566	13	83	640	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.979			0.875			0.997			0.997	
Flt Protected		0.974			0.996			0.999			0.994	
Satd. Flow (prot)	0	1804	0	0	1177	0	0	1877	0	0	1748	0
Flt Permitted		0.974			0.996			0.999			0.994	
Satd. Flow (perm)	0	1804	0	0	1177	0	0	1877	0	0	1748	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			165.3			548.1			132.7	
Travel Time (s)		8.1			12.4			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	7	4	2	7	0	89	7	615	14	90	696	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	0	0	96	0	0	636	0	0	804	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

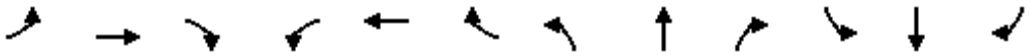
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	2	6	0	82	6	566	13	83	640	17
Future Volume (Veh/h)	6	4	2	6	0	82	6	566	13	83	640	17
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)	7	4	2	7	0	89	7	615	14	90	696	18
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.76	0.76	0.76	0.76	0.76		0.76					
vC, conflicting volume	1613	1532	708	1526	1534	623	717			630		
vC1, stage 1 conf vol	888	888		637	637							
vC2, stage 2 conf vol	725	644		889	897							
vCu, unblocked vol	1649	1542	456	1534	1545	623	468			630		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	96	98	100	97	100	79	99			89		
cM capacity (veh/h)	184	241	445	213	250	419	835			819		

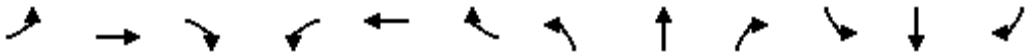
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	96	636	804
Volume Left	7	7	7	90
Volume Right	2	89	14	18
cSH	220	391	835	819
Volume to Capacity	0.06	0.25	0.01	0.11
Queue Length 95th (m)	1.4	7.2	0.2	2.8
Control Delay (s)	22.4	17.2	0.2	2.8
Lane LOS	C	C	A	A
Approach Delay (s)	22.4	17.2	0.2	2.8
Approach LOS	C	C		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	85.6%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	0	67	0	0	0	103	357	0	0	475	43
Future Volume (vph)	31	0	67	0	0	0	103	357	0	0	475	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.908									0.989	
Flt Protected		0.984						0.989				
Satd. Flow (prot)	0	1716	0	0	1883	0	0	1892	0	0	1817	0
Flt Permitted		0.984						0.989				
Satd. Flow (perm)	0	1716	0	0	1883	0	0	1892	0	0	1817	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		114.3			66.3			122.2			111.6	
Travel Time (s)		8.6			5.0			9.2			8.4	
Confl. Peds. (#/hr)			1				1					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	2%	2%	5%	0%
Adj. Flow (vph)	34	0	73	0	0	0	112	388	0	0	516	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	0	0	0	500	0	0	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

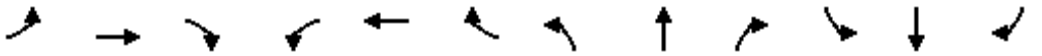
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	0	67	0	0	0	103	357	0	0	475	43
Future Volume (Veh/h)	31	0	67	0	0	0	103	357	0	0	475	43
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)	34	0	73	0	0	0	112	388	0	0	516	47
Pedestrians		3						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.76	0.76	0.74	0.76	0.76	0.97	0.74			0.97		
vC, conflicting volume	1154	1154	544	1226	1178	388	566			388		
vC1, stage 1 conf vol	542	542		612	612							
vC2, stage 2 conf vol	612	612		614	566							
vCu, unblocked vol	948	948	210	1042	979	351	241			351		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	88	100	100	100	89			100		
cM capacity (veh/h)	371	363	617	288	327	670	981			1169		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	107	0	500	563
Volume Left	34	0	112	0
Volume Right	73	0	0	47
cSH	509	1700	981	1169
Volume to Capacity	0.21	0.00	0.11	0.00
Queue Length 95th (m)	6.0	0.0	2.9	0.0
Control Delay (s)	13.9	0.0	3.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	13.9	0.0	3.1	0.0
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	68.3%	ICU Level of Service	C	
Analysis Period (min)	15			

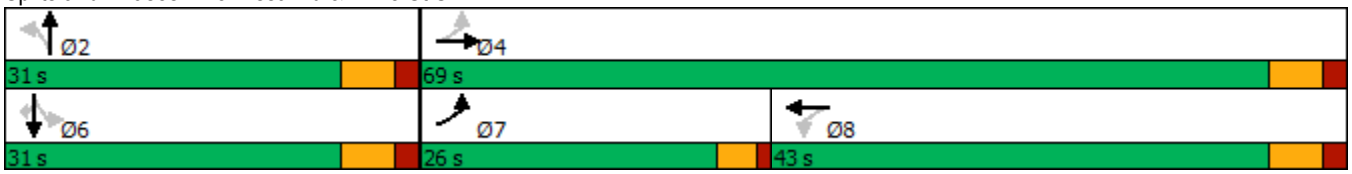


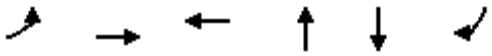
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	710	68	2	664	86	44	59	1	84	96	364
Future Volume (vph)	413	710	68	2	664	86	44	59	1	84	96	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		25.0
Storage Lanes	1		0	0		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	0.95	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	0.99
Frt		0.987			0.983			0.999				0.850
Flt Protected	0.950							0.979			0.977	
Satd. Flow (prot)	1755	1854	0	0	3509	0	0	1814	0	0	1857	1555
Flt Permitted	0.237				0.954			0.671			0.809	
Satd. Flow (perm)	437	1854	0	0	3347	0	0	1243	0	0	1536	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			16							396
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	449	772	74	2	722	93	48	64	1	91	104	396
Shared Lane Traffic (%)												
Lane Group Flow (vph)	449	846	0	0	817	0	0	113	0	0	195	396
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	26.0	69.0		43.0	43.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	26.0%	69.0%		43.0%	43.0%		31.0%	31.0%		31.0%	31.0%	31.0%
Maximum Green (s)	22.0	63.0		37.0	37.0		25.0	25.0		25.0	25.0	25.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0			6.0			6.0			6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	65.2	63.2			41.6			17.7			17.7	17.7
Actuated g/C Ratio	0.70	0.68			0.45			0.19			0.19	0.19
v/c Ratio	0.81	0.67			0.54			0.48			0.67	0.65
Control Delay	22.6	13.0			22.0			40.0			46.2	8.7
Queue Delay	0.0	0.0			0.0			0.0			0.0	0.0
Total Delay	22.6	13.0			22.0			40.0			46.2	8.7
LOS	C	B			C			D			D	A
Approach Delay		16.4			22.0			40.0			21.1	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: Essa Rd & Anne St S

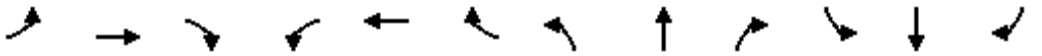




Lane Group	EBL	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	449	846	817	113	195	396
v/c Ratio	0.81	0.67	0.54	0.48	0.67	0.65
Control Delay	22.6	13.0	22.0	40.0	46.2	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	13.0	22.0	40.0	46.2	8.7
Queue Length 50th (m)	29.4	77.2	55.7	18.1	32.6	0.0
Queue Length 95th (m)	#84.2	146.9	87.3	33.9	54.4	23.0
Internal Link Dist (m)		80.6	313.1	99.5	524.1	
Turn Bay Length (m)						25.0
Base Capacity (vph)	619	1263	1508	335	414	702
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.67	0.54	0.34	0.47	0.56

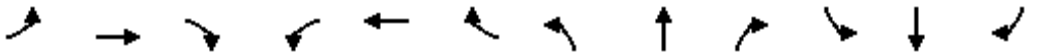
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	710	68	2	664	86	44	59	1	84	96	364
Future Volume (vph)	413	710	68	2	664	86	44	59	1	84	96	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			6.0			6.0	6.0
Lane Util. Factor	1.00	1.00			0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.99			0.98			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.98			0.98	1.00
Satd. Flow (prot)	1755	1854			3508			1813			1855	1533
Flt Permitted	0.24	1.00			0.95			0.67			0.81	1.00
Satd. Flow (perm)	438	1854			3346			1243			1535	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)	449	772	74	2	722	93	48	64	1	91	104	396
RTOR Reduction (vph)	0	3	0	0	9	0	0	0	0	0	0	321
Lane Group Flow (vph)	449	843	0	0	808	0	0	113	0	0	195	75
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	63.2	63.2			41.6			17.7			17.7	17.7
Effective Green, g (s)	63.2	63.2			41.6			17.7			17.7	17.7
Actuated g/C Ratio	0.68	0.68			0.45			0.19			0.19	0.19
Clearance Time (s)	4.0	6.0			6.0			6.0			6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	547	1261			1498			236			292	292
v/s Ratio Prot	c0.16	0.45										
v/s Ratio Perm	c0.40				0.24			0.09			c0.13	0.05
v/c Ratio	0.82	0.67			0.54			0.48			0.67	0.26
Uniform Delay, d1	10.5	8.7			18.7			33.5			34.9	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	9.6	2.8			1.4			1.5			5.7	0.5
Delay (s)	20.1	11.5			20.1			35.0			40.6	32.5
Level of Service	C	B			C			D			D	C
Approach Delay (s)		14.5			20.1			35.0			35.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



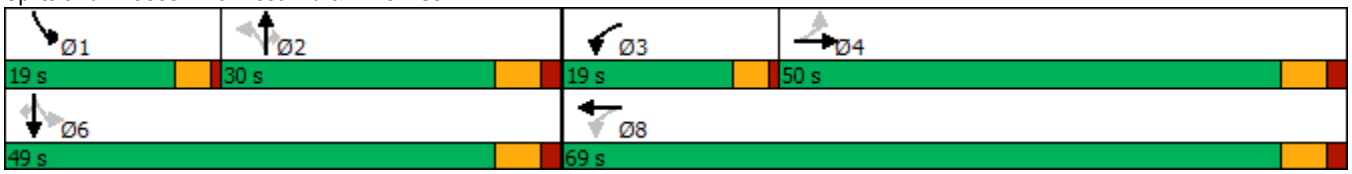
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	630	50	33	715	77	21	168	27	121	188	160
Future Volume (vph)	127	630	50	33	715	77	21	168	27	121	188	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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				0.98
Frt		0.991			0.986				0.850			0.850
Flt Protected		0.992			0.998			0.995			0.981	
Satd. Flow (prot)	0	3497	0	0	3490	0	0	1895	1633	0	1833	1585
Flt Permitted		0.625			0.888			0.942			0.726	
Satd. Flow (perm)	0	2203	0	0	3105	0	0	1793	1633	0	1356	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14				102			91
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			178.3	
Travel Time (s)		25.3			14.7			10.0			13.4	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Adj. Flow (vph)	128	636	51	33	722	78	21	170	27	122	190	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	815	0	0	833	0	0	191	27	0	312	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	50.0	50.0		19.0	69.0		30.0	30.0	30.0	19.0	49.0	49.0
Total Split (%)	42.4%	42.4%		16.1%	58.5%		25.4%	25.4%	25.4%	16.1%	41.5%	41.5%
Maximum Green (s)	44.0	44.0		15.0	63.0		24.0	24.0	24.0	15.0	43.0	43.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		63.3			63.3			36.7	36.7		36.7	36.7
Actuated g/C Ratio		0.57			0.57			0.33	0.33		0.33	0.33
v/c Ratio		0.65			0.47			0.33	0.04		0.70	0.28
Control Delay		21.0			16.3			29.4	0.1		42.0	13.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		21.0			16.3			29.4	0.1		42.0	13.4
LOS		C			B			C	A		D	B
Approach Delay		21.0			16.3			25.8			32.2	
Approach LOS		C			B			C			C	

Intersection Summary

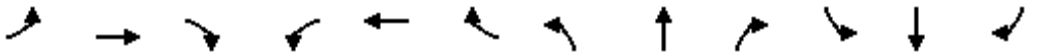
Area Type: Other
Cycle Length: 118
Actuated Cycle Length: 112
Natural Cycle: 100
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 133.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	815	833	191	27	312	162
v/c Ratio	0.65	0.47	0.33	0.04	0.70	0.28
Control Delay	21.0	16.3	29.4	0.1	42.0	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	16.3	29.4	0.1	42.0	13.4
Queue Length 50th (m)	68.3	59.5	31.1	0.0	59.1	10.9
Queue Length 95th (m)	93.1	77.4	49.4	0.0	90.2	26.3
Internal Link Dist (m)	313.1	171.7	108.7		154.3	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1247	1760	586	602	523	657
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.47	0.33	0.04	0.60	0.25

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	630	50	33	715	77	21	168	27	121	188	160
Future Volume (vph)	127	630	50	33	715	77	21	168	27	121	188	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			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
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3496			3490			1893	1633		1832	1561
Flt Permitted		0.62			0.89			0.94	1.00		0.73	1.00
Satd. Flow (perm)		2202			3106			1793	1633		1357	1561
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	128	636	51	33	722	78	21	170	27	122	190	162
RTOR Reduction (vph)	0	3	0	0	6	0	0	0	18	0	0	61
Lane Group Flow (vph)	0	812	0	0	827	0	0	191	9	0	312	101
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		63.3			63.3			36.7	36.7		36.7	36.7
Effective Green, g (s)		63.3			63.3			36.7	36.7		36.7	36.7
Actuated g/C Ratio		0.57			0.57			0.33	0.33		0.33	0.33
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1244			1755			587	535		444	511
v/s Ratio Prot												
v/s Ratio Perm		c0.37			0.27			0.11	0.01		c0.23	0.06
v/c Ratio		0.65			0.47			0.33	0.02		0.70	0.20
Uniform Delay, d1		16.8			14.4			28.3	25.5		32.9	27.1
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		2.7			0.2			0.3	0.0		5.0	0.2
Delay (s)		19.5			14.6			28.7	25.5		37.9	27.3
Level of Service		B			B			C	C		D	C
Approach Delay (s)		19.5			14.6			28.3			34.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	133.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

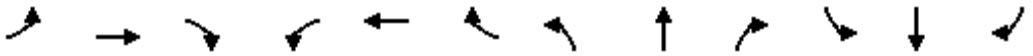
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	79	22	50	75	13	31
Future Volume (vph)	79	22	50	75	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.971				0.904	
Flt Protected				0.981	0.986	
Satd. Flow (prot)	1829	0	0	1848	1679	0
Flt Permitted				0.981	0.986	
Satd. Flow (perm)	1829	0	0	1848	1679	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	165.3			114.3	49.4	
Travel Time (s)	12.4			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	24	54	82	14	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	0	0	136	48	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	79	22	50	75	13	31
Future Volume (Veh/h)	79	22	50	75	13	31
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)	86	24	54	82	14	34
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			110		288	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			110		288	98
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		98	96
cM capacity (veh/h)			1480		677	958

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	110	136	48
Volume Left	0	54	14
Volume Right	24	0	34
cSH	1700	1480	854
Volume to Capacity	0.06	0.04	0.06
Queue Length 95th (m)	0.0	0.9	1.4
Control Delay (s)	0.0	3.2	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	3.2	9.5
Approach LOS			A

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		23.4%	ICU Level of Service A
Analysis Period (min)		15	

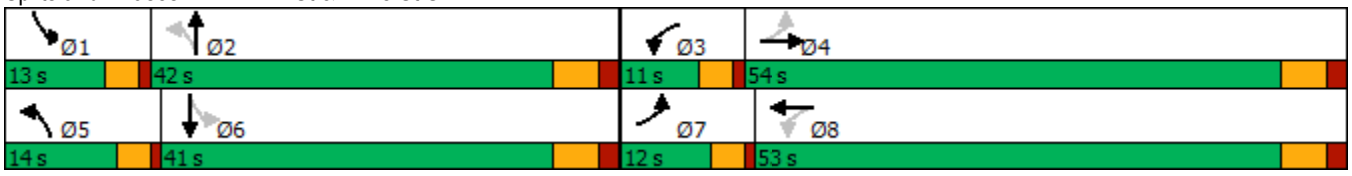


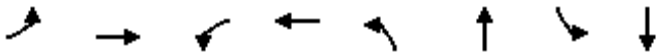
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	684	178	24	518	195	234	467	29	375	559	219
Future Volume (vph)	198	684	178	24	518	195	234	467	29	375	559	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	0.99	
Frt		0.969			0.959			0.991			0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1819	0	1722	1799	0	1755	3513	0	1807	3413	0
Flt Permitted	0.076			0.082			0.116			0.334		
Satd. Flow (perm)	145	1819	0	149	1799	0	214	3513	0	635	3413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			19			5			49	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	215	743	193	26	563	212	254	508	32	408	608	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	936	0	26	775	0	254	540	0	408	846	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	12.0	54.0		11.0	53.0		14.0	42.0		13.0	41.0	
Total Split (%)	10.0%	45.0%		9.2%	44.2%		11.7%	35.0%		10.8%	34.2%	
Maximum Green (s)	8.0	48.0		7.0	47.0		10.0	36.0		9.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	59.2	52.4		56.0	47.0		48.0	36.0		46.0	35.0	
Actuated g/C Ratio	0.49	0.44		0.47	0.39		0.40	0.30		0.38	0.29	
v/c Ratio	1.18	1.17		0.16	1.08		1.19	0.51		1.23	0.82	
Control Delay	152.4	121.0		17.2	92.9		148.5	36.4		157.4	45.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	152.4	121.0		17.2	92.9		148.5	36.4		157.4	45.0	
LOS	F	F		B	F		F	D		F	D	
Approach Delay		126.9			90.4			72.3			81.6	
Approach LOS		F			F			E			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay: 94.5		Intersection LOS: F	
Intersection Capacity Utilization 118.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	936	26	775	254	540	408	846
v/c Ratio	1.18	1.17	0.16	1.08	1.19	0.51	1.23	0.82
Control Delay	152.4	121.0	17.2	92.9	148.5	36.4	157.4	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	121.0	17.2	92.9	148.5	36.4	157.4	45.0
Queue Length 50th (m)	~46.0	~278.2	3.0	~201.8	~55.2	54.7	~93.1	92.6
Queue Length 95th (m)	#94.4	#355.4	7.6	#275.6	#107.0	71.6	#165.4	117.0
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	182	801	161	716	214	1057	331	1030
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	1.18	1.17	0.16	1.08	1.19	0.51	1.23	0.82

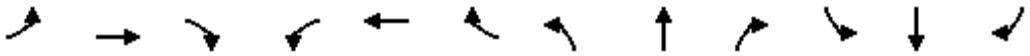
Intersection Summary

~ 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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	684	178	24	518	195	234	467	29	375	559	219
Future Volume (vph)	198	684	178	24	518	195	234	467	29	375	559	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	1819		1722	1799		1755	3514		1807	3413	
Flt Permitted	0.08	1.00		0.08	1.00		0.12	1.00		0.33	1.00	
Satd. Flow (perm)	145	1819		149	1799		215	3514		636	3413	
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)	215	743	193	26	563	212	254	508	32	408	608	238
RTOR Reduction (vph)	0	7	0	0	11	0	0	4	0	0	35	0
Lane Group Flow (vph)	215	929	0	26	764	0	254	536	0	408	811	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	60.4	52.4		52.8	48.6		46.0	36.0		44.0	35.0	
Effective Green, g (s)	60.4	52.4		52.8	48.6		46.0	36.0		44.0	35.0	
Actuated g/C Ratio	0.50	0.43		0.43	0.40		0.38	0.30		0.36	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	181	783		119	719		207	1040		316	982	
v/s Ratio Prot	c0.08	0.51		0.01	0.42		c0.10	0.15		0.10	0.24	
v/s Ratio Perm	c0.51			0.09			0.36			c0.37		
v/c Ratio	1.19	1.19		0.22	1.06		1.23	0.52		1.29	0.83	
Uniform Delay, d1	33.6	34.6		28.1	36.5		30.3	35.6		36.6	40.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	126.5	96.4		0.9	51.3		137.2	1.8		152.7	7.9	
Delay (s)	160.1	131.0		29.0	87.8		167.5	37.4		189.3	48.4	
Level of Service	F	F		C	F		F	D		F	D	
Approach Delay (s)		136.4			85.8			79.0			94.2	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	101.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	118.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

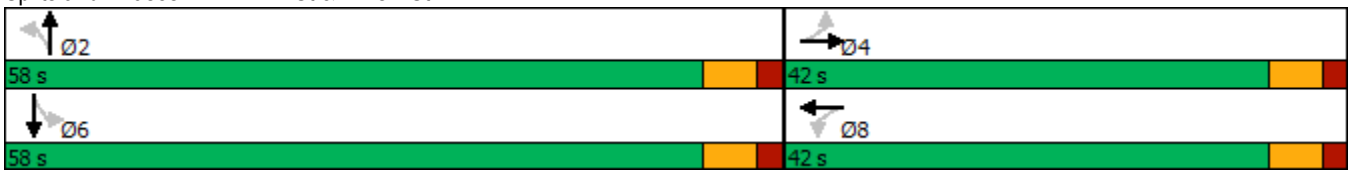


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	511	62	69	401	28	54	331	77	80	463	148
Future Volume (vph)	105	511	62	69	401	28	54	331	77	80	463	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00			0.99			0.99	
Frt		0.984			0.990			0.977			0.971	
Flt Protected	0.950			0.950				0.994			0.994	
Satd. Flow (prot)	1807	1858	0	1825	1864	0	0	1814	0	0	1802	0
Flt Permitted	0.343			0.192				0.856			0.886	
Satd. Flow (perm)	650	1858	0	369	1864	0	0	1562	0	0	1605	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			4			15			20	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	107	521	63	70	409	29	55	338	79	82	472	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	584	0	70	438	0	0	472	0	0	705	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	42.0	42.0		42.0	42.0		58.0	58.0		58.0	58.0	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		52.0	52.0		52.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.3	36.3		36.3	36.3			43.4			43.4	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.47			0.47	
v/c Ratio	0.42	0.79		0.48	0.59			0.63			0.92	
Control Delay	29.3	35.5		38.1	27.6			21.5			39.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	29.3	35.5		38.1	27.6			21.5			39.9	
LOS	C	D		D	C			C			D	
Approach Delay		34.5			29.0			21.5			39.9	
Approach LOS		C			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 91.8			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 32.3		Intersection LOS: C	
Intersection Capacity Utilization 124.3%		ICU Level of Service H	
Analysis Period (min) 15			

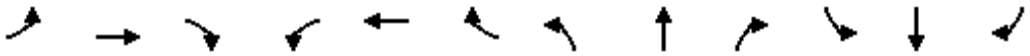
Splits and Phases: 2: Tiffin St & Innisfil St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	107	584	70	438	472	705
v/c Ratio	0.42	0.79	0.48	0.59	0.63	0.92
Control Delay	29.3	35.5	38.1	27.6	21.5	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	35.5	38.1	27.6	21.5	39.9
Queue Length 50th (m)	14.4	94.2	9.7	63.5	57.8	108.1
Queue Length 95th (m)	32.4	#163.6	#29.0	102.6	87.9	#179.8
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	257	739	145	740	899	926
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.79	0.48	0.59	0.53	0.76

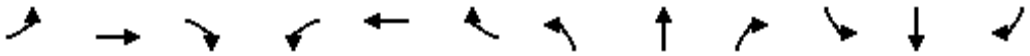
Intersection Summary

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



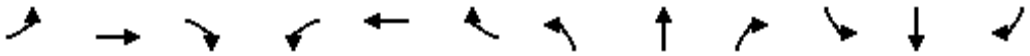
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	511	62	69	401	28	54	331	77	80	463	148
Future Volume (vph)	105	511	62	69	401	28	54	331	77	80	463	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1801	1858		1822	1864			1816			1801	
Flt Permitted	0.34	1.00		0.19	1.00			0.86			0.89	
Satd. Flow (perm)	650	1858		368	1864			1564			1605	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	107	521	63	70	409	29	55	338	79	82	472	151
RTOR Reduction (vph)	0	4	0	0	2	0	0	8	0	0	11	0
Lane Group Flow (vph)	107	580	0	70	436	0	0	464	0	0	694	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.3	36.3		36.3	36.3			43.4			43.4	
Effective Green, g (s)	36.3	36.3		36.3	36.3			43.4			43.4	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.47			0.47	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	257	735		145	737			740			759	
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm	0.16			0.19				0.30			c0.43	
v/c Ratio	0.42	0.79		0.48	0.59			0.63			0.91	
Uniform Delay, d1	20.0	24.3		20.7	21.8			18.1			22.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.9	8.4		11.1	3.5			1.7			15.5	
Delay (s)	24.9	32.7		31.7	25.3			19.8			38.0	
Level of Service	C	C		C	C			B			D	
Approach Delay (s)		31.5			26.2			19.8			38.0	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.3%	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)	7	4	2	2	0	76	7	593	7	71	672	17
Future Volume (vph)	7	4	2	2	0	76	7	593	7	71	672	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.868			0.998			0.997	
Flt Protected		0.972			0.999			0.999			0.995	
Satd. Flow (prot)	0	1806	0	0	1167	0	0	1879	0	0	1758	0
Flt Permitted		0.972			0.999			0.999			0.995	
Satd. Flow (perm)	0	1806	0	0	1167	0	0	1879	0	0	1758	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			165.3			548.1			132.7	
Travel Time (s)		8.1			12.4			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	8	4	2	2	0	83	8	645	8	77	730	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	85	0	0	661	0	0	825	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

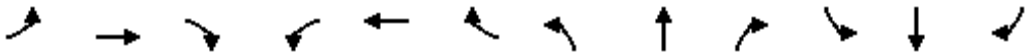
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	2	2	0	76	7	593	7	71	672	17
Future Volume (Veh/h)	7	4	2	2	0	76	7	593	7	71	672	17
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)	8	4	2	2	0	83	8	645	8	77	730	18
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.74	0.74	0.74	0.74	0.74		0.74					
vC, conflicting volume	1644	1566	742	1563	1571	650	751			654		
vC1, stage 1 conf vol	896	896		666	666							
vC2, stage 2 conf vol	748	670		897	905							
vCu, unblocked vol	1695	1590	472	1585	1596	650	484			654		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	96	98	100	99	100	79	99			90		
cM capacity (veh/h)	186	239	423	210	246	404	801			801		

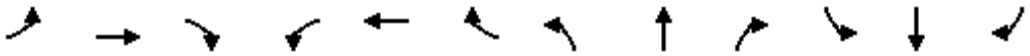
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	85	661	825
Volume Left	8	2	8	77
Volume Right	2	83	8	18
cSH	217	395	801	801
Volume to Capacity	0.06	0.22	0.01	0.10
Queue Length 95th (m)	1.6	6.1	0.2	2.4
Control Delay (s)	22.7	16.6	0.3	2.5
Lane LOS	C	C	A	A
Approach Delay (s)	22.7	16.6	0.3	2.5
Approach LOS	C	C		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	87.2%	ICU Level of Service	E	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	0	47	18	0	30	69	387	28	47	518	30
Future Volume (vph)	23	0	47	18	0	30	69	387	28	47	518	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.909			0.916			0.992			0.993	
Flt Protected		0.984			0.981			0.993			0.996	
Satd. Flow (prot)	0	1718	0	0	1692	0	0	1885	0	0	1818	0
Flt Permitted		0.984			0.981			0.993			0.996	
Satd. Flow (perm)	0	1718	0	0	1692	0	0	1885	0	0	1818	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		114.3			66.3			119.8			111.6	
Travel Time (s)		8.6			5.0			9.0			8.4	
Confl. Peds. (#/hr)			1				1					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	2%	2%	5%	0%
Adj. Flow (vph)	25	0	51	20	0	33	75	421	30	51	563	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	53	0	0	526	0	0	647	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

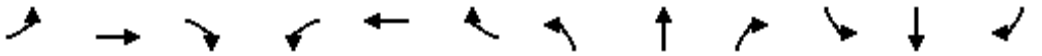
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	0	47	18	0	30	69	387	28	47	518	30
Future Volume (Veh/h)	23	0	47	18	0	30	69	387	28	47	518	30
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)	25	0	51	20	0	33	75	421	30	51	563	33
Pedestrians		3						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.72	0.72	0.71	0.72	0.72	0.98	0.71			0.98		
vC, conflicting volume	1304	1286	584	1320	1287	436	599			451		
vC1, stage 1 conf vol	684	684		586	586							
vC2, stage 2 conf vol	619	601		734	701							
vCu, unblocked vol	1149	1124	203	1171	1126	409	225			424		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	91	92	100	95	92			95		
cM capacity (veh/h)	298	310	593	263	292	627	947			1107		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	53	526	647
Volume Left	25	20	75	51
Volume Right	51	33	30	33
cSH	447	411	947	1107
Volume to Capacity	0.17	0.13	0.08	0.05
Queue Length 95th (m)	4.6	3.3	2.0	1.1
Control Delay (s)	14.7	15.0	2.1	1.2
Lane LOS	B	C	A	A
Approach Delay (s)	14.7	15.0	2.1	1.2
Approach LOS	B	C		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

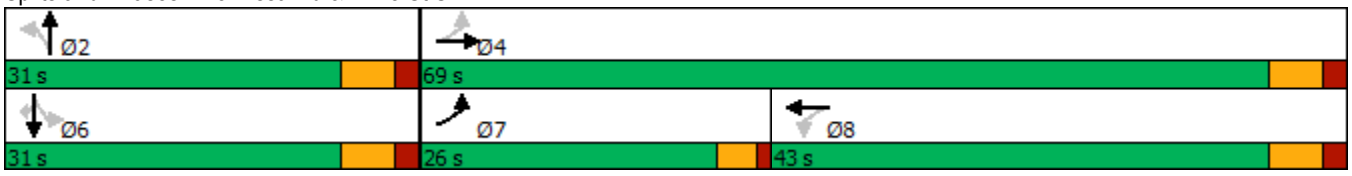


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	831	71	2	762	91	49	62	1	91	101	397
Future Volume (vph)	425	831	71	2	762	91	49	62	1	91	101	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	50.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		1.00		0.99
Frt		0.988			0.984			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	3528	0	1825	3513	0	1772	1844	0	1825	1883	1555
Flt Permitted	0.189			0.292			0.686			0.713		
Satd. Flow (perm)	349	3528	0	560	3513	0	1277	1844	0	1365	1883	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			15			1				432
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	462	903	77	2	828	99	53	67	1	99	110	432
Shared Lane Traffic (%)												
Lane Group Flow (vph)	462	980	0	2	927	0	53	68	0	99	110	432
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	26.0	69.0		43.0	43.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	26.0%	69.0%		43.0%	43.0%		31.0%	31.0%		31.0%	31.0%	31.0%
Maximum Green (s)	22.0	63.0		37.0	37.0		25.0	25.0		25.0	25.0	25.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	65.1	63.1		39.2	39.2		14.2	14.2		14.2	14.2	14.2
Actuated g/C Ratio	0.73	0.71		0.44	0.44		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.81	0.39		0.01	0.60		0.26	0.23		0.46	0.37	0.71
Control Delay	26.0	6.3		18.0	22.1		35.6	33.6		40.6	36.6	10.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.0	6.3		18.0	22.1		35.6	33.6		40.6	36.6	10.6
LOS	C	A		B	C		D	C		D	D	B
Approach Delay		12.6			22.1			34.5			19.7	
Approach LOS		B			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89.4			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

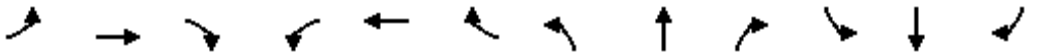
Splits and Phases: 5: Essa Rd & Anne St S



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	462	980	2	927	53	68	99	110	432
v/c Ratio	0.81	0.39	0.01	0.60	0.26	0.23	0.46	0.37	0.71
Control Delay	26.0	6.3	18.0	22.1	35.6	33.6	40.6	36.6	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	6.3	18.0	22.1	35.6	33.6	40.6	36.6	10.6
Queue Length 50th (m)	37.1	28.7	0.2	62.5	8.1	10.1	15.6	17.0	0.0
Queue Length 95th (m)	#101.0	54.2	1.7	96.7	18.0	21.0	29.8	31.5	24.9
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0				50.0		25.0
Base Capacity (vph)	600	2496	245	1547	357	517	382	527	740
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	0.77	0.39	0.01	0.60	0.15	0.13	0.26	0.21	0.58

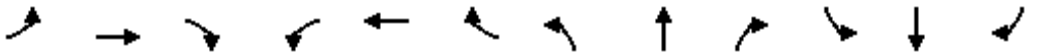
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	831	71	2	762	91	49	62	1	91	101	397
Future Volume (vph)	425	831	71	2	762	91	49	62	1	91	101	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	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	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	3529		1821	3513		1768	1844		1819	1883	1533
Flt Permitted	0.19	1.00		0.29	1.00		0.69	1.00		0.71	1.00	1.00
Satd. Flow (perm)	349	3529		561	3513		1277	1844		1365	1883	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)	462	903	77	2	828	99	53	67	1	99	110	432
RTOR Reduction (vph)	0	5	0	0	8	0	0	1	0	0	0	363
Lane Group Flow (vph)	462	975	0	2	919	0	53	67	0	99	110	69
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	63.2	63.2		39.2	39.2		14.3	14.3		14.3	14.3	14.3
Effective Green, g (s)	63.2	63.2		39.2	39.2		14.3	14.3		14.3	14.3	14.3
Actuated g/C Ratio	0.71	0.71		0.44	0.44		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	560	2491		245	1538		204	294		218	300	244
v/s Ratio Prot	c0.18	0.28			0.26			0.04			0.06	
v/s Ratio Perm	c0.40			0.00			0.04			c0.07		0.05
v/c Ratio	0.82	0.39		0.01	0.60		0.26	0.23		0.45	0.37	0.28
Uniform Delay, d1	15.3	5.3		14.2	19.1		33.0	32.8		34.1	33.6	33.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.6	0.5		0.1	1.7		0.7	0.4		1.5	0.8	0.6
Delay (s)	24.9	5.8		14.2	20.9		33.6	33.2		35.6	34.3	33.7
Level of Service	C	A		B	C		C	C		D	C	C
Approach Delay (s)		11.9			20.8			33.4			34.1	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

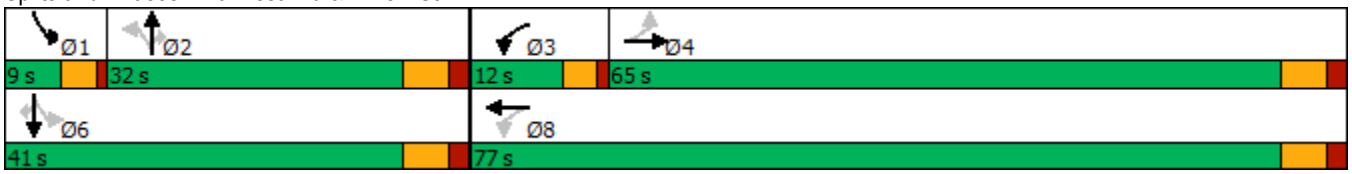


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	726	52	35	807	81	23	176	30	134	198	187
Future Volume (vph)	151	726	52	35	807	81	23	176	30	134	198	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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				0.98
Frt		0.992			0.987				0.850			0.850
Flt Protected		0.992			0.998			0.994			0.980	
Satd. Flow (prot)	0	3501	0	0	3493	0	0	1893	1633	0	1832	1585
Flt Permitted		0.597			0.876			0.883			0.681	
Satd. Flow (perm)	0	2107	0	0	3066	0	0	1681	1633	0	1273	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			15				102			89
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			180.8	
Travel Time (s)		25.3			14.7			10.0			13.6	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Adj. Flow (vph)	153	733	53	35	815	82	23	178	30	135	200	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	939	0	0	932	0	0	201	30	0	335	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	65.0	65.0		12.0	77.0		32.0	32.0	32.0	9.0	41.0	41.0
Total Split (%)	55.1%	55.1%		10.2%	65.3%		27.1%	27.1%	27.1%	7.6%	34.7%	34.7%
Maximum Green (s)	59.0	59.0		8.0	71.0		26.0	26.0	26.0	5.0	35.0	35.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		71.0			71.0			35.0	35.0		35.0	35.0
Actuated g/C Ratio		0.60			0.60			0.30	0.30		0.30	0.30
v/c Ratio		0.74			0.50			0.40	0.05		0.89	0.36
Control Delay		21.2			14.4			36.2	0.2		66.0	19.1
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		21.2			14.4			36.2	0.2		66.0	19.1
LOS		C			B			D	A		E	B
Approach Delay		21.2			14.4			31.5			49.1	
Approach LOS		C			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 25.2		Intersection LOS: C	
Intersection Capacity Utilization 133.3%		ICU Level of Service H	
Analysis Period (min) 15			

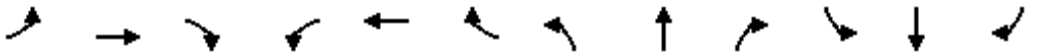
Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	939	932	201	30	335	189
v/c Ratio	0.74	0.50	0.40	0.05	0.89	0.36
Control Delay	21.2	14.4	36.2	0.2	66.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	14.4	36.2	0.2	66.0	19.1
Queue Length 50th (m)	76.5	59.8	37.1	0.0	74.0	17.4
Queue Length 95th (m)	103.1	75.5	58.7	0.0	#126.3	37.2
Internal Link Dist (m)	313.1	171.7	108.7		156.8	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1270	1850	498	556	377	525
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.50	0.40	0.05	0.89	0.36

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	726	52	35	807	81	23	176	30	134	198	187
Future Volume (vph)	151	726	52	35	807	81	23	176	30	134	198	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			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
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3499			3493			1893	1633		1832	1560
Flt Permitted		0.60			0.88			0.88	1.00		0.68	1.00
Satd. Flow (perm)		2107			3066			1681	1633		1273	1560
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	153	733	53	35	815	82	23	178	30	135	200	189
RTOR Reduction (vph)	0	3	0	0	6	0	0	0	21	0	0	63
Lane Group Flow (vph)	0	936	0	0	926	0	0	201	9	0	335	126
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		71.0			71.0			35.0	35.0		35.0	35.0
Effective Green, g (s)		71.0			71.0			35.0	35.0		35.0	35.0
Actuated g/C Ratio		0.60			0.60			0.30	0.30		0.30	0.30
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1267			1844			498	484		377	462
v/s Ratio Prot												
v/s Ratio Perm		c0.44			0.30			0.12	0.01		c0.26	0.08
v/c Ratio		0.74			0.50			0.40	0.02		0.89	0.27
Uniform Delay, d1		16.9			13.4			33.2	29.4		39.6	31.8
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		3.9			0.2			0.5	0.0		21.5	0.3
Delay (s)		20.7			13.6			33.7	29.4		61.2	32.1
Level of Service		C			B			C	C		E	C
Approach Delay (s)		20.7			13.6			33.1			50.7	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	133.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

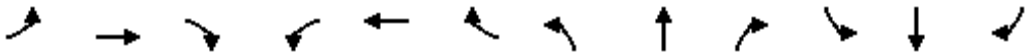
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	82	0	0	78	0	0
Future Volume (vph)	82	0	0	78	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	165.3			114.3	49.4	
Travel Time (s)	12.4			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	0	0	85	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	85	0	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 7.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	82	0	0	78	0	0
Future Volume (Veh/h)	82	0	0	78	0	0
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)	89	0	0	85	0	0
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			89		174	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			89		174	89
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	100
cM capacity (veh/h)			1506		816	969

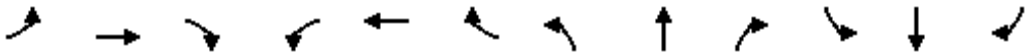
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	89	85	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1506	1700
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	22	18	0	12	36	472	28	19	546	0
Future Volume (vph)	0	0	22	18	0	12	36	472	28	19	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.947			0.993				
Flt Protected					0.971			0.997			0.998	
Satd. Flow (prot)	0	1629	0	0	1732	0	0	1865	0	0	1880	0
Flt Permitted					0.971			0.997			0.998	
Satd. Flow (perm)	0	1629	0	0	1732	0	0	1865	0	0	1880	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		43.3			39.7			180.8			119.8	
Travel Time (s)		3.2			3.0			13.6			9.0	
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
Adj. Flow (vph)	0	0	24	20	0	13	39	513	30	21	593	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	33	0	0	582	0	0	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

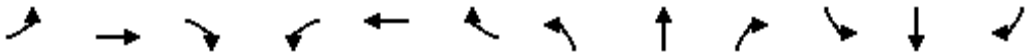
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	22	18	0	12	36	472	28	19	546	0
Future Volume (Veh/h)	0	0	22	18	0	12	36	472	28	19	546	0
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	20	0	13	39	513	30	21	593	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								181			231	
pX, platoon unblocked	0.94	0.94	0.90	0.94	0.94	0.93	0.90			0.93		
vC, conflicting volume	1254	1256	593	1265	1241	528	593			543		
vC1, stage 1 conf vol	635	635		606	606							
vC2, stage 2 conf vol	619	621		659	635							
vCu, unblocked vol	1076	1078	498	1088	1062	458	498			474		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	94	100	98	96			98		
cM capacity (veh/h)	346	354	518	328	351	562	965			1015		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	33	582	614
Volume Left	0	20	39	21
Volume Right	24	13	30	0
cSH	518	392	965	1015
Volume to Capacity	0.05	0.08	0.04	0.02
Queue Length 95th (m)	1.1	2.1	1.0	0.5
Control Delay (s)	12.3	15.0	1.1	0.6
Lane LOS	B	C	A	A
Approach Delay (s)	12.3	15.0	1.1	0.6
Approach LOS	B	C		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	57.0%	ICU Level of Service	B	
Analysis Period (min)	15			

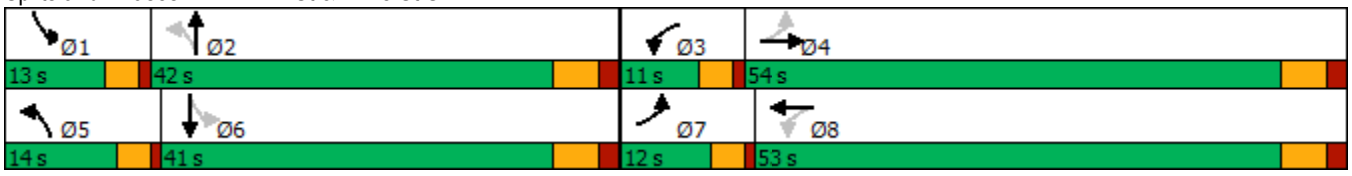


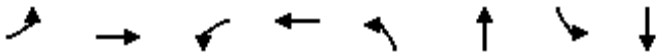
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	684	185	24	518	195	238	471	29	375	566	219
Future Volume (vph)	198	684	185	24	518	195	238	471	29	375	566	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	0.99	
Frt		0.968			0.959			0.991			0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	1817	0	1722	1799	0	1755	3513	0	1807	3413	0
Flt Permitted	0.076			0.082			0.113			0.331		
Satd. Flow (perm)	145	1817	0	149	1799	0	209	3513	0	629	3413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			19			5			48	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	215	743	201	26	563	212	259	512	32	408	615	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	944	0	26	775	0	259	544	0	408	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	12.0	54.0		11.0	53.0		14.0	42.0		13.0	41.0	
Total Split (%)	10.0%	45.0%		9.2%	44.2%		11.7%	35.0%		10.8%	34.2%	
Maximum Green (s)	8.0	48.0		7.0	47.0		10.0	36.0		9.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	59.2	52.4		56.0	47.0		48.0	36.0		46.0	35.0	
Actuated g/C Ratio	0.49	0.44		0.47	0.39		0.40	0.30		0.38	0.29	
v/c Ratio	1.18	1.18		0.16	1.08		1.22	0.51		1.24	0.83	
Control Delay	152.4	124.9		17.2	92.9		161.8	36.5		160.4	45.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	152.4	124.9		17.2	92.9		161.8	36.5		160.4	45.5	
LOS	F	F		B	F		F	D		F	D	
Approach Delay		130.0			90.4			76.9			82.7	
Approach LOS		F			F			E			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 96.7		Intersection LOS: F	
Intersection Capacity Utilization 118.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S



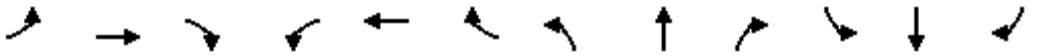


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	944	26	775	259	544	408	853
v/c Ratio	1.18	1.18	0.16	1.08	1.22	0.51	1.24	0.83
Control Delay	152.4	124.9	17.2	92.9	161.8	36.5	160.4	45.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.4	124.9	17.2	92.9	161.8	36.5	160.4	45.5
Queue Length 50th (m)	~46.0	~282.1	3.0	~201.8	~58.5	55.2	~93.6	93.7
Queue Length 95th (m)	#94.4	#359.3	7.6	#275.6	#110.8	72.3	#166.1	118.4
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	182	801	161	716	212	1057	329	1029
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	1.18	1.18	0.16	1.08	1.22	0.51	1.24	0.83

Intersection Summary

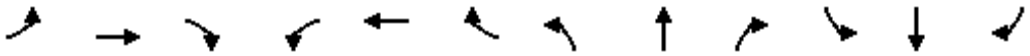
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	684	185	24	518	195	238	471	29	375	566	219
Future Volume (vph)	198	684	185	24	518	195	238	471	29	375	566	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		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	0.97		1.00	0.96		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	1817		1722	1799		1755	3514		1807	3414	
Flt Permitted	0.08	1.00		0.08	1.00		0.11	1.00		0.33	1.00	
Satd. Flow (perm)	145	1817		149	1799		208	3514		630	3414	
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)	215	743	201	26	563	212	259	512	32	408	615	238
RTOR Reduction (vph)	0	8	0	0	11	0	0	4	0	0	34	0
Lane Group Flow (vph)	215	936	0	26	764	0	259	540	0	408	819	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	60.4	52.4		52.8	48.6		46.0	36.0		44.0	35.0	
Effective Green, g (s)	60.4	52.4		52.8	48.6		46.0	36.0		44.0	35.0	
Actuated g/C Ratio	0.50	0.43		0.43	0.40		0.38	0.30		0.36	0.29	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	181	782		119	719		205	1040		315	982	
v/s Ratio Prot	c0.08	c0.52		0.01	0.42		c0.10	0.15		0.10	0.24	
v/s Ratio Perm	0.51			0.09			0.37			c0.37		
v/c Ratio	1.19	1.20		0.22	1.06		1.26	0.52		1.30	0.83	
Uniform Delay, d1	33.6	34.6		28.1	36.5		30.1	35.6		36.6	40.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	126.5	100.9		0.9	51.3		151.5	1.9		154.4	8.3	
Delay (s)	160.1	135.5		29.0	87.8		181.6	37.5		191.0	48.9	
Level of Service	F	F		C	F		F	D		F	D	
Approach Delay (s)		140.1			85.8			84.0			94.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	103.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

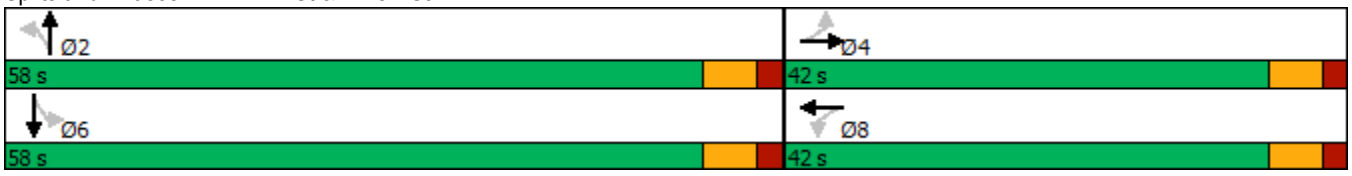


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	511	62	76	401	28	54	335	81	80	470	148
Future Volume (vph)	105	511	62	76	401	28	54	335	81	80	470	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00			1.00			0.99			0.99	
Frt		0.984			0.990			0.977			0.971	
Flt Protected	0.950			0.950				0.994			0.994	
Satd. Flow (prot)	1807	1858	0	1825	1864	0	0	1814	0	0	1802	0
Flt Permitted	0.341			0.189				0.857			0.885	
Satd. Flow (perm)	647	1858	0	363	1864	0	0	1564	0	0	1603	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			4			16			20	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	107	521	63	78	409	29	55	342	83	82	480	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	584	0	78	438	0	0	480	0	0	713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	42.0	42.0		42.0	42.0		58.0	58.0		58.0	58.0	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		58.0%	58.0%		58.0%	58.0%	
Maximum Green (s)	36.0	36.0		36.0	36.0		52.0	52.0		52.0	52.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.3	36.3		36.3	36.3			43.9			43.9	
Actuated g/C Ratio	0.39	0.39		0.39	0.39			0.48			0.48	
v/c Ratio	0.42	0.79		0.55	0.60			0.64			0.92	
Control Delay	29.7	36.0		43.1	27.9			21.6			40.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	29.7	36.0		43.1	27.9			21.6			40.7	
LOS	C	D		D	C			C			D	
Approach Delay		35.0			30.2			21.6			40.7	
Approach LOS		D			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 92.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 33.0		Intersection LOS: C	
Intersection Capacity Utilization 124.8%		ICU Level of Service H	
Analysis Period (min) 15			

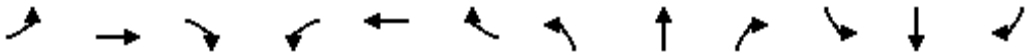
Splits and Phases: 2: Tiffin St & Innisfil St



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	107	584	78	438	480	713
v/c Ratio	0.42	0.79	0.55	0.60	0.64	0.92
Control Delay	29.7	36.0	43.1	27.9	21.6	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	36.0	43.1	27.9	21.6	40.7
Queue Length 50th (m)	14.7	96.1	11.4	64.7	59.1	110.3
Queue Length 95th (m)	32.5	#163.6	#33.9	102.6	89.9	#183.8
Internal Link Dist (m)		250.0		304.8	87.6	52.6
Turn Bay Length (m)	20.0		20.0			
Base Capacity (vph)	254	735	142	735	895	919
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.79	0.55	0.60	0.54	0.78

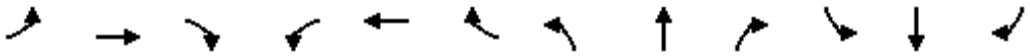
Intersection Summary

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



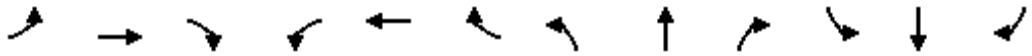
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	511	62	76	401	28	54	335	81	80	470	148
Future Volume (vph)	105	511	62	76	401	28	54	335	81	80	470	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1801	1858		1822	1864			1814			1802	
Flt Permitted	0.34	1.00		0.19	1.00			0.86			0.89	
Satd. Flow (perm)	646	1858		363	1864			1564			1605	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	107	521	63	78	409	29	55	342	83	82	480	151
RTOR Reduction (vph)	0	4	0	0	2	0	0	8	0	0	10	0
Lane Group Flow (vph)	107	580	0	78	436	0	0	472	0	0	703	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.3	36.3		36.3	36.3			43.9			43.9	
Effective Green, g (s)	36.3	36.3		36.3	36.3			43.9			43.9	
Actuated g/C Ratio	0.39	0.39		0.39	0.39			0.48			0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	254	731		142	733			744			764	
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm	0.17			0.22				0.30			c0.44	
v/c Ratio	0.42	0.79		0.55	0.59			0.63			0.92	
Uniform Delay, d1	20.3	24.6		21.6	22.1			18.1			22.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.1	8.6		14.4	3.5			1.8			16.0	
Delay (s)	25.4	33.3		36.0	25.6			19.9			38.5	
Level of Service	C	C		D	C			B			D	
Approach Delay (s)		32.1			27.2			19.9			38.5	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.8%	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)	7	4	2	6	0	85	7	593	14	85	672	17
Future Volume (vph)	7	4	2	6	0	85	7	593	14	85	672	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.875			0.997			0.997	
Flt Protected		0.972			0.996			0.999			0.995	
Satd. Flow (prot)	0	1806	0	0	1177	0	0	1877	0	0	1751	0
Flt Permitted		0.972			0.996			0.999			0.995	
Satd. Flow (perm)	0	1806	0	0	1177	0	0	1877	0	0	1751	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			165.3			548.1			132.7	
Travel Time (s)		8.1			12.4			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	8	4	2	7	0	92	8	645	15	92	730	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	99	0	0	668	0	0	840	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

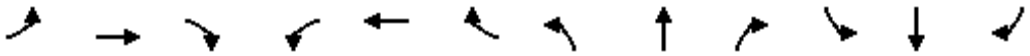
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	4	2	6	0	85	7	593	14	85	672	17
Future Volume (Veh/h)	7	4	2	6	0	85	7	593	14	85	672	17
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)	8	4	2	7	0	92	8	645	15	92	730	18
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (m)											133	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	1686	1603	742	1596	1604	654	751			661		
vC1, stage 1 conf vol	926	926		670	670							
vC2, stage 2 conf vol	760	677		927	935							
vCu, unblocked vol	1754	1640	468	1631	1642	654	480			661		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	95	98	100	96	100	77	99			88		
cM capacity (veh/h)	166	225	424	197	233	402	800			796		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	99	668	840
Volume Left	8	7	8	92
Volume Right	2	92	15	18
cSH	198	374	800	796
Volume to Capacity	0.07	0.26	0.01	0.12
Queue Length 95th (m)	1.7	8.0	0.2	3.0
Control Delay (s)	24.5	18.1	0.3	3.0
Lane LOS	C	C	A	A
Approach Delay (s)	24.5	18.1	0.3	3.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	89.1%	ICU Level of Service	E	
Analysis Period (min)	15			



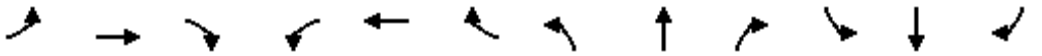
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	69	18	0	30	105	387	28	47	518	44
Future Volume (vph)	32	0	69	18	0	30	105	387	28	47	518	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.908			0.916			0.993			0.990	
Flt Protected		0.984			0.981			0.990			0.996	
Satd. Flow (prot)	0	1716	0	0	1692	0	0	1879	0	0	1814	0
Flt Permitted		0.984			0.981			0.990			0.996	
Satd. Flow (perm)	0	1716	0	0	1692	0	0	1879	0	0	1814	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		114.3			66.3			119.8			111.6	
Travel Time (s)		8.6			5.0			9.0			8.4	
Confl. Peds. (#/hr)			1				1					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	2%	2%	5%	0%
Adj. Flow (vph)	35	0	75	20	0	33	114	421	30	51	563	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	53	0	0	565	0	0	662	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	67.8%	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)	32	0	69	18	0	30	105	387	28	47	518	44
Future Volume (Veh/h)	32	0	69	18	0	30	105	387	28	47	518	44
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)	35	0	75	20	0	33	114	421	30	51	563	48
Pedestrians		3						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.71	0.71	0.70	0.71	0.71	0.96	0.70			0.96		
vC, conflicting volume	1389	1371	591	1429	1380	436	614			451		
vC1, stage 1 conf vol	692	692		664	664							
vC2, stage 2 conf vol	697	679		765	716							
vCu, unblocked vol	1227	1201	194	1283	1214	395	227			410		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	87	90	100	95	88			95		
cM capacity (veh/h)	263	280	591	204	252	630	931			1106		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	53	565	662
Volume Left	35	20	114	51
Volume Right	75	33	30	48
cSH	423	352	931	1106
Volume to Capacity	0.26	0.15	0.12	0.05
Queue Length 95th (m)	7.8	4.0	3.2	1.1
Control Delay (s)	16.5	17.0	3.1	1.2
Lane LOS	C	C	A	A
Approach Delay (s)	16.5	17.0	3.1	1.2
Approach LOS	C	C		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	67.8%	ICU Level of Service	C	
Analysis Period (min)	15			

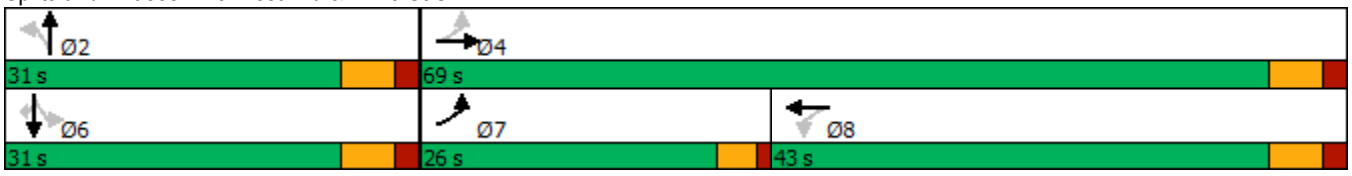


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	867	71	2	784	91	49	62	1	91	101	401
Future Volume (vph)	432	867	71	2	784	91	49	62	1	91	101	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	50.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		1.00		0.99
Frt		0.989			0.984			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	3532	0	1825	3513	0	1772	1844	0	1825	1883	1555
Flt Permitted	0.174			0.281			0.686			0.713		
Satd. Flow (perm)	321	3532	0	539	3513	0	1277	1844	0	1365	1883	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			14			1				436
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	470	942	77	2	852	99	53	67	1	99	110	436
Shared Lane Traffic (%)												
Lane Group Flow (vph)	470	1019	0	2	951	0	53	68	0	99	110	436
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	26.0	69.0		43.0	43.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	26.0%	69.0%		43.0%	43.0%		31.0%	31.0%		31.0%	31.0%	31.0%
Maximum Green (s)	22.0	63.0		37.0	37.0		25.0	25.0		25.0	25.0	25.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	65.2	63.2		38.2	38.2		14.5	14.5		14.5	14.5	14.5
Actuated g/C Ratio	0.73	0.70		0.43	0.43		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.83	0.41		0.01	0.63		0.26	0.23		0.45	0.36	0.71
Control Delay	28.7	6.5		18.0	23.3		35.4	33.5		40.3	36.4	10.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	28.7	6.5		18.0	23.3		35.4	33.5		40.3	36.4	10.5
LOS	C	A		B	C		D	C		D	D	B
Approach Delay		13.5			23.3			34.3			19.4	
Approach LOS		B			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 89.7			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

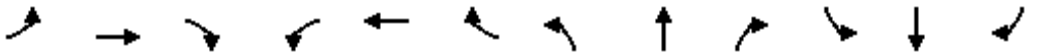
Splits and Phases: 5: Essa Rd & Anne St S



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	470	1019	2	951	53	68	99	110	436
v/c Ratio	0.83	0.41	0.01	0.63	0.26	0.23	0.45	0.36	0.71
Control Delay	28.7	6.5	18.0	23.3	35.4	33.5	40.3	36.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	6.5	18.0	23.3	35.4	33.5	40.3	36.4	10.5
Queue Length 50th (m)	42.2	30.4	0.2	64.8	8.1	10.1	15.6	17.0	0.0
Queue Length 95th (m)	#109.9	57.5	1.7	100.4	18.0	21.0	29.8	31.5	25.0
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0				50.0		25.0
Base Capacity (vph)	586	2492	229	1502	356	516	381	526	742
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	0.80	0.41	0.01	0.63	0.15	0.13	0.26	0.21	0.59

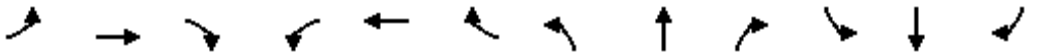
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	867	71	2	784	91	49	62	1	91	101	401
Future Volume (vph)	432	867	71	2	784	91	49	62	1	91	101	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	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	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	3531		1822	3514		1768	1844		1819	1883	1533
Flt Permitted	0.17	1.00		0.28	1.00		0.69	1.00		0.71	1.00	1.00
Satd. Flow (perm)	321	3531		539	3514		1277	1844		1365	1883	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)	470	942	77	2	852	99	53	67	1	99	110	436
RTOR Reduction (vph)	0	5	0	0	8	0	0	1	0	0	0	366
Lane Group Flow (vph)	470	1014	0	2	943	0	53	67	0	99	110	70
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	63.2	63.2		38.2	38.2		14.5	14.5		14.5	14.5	14.5
Effective Green, g (s)	63.2	63.2		38.2	38.2		14.5	14.5		14.5	14.5	14.5
Actuated g/C Ratio	0.70	0.70		0.43	0.43		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	561	2487		229	1496		206	298		220	304	247
v/s Ratio Prot	c0.20	0.29			0.27			0.04			0.06	
v/s Ratio Perm	c0.39			0.00			0.04			c0.07		0.05
v/c Ratio	0.84	0.41		0.01	0.63		0.26	0.23		0.45	0.36	0.29
Uniform Delay, d1	17.1	5.5		14.8	20.2		32.9	32.7		34.0	33.5	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.5	0.5		0.1	2.0		0.7	0.4		1.5	0.7	0.6
Delay (s)	27.7	6.0		14.9	22.2		33.6	33.1		35.5	34.2	33.7
Level of Service	C	A		B	C		C	C		D	C	C
Approach Delay (s)		12.8			22.2			33.3			34.0	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

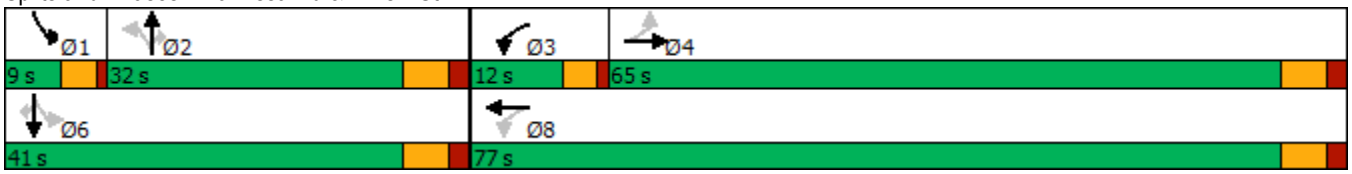


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	726	52	35	807	81	23	176	30	134	198	209
Future Volume (vph)	187	726	52	35	807	81	23	176	30	134	198	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		15.0	0.0		20.0
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	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				0.98
Frt		0.992			0.987				0.850			0.850
Flt Protected		0.990			0.998			0.994			0.980	
Satd. Flow (prot)	0	3497	0	0	3493	0	0	1893	1633	0	1832	1585
Flt Permitted		0.581			0.873			0.883			0.681	
Satd. Flow (perm)	0	2052	0	0	3056	0	0	1681	1633	0	1273	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			15				102			99
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			180.8	
Travel Time (s)		25.3			14.7			10.0			13.6	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Adj. Flow (vph)	189	733	53	35	815	82	23	178	30	135	200	211
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	975	0	0	932	0	0	201	30	0	335	211
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	44.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	24.0
Minimum Split (s)	50.0	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	30.0
Total Split (s)	65.0	65.0		12.0	77.0		32.0	32.0	32.0	9.0	41.0	41.0
Total Split (%)	55.1%	55.1%		10.2%	65.3%		27.1%	27.1%	27.1%	7.6%	34.7%	34.7%
Maximum Green (s)	59.0	59.0		8.0	71.0		26.0	26.0	26.0	5.0	35.0	35.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	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
Recall Mode	Max	Max		None	Max		None	None	None	None	None	None
Walk Time (s)	32.0	32.0			32.0		7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	12.0	12.0			12.0		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)		71.0			71.0			35.0	35.0		35.0	35.0
Actuated g/C Ratio		0.60			0.60			0.30	0.30		0.30	0.30
v/c Ratio		0.79			0.51			0.40	0.05		0.89	0.40
Control Delay		23.5			14.4			36.2	0.2		66.0	19.6
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		23.5			14.4			36.2	0.2		66.0	19.6
LOS		C			B			D	A		E	B
Approach Delay		23.5			14.4			31.5			48.1	
Approach LOS		C			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 133.3%		ICU Level of Service H	
Analysis Period (min) 15			

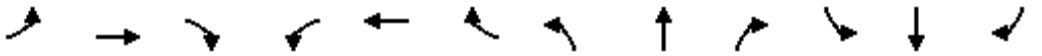
Splits and Phases: 6: Essa Rd & Innisfil St



Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	975	932	201	30	335	211
v/c Ratio	0.79	0.51	0.40	0.05	0.89	0.40
Control Delay	23.5	14.4	36.2	0.2	66.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	14.4	36.2	0.2	66.0	19.6
Queue Length 50th (m)	84.0	59.9	37.1	0.0	74.0	19.6
Queue Length 95th (m)	114.5	75.7	58.7	0.0	#126.3	41.0
Internal Link Dist (m)	313.1	171.7	108.7		156.8	
Turn Bay Length (m)				15.0		20.0
Base Capacity (vph)	1237	1844	498	556	377	532
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.51	0.40	0.05	0.89	0.40

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	726	52	35	807	81	23	176	30	134	198	209
Future Volume (vph)	187	726	52	35	807	81	23	176	30	134	198	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Lane Util. Factor		0.95			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
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)		3498			3493			1893	1633		1832	1560
Flt Permitted		0.58			0.87			0.88	1.00		0.68	1.00
Satd. Flow (perm)		2053			3054			1681	1633		1273	1560
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	189	733	53	35	815	82	23	178	30	135	200	211
RTOR Reduction (vph)	0	3	0	0	6	0	0	0	21	0	0	70
Lane Group Flow (vph)	0	972	0	0	926	0	0	201	9	0	335	141
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		71.0			71.0			35.0	35.0		35.0	35.0
Effective Green, g (s)		71.0			71.0			35.0	35.0		35.0	35.0
Actuated g/C Ratio		0.60			0.60			0.30	0.30		0.30	0.30
Clearance Time (s)		6.0			6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1235			1837			498	484		377	462
v/s Ratio Prot												
v/s Ratio Perm		c0.47			0.30			0.12	0.01		c0.26	0.09
v/c Ratio		0.79			0.50			0.40	0.02		0.89	0.31
Uniform Delay, d1		17.8			13.4			33.2	29.4		39.6	32.1
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		5.1			0.2			0.5	0.0		21.5	0.4
Delay (s)		22.9			13.7			33.7	29.4		61.2	32.5
Level of Service		C			B			C	C		E	C
Approach Delay (s)		22.9			13.7			33.1			50.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	133.3%	ICU Level of Service	H
Analysis Period (min)	15		

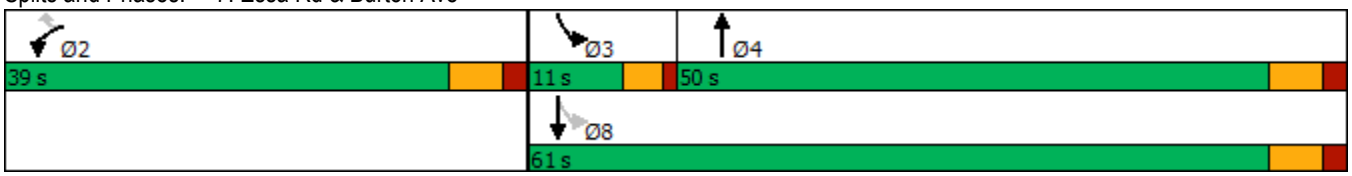
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	368	223	466	359	218	452
Future Volume (vph)	368	223	466	359	218	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	35.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor		0.97	0.99			1.00
Frt		0.850	0.935			
Flt Protected	0.950					0.984
Satd. Flow (prot)	1772	1585	3320	0	0	3488
Flt Permitted	0.950					0.565
Satd. Flow (perm)	1772	1542	3320	0	0	2001
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		183	248			
Link Speed (k/h)	48		48			48
Link Distance (m)	133.2		195.7			221.2
Travel Time (s)	10.0		14.7			16.6
Confl. Peds. (#/hr)		9		7	7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	3%	2%	1%	5%	2%
Adj. Flow (vph)	379	230	480	370	225	466
Shared Lane Traffic (%)						
Lane Group Flow (vph)	379	230	850	0	0	691
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (m)	6.1	6.1	30.5		6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8		6.1	1.8
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2			8	
Detector Phase	2	2	4		3	8
Switch Phase						
Minimum Initial (s)	15.0	15.0	44.0		7.0	44.0
Minimum Split (s)	23.0	23.0	50.0		11.0	50.0
Total Split (s)	39.0	39.0	50.0		11.0	61.0
Total Split (%)	39.0%	39.0%	50.0%		11.0%	61.0%
Maximum Green (s)	33.0	33.0	44.0		7.0	55.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	33.0			33.0
Flash Dont Walk (s)	10.0	10.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	24.4	24.4	55.3			55.3
Actuated g/C Ratio	0.27	0.27	0.60			0.60
v/c Ratio	0.80	0.42	0.40			0.57
Control Delay	45.0	9.2	7.8			14.6
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	45.0	9.2	7.8			14.6
LOS	D	A	A			B
Approach Delay	31.5		7.8			14.6
Approach LOS	C		A			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 91.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 108.7%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 7: Essa Rd & Burton Ave



Lane Group	WBL	WBR	NBT	SBT
Lane Group Flow (vph)	379	230	850	691
v/c Ratio	0.80	0.42	0.40	0.57
Control Delay	45.0	9.2	7.8	14.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	45.0	9.2	7.8	14.6
Queue Length 50th (m)	62.1	6.3	25.1	35.7
Queue Length 95th (m)	93.3	23.3	46.3	64.7
Internal Link Dist (m)	109.2		171.7	197.2
Turn Bay Length (m)		35.0		
Base Capacity (vph)	640	674	2099	1206
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	0.59	0.34	0.40	0.57

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	368	223	466	359	218	452
Future Volume (vph)	368	223	466	359	218	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	1.00	1.00	0.95			0.95
Frpb, ped/bikes	1.00	0.97	0.99			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	0.93			1.00
Flt Protected	0.95	1.00	1.00			0.98
Satd. Flow (prot)	1772	1544	3320			3485
Flt Permitted	0.95	1.00	1.00			0.57
Satd. Flow (perm)	1772	1544	3320			2002
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	379	230	480	370	225	466
RTOR Reduction (vph)	0	134	99	0	0	0
Lane Group Flow (vph)	379	96	751	0	0	691
Confl. Peds. (#/hr)		9		7	7	
Heavy Vehicles (%)	3%	3%	2%	1%	5%	2%
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	2		4		3	8
Permitted Phases		2			8	
Actuated Green, G (s)	24.4	24.4	55.2			55.2
Effective Green, g (s)	24.4	24.4	55.2			55.2
Actuated g/C Ratio	0.27	0.27	0.60			0.60
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	472	411	2000			1206
v/s Ratio Prot	c0.21		0.23			
v/s Ratio Perm		0.06				c0.35
v/c Ratio	0.80	0.23	0.38			0.57
Uniform Delay, d1	31.4	26.3	9.3			11.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	9.5	0.3	0.5			0.7
Delay (s)	40.9	26.6	9.9			11.7
Level of Service	D	C	A			B
Approach Delay (s)	35.5		9.9			11.7
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations							
Traffic Volume (vph)	6	342	634	10	210	647	
Future Volume (vph)	6	342	634	10	210	647	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.98		1.00			1.00	
Frt	0.867		0.998				
Flt Protected	0.999					0.988	
Satd. Flow (prot)	1635	0	3571	0	0	3490	
Flt Permitted	0.999					0.653	
Satd. Flow (perm)	1635	0	3571	0	0	2305	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	352		2				
Link Speed (k/h)	48		48			48	
Link Distance (m)	165.5		221.2			124.5	
Travel Time (s)	12.4		16.6			9.3	
Confl. Peds. (#/hr)		2		9	9		
Confl. Bikes (#/hr)		2		5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Heavy Vehicles (%)	0%	0%	2%	0%	1%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	4	
Adj. Flow (vph)	6	353	654	10	216	667	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	359	0	664	0	0	883	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	1.6		1.6			1.6	
Two way Left Turn Lane							
Headway Factor	0.99	0.99	0.99	0.99	0.99	1.00	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	6.1		30.5		6.1	30.5	
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)	6.1		1.8		6.1	1.8	
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)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	pm+pt		NA		pm+pt	NA	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Protected Phases	3		2		1	6	8
Permitted Phases	8				6		
Detector Phase	3		2		1	6	
Switch Phase							
Minimum Initial (s)	10.0		80.0		7.0	80.0	10.0
Minimum Split (s)	27.0		86.0		11.0	86.0	27.0
Total Split (s)	31.0		86.0		14.0	100.0	31.0
Total Split (%)	23.7%		65.6%		10.7%	76.3%	24%
Maximum Green (s)	25.0		80.0		10.0	94.0	25.0
Yellow Time (s)	4.0		4.0		3.0	4.0	4.0
All-Red Time (s)	2.0		2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		Max		None	Max	None
Walk Time (s)	10.0		65.0			65.0	10.0
Flash Dont Walk (s)	11.0		15.0			15.0	11.0
Pedestrian Calls (#/hr)	0		0			0	0
Act Effct Green (s)	11.6		94.1			94.1	
Actuated g/C Ratio	0.10		0.80			0.80	
v/c Ratio	0.75		0.23			0.48	
Control Delay	16.3		3.3			5.1	
Queue Delay	0.0		0.0			0.8	
Total Delay	16.3		3.3			5.9	
LOS	B		A			A	
Approach Delay	16.3		3.3			5.9	
Approach LOS	B		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 131			
Actuated Cycle Length: 117.7			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 170.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: Essa Rd & Gowan St

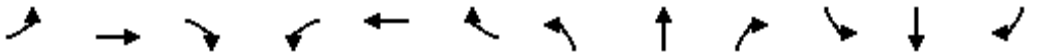
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	359	664	883
v/c Ratio	0.75	0.23	0.48
Control Delay	16.3	3.3	5.1
Queue Delay	0.0	0.0	0.8
Total Delay	16.3	3.3	5.9
Queue Length 50th (m)	1.5	14.4	25.4
Queue Length 95th (m)	30.1	27.4	49.4
Internal Link Dist (m)	141.5	197.2	100.5
Turn Bay Length (m)			
Base Capacity (vph)	624	2854	1842
Starvation Cap Reductn	0	0	611
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.58	0.23	0.72

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	342	634	10	210	647
Future Volume (vph)	6	342	634	10	210	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.87		1.00			1.00
Flt Protected	1.00		1.00			0.99
Satd. Flow (prot)	1632		3570			3487
Flt Permitted	1.00		1.00			0.65
Satd. Flow (perm)	1632		3570			2304
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	6	353	654	10	216	667
RTOR Reduction (vph)	317	0	0	0	0	0
Lane Group Flow (vph)	42	0	664	0	0	883
Confl. Peds. (#/hr)		2		9	9	
Confl. Bikes (#/hr)		2		5		
Heavy Vehicles (%)	0%	0%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	4
Turn Type	pm+pt		NA		pm+pt	NA
Protected Phases	3		2		1	6
Permitted Phases	8				6	
Actuated Green, G (s)	11.6		94.1			94.1
Effective Green, g (s)	11.6		94.1			94.1
Actuated g/C Ratio	0.10		0.80			0.80
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	160		2854			1842
v/s Ratio Prot	c0.03		0.19			
v/s Ratio Perm						c0.38
v/c Ratio	0.26		0.23			0.48
Uniform Delay, d1	49.1		2.9			3.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.9		0.2			0.2
Delay (s)	50.0		3.1			4.0
Level of Service	D		A			A
Approach Delay (s)	50.0		3.1			4.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	117.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	170.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



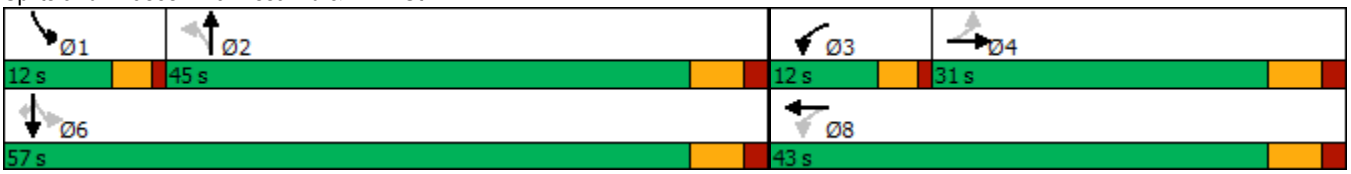
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	519	102	143	318	90	124	654	232	199	635	72
Future Volume (vph)	51	519	102	143	318	90	124	654	232	199	635	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	0.0		0.0	25.0		30.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00			1.00			0.99			1.00	0.97
Frt		0.975			0.967			0.966				0.850
Flt Protected	0.950			0.950				0.994			0.988	
Satd. Flow (prot)	1772	1830	0	1706	1789	0	0	3458	0	0	3552	1601
Flt Permitted	0.510			0.137				0.630			0.528	
Satd. Flow (perm)	949	1830	0	246	1789	0	0	2191	0	0	1898	1560
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			16			46				76
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		328.8			105.3			124.5			69.7	
Travel Time (s)		24.7			7.9			9.3			5.2	
Confl. Peds. (#/hr)	4		1	1		4	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	1%	8%	7%	1%	12%	0%	1%	0%	0%	2%	2%
Adj. Flow (vph)	53	535	105	147	328	93	128	674	239	205	655	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	640	0	147	421	0	0	1041	0	0	860	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

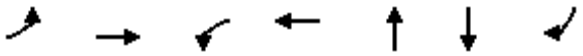
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		3	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		34.0	34.0		7.0	34.0	34.0
Minimum Split (s)	31.0	31.0		11.0	31.0		40.0	40.0		11.0	40.0	40.0
Total Split (s)	31.0	31.0		12.0	43.0		45.0	45.0		12.0	57.0	57.0
Total Split (%)	31.0%	31.0%		12.0%	43.0%		45.0%	45.0%		12.0%	57.0%	57.0%
Maximum Green (s)	25.0	25.0		8.0	37.0		39.0	39.0		8.0	51.0	51.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		None	Max		None	None		None	None	None
Walk Time (s)	10.0	10.0			10.0		22.0	22.0			22.0	22.0
Flash Dont Walk (s)	15.0	15.0			15.0		12.0	12.0			12.0	12.0
Pedestrian Calls (#/hr)	0	0			0		0	0			0	0
Act Effct Green (s)	25.2	25.2		39.1	37.1			47.6			47.6	47.6
Actuated g/C Ratio	0.26	0.26		0.40	0.38			0.49			0.49	0.49
v/c Ratio	0.21	1.33		0.67	0.60			0.95			1.17dl	0.09
Control Delay	32.5	192.0		37.1	28.2			39.9			39.3	3.3
Queue Delay	0.0	0.0		0.0	0.0			16.7			0.0	0.0
Total Delay	32.5	192.0		37.1	28.2			56.6			39.3	3.3
LOS	C	F		D	C			E			D	A
Approach Delay		179.8			30.5			56.6			36.5	
Approach LOS		F			C			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 96.7
Natural Cycle: 135
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 72.6 Intersection LOS: E
Intersection Capacity Utilization 117.4% ICU Level of Service H
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 9: Essa Rd & Tiffin St





Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	53	640	147	421	1041	860	74
v/c Ratio	0.21	1.33	0.67	0.60	0.95	1.17dl	0.09
Control Delay	32.5	192.0	37.1	28.2	39.9	39.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	16.7	0.0	0.0
Total Delay	32.5	192.0	37.1	28.2	56.6	39.3	3.3
Queue Length 50th (m)	8.2	~165.5	18.7	63.5	90.0	75.1	0.0
Queue Length 95th (m)	18.7	#232.1	#38.0	95.6	#137.2	#117.4	6.4
Internal Link Dist (m)		304.8		81.3	100.5	45.7	
Turn Bay Length (m)	20.0		20.0				30.0
Base Capacity (vph)	247	483	220	696	1101	1003	860
Starvation Cap Reductn	0	0	0	0	89	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	1.33	0.67	0.60	1.03	0.86	0.09

Intersection Summary

~ 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.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	519	102	143	318	90	124	654	232	199	635	72
Future Volume (vph)	51	519	102	143	318	90	124	654	232	199	635	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	0.97			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1767	1830		1706	1789			3456			3551	1560
Flt Permitted	0.51	1.00		0.14	1.00			0.63			0.53	1.00
Satd. Flow (perm)	949	1830		246	1789			2190			1897	1560
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	53	535	105	147	328	93	128	674	239	205	655	74
RTOR Reduction (vph)	0	7	0	0	10	0	0	23	0	0	0	38
Lane Group Flow (vph)	53	633	0	147	411	0	0	1018	0	0	860	36
Confl. Peds. (#/hr)	4		1	1		4	4		7	7		4
Heavy Vehicles (%)	3%	1%	8%	7%	1%	12%	0%	1%	0%	0%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	25.2	25.2		37.1	37.1			47.6			47.6	47.6
Effective Green, g (s)	25.2	25.2		37.1	37.1			47.6			47.6	47.6
Actuated g/C Ratio	0.26	0.26		0.38	0.38			0.49			0.49	0.49
Clearance Time (s)	6.0	6.0		4.0	6.0			6.0			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	247	476		213	686			1078			933	767
v/s Ratio Prot		c0.35		0.06	c0.23							
v/s Ratio Perm	0.06			0.21				c0.46			0.45	0.02
v/c Ratio	0.21	1.33		0.69	0.60			0.94			1.17dl	0.05
Uniform Delay, d1	28.0	35.8		23.7	23.9			23.3			22.8	12.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.0	162.7		9.2	3.8			15.7			14.1	0.0
Delay (s)	30.0	198.4		32.9	27.7			39.0			37.0	12.8
Level of Service	C	F		C	C			D			D	B
Approach Delay (s)		185.5			29.0			39.0			35.0	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	67.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	117.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

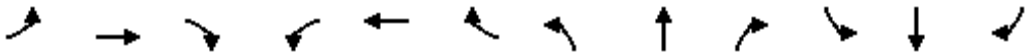
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	82	22	50	78	13	31
Future Volume (vph)	82	22	50	78	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.971				0.904	
Flt Protected				0.981	0.986	
Satd. Flow (prot)	1829	0	0	1848	1679	0
Flt Permitted				0.981	0.986	
Satd. Flow (perm)	1829	0	0	1848	1679	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	165.3			114.3	49.4	
Travel Time (s)	12.4			8.6	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	24	54	85	14	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	0	139	48	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	82	22	50	78	13	31
Future Volume (Veh/h)	82	22	50	78	13	31
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)	89	24	54	85	14	34
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			113		294	101
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			113		294	101
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		98	96
cM capacity (veh/h)			1476		671	954

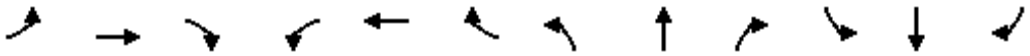
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	113	139	48
Volume Left	0	54	14
Volume Right	24	0	34
cSH	1700	1476	850
Volume to Capacity	0.07	0.04	0.06
Queue Length 95th (m)	0.0	0.9	1.4
Control Delay (s)	0.0	3.1	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.5
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	18	0	12	0	472	28	19	546	0
Future Volume (vph)	0	0	0	18	0	12	0	472	28	19	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.947			0.993				
Flt Protected					0.971						0.998	
Satd. Flow (prot)	0	1883	0	0	1732	0	0	1870	0	0	1880	0
Flt Permitted					0.971						0.998	
Satd. Flow (perm)	0	1883	0	0	1732	0	0	1870	0	0	1880	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		43.3			39.7			180.8			119.8	
Travel Time (s)		3.2			3.0			13.6			9.0	
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
Adj. Flow (vph)	0	0	0	20	0	13	0	513	30	21	593	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	0	543	0	0	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

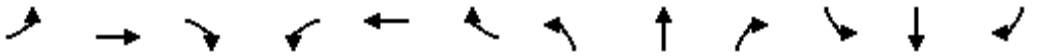
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	18	0	12	0	472	28	19	546	0
Future Volume (Veh/h)	0	0	0	18	0	12	0	472	28	19	546	0
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	0	20	0	13	0	513	30	21	593	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								181			231	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	1176	1178	593	1163	1163	528	593			543		
vC1, stage 1 conf vol	635	635		528	528							
vC2, stage 2 conf vol	541	543		635	635							
vCu, unblocked vol	1153	1155	593	1139	1139	458	593			474		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	95	100	98	100			98		
cM capacity (veh/h)	361	371	506	374	379	562	983			1015		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	33	543	614
Volume Left	0	20	0	21
Volume Right	0	13	30	0
cSH	1700	431	983	1015
Volume to Capacity	0.00	0.08	0.00	0.02
Queue Length 95th (m)	0.0	1.9	0.0	0.5
Control Delay (s)	0.0	14.0	0.0	0.6
Lane LOS	A	B		A
Approach Delay (s)	0.0	14.0	0.0	0.6
Approach LOS	A	B		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	54.1%	ICU Level of Service	A	
Analysis Period (min)	15			

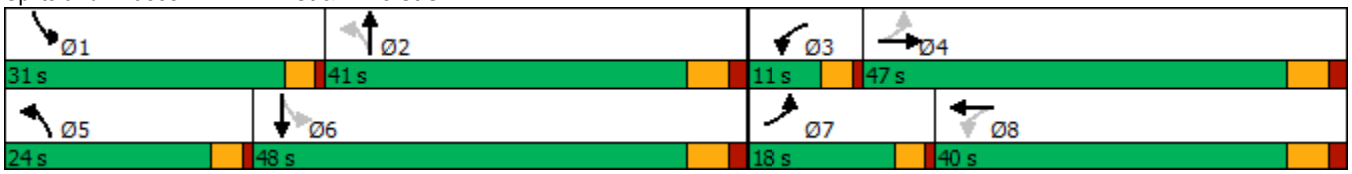


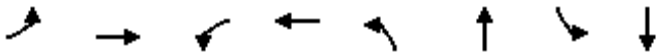
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	826	193	25	626	205	284	493	33	454	593	267
Future Volume (vph)	208	826	193	25	626	205	284	493	33	454	593	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	17.0		0.0	20.0		0.0	15.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.972			0.963			0.991			0.953	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	3467	0	1722	3434	0	1755	3515	0	1807	3404	0
Flt Permitted	0.101			0.112			0.129			0.243		
Satd. Flow (perm)	192	3467	0	203	3434	0	238	3515	0	462	3404	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			33			5			59	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		109.8			274.0			132.7			96.5	
Travel Time (s)		8.2			20.6			10.0			7.2	
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Adj. Flow (vph)	226	898	210	27	680	223	309	536	36	493	645	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	226	1108	0	27	903	0	309	572	0	493	935	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		10.0	34.0		7.0	34.0	
Minimum Split (s)	11.0	34.0		11.0	34.0		14.0	40.0		11.0	40.0	
Total Split (s)	18.0	47.0		11.0	40.0		24.0	41.0		31.0	48.0	
Total Split (%)	13.8%	36.2%		8.5%	30.8%		18.5%	31.5%		23.8%	36.9%	
Maximum Green (s)	14.0	41.0		7.0	34.0		20.0	35.0		27.0	42.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag		Lead	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	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		11.0			11.0			23.0			23.0	
Flash Dont Walk (s)		17.0			17.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	54.0	45.4		43.0	34.0		56.4	35.0		67.6	42.3	
Actuated g/C Ratio	0.42	0.35		0.33	0.26		0.44	0.27		0.52	0.33	
v/c Ratio	0.89	0.90		0.18	0.98		0.94	0.60		0.95	0.81	
Control Delay	66.9	50.9		26.1	70.3		70.8	44.0		54.0	44.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	66.9	50.9		26.1	70.3		70.8	44.0		54.0	44.3	
LOS	E	D		C	E		E	D		D	D	
Approach Delay		53.6			69.0			53.4			47.6	
Approach LOS		D			E			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 129.6			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 54.8		Intersection LOS: D	
Intersection Capacity Utilization 105.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Tiffin St & Anne St S





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	226	1108	27	903	309	572	493	935
v/c Ratio	0.89	0.90	0.18	0.98	0.94	0.60	0.95	0.81
Control Delay	66.9	50.9	26.1	70.3	70.8	44.0	54.0	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	50.9	26.1	70.3	70.8	44.0	54.0	44.3
Queue Length 50th (m)	41.5	146.8	4.1	117.7	59.8	66.9	83.9	109.5
Queue Length 95th (m)	#87.2	#194.8	10.0	#161.1	#113.1	85.8	#150.6	135.6
Internal Link Dist (m)		85.8		250.0		108.7		72.5
Turn Bay Length (m)	20.0		17.0		20.0		15.0	
Base Capacity (vph)	254	1229	149	924	338	953	521	1149
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	0.89	0.90	0.18	0.98	0.91	0.60	0.95	0.81

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	826	193	25	626	205	284	493	33	454	593	267
Future Volume (vph)	208	826	193	25	626	205	284	493	33	454	593	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		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	
Frt	1.00	0.97		1.00	0.96		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1807	3466		1722	3433		1755	3514		1807	3406	
Flt Permitted	0.10	1.00		0.11	1.00		0.13	1.00		0.24	1.00	
Satd. Flow (perm)	192	3466		204	3433		239	3514		461	3406	
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)	226	898	210	27	680	223	309	536	36	493	645	290
RTOR Reduction (vph)	0	15	0	0	24	0	0	4	0	0	40	0
Lane Group Flow (vph)	226	1093	0	27	879	0	309	568	0	493	895	0
Confl. Peds. (#/hr)	2		3	3		2	3		1	1		3
Heavy Vehicles (%)	1%	2%	1%	6%	2%	2%	4%	3%	0%	1%	2%	1%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.6	45.4		39.8	35.6		54.4	35.0		65.7	42.3	
Effective Green, g (s)	53.6	45.4		39.8	35.6		54.4	35.0		65.7	42.3	
Actuated g/C Ratio	0.41	0.35		0.30	0.27		0.41	0.27		0.50	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	250	1198		110	930		323	936		504	1097	
v/s Ratio Prot	c0.10	c0.32		0.01	0.26		0.14	0.16		c0.20	0.26	
v/s Ratio Perm	0.27			0.07			0.26			c0.29		
v/c Ratio	0.90	0.91		0.25	0.95		0.96	0.61		0.98	0.82	
Uniform Delay, d1	35.4	41.0		34.9	46.9		36.2	42.1		27.0	40.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.5	10.6		1.2	17.6		38.2	2.9		34.1	6.7	
Delay (s)	67.9	51.6		36.1	64.5		74.4	45.1		61.1	47.6	
Level of Service	E	D		D	E		E	D		E	D	
Approach Delay (s)		54.4			63.7			55.3			52.3	
Approach LOS		D			E			E			D	

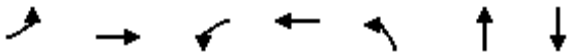
Intersection Summary			
HCM 2000 Control Delay	55.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	131.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	620	63	78	486	30	60	351	94	97	492	180
Future Volume (vph)	110	620	63	78	486	30	60	351	94	97	492	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
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	0.99			0.99	
Frt		0.986			0.991			0.968			0.968	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1807	3541	0	1825	3544	0	1825	1807	0	0	1801	0
Flt Permitted	0.370			0.256			0.315				0.807	
Satd. Flow (perm)	701	3541	0	491	3544	0	604	1807	0	0	1461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			6			21			24	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		274.0			328.8			111.6			76.6	
Travel Time (s)		20.6			24.7			8.4			5.7	
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Adj. Flow (vph)	112	633	64	80	496	31	61	358	96	99	502	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	697	0	80	527	0	61	454	0	0	785	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	34.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		26.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0		70.0	70.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		36.4%	36.4%		63.6%	63.6%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		34.0	34.0		64.0	64.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Min	Min		Min	Min	
Walk Time (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.3	34.3		34.3	34.3		56.8	56.8			56.8	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.55	0.55			0.55	
v/c Ratio	0.48	0.59		0.49	0.45		0.18	0.45			0.96	
Control Delay	38.7	32.0		43.3	29.6		12.6	14.4			46.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.7	32.0		43.3	29.6		12.6	14.4			46.0	
LOS	D	C		D	C		B	B			D	
Approach Delay		32.9			31.4			14.2			46.0	
Approach LOS		C			C			B			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 103.2			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 32.8		Intersection LOS: C	
Intersection Capacity Utilization 143.3%		ICU Level of Service H	
Analysis Period (min) 15			

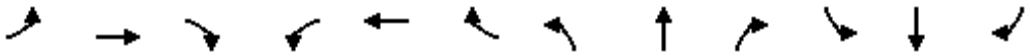
Splits and Phases: 2: Tiffin St & Innisfil St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	112	697	80	527	61	454	785
v/c Ratio	0.48	0.59	0.49	0.45	0.18	0.45	0.96
Control Delay	38.7	32.0	43.3	29.6	12.6	14.4	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	32.0	43.3	29.6	12.6	14.4	46.0
Queue Length 50th (m)	19.7	66.4	14.1	47.5	5.7	48.5	138.3
Queue Length 95th (m)	38.8	86.0	31.3	63.5	12.8	71.0	#228.5
Internal Link Dist (m)		250.0		304.8		87.6	52.6
Turn Bay Length (m)	20.0		20.0		50.0		
Base Capacity (vph)	233	1184	163	1182	378	1139	923
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.59	0.49	0.45	0.16	0.40	0.85

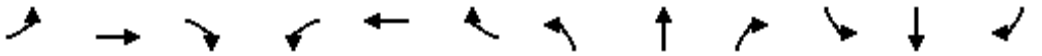
Intersection Summary

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



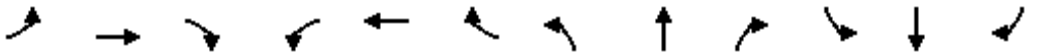
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	620	63	78	486	30	60	351	94	97	492	180
Future Volume (vph)	110	620	63	78	486	30	60	351	94	97	492	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	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	0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1801	3542		1821	3545		1823	1808			1801	
Flt Permitted	0.37	1.00		0.26	1.00		0.32	1.00			0.81	
Satd. Flow (perm)	700	3542		490	3545		605	1808			1462	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	112	633	64	80	496	31	61	358	96	99	502	184
RTOR Reduction (vph)	0	7	0	0	4	0	0	9	0	0	11	0
Lane Group Flow (vph)	112	690	0	80	523	0	61	445	0	0	774	0
Confl. Peds. (#/hr)	4		4	4		4	4		8	8		4
Heavy Vehicles (%)	1%	1%	5%	0%	2%	0%	0%	3%	0%	2%	3%	0%
Bus Blockages (#/hr)	0	0	1	0	0	1	0	0	1	0	0	1
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.3	34.3		34.3	34.3		56.8	56.8			56.8	
Effective Green, g (s)	34.3	34.3		34.3	34.3		56.8	56.8			56.8	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.55	0.55			0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	232	1178		163	1179		333	996			805	
v/s Ratio Prot		c0.19			0.15			0.25				
v/s Ratio Perm	0.16			0.16			0.10				c0.53	
v/c Ratio	0.48	0.59		0.49	0.44		0.18	0.45			0.96	
Uniform Delay, d1	27.3	28.5		27.4	26.9		11.6	13.8			22.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	7.0	2.1		10.2	1.2		0.3	0.3			22.7	
Delay (s)	34.4	30.7		37.6	28.1		11.8	14.1			44.8	
Level of Service	C	C		D	C		B	B			D	
Approach Delay (s)		31.2			29.4			13.8			44.8	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.3%	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)	7	5	2	6	0	87	7	622	14	87	705	18
Future Volume (vph)	7	5	2	6	0	87	7	622	14	87	705	18
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		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982			0.874			0.997			0.996	
Flt Protected		0.974			0.997		0.950			0.950		
Satd. Flow (prot)	0	1813	0	0	1176	0	1825	1879	0	1372	1808	0
Flt Permitted		0.974			0.997		0.950			0.950		
Satd. Flow (perm)	0	1813	0	0	1176	0	1825	1879	0	1372	1808	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		108.2			81.4			548.1			132.7	
Travel Time (s)		8.1			6.1			41.1			10.0	
Confl. Peds. (#/hr)							3		1	1		3
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	10%	33%	0%	43%	0%	2%	0%	33%	6%	0%
Adj. Flow (vph)	8	5	2	7	0	95	8	676	15	95	766	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	102	0	8	691	0	95	786	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)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

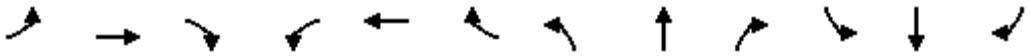
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	2	6	0	87	7	622	14	87	705	18
Future Volume (Veh/h)	7	5	2	6	0	87	7	622	14	87	705	18
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)	8	5	2	7	0	95	8	676	15	95	766	20
Pedestrians		3			1							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)											133	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	1756	1677	779	1661	1680	684	789			692		
vC1, stage 1 conf vol	969	969		700	700							
vC2, stage 2 conf vol	787	708		960	979							
vCu, unblocked vol	1852	1743	509	1721	1747	684	523			692		
tC, single (s)	7.1	6.5	6.3	7.4	6.5	6.6	4.1			4.4		
tC, 2 stage (s)	6.1	5.5		6.4	5.5							
tF (s)	3.5	4.0	3.4	3.8	4.0	3.7	2.2			2.5		
p0 queue free %	95	98	99	96	100	75	99			88		
cM capacity (veh/h)	151	209	398	183	217	385	765			774		

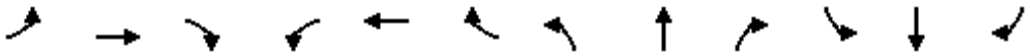
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	15	102	8	691	95	786
Volume Left	8	7	8	0	95	0
Volume Right	2	95	0	15	0	20
cSH	183	358	765	1700	774	1700
Volume to Capacity	0.08	0.29	0.01	0.41	0.12	0.46
Queue Length 95th (m)	2.0	8.8	0.2	0.0	3.2	0.0
Control Delay (s)	26.4	19.0	9.8	0.0	10.3	0.0
Lane LOS	D	C	A		B	
Approach Delay (s)	26.4	19.0	0.1		1.1	
Approach LOS	D	C				

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	57.3%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	71	18	0	30	108	406	28	47	543	44
Future Volume (vph)	32	0	71	18	0	30	108	406	28	47	543	44
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	15.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.907			0.916			0.990			0.989	
Flt Protected		0.985			0.981		0.950			0.950		
Satd. Flow (prot)	0	1716	0	0	1692	0	1789	1899	0	1789	1816	0
Flt Permitted		0.985			0.981		0.950			0.950		
Satd. Flow (perm)	0	1716	0	0	1692	0	1789	1899	0	1789	1816	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		113.3			61.4			107.8			111.6	
Travel Time (s)		8.5			4.6			8.1			8.4	
Confl. Peds. (#/hr)			1				1					3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	2%	2%	5%	0%
Adj. Flow (vph)	35	0	77	20	0	33	117	441	30	51	590	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	0	0	53	0	117	471	0	51	638	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

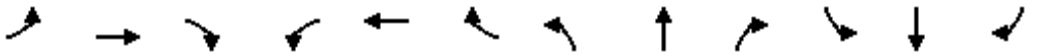
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	71	18	0	30	108	406	28	47	543	44
Future Volume (Veh/h)	32	0	71	18	0	30	108	406	28	47	543	44
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)	35	0	77	20	0	33	117	441	30	51	590	48
Pedestrians		3						1				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								301			112	
pX, platoon unblocked	0.72	0.72	0.72	0.72	0.72		0.72					
vC, conflicting volume	1427	1424	618	1460	1433	456	641			471		
vC1, stage 1 conf vol	719	719		690	690							
vC2, stage 2 conf vol	708	705		770	743							
vCu, unblocked vol	1398	1394	271	1444	1407	456	303			471		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	86	89	100	95	87			95		
cM capacity (veh/h)	248	263	552	189	232	604	900			1091		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	112	53	117	471	51	638
Volume Left	35	20	117	0	51	0
Volume Right	77	33	0	30	0	48
cSH	399	330	900	1700	1091	1700
Volume to Capacity	0.28	0.16	0.13	0.28	0.05	0.38
Queue Length 95th (m)	8.6	4.3	3.4	0.0	1.1	0.0
Control Delay (s)	17.5	18.0	9.6	0.0	8.5	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	17.5	18.0	1.9		0.6	
Approach LOS	C	C				

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	55.0%	ICU Level of Service	B	
Analysis Period (min)	15			

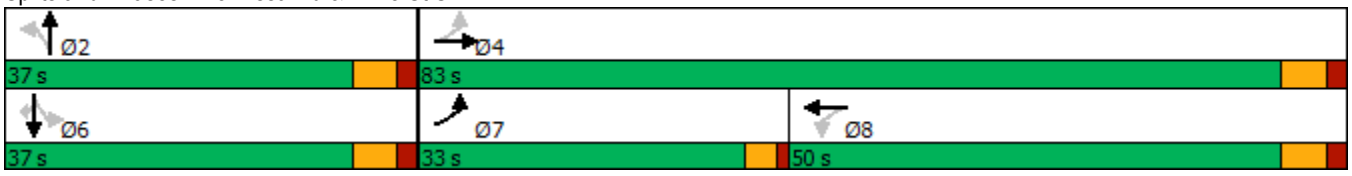


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	452	935	75	2	848	95	54	66	1	99	106	442
Future Volume (vph)	452	935	75	2	848	95	54	66	1	99	106	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	50.0		0.0	0.0		0.0	15.0		25.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
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	1.00		1.00		0.98
Frt		0.989			0.985			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1755	3531	0	1825	3520	0	1772	1844	0	1825	1883	1555
Flt Permitted	0.142			0.260			0.679			0.709		
Satd. Flow (perm)	262	3531	0	498	3520	0	1263	1844	0	1356	1883	1532
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			11			1				455
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		104.6			337.1			123.5			548.1	
Travel Time (s)		7.8			25.3			9.3			41.1	
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	491	1016	82	2	922	103	59	72	1	108	115	480
Shared Lane Traffic (%)												
Lane Group Flow (vph)	491	1098	0	2	1025	0	59	73	0	108	115	480
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	7.0	34.0		34.0	34.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.0	40.0		40.0	40.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	33.0	83.0		50.0	50.0		37.0	37.0		37.0	37.0	37.0
Total Split (%)	27.5%	69.2%		41.7%	41.7%		30.8%	30.8%		30.8%	30.8%	30.8%
Maximum Green (s)	29.0	77.0		44.0	44.0		31.0	31.0		31.0	31.0	31.0
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)	1.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Walk Time (s)		13.0		13.0	13.0		9.0	9.0		9.0	9.0	9.0
Flash Dont Walk (s)		21.0		21.0	21.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	0
Act Effct Green (s)	79.3	77.3		45.0	45.0		16.7	16.7		16.7	16.7	16.7
Actuated g/C Ratio	0.75	0.73		0.42	0.42		0.16	0.16		0.16	0.16	0.16
v/c Ratio	0.83	0.43		0.01	0.68		0.30	0.25		0.51	0.39	0.77
Control Delay	33.9	6.9		22.0	28.6		42.4	39.7		48.8	43.2	13.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	33.9	6.9		22.0	28.6		42.4	39.7		48.8	43.2	13.9
LOS	C	A		C	C		D	D		D	D	B
Approach Delay		15.2			28.6			40.9			24.0	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 106			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.0		Intersection LOS: C	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

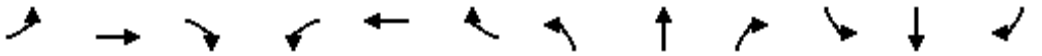
Splits and Phases: 5: Essa Rd & Anne St S



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	491	1098	2	1025	59	73	108	115	480
v/c Ratio	0.83	0.43	0.01	0.68	0.30	0.25	0.51	0.39	0.77
Control Delay	33.9	6.9	22.0	28.6	42.4	39.7	48.8	43.2	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	6.9	22.0	28.6	42.4	39.7	48.8	43.2	13.9
Queue Length 50th (m)	61.5	37.3	0.2	86.4	10.9	13.2	20.6	21.4	4.5
Queue Length 95th (m)	#142.1	74.5	2.1	132.9	22.4	25.5	37.1	37.5	36.0
Internal Link Dist (m)		80.6		313.1		99.5		524.1	
Turn Bay Length (m)			50.0				15.0		25.0
Base Capacity (vph)	605	2578	211	1499	370	542	398	552	771
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	0.81	0.43	0.01	0.68	0.16	0.13	0.27	0.21	0.62

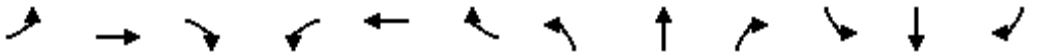
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	452	935	75	2	848	95	54	66	1	99	106	442
Future Volume (vph)	452	935	75	2	848	95	54	66	1	99	106	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		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	1.00		1.00	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	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	3531		1821	3520		1768	1844		1818	1883	1532
Flt Permitted	0.14	1.00		0.26	1.00		0.68	1.00		0.71	1.00	1.00
Satd. Flow (perm)	262	3531		498	3520		1264	1844		1358	1883	1532
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)	491	1016	82	2	922	103	59	72	1	108	115	480
RTOR Reduction (vph)	0	4	0	0	6	0	0	1	0	0	0	383
Lane Group Flow (vph)	491	1094	0	2	1019	0	59	72	0	108	115	97
Confl. Peds. (#/hr)	2		6	6		2	2		3	3		2
Heavy Vehicles (%)	4%	2%	2%	0%	2%	2%	3%	4%	0%	0%	2%	5%
Bus Blockages (#/hr)	0	0	4	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	77.3	77.3		45.0	45.0		16.7	16.7		16.7	16.7	16.7
Effective Green, g (s)	77.3	77.3		45.0	45.0		16.7	16.7		16.7	16.7	16.7
Actuated g/C Ratio	0.73	0.73		0.42	0.42		0.16	0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
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)	589	2574		211	1494		199	290		213	296	241
v/s Ratio Prot	c0.22	0.31			0.29			0.04			0.06	
v/s Ratio Perm	c0.38			0.00			0.05			c0.08		0.06
v/c Ratio	0.83	0.43		0.01	0.68		0.30	0.25		0.51	0.39	0.40
Uniform Delay, d1	23.2	5.6		17.6	24.7		39.5	39.2		40.9	40.1	40.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.9	0.5		0.1	2.5		0.8	0.5		1.9	0.8	1.1
Delay (s)	33.0	6.1		17.7	27.2		40.3	39.6		42.8	40.9	41.2
Level of Service	C	A		B	C		D	D		D	D	D
Approach Delay (s)		14.5			27.2			39.9			41.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

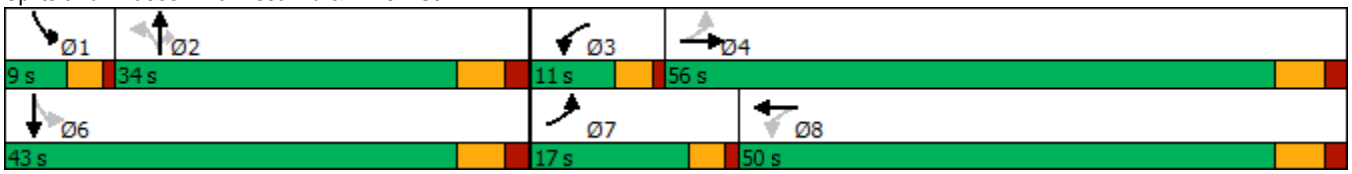


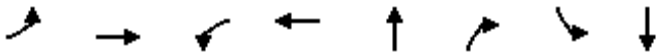
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	789	55	37	882	85	25	185	33	148	208	223
Future Volume (vph)	191	789	55	37	882	85	25	185	33	148	208	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	50.0		0.0	0.0		15.0	50.0		20.0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
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			0.99	
Frt		0.990			0.987				0.850		0.922	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1825	3505	0	1772	3500	0	0	1893	1620	1807	1698	0
Flt Permitted	0.163			0.293				0.841		0.433		
Satd. Flow (perm)	313	3505	0	546	3500	0	0	1601	1620	824	1698	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			11				149		53	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		337.1			195.7			132.7			192.7	
Travel Time (s)		25.3			14.7			10.0			14.5	
Confl. Peds. (#/hr)	1		3	3		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Adj. Flow (vph)	193	797	56	37	891	86	25	187	33	149	210	225
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	853	0	37	977	0	0	212	33	149	435	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
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)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	44.0		7.0	44.0		24.0	24.0	24.0	5.0	24.0	
Minimum Split (s)	9.5	50.0		11.0	50.0		30.0	30.0	30.0	9.0	30.0	
Total Split (s)	17.0	56.0		11.0	50.0		34.0	34.0	34.0	9.0	43.0	
Total Split (%)	15.5%	50.9%		10.0%	45.5%		30.9%	30.9%	30.9%	8.2%	39.1%	
Maximum Green (s)	13.0	50.0		7.0	44.0		28.0	28.0	28.0	5.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lag	Lead		
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	Max		None	Max		None	None	None	None	None	
Walk Time (s)		32.0			32.0		7.0	7.0	7.0		7.0	
Flash Dont Walk (s)		12.0			12.0		11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0		0	0	0		0	
Act Effct Green (s)	61.3	52.9		53.8	44.7			25.1	25.1	36.1	34.1	
Actuated g/C Ratio	0.58	0.50		0.51	0.42			0.24	0.24	0.34	0.32	
v/c Ratio	0.58	0.48		0.10	0.66			0.56	0.07	0.45	0.74	
Control Delay	17.7	19.2		10.8	26.9			42.1	0.2	30.8	37.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	17.7	19.2		10.8	26.9			42.1	0.2	30.8	37.0	
LOS	B	B		B	C			D	A	C	D	
Approach Delay		19.0			26.3			36.4			35.4	
Approach LOS		B			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 105.5			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 26.4		Intersection LOS: C	
Intersection Capacity Utilization 110.3%		ICU Level of Service H	
Analysis Period (min) 15			

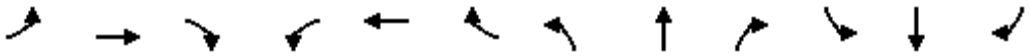
Splits and Phases: 6: Essa Rd & Innisfil St





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	193	853	37	977	212	33	149	435
v/c Ratio	0.58	0.48	0.10	0.66	0.56	0.07	0.45	0.74
Control Delay	17.7	19.2	10.8	26.9	42.1	0.2	30.8	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	19.2	10.8	26.9	42.1	0.2	30.8	37.0
Queue Length 50th (m)	16.9	61.9	3.0	79.5	39.2	0.0	22.3	71.7
Queue Length 95th (m)	30.1	84.9	7.7	112.1	62.8	0.0	37.6	108.5
Internal Link Dist (m)		313.1		171.7	108.7			168.7
Turn Bay Length (m)	50.0		50.0			15.0	50.0	
Base Capacity (vph)	368	1763	359	1490	425	539	328	630
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	0.52	0.48	0.10	0.66	0.50	0.06	0.45	0.69

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	789	55	37	882	85	25	185	33	148	208	223
Future Volume (vph)	191	789	55	37	882	85	25	185	33	148	208	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
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	1.00	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	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1825	3506		1771	3499			1893	1620	1807	1699	
Flt Permitted	0.16	1.00		0.29	1.00			0.84	1.00	0.43	1.00	
Satd. Flow (perm)	313	3506		546	3499			1601	1620	824	1699	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	193	797	56	37	891	86	25	187	33	149	210	225
RTOR Reduction (vph)	0	5	0	0	6	0	0	0	25	0	36	0
Lane Group Flow (vph)	193	848	0	37	971	0	0	212	8	149	399	0
Confl. Peds. (#/hr)	1		3	3		1	2					2
Heavy Vehicles (%)	0%	3%	2%	3%	3%	0%	0%	1%	0%	1%	4%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	61.0	52.9		50.4	46.3			25.1	25.1	34.1	34.1	
Effective Green, g (s)	61.0	52.9		50.4	46.3			25.1	25.1	34.1	34.1	
Actuated g/C Ratio	0.57	0.49		0.47	0.43			0.23	0.23	0.32	0.32	
Clearance Time (s)	4.0	6.0		4.0	6.0			6.0	6.0	4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	329	1731		303	1512			375	379	308	540	
v/s Ratio Prot	c0.06	0.24		0.00	c0.28					0.02	c0.23	
v/s Ratio Perm	0.27			0.05				0.13	0.00	0.13		
v/c Ratio	0.59	0.49		0.12	0.64			0.57	0.02	0.48	0.74	
Uniform Delay, d1	14.6	18.1		15.5	23.9			36.2	31.5	29.3	32.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	1.0		0.2	2.1			2.0	0.0	1.2	5.2	
Delay (s)	17.3	19.1		15.7	26.0			38.1	31.6	30.5	37.8	
Level of Service	B	B		B	C			D	C	C	D	
Approach Delay (s)		18.8			25.6			37.3			35.9	
Approach LOS		B			C			D			D	

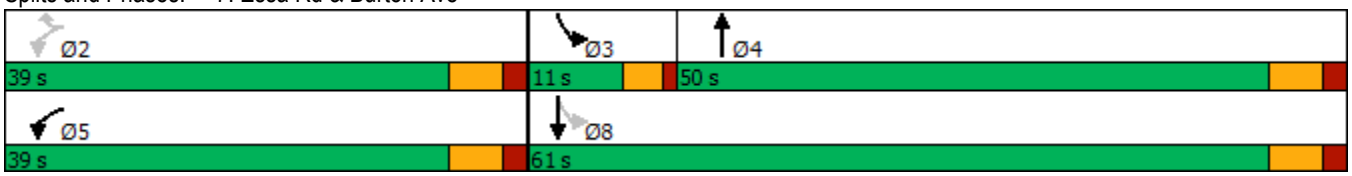
Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	406	243	503	396	240	490
Future Volume (vph)	406	243	503	396	240	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	35.0		0.0	50.0	
Storage Lanes	1	1		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor		0.97	0.99		1.00	
Frt		0.850	0.934			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1772	1585	3316	0	1738	3579
Flt Permitted	0.950				0.204	
Satd. Flow (perm)	1772	1542	3316	0	373	3579
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		180	255			
Link Speed (k/h)	48		48			48
Link Distance (m)	133.2		195.7			221.2
Travel Time (s)	10.0		14.7			16.6
Confl. Peds. (#/hr)		9		7	7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	3%	2%	1%	5%	2%
Adj. Flow (vph)	419	251	519	408	247	505
Shared Lane Traffic (%)						
Lane Group Flow (vph)	419	251	927	0	247	505
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (m)	6.1	6.1	30.5		6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8		6.1	1.8
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	pm+pt	Perm	NA		pm+pt	NA
Protected Phases	5		4		3	8
Permitted Phases	2	2			8	
Detector Phase	5	2	4		3	8
Switch Phase						
Minimum Initial (s)	15.0	15.0	44.0		7.0	44.0
Minimum Split (s)	23.0	23.0	50.0		11.0	50.0
Total Split (s)	39.0	39.0	50.0		11.0	61.0
Total Split (%)	39.0%	39.0%	50.0%		11.0%	61.0%
Maximum Green (s)	33.0	33.0	44.0		7.0	55.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		4.0	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	33.0			33.0
Flash Dont Walk (s)	10.0	10.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	26.1	26.1	44.2		57.2	55.2
Actuated g/C Ratio	0.28	0.28	0.47		0.61	0.59
v/c Ratio	0.85	0.45	0.54		0.75	0.24
Control Delay	48.0	10.9	14.3		26.7	10.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	48.0	10.9	14.3		26.7	10.2
LOS	D	B	B		C	B
Approach Delay	34.1		14.3			15.6
Approach LOS	C		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 93.4			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Essa Rd & Burton Ave



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	419	251	927	247	505
v/c Ratio	0.85	0.45	0.54	0.75	0.24
Control Delay	48.0	10.9	14.3	26.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	10.9	14.3	26.7	10.2
Queue Length 50th (m)	70.7	9.6	43.2	18.9	21.5
Queue Length 95th (m)	105.2	28.4	68.3	#48.1	34.6
Internal Link Dist (m)	109.2		171.7		197.2
Turn Bay Length (m)		35.0		50.0	
Base Capacity (vph)	628	663	1703	331	2116
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.38	0.54	0.75	0.24

Intersection Summary

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	406	243	503	396	240	490
Future Volume (vph)	406	243	503	396	240	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		4.0	6.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	0.97	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1772	1543	3316		1738	3579
Flt Permitted	0.95	1.00	1.00		0.20	1.00
Satd. Flow (perm)	1772	1543	3316		374	3579
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	419	251	519	408	247	505
RTOR Reduction (vph)	0	130	134	0	0	0
Lane Group Flow (vph)	419	121	793	0	247	505
Confl. Peds. (#/hr)		9		7	7	
Heavy Vehicles (%)	3%	3%	2%	1%	5%	2%
Turn Type	pm+pt	Perm	NA		pm+pt	NA
Protected Phases	5		4		3	8
Permitted Phases	2	2			8	
Actuated Green, G (s)	26.1	26.1	44.2		55.2	55.2
Effective Green, g (s)	26.1	26.1	44.2		55.2	55.2
Actuated g/C Ratio	0.28	0.28	0.47		0.59	0.59
Clearance Time (s)	6.0	6.0	6.0		4.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	495	431	1570		323	2117
v/s Ratio Prot	c0.24		0.24		c0.06	0.14
v/s Ratio Perm		0.08			c0.39	
v/c Ratio	0.85	0.28	0.50		0.76	0.24
Uniform Delay, d1	31.7	26.3	17.0		11.6	9.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	12.6	0.4	1.2		10.3	0.3
Delay (s)	44.3	26.6	18.1		21.9	9.3
Level of Service	D	C	B		C	A
Approach Delay (s)	37.7		18.1			13.5
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations							
Traffic Volume (vph)	7	377	691	10	221	706	
Future Volume (vph)	7	377	691	10	221	706	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (m)	0.0	0.0		0.0	15.0		
Storage Lanes	1	0		0	1		
Taper Length (m)	2.5				2.5		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95	
Ped Bike Factor	0.98		1.00		1.00		
Frt	0.867		0.998				
Flt Protected	0.999				0.950		
Satd. Flow (prot)	1635	0	3571	0	1807	3515	
Flt Permitted	0.999				0.339		
Satd. Flow (perm)	1635	0	3571	0	643	3515	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	284		2				
Link Speed (k/h)	48		48			48	
Link Distance (m)	165.5		221.2			124.5	
Travel Time (s)	12.4		16.6			9.3	
Confl. Peds. (#/hr)		2		9	9		
Confl. Bikes (#/hr)		2		5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Heavy Vehicles (%)	0%	0%	2%	0%	1%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	4	
Adj. Flow (vph)	7	389	712	10	228	728	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	396	0	722	0	228	728	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		3.7			3.7	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	1.6		1.6			1.6	
Two way Left Turn Lane							
Headway Factor	0.99	0.99	0.99	0.99	0.99	1.00	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1		2		1	2	
Detector Template	Left		Thru		Left	Thru	
Leading Detector (m)	6.1		30.5		6.1	30.5	
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)	6.1		1.8		6.1	1.8	
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)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			Cl+Ex	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	pm+pt		NA		pm+pt	NA	
Protected Phases	3		2		1	6	8
Permitted Phases	8				6		
Detector Phase	3		2		1	6	
Switch Phase							
Minimum Initial (s)	10.0		80.0		7.0	80.0	10.0
Minimum Split (s)	27.0		86.0		11.0	86.0	27.0
Total Split (s)	38.0		81.0		11.0	92.0	38.0
Total Split (%)	29.2%		62.3%		8.5%	70.8%	29%
Maximum Green (s)	32.0		75.0		7.0	86.0	32.0
Yellow Time (s)	4.0		4.0		3.0	4.0	4.0
All-Red Time (s)	2.0		2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		4.0	6.0	
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?			Yes		Yes		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		Max		None	Max	None
Walk Time (s)	10.0		65.0			65.0	10.0
Flash Dont Walk (s)	11.0		15.0			15.0	11.0
Pedestrian Calls (#/hr)	0		0			0	0
Act Effct Green (s)	16.3		80.2		93.3	91.3	
Actuated g/C Ratio	0.14		0.67		0.78	0.76	
v/c Ratio	0.85		0.30		0.40	0.27	
Control Delay	31.6		9.2		6.3	5.2	
Queue Delay	0.0		0.0		0.0	0.5	
Total Delay	31.6		9.2		6.3	5.7	
LOS	C		A		A	A	
Approach Delay	31.6		9.2			5.8	
Approach LOS	C		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 119.6			
Natural Cycle: 125			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 116.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 8: Essa Rd & Gowan St

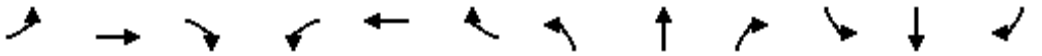
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	396	722	228	728
v/c Ratio	0.85	0.30	0.40	0.27
Control Delay	31.6	9.2	6.3	5.2
Queue Delay	0.0	0.0	0.0	0.5
Total Delay	31.6	9.2	6.3	5.7
Queue Length 50th (m)	25.6	31.8	10.4	21.2
Queue Length 95th (m)	62.0	56.8	26.8	43.8
Internal Link Dist (m)	141.5	197.2		100.5
Turn Bay Length (m)			15.0	
Base Capacity (vph)	646	2396	569	2682
Starvation Cap Reductn	0	0	0	1441
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.30	0.40	0.59

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	377	691	10	221	706
Future Volume (vph)	7	377	691	10	221	706
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		4.0	6.0
Lane Util. Factor	1.00		0.95		1.00	0.95
Frpb, ped/bikes	0.98		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.87		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1634		3571		1806	3515
Flt Permitted	1.00		1.00		0.34	1.00
Satd. Flow (perm)	1634		3571		645	3515
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	7	389	712	10	228	728
RTOR Reduction (vph)	245	0	1	0	0	0
Lane Group Flow (vph)	151	0	721	0	228	728
Confl. Peds. (#/hr)		2		9	9	
Confl. Bikes (#/hr)		2		5		
Heavy Vehicles (%)	0%	0%	2%	0%	1%	3%
Bus Blockages (#/hr)	0	0	0	0	0	4
Turn Type	pm+pt		NA		pm+pt	NA
Protected Phases	3		2		1	6
Permitted Phases	8				6	
Actuated Green, G (s)	16.3		80.3		91.3	91.3
Effective Green, g (s)	16.3		80.3		91.3	91.3
Actuated g/C Ratio	0.14		0.67		0.76	0.76
Clearance Time (s)	6.0		6.0		4.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	222		2397		560	2683
v/s Ratio Prot	c0.09		0.20		c0.02	0.21
v/s Ratio Perm					c0.29	
v/c Ratio	0.68		0.30		0.41	0.27
Uniform Delay, d1	49.2		8.1		4.3	4.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	8.0		0.3		0.5	0.2
Delay (s)	57.1		8.4		4.8	4.5
Level of Service	E		A		A	A
Approach Delay (s)	57.1		8.4			4.5
Approach LOS	E		A			A

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



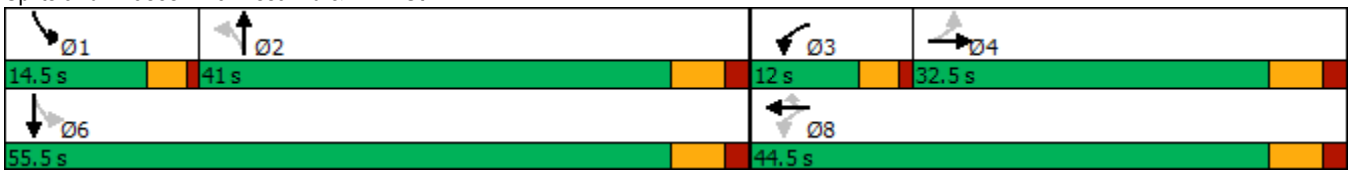
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	627	113	158	381	99	149	714	282	242	694	87
Future Volume (vph)	56	627	113	158	381	99	149	714	282	242	694	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	20.0		0.0	50.0		0.0	25.0		30.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00		0.98	1.00	0.99		1.00	1.00	
Frt		0.977				0.850		0.957			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3487	0	1706	5193	1458	1825	3451	0	1825	3512	0
Flt Permitted	0.511			0.137			0.348			0.104		
Satd. Flow (perm)	950	3487	0	246	5193	1434	668	3451	0	200	3512	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				102		64			19	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		328.8			105.3			124.5			69.7	
Travel Time (s)		24.7			7.9			9.3			5.2	
Confl. Peds. (#/hr)	4		1	1		4	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	1%	8%	7%	1%	12%	0%	1%	0%	0%	2%	2%
Adj. Flow (vph)	58	646	116	163	393	102	154	736	291	249	715	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	762	0	163	393	102	154	1027	0	249	805	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
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)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		3	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0	10.0	34.0	34.0		5.0	34.0	
Minimum Split (s)	31.0	31.0		11.0	31.0	31.0	40.0	40.0		9.5	40.0	
Total Split (s)	32.5	32.5		12.0	44.5	44.5	41.0	41.0		14.5	55.5	
Total Split (%)	32.5%	32.5%		12.0%	44.5%	44.5%	41.0%	41.0%		14.5%	55.5%	
Maximum Green (s)	26.5	26.5		8.0	38.5	38.5	35.0	35.0		10.5	49.5	
Yellow Time (s)	4.0	4.0		3.0	4.0	4.0	4.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0	2.0	2.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max	Max	None	None		None	None	
Walk Time (s)	10.0	10.0			10.0	10.0	22.0	22.0			22.0	
Flash Dont Walk (s)	15.0	15.0			15.0	15.0	12.0	12.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	
Act Effct Green (s)	26.5	26.5		40.5	38.5	38.5	34.6	34.6		51.1	49.1	
Actuated g/C Ratio	0.27	0.27		0.41	0.39	0.39	0.35	0.35		0.51	0.49	
v/c Ratio	0.23	0.81		0.75	0.20	0.17	0.67	0.83		0.91	0.46	
Control Delay	31.8	41.2		43.2	20.7	4.9	43.8	34.7		58.8	17.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	6.5		0.0	0.0	
Total Delay	31.8	41.2		43.2	20.7	4.9	43.8	41.2		58.8	17.2	
LOS	C	D		D	C	A	D	D		E	B	
Approach Delay		40.6			23.8			41.5			27.0	
Approach LOS		D			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 99.6
Natural Cycle: 95
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 105.8% ICU Level of Service G
Analysis Period (min) 15

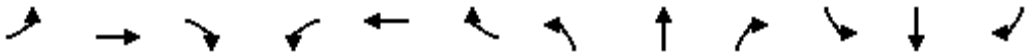
Splits and Phases: 9: Essa Rd & Tiffin St



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	762	163	393	102	154	1027	249	805
v/c Ratio	0.23	0.81	0.75	0.20	0.17	0.67	0.83	0.91	0.46
Control Delay	31.8	41.2	43.2	20.7	4.9	43.8	34.7	58.8	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Total Delay	31.8	41.2	43.2	20.7	4.9	43.8	41.2	58.8	17.2
Queue Length 50th (m)	8.8	71.0	20.4	18.2	0.0	24.9	89.3	30.8	50.2
Queue Length 95th (m)	19.6	93.0	#45.1	25.3	9.9	#53.2	114.8	#76.0	65.4
Internal Link Dist (m)		304.8		81.3			100.5		45.7
Turn Bay Length (m)	20.0		20.0			50.0		25.0	
Base Capacity (vph)	252	942	217	2007	616	234	1254	273	1755
Starvation Cap Reductn	0	0	0	0	0	0	185	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.81	0.75	0.20	0.17	0.66	0.96	0.91	0.46

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	627	113	158	381	99	149	714	282	242	694	87
Future Volume (vph)	56	627	113	158	381	99	149	714	282	242	694	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.91	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		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	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1767	3488		1706	5193	1434	1823	3452		1825	3512	
Flt Permitted	0.51	1.00		0.14	1.00	1.00	0.35	1.00		0.10	1.00	
Satd. Flow (perm)	951	3488		246	5193	1434	667	3452		199	3512	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	646	116	163	393	102	154	736	291	249	715	90
RTOR Reduction (vph)	0	15	0	0	0	63	0	42	0	0	10	0
Lane Group Flow (vph)	58	747	0	163	393	39	154	985	0	249	795	0
Confl. Peds. (#/hr)	4		1	1		4	4		7	7		4
Heavy Vehicles (%)	3%	1%	8%	7%	1%	12%	0%	1%	0%	0%	2%	2%
Turn Type	Perm	NA		pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4		3	8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	26.5	26.5		38.5	38.5	38.5	34.6	34.6		49.1	49.1	
Effective Green, g (s)	26.5	26.5		38.5	38.5	38.5	34.6	34.6		49.1	49.1	
Actuated g/C Ratio	0.27	0.27		0.39	0.39	0.39	0.35	0.35		0.49	0.49	
Clearance Time (s)	6.0	6.0		4.0	6.0	6.0	6.0	6.0		4.0	6.0	
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)	253	928		212	2007	554	231	1199		269	1731	
v/s Ratio Prot		0.21		c0.06	0.08			0.29		c0.10	0.23	
v/s Ratio Perm	0.06			c0.23		0.03	0.23			c0.36		
v/c Ratio	0.23	0.81		0.77	0.20	0.07	0.67	0.82		0.93	0.46	
Uniform Delay, d1	28.6	34.1		23.1	20.3	19.3	27.6	29.7		24.9	16.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.1	7.4		15.4	0.2	0.2	7.1	4.7		35.3	0.2	
Delay (s)	30.7	41.5		38.5	20.5	19.5	34.7	34.3		60.3	16.7	
Level of Service	C	D		D	C	B	C	C		E	B	
Approach Delay (s)		40.8			24.8			34.4			27.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	85	0	0	80	0	0
Future Volume (vph)	85	0	0	80	0	0
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						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	81.4			84.8	61.6	
Travel Time (s)	6.1			6.4	4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	0	0	87	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	0	87	0	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 7.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	85	0	0	80	0	0
Future Volume (Veh/h)	85	0	0	80	0	0
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)	92	0	0	87	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			92		179	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			92		179	92
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	100
cM capacity (veh/h)			1503		811	965

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	92	87	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1503	1700
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		7.8%	ICU Level of Service
Analysis Period (min)		15	

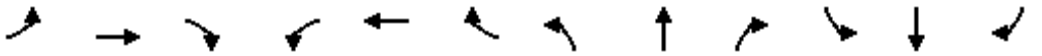
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	85	22	50	80	13	31
Future Volume (vph)	85	22	50	80	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.904	
Flt Protected				0.981	0.986	
Satd. Flow (prot)	1831	0	0	1848	1679	0
Flt Permitted				0.981	0.986	
Satd. Flow (perm)	1831	0	0	1848	1679	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	84.8			113.3	49.6	
Travel Time (s)	6.4			8.5	3.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	24	54	87	14	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	0	141	48	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	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	85	22	50	80	13	31
Future Volume (Veh/h)	85	22	50	80	13	31
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)	92	24	54	87	14	34
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			116		299	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			116		299	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		98	96
cM capacity (veh/h)			1473		667	951

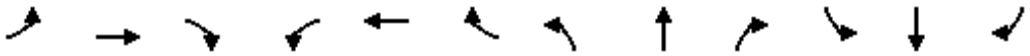
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	116	141	48
Volume Left	0	54	14
Volume Right	24	0	34
cSH	1700	1473	846
Volume to Capacity	0.07	0.04	0.06
Queue Length 95th (m)	0.0	0.9	1.4
Control Delay (s)	0.0	3.1	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.5
Approach LOS			A

Intersection Summary			
Average Delay		2.9	
Intersection Capacity Utilization		23.6%	ICU Level of Service
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	0	18	0	12	0	494	28	19	573	0
Future Volume (vph)	0	0	0	18	0	12	0	494	28	19	573	0
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	15.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.947			0.992				
Flt Protected					0.971					0.950		
Satd. Flow (prot)	0	1883	0	0	1732	0	1883	1868	0	1789	1883	0
Flt Permitted					0.971					0.950		
Satd. Flow (perm)	0	1883	0	0	1732	0	1883	1868	0	1789	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		70.4			43.1			192.7			107.8	
Travel Time (s)		5.3			3.2			14.5			8.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	20	0	13	0	537	30	21	623	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	0	567	0	21	623	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	18	0	12	0	494	28	19	573	0
Future Volume (Veh/h)	0	0	0	18	0	12	0	494	28	19	573	0
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	0	20	0	13	0	537	30	21	623	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (m)								193			219	
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	1215	1232	623	1217	1217	552	623			567		
vC1, stage 1 conf vol	665	665		552	552							
vC2, stage 2 conf vol	550	567		665	665							
vCu, unblocked vol	1176	1196	623	1179	1179	424	623			441		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	100	98	100			98		
cM capacity (veh/h)	351	356	486	359	364	555	958			986		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	33	0	567	21	623
Volume Left	0	20	0	0	21	0
Volume Right	0	13	0	30	0	0
cSH	1700	417	1700	1700	986	1700
Volume to Capacity	0.00	0.08	0.00	0.33	0.02	0.37
Queue Length 95th (m)	0.0	1.9	0.0	0.0	0.5	0.0
Control Delay (s)	0.0	14.4	0.0	0.0	8.7	0.0
Lane LOS	A	B			A	
Approach Delay (s)	0.0	14.4	0.0		0.3	
Approach LOS	A	B				

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix F

TTS

datamanagementgroup

Hello Dhaval Harpal

TTS Cross Tabulation

Cross Tabulation Query Form - Trip - 2016 v1.1

Filter Variables

Planning district of desti… | 2006 GTA zone of origin | (Optional) Table Attribute

Group Attributes

Row Grouping | (8502,8525-8527) | Table Grouping

Grouping file: Choose File No file chosen

Filter Selection +

Trip purpose of origin | In

H,

And

Start time of trip | In

600-900

And

Primary travel mode of trip | In

D, P, M, T,

Add Delete

Output

Comma-delimited table | Column format | Expansion Factor On | Click to Select Load | Load

Execute Query Select All Save As

```
Thu Jun 24 2021 15:47:53 GMT-0400 (Eastern Daylight Time) - Run Time: 3038ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(8502,8525-8527)
TblG:

Filters:
(Trip purpose of origin - purp_orig In H,
and
Start time of trip - start_time In 600-900
and
Primary travel mode of trip - mode_prime In D, P, M, T, )

Trip 2016
Table:

,1
PD 6 of Toronto,14
PD 10 of Toronto,24
PD 13 of Toronto,43
King,23
Vaughan,283
Mississauga,31
Barrie,2032
Innisfil,104
Bradford-West Gwillimbury,113
New Tecumseth,54
Essa,30
```

Instructions

Group attributes on the output by:

- Entering the values of ea group

Example

- (1) (4-6,8) (9-14)
- Group 1: 1
- Group 2: 4,5,6,8
- Group 3: 9,10,11,12,13,1

Open current page in new tab

2006 GTA Zone of Origin

Code	Description
1 - 625	Toronto
1001 - 1334	Durham
2001 - 2877	York
3001 - 3879	Peel
4001 - 4197	Halton
5001 - 5253	Hamilton
6001 - 6366	Niagara
7001 - 7576	Waterloo
8001 - 8207	Guelph
8301 - 8380	Wellington
8401 - 8405	Orangeville
8411 - 8417	Dufferin
8501 - 8532	Barrie

```
Springwater,77
Muskoka,50
Grey,8
Midland,35
Orillia,83
```

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Instructions

Group attributes on the output by:

- Entering the values of ea group

Example

- (1) (4-6,8) (9-14)
- Group 1: 1
- Group 2: 4,5,6,8
- Group 3: 9,10,11,12,13,1

Open current page in new tab

2006 GTA Zone of Origin

Code	Description
1 - 625	Toronto
1001 - 1334	Durham
2001 - 2877	York
3001 - 3879	Peel
4001 - 4197	Halton
5001 - 5253	Hamilton
6001 - 6366	Niagara
7001 - 7576	Waterloo
8001 - 8207	Guelph
8301 - 8380	Wellington
8401 - 8405	Orangeville
8411 - 8417	Dufferin
8501 - 8532	Barrie

datamanagementgroup

Hello Dhaval Harpal

TTS Cross Tabulation

Cross Tabulation Query Form - Trip - 2016 v1.1

Filter Variables

Planning district of origin | 2006 GTA zone of desti… | (Optional) Table Attribute

Group Attributes

Row Grouping | (8502,8525-8527) | Table Grouping

Grouping file: Choose File No file chosen

Filter Selection +

Filter survey records by selection criteria:
1 Select a data field
2 Enter codes to be included in the extraction.
3 Use '-' to specify a range and ',' to separate codes.
4 Do not use '()' to separate codes.
5 The default operator for selecting values in a specific filter is IN but the operator NOT IN is available to exclude values from the filter.
6 The default operator for connecting multiple filters is AND but the OR operator is also available
7 If a combination of ANDs and ORs is used the checkboxes can be used to act as brackets (see manual for more details) and the bracketed filters

- Trip purpose of destination | In | H,
- And
- Start time of trip | In | 1600-1900
- And
- Primary travel mode of trip | In | D, P, M, T,

Add Delete

Output

Comma-delimited table | Column format | Expansion Factor On | Click to Select Load | Load

Execute Query Select All Save As

```
Thu Jun 24 2021 15:52:53 GMT-0400 (Eastern Daylight Time) - Run Time: 2781ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(8502,8525-8527)
TblG:

Filters:
(Trip purpose of destination - purp_dest In H,
and
Start time of trip - start_time In 1600-1900
and
Primary travel mode of trip - mode_prime In D, P, M, T, )

Trip 2016
Table:

,1
PD 1 of Toronto,28
PD 10 of Toronto,55
PD 13 of Toronto,43
```

Filter Tutorial Here about the c

Open current page in new tab

Start Time of Trip

Code	Description
400 - 2800	Total range - 4:00 a.m survey day to 3:39 a. next day

```
King,23
Vaughan,220
Mississauga,118
Halton Hills,13
City of Guelph,26
Barrie,2193
Innisfil,84
Bradford-West Gwillimbury,46
Essa,20
Springwater,67
Perth,24
Midland,64
Oro-Medonte,11
Orillia,147
```

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Filter Tutorial Here about the c

Open current page in new tab

Start Time of Trip

Code	Description
400 - 2800	Total range - 4:00 a.m survey day to 3:39 a. next day

TTS

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

RowG:

ColG:(8502,8525-8527)

TblG:

Filters:

(Trip purpose of origin - purp_orig In H,

and

Start time of trip - start_time In 600-900

and

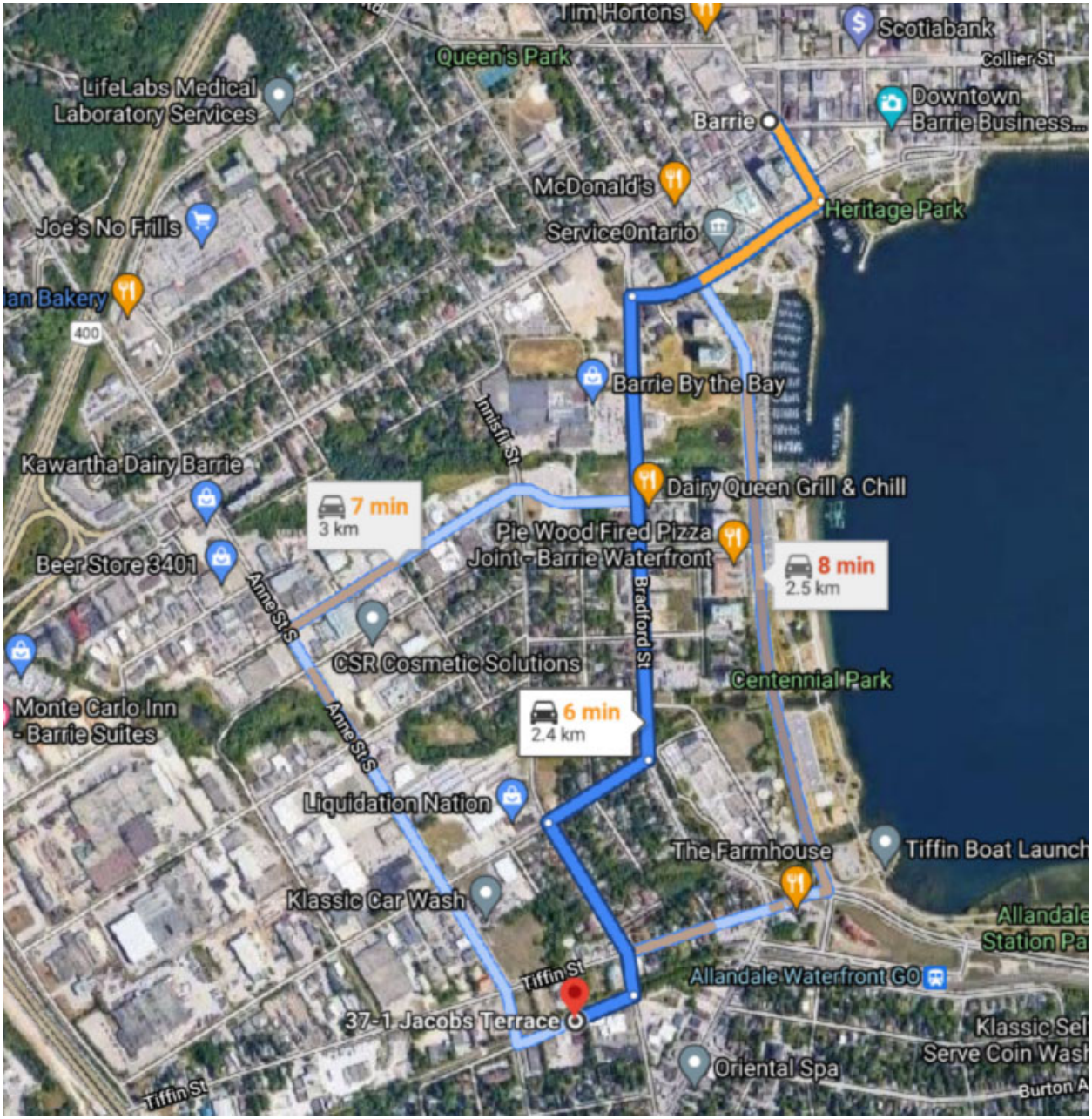
Primary travel mode of trip - mode_prime In D, P, M, T,)

Trip 2016

Table:

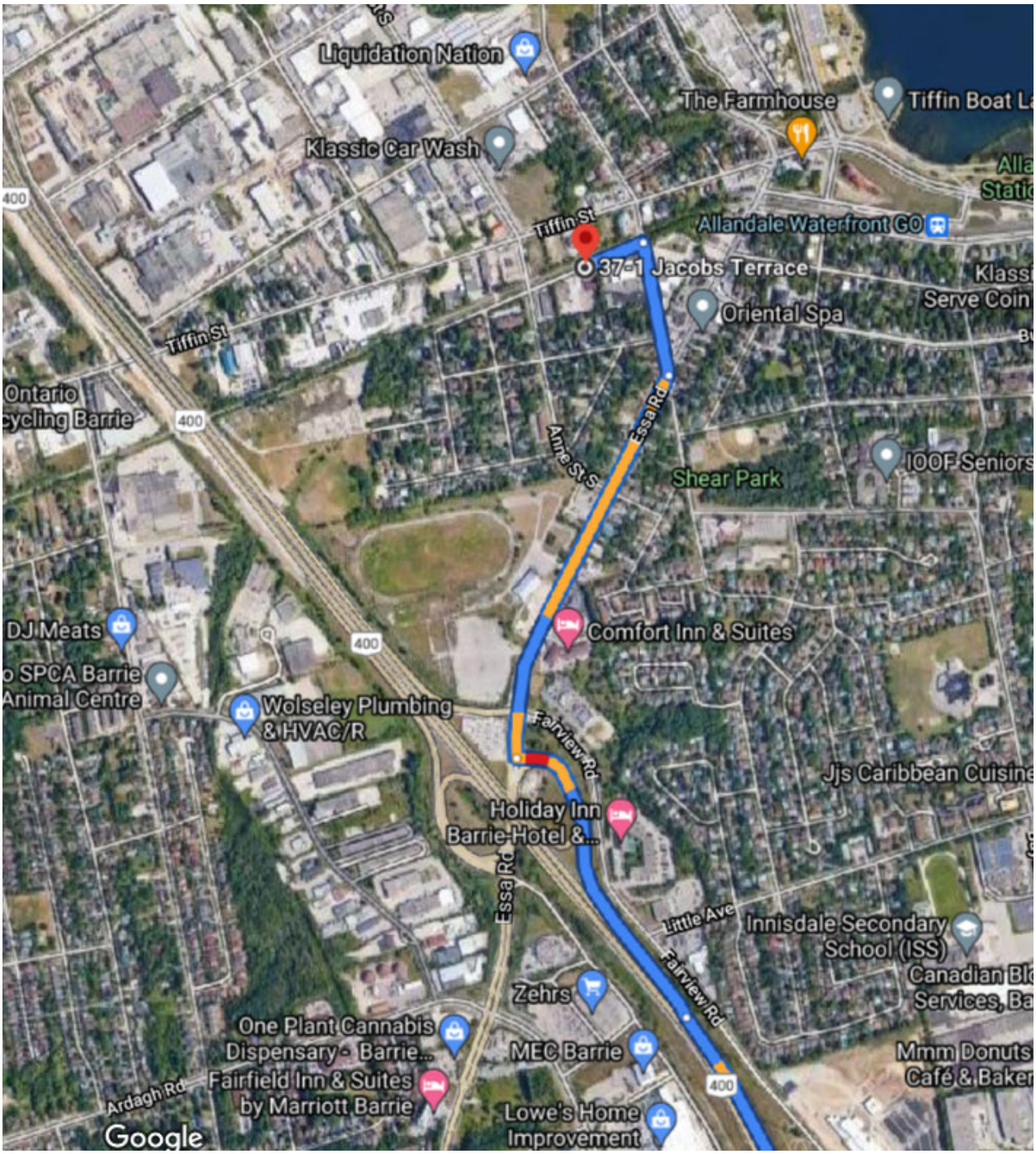
		East BURTON/ESSA	West essa	East tiffin	west tiffin	N-ANNE	S-ANNE	N-INNISFIL
,1								
PD 6 of Toronto	14		1					
PD 10 of Toron	24		1					
PD 13 of Toron	43		1					
King	23		1					
Vaughan	283		1					
Mississauga	31		1					
			0					
Innisfil	104	1						
Bradford-West	113		1					
New Tecumsetl	54				1			
Essa	30				1			
Springwater	77				1			
Muskoka	50					1		
Grey	8				1			
Midland	35							1
Orillia	83							1
Total	972	104	531	0	169	50	0	118
		11%	55%	0%	17%	5%	0%	12%

Barrie


Tim Hortons
Scotiabank
Collier St
Queen's Park
LifeLabs Medical Laboratory Services
Barrie
Downtown Barrie Business...
McDonald's
Heritage Park
Joe's No Frills
ServiceOntario
400
Barrie By the Bay
Innisfil St
Kawartha Dairy Barrie
Dairy Queen Grill & Chill
7 min
3 km
Pie Wood Fired Pizza Joint - Barrie Waterfront
8 min
2.5 km
Beer Store 3401
Anne St S
Bradford St
CSR Cosmetic Solutions
Centennial Park
Monte Carlo Inn - Barrie Suites
6 min
2.4 km
Liquidation Nation
The Farmhouse
Tiffin Boat Launch
Klassic Car Wash
Allandale Station Pa
Tiffin St
Allandale Waterfront GO
37-1 Jacobs Terrace
Klassic Sel
Serve Coin Wash
Oriental Spa
Tiffin St
Burton A

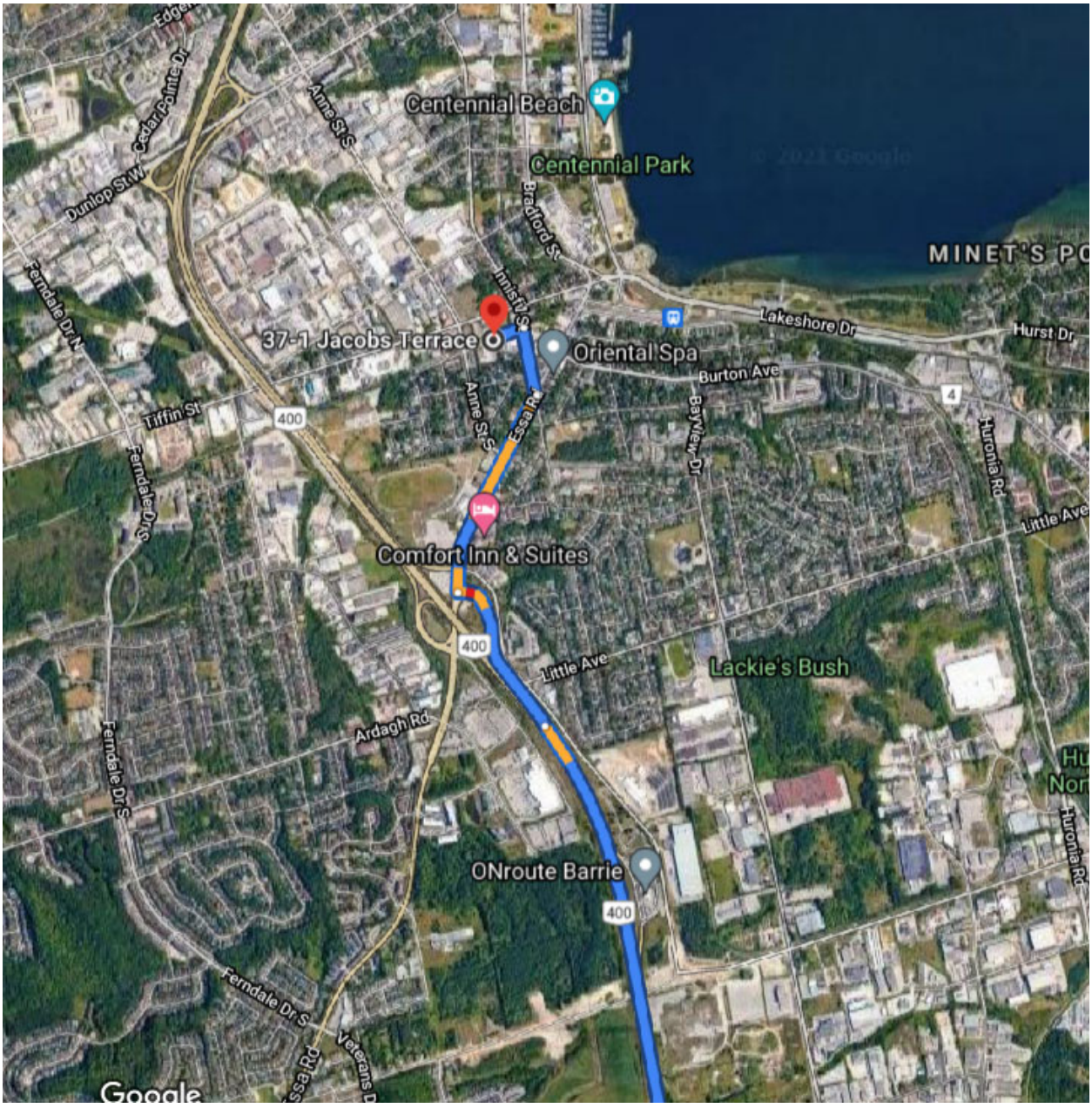
`

King


Liquidation Nation
The Farmhouse
Tiffin Boat La
Klassic Car Wash
Allandale Waterfront GO
Tiffin St
37-1 Jacobs Terrace
Oriental Spa
Tiffin St
Ontario
cycling Barrie
400
Anne St S
Essa Rd
IOOF Seniors
Shear Park
DJ Meats
400
Comfort Inn & Suites
SPCA Barrie
Animal Centre
Wolseley Plumbing
& HVAC/R
Fairview Rd
Jjs Caribbean Cuisine
Holiday Inn
Barrie-Hotel &...
Essa Rd
Little Ave
Innisdale Secondary
School (ISS)
Fairview Rd
Zehrs
One Plant Cannabis
Dispensary - Barrie...
MEC Barrie
Mmm Donuts
Café & Baker
Ardagh Rd
Fairfield Inn & Suites
by Marriott Barrie
400
Lowe's Home
Improvement
Google

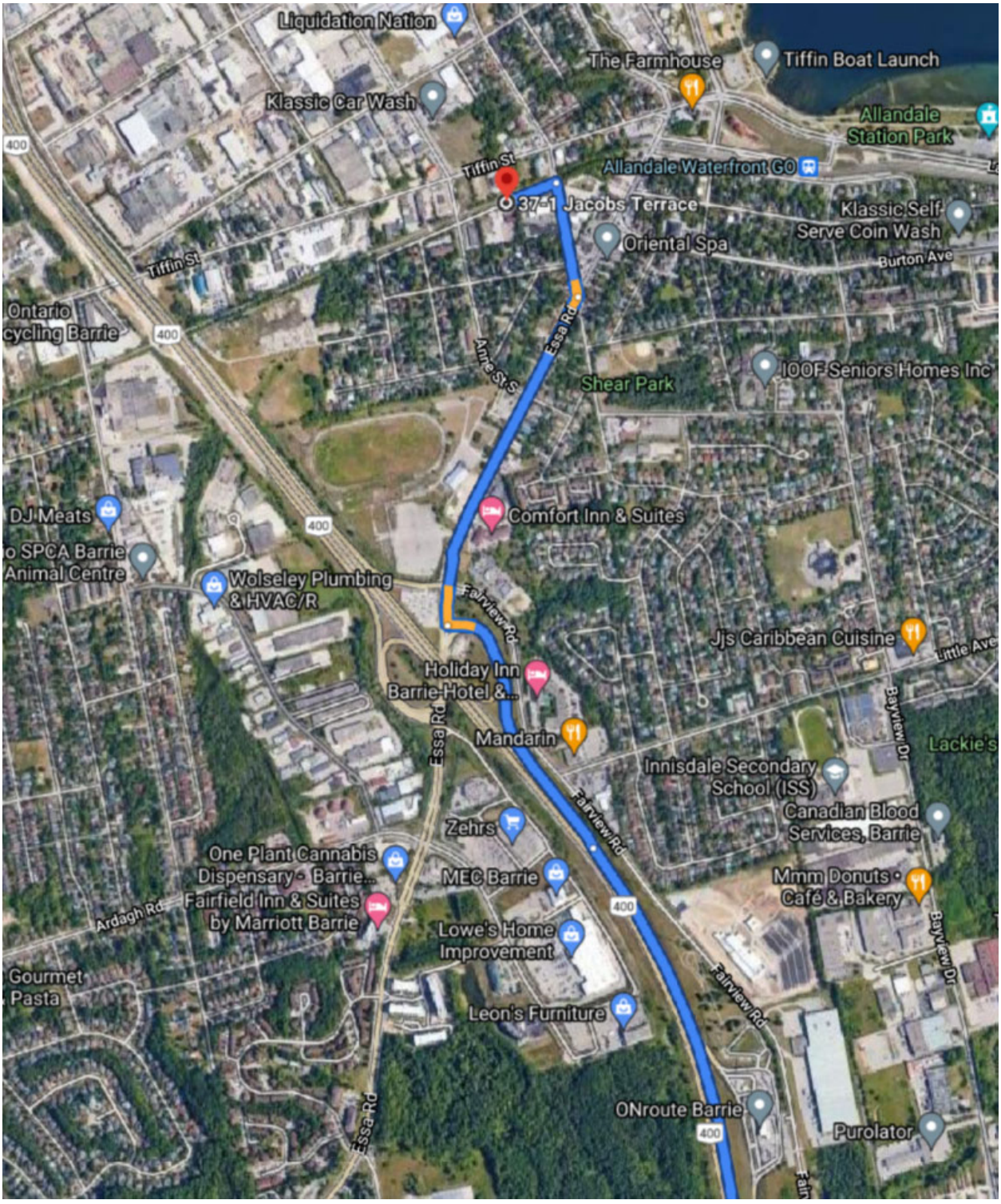
`

Vaughn,Toronto



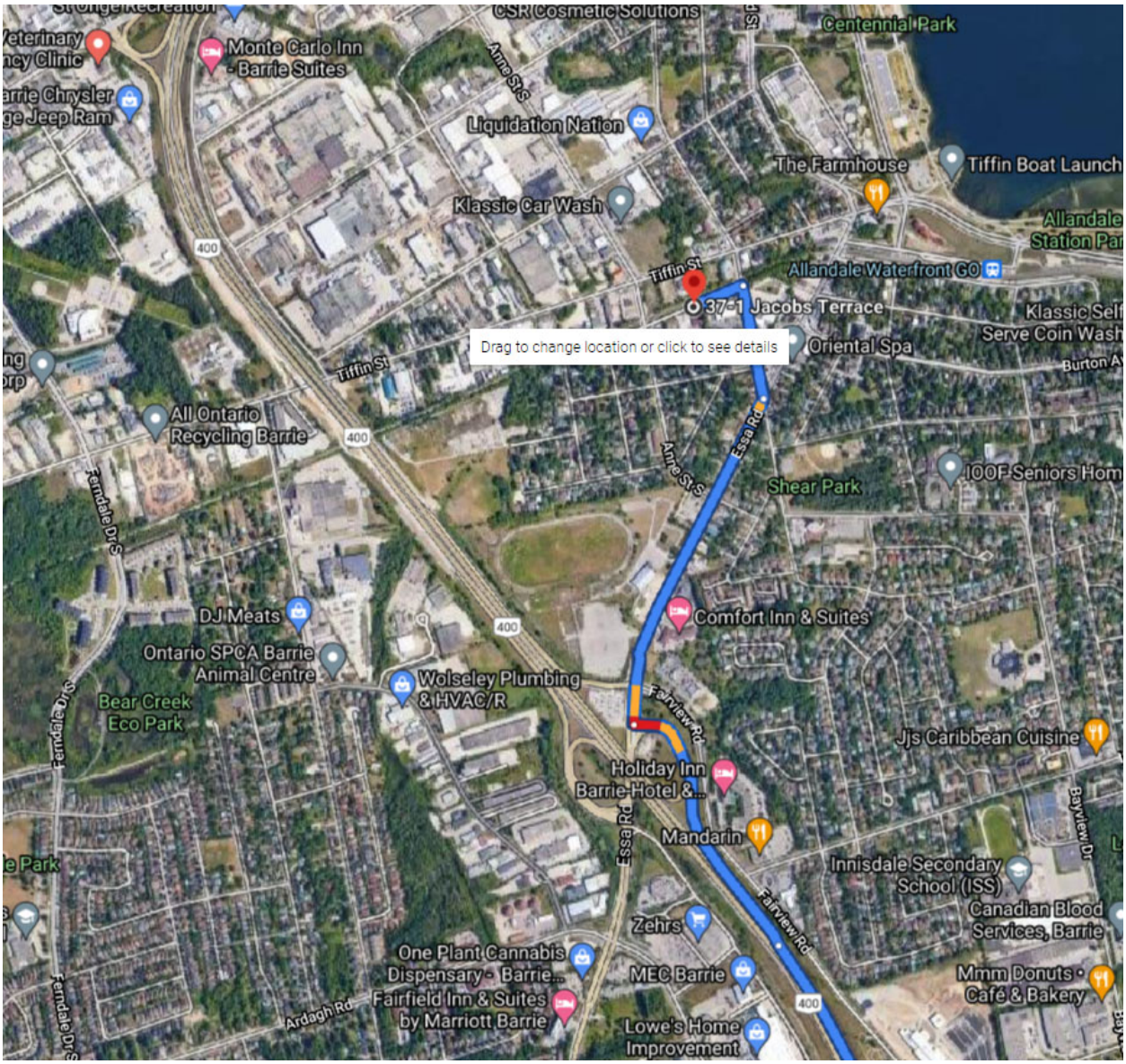
`

Messisauga


Liquidation Nation
The Farmhouse
Tiffin Boat Launch
Klassic Car Wash
Allandale Station Park
Tiffin St
Allandale Waterfront GO
37-1 Jacobs Terrace
Klassic Self-Serve Coin Wash
Oriental Spa
Burton Ave
Ontario cycling Barrie
400
Anne St S
Essa Rd
IOOF Seniors Homes Inc
Shear Park
DJ Meats
Comfort Inn & Suites
SPCA Barrie Animal Centre
Wolseley Plumbing & HVAC/R
Fairview Rd
Jjs Caribbean Cuisine
Little Ave
Holiday Inn Barrie Hotel &...
Mandarin
Bayview Dr
Lackie's
Innisdale Secondary School (ISS)
Canadian Blood Services, Barrie
Zehrs
One Plant Cannabis Dispensary - Barrie...
MEC Barrie
Mmm Donuts - Café & Bakery
Ardagh Rd
Fairfield Inn & Suites by Marriott Barrie
Lowe's Home Improvement
Gourmet Pasta
Leon's Furniture
ONroute Barrie
Purolator

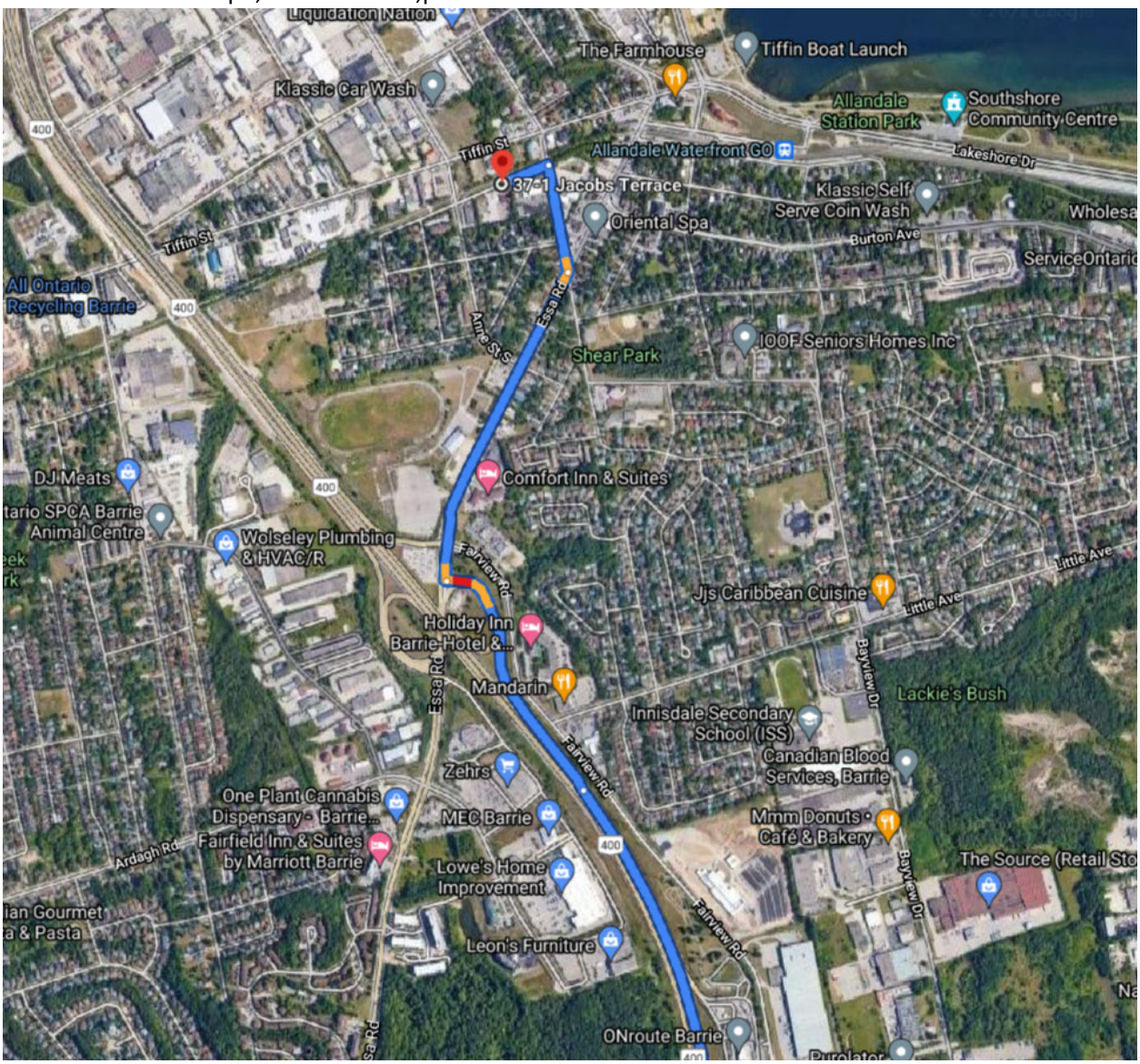
`

Halton Hills



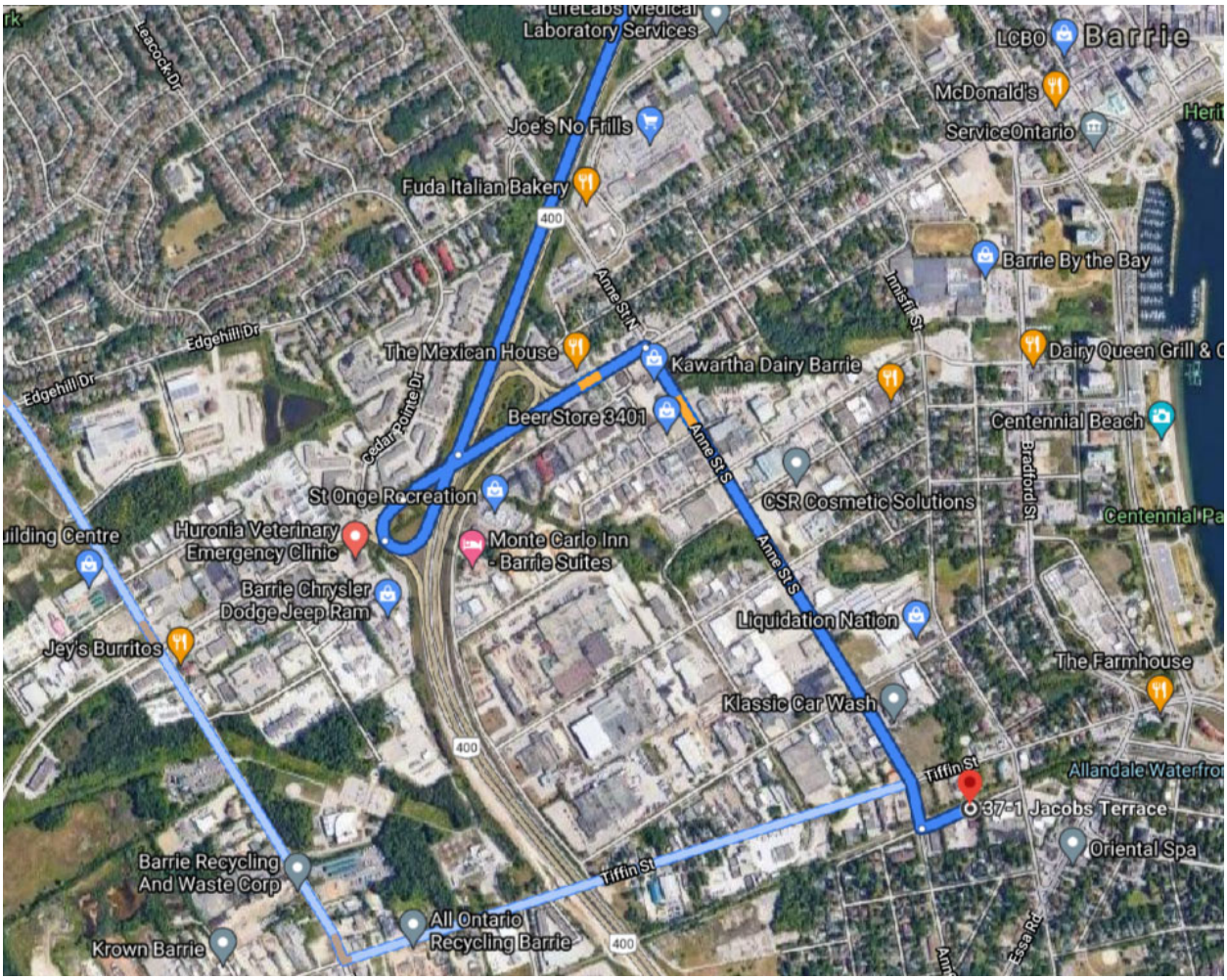
`

Guelph,Bradford west,perth



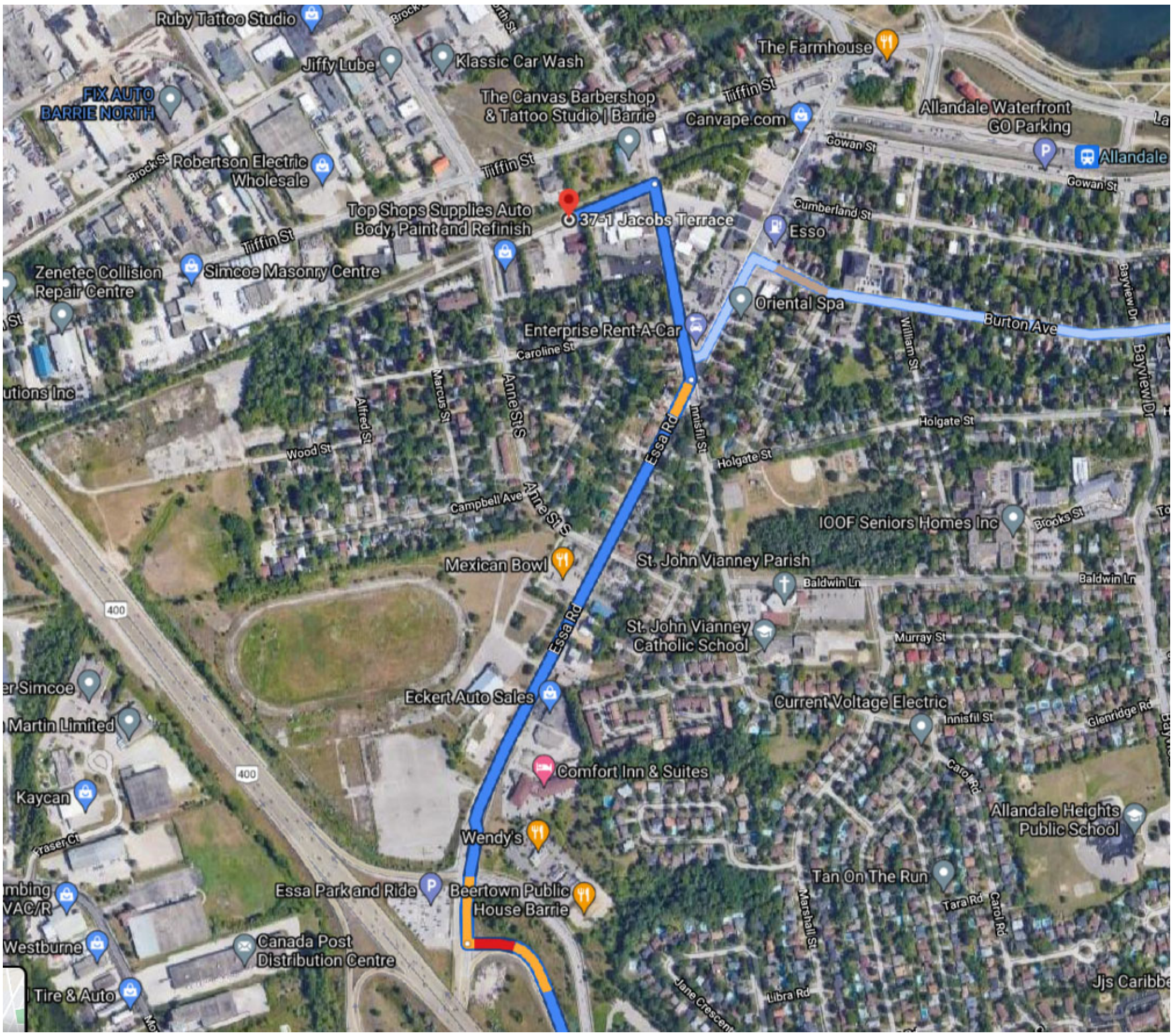
`

Midland, Oro-Medonte



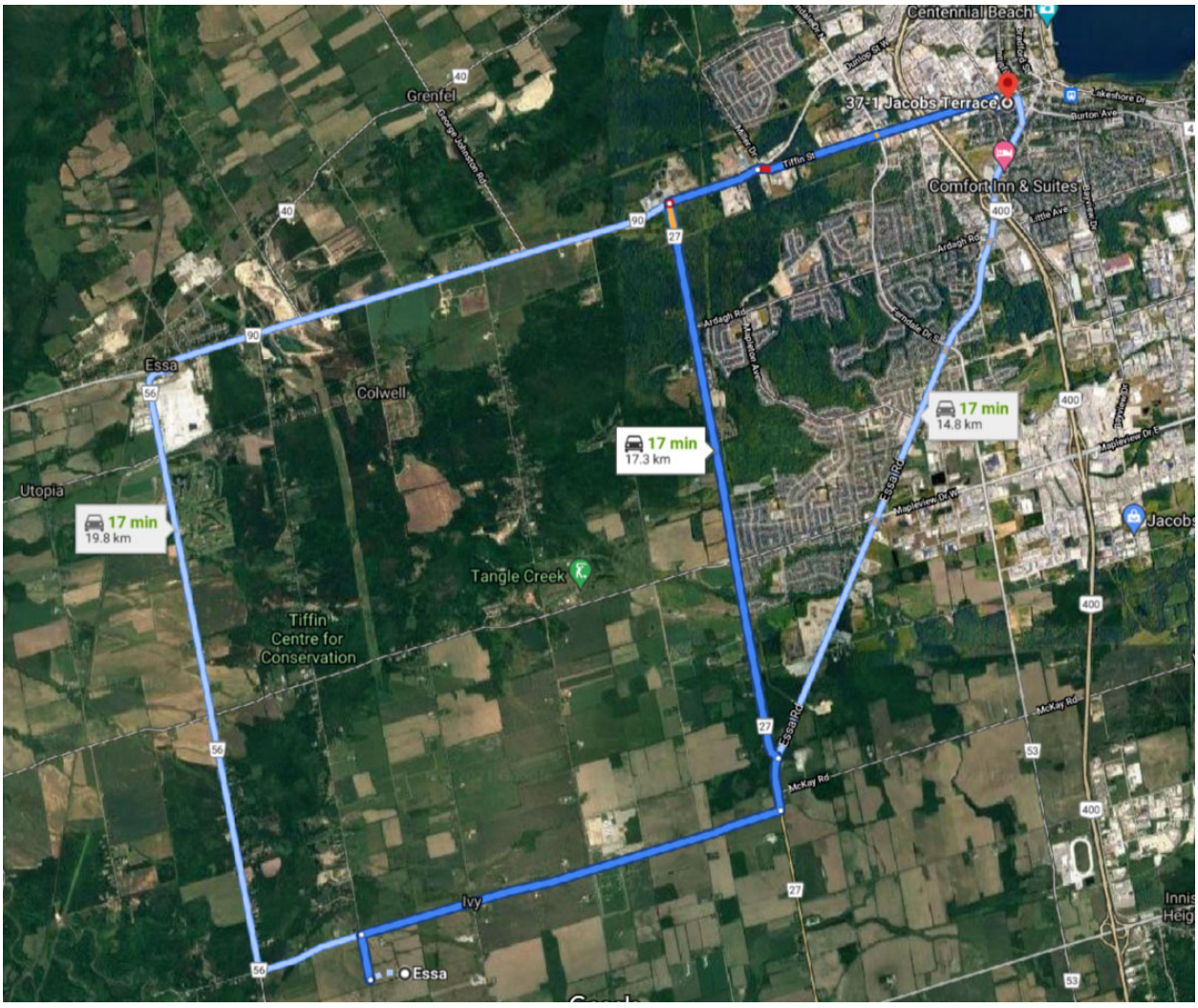
Innisfil

`


Ruby Tattoo Studio
Jiffy Lube
Klassic Car Wash
The Farmhouse
FIX AUTO BARRIE NORTH
The Canvas Barbershop & Tattoo Studio | Barrie
Canvape.com
Allandale Waterfront GO Parking
Allandale
Robertson Electric Wholesale
Tiffin St
Gowan St
Top Shops Supplies Auto Body, Paint and Refinish
37-1 Jacobs Terrace
Esso
Cumberland St
Zenetec Collision Repair Centre
Simcoe Masonry Centre
Oriental Spa
Burton Ave
Enterprise Rent-A-Car
Caroline St
Bayview Dr
William St
Marcus St
Anne St S
Alfred St
Wood St
Essa Rd
Innisfil St
Holgate St
Campbell Ave
IOOF Seniors Homes Inc
Brooks St
Mexican Bowl
St. John Vianney Parish
Baldwin Ln
400
St. John Vianney Catholic School
Murray St
Eckert Auto Sales
Current Voltage Electric
Glenridge Rd
Martin Limited
Comfort Inn & Suites
Kaycan
Allandale Heights Public School
Fraser Ct
Wendy's
Tan On The Run
Essa Park and Ride
Beertown Public House Barrie
Tara Rd
Carol Rd
Marshall St
Westburne
Canada Post Distribution Centre
Tire & Auto
Libra Rd

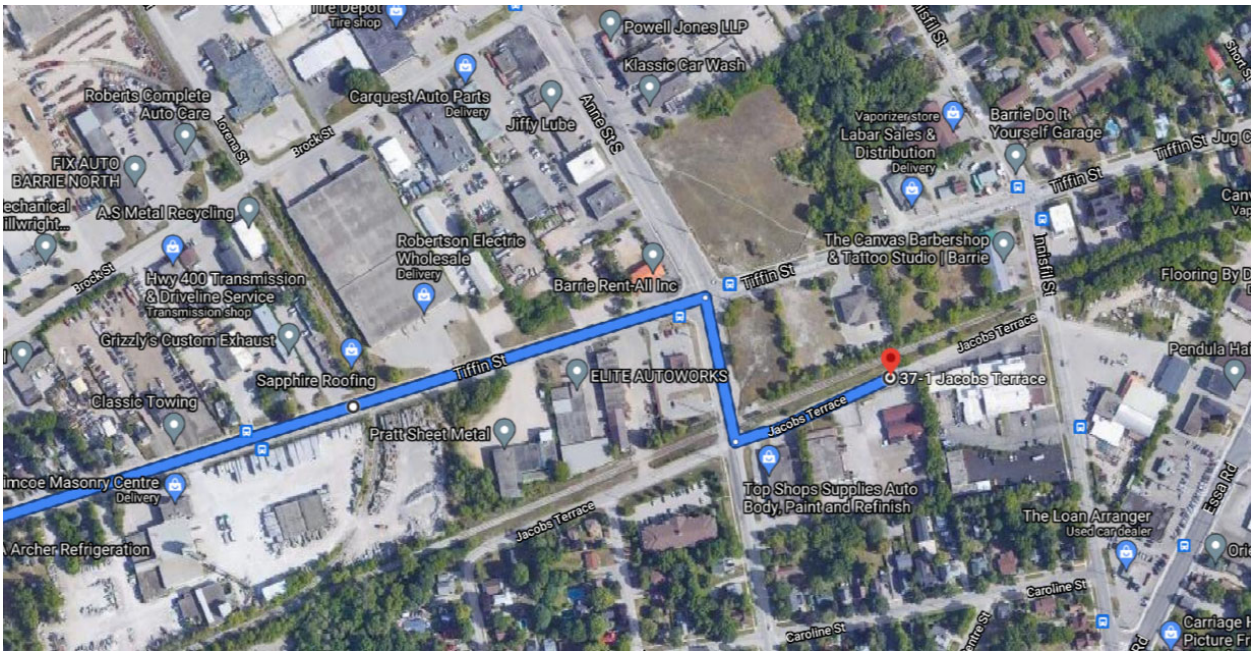
Essa

`


Centennial Beach
37-1 Jacobs Terrace, O
Comfort Inn & Suites
Grenfel
Colwell
Essa
Utopia
Tangle Creek
Tiffin Centre for Conservation
Ivy
Essa
17 min
19.8 km
17 min
17.3 km
17 min
14.8 km
Tiffin St
Ardagh Rd
McKay Rd
Essa Rd
Lakeshore Dr
Burton Ave
Little Ave
Maplehaven Dr W
Jacobs

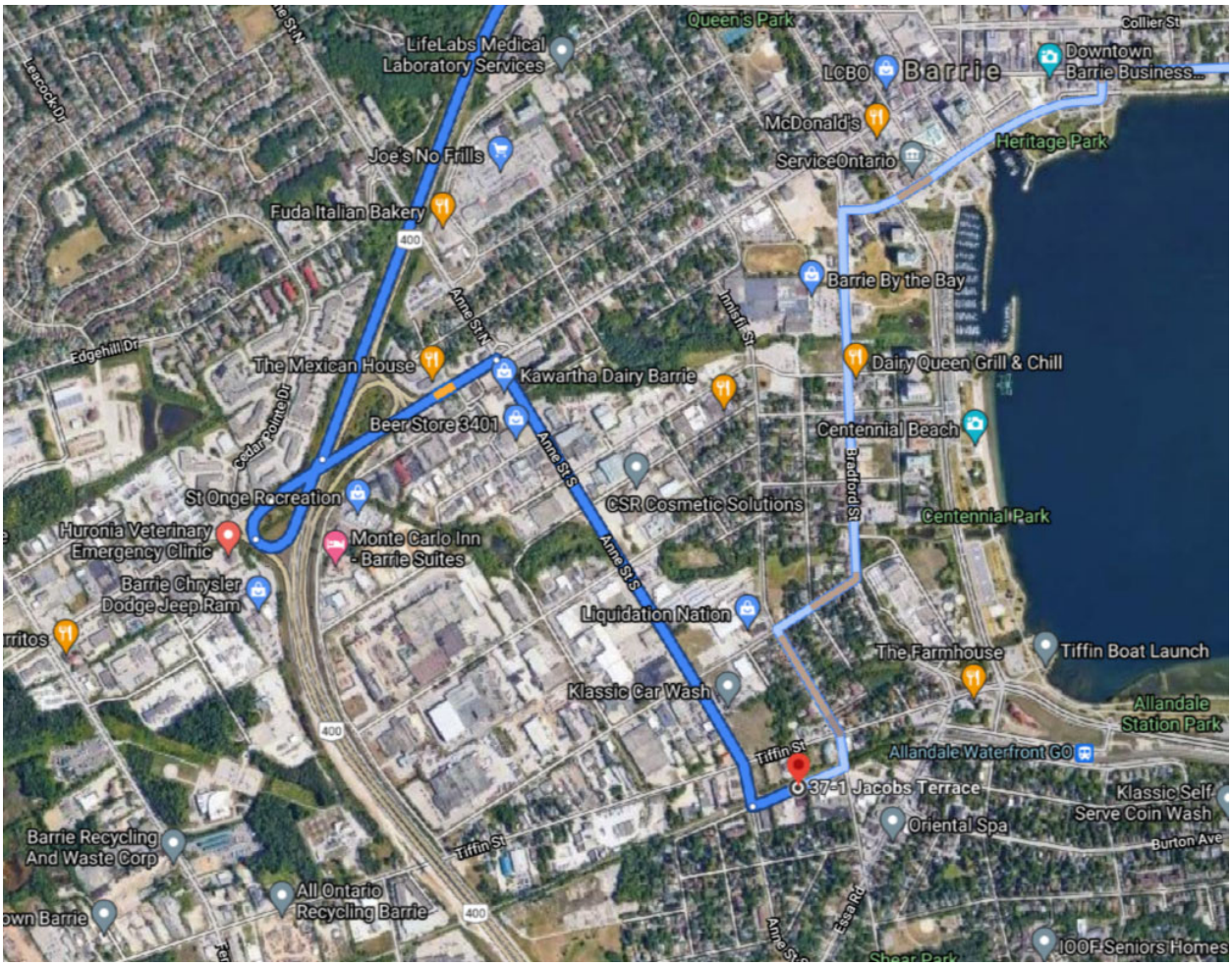
`

Spring water,



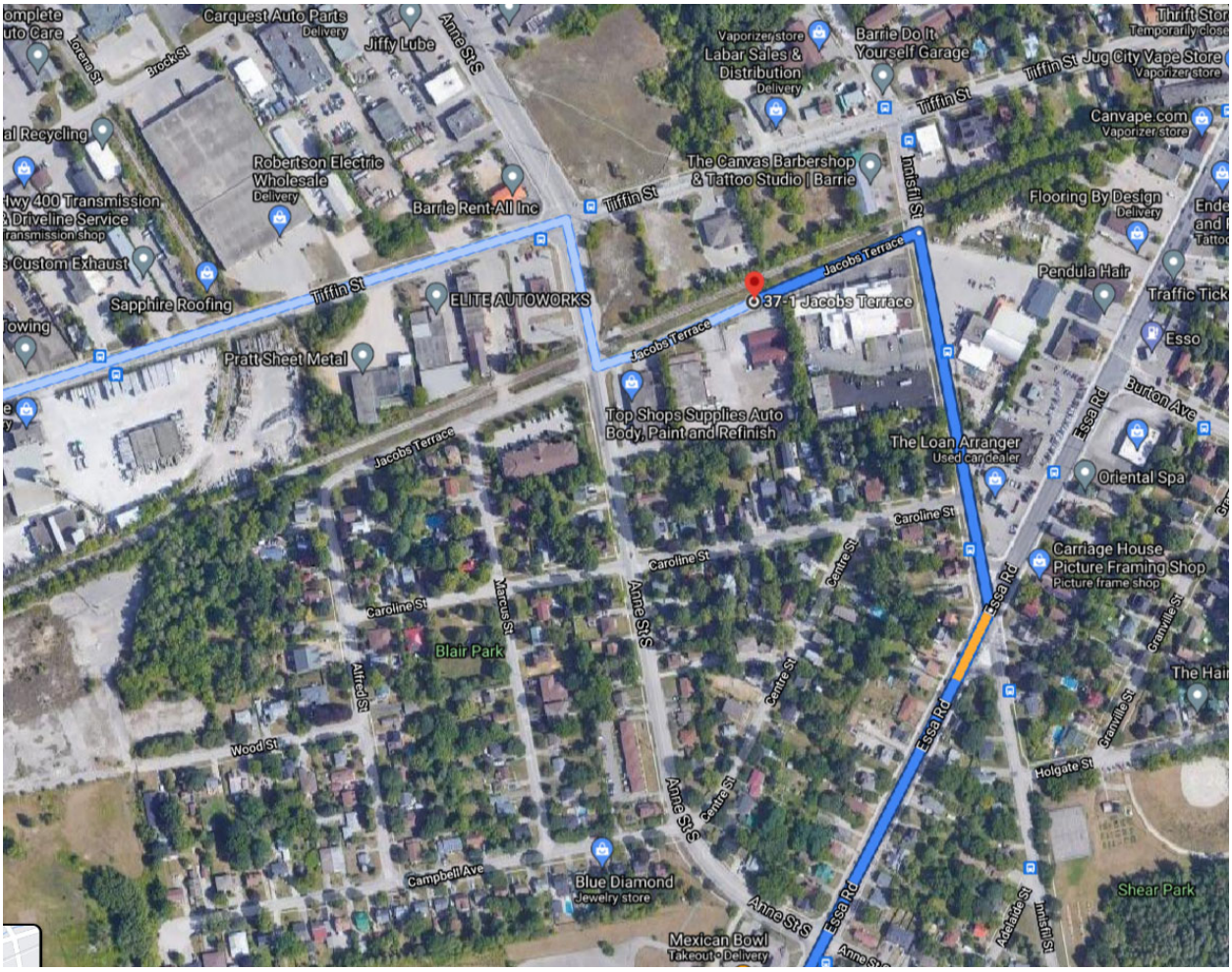
`

orilla


Queen's Park
Collier St
LifeLabs Medical Laboratory Services
LCBO
Barrie
Downtown Barrie Business...
McDonald's
Heritage Park
ServiceOntario
Joe's No Frills
Fuda Italian Bakery
400
Barrie By the Bay
Innisfil St
Anne St N
Edgehill Dr
The Mexican House
Kawartha Dairy Barrie
Dairy Queen Grill & Chill
Cedar Pointe Dr
Beer Store 3401
Centennial Beach
Anne St S
Bradford St
St Onge Recreation
CSR Cosmetic Solutions
Centennial Park
Huronia Veterinary Emergency Clinic
Monte Carlo Inn - Barrie Suites
Barrie Chrysler Dodge Jeep Ram
Liquidation Nation
The Farmhouse
Tiffin Boat Launch
Klassic Car Wash
Allandale Station Park
Tiffin St
Allandale Waterfront GO
37-1 Jacobs Terrace
Klassic Self Serve Coin Wash
Oriental Spa
Barrie Recycling And Waste Corp
Burton Ave
All Ontario Recycling Barrie
Essa Rd
IOOF Seniors Homes

`

New Tecumseth



`

AM INBOUND

Thu Jun 24 2021 16:12:53 GMT-0400 (Eastern Daylight Time) - Run Time: 23

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(8502,8525-8527)
TblG:

Filters:
(Trip purpose of destination - purp_dest In H,
and
Start time of trip - start_time In 600-900)

Trip 2016
Table:

	1	
Auto driver	145	82.4%
Walk	31	17.6%
TOTAL	176	82.4%

AM Outbound

Thu Jun 24 2021 16:20:59 GMT-0400 (Eastern Daylight Time) - Run Time: 262

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(8502,8525-8527)
TblG:

Filters:
(Trip purpose of origin - purp_orig In H,
and
Start time of trip - start_time In 600-900)

Trip 2016
Table:

	1	
Transit excludir	114	3.0%
Cycle	23	0.6%
Auto driver	2739	79.2%
GO rail only	38	1.0%
Auto passenge	264	7.0%
School bus	247	6.6%
Walk	345	9.2%
TOTAL	3770	
Total Transit	152	4%

modal split

PM INBOUND

Thu Jun 24 2021 16:16:34 GMT-0400 (Eastern Daylight Time) - Run Time: 2577ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of destination - gta06_dest

RowG:

ColG:(8502,8525-8527)

TblG:

Filters:

(Trip purpose of destination - purp_dest In H,

and

Start time of trip - start_time In 1600-1900)

Trip 2016

Table:

	1	
Transit excludir	76	2.3%
Cycle	52	1.5%
Auto driver	2872	85.4%
GO rail only	38	1.1%
Auto passenge	311	9.3%
Walk	13	0.4%
TOTAL	**3362**	
Total Transit	114	3%

PM OUTBOUND

Thu Jun 24 2021 16:18:43 GMT-0400 (Eastern Daylight Time) - Run Time: 2464ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of origin - gta06_orig

RowG:

ColG:(8502,8525-8527)

TblG:

Filters:

(Trip purpose of origin - purp_orig In H,

and

Start time of trip - start_time In 1600-1900)

Trip 2016

Table:

	1	
Auto driver	876	77.2%
Auto passenge	259	22.8%
TOTAL	**1135**	

Appendix G

Correspondences and TOR

Ameer Al Rijjal

From: Ameer Al Rijjal
Sent: Tuesday, April 19, 2022 4:17 PM
To: Justin MacDonald
Cc: Will Maria
Subject: RE: 41-43 Essa City Comments
Attachments: Regional Guidelines for Using Synchro Version 7.73 Rev.pdf; Town of Milton - Peak Hour Factor.pdf

CompleteRepository: 12805
Description: Albany Ring Road
JobNo: 12805
OperatingCentre: 613
RepoEmail: 12805@ghd.com
RepoType: Opportunity

Hi Justin,

Thank you for the meeting today, please let us know your comments regards the scope of work below:

For reference the buildout are as follows :

1. 17 Jacobs Terrace – 2025
2. Essa/Innisfil Buildings 1&2 – 2027
3. Essa/Innisfil Buildings 3&4 – 2029

Growth rates and background developments will be consistent with what we submitted previously, the change in the methodology is mainly with horizon years, improvements and when to included 17 Jacobs Terrace and 41-43 Essa Road as background traffic for one another.

17 Jacobs Terrace

- **Existing 2021**
- **Future Background 2025 (Build out) - 41-43 Essa not included as Background**
  - **NO Improvements**
- **Future Total 2025 - 41-43 Essa not included as Background**
  - **NO Improvements**
- **Future Total 2030 – 41-43 Essa Site Trips Included**
  - **With Improvements**
    - Essa Road - EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.
    - Anne Street EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.
- **Future Total 2035 – 41-43 Essa Site Trips Included**
  - **Improvements as per Masterplan – Same as what we submitted in the report.**

41-43 Essa Road

- **Existing 2021**
- **Future Background 2029 (Build out) - 17 Jacobs included as Background**
  - **With Improvements**
    - Essa Road - EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.

        - Anne Street EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.
- **Future Total 2029 - 17 Jacobs included as Background**
    - **With Improvements**
        - Essa Road - EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.
        - Anne Street EN1353 Essa Road and Anne Street Intersection – anticipated start 2026 this will include turn lanes.
- **Future Total 2034 – 17 Jacobs included as Background**
    - **With Improvements**
        - Improvements as per Masterplan – Same as what we submitted in the report.
- **Future Total 2039 - 17 Jacobs included as Background**
    - **With Improvements**
        - Improvements as per Masterplan – Same as what we submitted in the report.

In regards to peak hour factor, given the anticipated corridor growth, we suggest that a peak hour factor of 1.0 be utilized for future scenarios. Attached is the Synchro guidelines for Peal Region **(page 8 of pdf**) where they ask for a peak hour factor of 1.0 to be utilized. I also attached comments for the Town of Milton (second bullet point under Town of Milton Comments) where we were asked to utilize a peak of hour of 1.0,

	circulated these requests and will provide comment through that process.	
Town of Milton Traffic		
1	Please review and confirm that traffic volumes extracted from previous	GHD to respond

	Transportation Studies used for back developments do not account for the traffic volumes twice.	
2	For future conditions, a peak hour factor of 1.0 should be used for Town intersections. Existing peak hour factors should be used for existing conditions.	GHD to respond

Please let us know your thoughts.

Thanks again for your time this morning,

Best,

Ameer Al Rijjal

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Wednesday, April 13, 2022 10:20 AM
To: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Cc: Will Maria <William.Maria@ghd.com>
Subject: RE: 41-43 Essa City Comments

Good morning Ameer,

I have time tomorrow between 8:30 and 10am or all day Tuesday. Let me know what works for you and I can send out a Teams invite.

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020
Please consider the environment before printing this email.

From: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Sent: Tuesday, April 12, 2022 4:41 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: RE: 41-43 Essa City Comments

Hi Justin,

Sorry I did not come back to you in regards to setting up a meeting early, but I was waiting for the phasing plan first and we just received in the email below.

Does Tomorrow still work for you? If yes what is your availability.

If not can you please let us know if you are available Thursday or early next week.

Best,

Ameer Al Rijjal

From: Isabel Bercasio <isabel@rinomatogroup.com>
Sent: Tuesday, April 12, 2022 4:25 PM
To: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>; Will Maria <William.Maria@ghd.com>
Cc: Kyle Galvin <kgalvin@ipsconsultinginc.com>; Darren Vella <dvella@ipsconsultinginc.com>; TJ Rinomato <tj@rinomatogroup.com>
Subject: FW: 41-43 Essa City Comments

Hi Ameer,

Please carry the following phasing times for the development

17 Jacobs Terrace – 2025
Essa/Innisfil Buildings 1&2 – 2027
Essa/Innisfil Buildings 3&4 – 2029

Please discuss with Justin at the City of Barrie about these timelines ASAP.

Thanks,

****Please forward all invoices / statements to *accountspayable@rinomatogroup.com*****
****Please include the project name in your subject line****

Isabel Bercasio
Vice President, Multi-Family Development

401 Vaughan Valley Boulevard
Woodbridge ON | L4H 3B5

Cell: 647.533.8231
Office: 905.851.6616 Ext. 1801

rinomatogroup.com

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Click here for contact card

From: Darren Vella <dvella@ipsconsultinginc.com>
Sent: April 12, 2022 4:05 PM
To: Kyle Galvin <kgalvin@ipsconsultinginc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Mark Zwicker <zwicker@unfolded.ca>; TJ Rinomato <tj@rinomatogroup.com>; Nick Millington <nmillington@tathameng.com>; Justin Ferraro <justin.ferraro@gradientwind.com>; Will Maria <William.Maria@ghd.com>; peter@kuntzforestry.ca; labib.mousa@dsconsultants.ca; Celine Batterink <cbatterink@kuntzforestry.ca>; kim.dowell@kuntzforestry.ca; Isabel Bercasio <isabel@rinomatogroup.com>; Mark Zwicker <zwicker@unfolded.ca>; TJ Rinomato <tj@rinomatogroup.com>; Nick Millington <nmillington@tathameng.com>; Justin Ferraro <justin.ferraro@gradientwind.com>; Will Maria <William.Maria@ghd.com>; labib.mousa@dsconsultants.ca; Layal Bitar <lbitar@studiotla.ca>; Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Cc: Rahman, Sonia <Sonia.Rahman@stantec.com>; Kingston, Jeff <jeff.kingston@stantec.com>; Donald, Steve <Steve.Donald@stantec.com>; Michael Guadagnoli <michael.guadagnoli@ecovert.ca>; Adolfo Silva <adolfo.silva@ecovert.ca>; Richard Faccio <richard@rinomatogroup.com>; Jeff Watson <jwatson@astint.on.ca>; Mark Dilley <markd@tonluproperties.ca>; Jeffrey Craft <JCraft@studiotla.ca>; Jelaine Foster <Jelaine@isherwood.to>; Michael Cullen <MCullen@studiotla.ca>; David Reid <dreid@tathameng.com>; Rahman, Sonia <Sonia.Rahman@stantec.com>; Kingston, Jeff <jeff.kingston@stantec.com>; Donald, Steve <Steve.Donald@stantec.com>; Michael Guadagnoli <michael.guadagnoli@ecovert.ca>; Adolfo Silva <adolfo.silva@ecovert.ca>; Jeff Watson <jwatson@astint.on.ca>; Jelaine Foster <Jelaine@isherwood.to>
Subject: RE: 41-43 Essa City Comments

Good Afternoon Everyone

Please find attached the consolidated comment package from the City of Barrie. I would ask that you review these comments and advise of your concerns prior to April 26.

Darren Vella, MCIP, RPP
PRESIDENT & DIRECTOR OF PLANNING

647 Welham Road, Unit 9, Barrie, ON L4N 0B7
Tel: 705 – 812 - 3281 Ext. 22 Fax: 705 – 812 - 3438
E-Mail: dvella@ipsconsultinginc.com URL: www.ipsconsultinginc.com

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Ameer Al Rijjal

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Friday, May 28, 2021 2:05 PM
To: Ameer Al Rijjal
Subject: RE: TOR-Jacobs Terrace
Attachments: Essa Road & Anne Street.pdf; Tiffin Street and Innisfil Street (pdf).pdf; Anne Street and Tiffin Street.pdf

Good morning Ameer,

- growth rates based on EMME plots.
    - Anne Street – 1% per annum
    - Innisfil Street – 1% per annum
    - Jacob's Terrace – 1% per annum.
- Class EA for this area - Plans have been attached from the 2016 design. The City is currently undertaking a Class EA for the Bradford Street corridor, as information becomes available, I shall provide it.
- Signal Timing – I have requested these counts it is anticipated to be approximately 2 weeks.
- Historic Counts for all study area intersections – attached.
- Background traffic please use the following:
    - **175, 199 Essa Road & 50 Wood Street**
    - **272 Innisfil Street**
    - **220 Bradford Street**

From: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Sent: Tuesday, May 25, 2021 1:03 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: RE: TOR-Jacobs Terrace

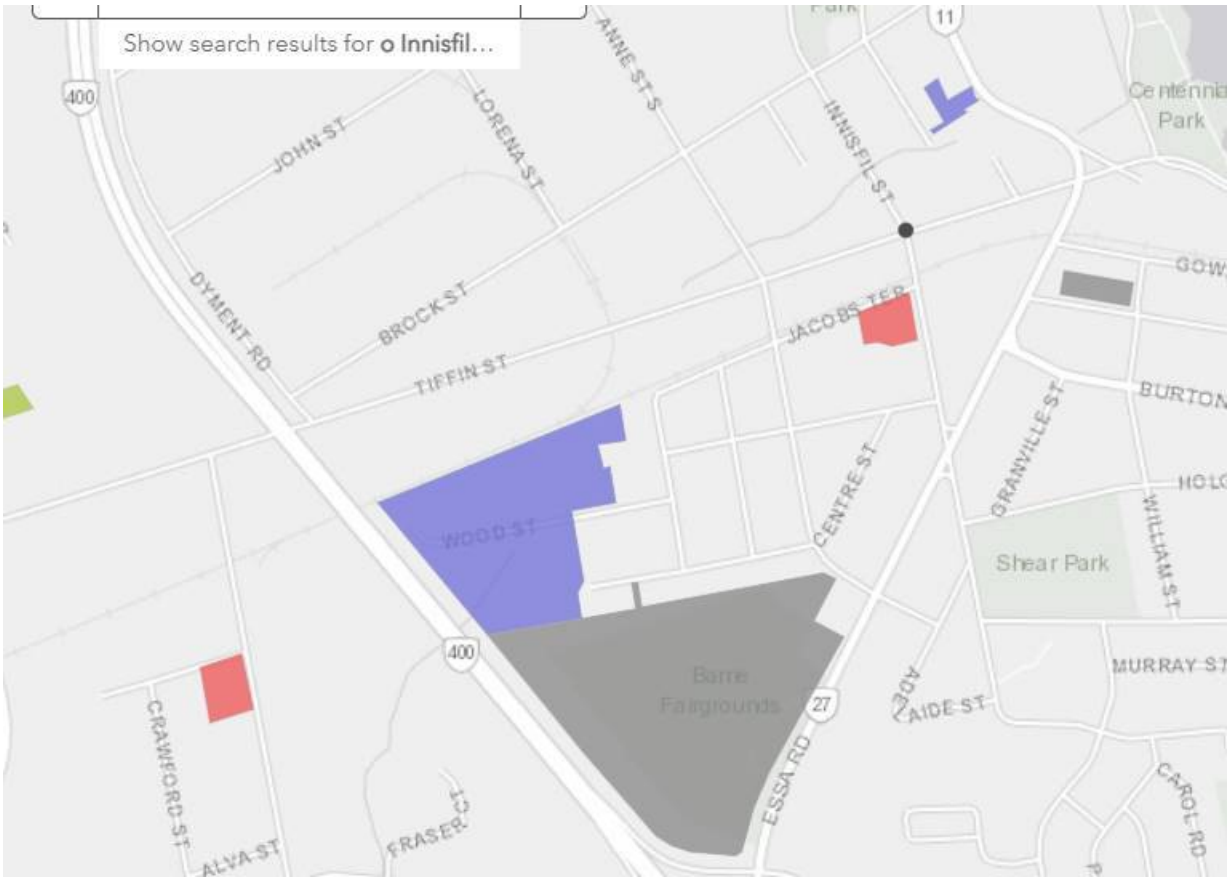
Hi Justin,

Good Afternoon,

Can you provide us with the following:

- growth rates based on EMME plots.
- Class EA for this area
- Signal Timing
- Historic Counts for all study area intersections

Also, there are couple of background developments nearby to the site, what does the City suggest we include:



Thank you,

Ameer Al Rijjal, M.Eng
Transportation Planner

GHD
T: +1 905 752 4300 E: ameer.alrijjal@ghd.com
140 Allstate Parkway Suite 210 Markham Ontario L3R 5Y8 Canada | **www.ghd.com**

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Monday, May 17, 2021 8:58 AM
To: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Subject: RE: TOR-Jacobs Terrace

Good morning,

My comments are blow in red.

From: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Sent: Wednesday, May 12, 2021 4:07 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: RE: TOR-Jacobs Terrace

Hello,

GHD will be undertaking a Transportation Impact and Parking Study in support of the proposed mixed-use residential development located at 17 Jacobs Terrace in the City of Barrie.
Our proposed Terms of Reference includes:

- **Study Intersections**:
    - Anne Street South and Tiffin Street;
    - Innisfil Street and Tiffin Street;
    - Anne Street and Essa Road; and
    - Jacobs Terrace and the site accesses..
    - **Innisfill Street and Tiffin Street**

- **Traffic Data:**
    - Given the current situation of the Civid 19 Pandamic, the collection of existing traffic data at any of the study intersections is not recommended unless the City has reason to believe that traffic has not been impacted, if it is recommended that GHD does not survey at this time can the County/MTO please confirm if there are any historic traffic data available for use in the study for the aforementioned study intersection.

I shall provide any historical counts available. Staff shall work with you to determine methodology to factor counts to current volumes.

- **Study Peak Hours:** Weekday a.m. and p.m. peak hours to be analyzed.

Confirm trips from mix use would not require an analysis of a Saturday Peak.

- **Trip Generation:** Based on latest edition of ITE 10th edition.
- **Trip Distribution:** Based on a review of 2016 TTS , existing travel patterns or a combination of both.
- **Study Horizon Year:** Horizon years will be based on City's Transportation Impact Study requirements (Existing (2021), opening year (2023), 5 year (2028) and 10 year (2033) post build-out.
- **Analysis years**
    - Existing 2021
    - Future Background 2023
    - Future Total 2023
    - Future Total 2028
    - Future Total 2033
- **Background Development Traffic:** City to confirm and provide other background Developments with supporting TIS reports to be included in the analysis?
- **Background Growth Rates:** GHD will request historic data available from City , the historic data will be utilized to estimate growth rate, in case historic data is not available can the City advise on appropriate growth rate to use for the study area intersections .

I can also provide growth rates based on the 2019 EMME plots.

- **Transportation Network:** City to confirm any planned improvements that should be included with horizon year timeframe.
- **Analysis:** completed using Synchro version 10 following the City of Barry's Guidelines.
- GHD will review TAC guidelines to complete an access management review for the site accesses and summarize the findings.
- Autoturn analysis of vehicles and truck swept paths will be completed for the site accesses to ensure proper design and on-site circulation.
- TDM to be undertaken as per the city's guidelines.
    - Given the scale of the development please refer the Section 8, 9, 10 of the TIS Guidelines are required.
    - Construction Management Plan.

Your review and comment on the proposed Terms are greatly appreciated.

Thank you,

Ameer Al Rijjal, M.Eng
Transportation Planner

GHD
T: +1 905 752 4300 E: ameer.alrijjal@ghd.com
140 Allstate Parkway Suite 210 Markham Ontario L3R 5Y8 Canada | **www.ghd.com**

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Appendix I

2nd Submission TOR Changes

Ameer Al Rijjal

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Monday, December 19, 2022 8:25 AM
To: Ameer Al Rijjal; Will Maria
Cc: Celeste Kitsemetry
Subject: RE: 17 Jacobs

Good morning Ameer,

The overall LOS appears to have improved with the mitigation measures which is good to see, but I would like still like the Sim-Traffic. Given there are specific movements which may cause queuing issues I would feel more comfortable with the Sim-Traffic output as synchro only identify maximum queuing after two cycles.

Thanks.

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020
Please consider the environment before printing this email.

From: Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Sent: Friday, December 16, 2022 5:06 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>; Will Maria <William.Maria@ghd.com>
Subject: RE: 17 Jacobs

Hi Justin,

As per our discussion, 17 Jacobs Terrace and 41 Essa Trip generation was based on an 11% Mode Split from the ITE Rate and we did Trip Generation for 80% of the unit count taking to consideration that a minimum of 20% of the units will not have a parking space . We also reduced the growth rate down to 2% on Essa Road for all study area intersections, here are the results for the two key Intersections.

We are updating our report for resubmission early next week, please advise if based on your previous comment that you still require a Sim-Traffic analysis of the Essa road intersections to be provided or is the anticipated reduction in v/c ratios sufficient to clear up that comment.

Analysis Years	Essa&Anne				Essa&Innisfil			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Overall		Overall		Overall		Overall	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
FB2025	0.62	B	0.8	C	0.4	B	0.67	C
FT2025	0.64	B	0.82	C	0.41	B	0.73	C
FB2030	0.60	B	0.78	B	0.46	B	0.85	C
FT2030	0.62	B	0.79	C	0.48	B	0.89	C
FT2035	0.63	B	0.8	C	0.45	C	0.7	C

Best,

AMEER Al Rijjal

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Thursday, December 15, 2022 7:01 PM
To: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>; Will Maria <William.Maria@ghd.com>; Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Subject: Re: Trip Generation

For ease I would agree to keep it consistent. In particular this will demonstrate the baseline reduction for the 17 Jacob's report.

Celeste to address your concern we can review these results in the 17 Jacob report. Should the City want more aggressive TDM we can pursue further reductions for 41 Essa.

If needed I am free for a call in the morning.

Get Outlook for Android

From: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>
Sent: Thursday, December 15, 2022, 5:36 p.m.
To: Will Maria <William.Maria@ghd.com>; Justin MacDonald <Justin.MacDonald@barrie.ca>; Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Subject: RE: Trip Generation

I'll let Justin respond, in particular to the modal split… but from Planning, I can confirm that we would certainly be looking for a reduction to parking for the Essa/Innisfil site (D30-016-2021) preferably even less than 0.8.

Celeste Kitsemetry, RPP
Senior Planner
City of Barrie
Central Ontario's Premier Waterfront Community

Development Services
70 Collier Street, P.O. Box 400
Barrie ON L4M 4T5
Tel: 705-739-4220 ext. 4430
Fax: 705-739-4270

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From: Will Maria <William.Maria@ghd.com>
Sent: Thursday, December 15, 2022 4:55 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>; Ameer Al Rijjal <Ameer.AlRijjal@ghd.com>
Cc: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>
Subject: RE: Trip Generation

Just had a thought since we are including Essa in our background for Jacobs in 2030 and 2035.
I know we will be going in for a parking reduction of at least 0.80 for Essa in the future.
It would make sense then when we include the Essa development in background that we include the same assumptions as for Jacob i.e. 16% mode split and 20% reduction in trip generation.
This makes both reports consistent in the end.
Please advise.

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | V: 881397 | F: 905 890 8499 | E: will.maria@ghd.com
6705 Millcreek Drive Unit 1 Mississauga ON L5N 5M4 | **www.ghd.com**
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Thursday, December 15, 2022 4:22 PM
To: Will Maria <William.Maria@ghd.com>
Cc: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>
Subject: RE: Trip Generation

If possible could we also get a future background horizon of 2030 with no subject site; this would help demonstrate corridor growth impacts.

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020
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From: Will Maria <William.Maria@ghd.com>
Sent: Thursday, December 15, 2022 4:17 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Cc: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>
Subject: RE: Trip Generation

Thank you, appreciate your review and input.
These changes I'm sure will help us to frame the report in a better light as we resubmit.

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | V: 881397 | F: 905 890 8499 | E: will.maria@ghd.com
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Please consider our environment before printing this email

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: Thursday, December 15, 2022 4:15 PM
To: Will Maria <William.Maria@ghd.com>
Cc: Celeste Kitsemetry <Celeste.Kitsemetry@barrie.ca>
Subject: RE: Trip Generation

Good afternoon Will,

I would agree the reduction in trip generation to reflect the reduction in parking would make sense and would be the only way to demonstrate the mitigation of traffic by TDM measures.

I have also reviewed the provided transit information provided by Ameer – I would recommend we land on 16% (transit and walking) which is the median of the proxy site for the PM peak. The average of the sites seems a bit high for 17 Jacob's.

We can discuss higher reductions for 41 Essa Road once we get into the details for that report.

Thanks,

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020
Please consider the environment before printing this email.

From: Will Maria <William.Maria@ghd.com>
Sent: Thursday, December 15, 2022 2:45 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: Trip Generation

Hi Justin, based on our discussion yesterday and the desire for the City to have us reduce parking so that we can accommodate more population within this zone, can I ask if reducing our parking supply say down to 0.80 spaces per unit can result in us reducing our trip generation by 20% as well.
Assuming that the ITE rates assume each unit own a parking space at a minimum, then if we reduce the parking down to 0.80, it should result in a reduction in the trip generation since there will be less vehicles to make the trip.
Will the city accept a 20% reduction in site trip for the site, which will allow us to show the impact at the intersection capacity level.
If we reduce parking to 0.80 per unit but keep trip generation unchanged, then the parking reduction has no impact on the intersection capacity.
We are hoping to submit the report early next week so a speedy reply would be appreciated.
Thanks,

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | V: 881397 | F: 905 890 8499 | E: will.maria@ghd.com
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Appendix J

GO Terminal TTS - Modal Split

AM
OUTBOUND

Mon Dec 12 2022 14:14:06 GMT-0500 (Eastern Standard Time) - Run Time: 2527ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(1050 1051 1052)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

Transit excluding GO rail	208	Transit excluding GO rail
Cycle	24	cycle
Auto driver	2875	Auto driver
GO rail only	426	GO rail only
		motorcycle
Joint GO rail and local transit	35	Joint GO rail and local transit
Auto passenger	444	Auto passenger
School bus	104	School bus
		Taxi passenger
		Paid rideshare
Walk	48	Walk
	4164	

PM
OUTBOUND

Mon Dec 12 2022 14:17:03 GMT-0500 (Eastern Standard Time) - Run Time: 2474ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(1050 1051 1052)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

	1	
Transit excluding GO rail	194	Transit excluding GO rail
		cycle
Auto driver	3944	Auto driver
GO rail only	439	GO rail only
		motorcycle
Joint GO rail and local transit	22	Joint GO rail and local transit
Auto passenger	603	Auto passenger
School bus	17	School bus
		Taxi passenger
		Paid rideshare
Walk	22	Walk
	5242	

AM TOTAL

Transit excluding GO rail	208	5%
cycle	24	1%
Auto driver	2875	69%
GO rail only	426	10%
motorcycle	0	0%
Joint GO rail and local transi	35	1%
Auto passenger	444	11%
School bus	104	2%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	48	1%
	4164	100%

PM TOTAL

Transit excluding GO rail	194	4%
cycle	0	0%
Auto driver	3944	75%
GO rail only	439	8%
motorcycle	0	0%
Joint GO rail and local transit	22	0%
Auto passenger	603	12%
School bus	17	0%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	22	0%
	5241	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	19%	13%
Auto driver	69%	75%
Auto passenger	11%	12%
Walk	2%	0%
TOTAL	100%	100%

20% 13%

AM
OUTBOUND

Mon Dec 12 2022 14:24:20 GMT-0500 (Eastern Standard Time) - Run Time: 2492ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(571)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

	1	
Transit excluding GO rail	440	Transit excluding GO rail
Cycle	39	cycle
Auto driver	3004	Auto driver
GO rail only	522	GO rail only
		motorcycle
Joint GO rail and local transit	103	Joint GO rail and local transit
Auto passenger	508	Auto passenger
School bus	119	School bus
		Taxi passenger
		Paid rideshare
Walk	461	Walk
	5196	

PM
OUTBOUND

Mon Dec 12 2022 14:25:41 GMT-0500 (Eastern Standard Time) - Run Time: 2343ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(571)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

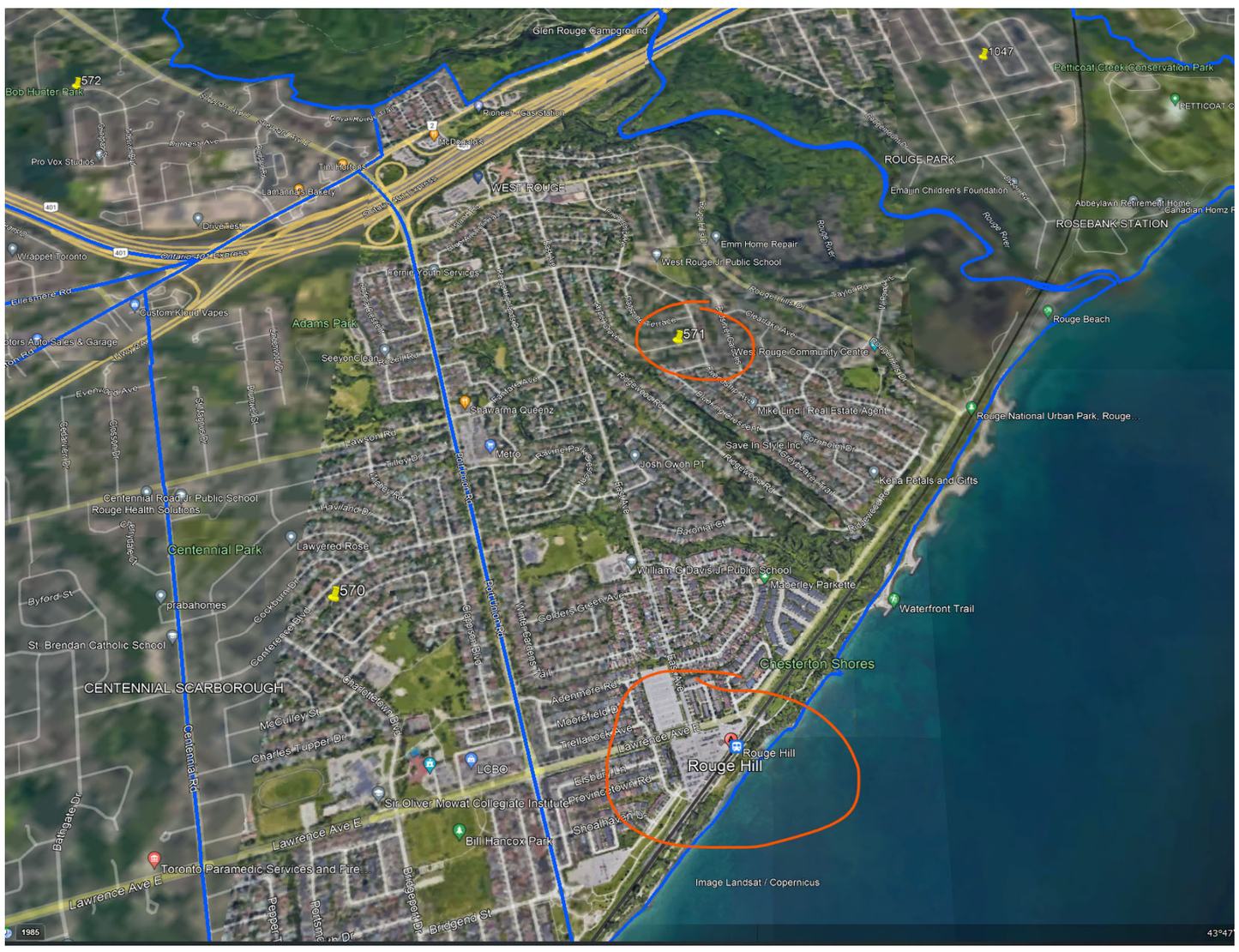
	1	
Transit excluding GO rail	342	Transit excluding GO rail
		cycle
Auto driver	3426	Auto driver
GO rail only	388	GO rail only
		motorcycle
Joint GO rail and local transit	142	Joint GO rail and local transit
Other	32	Auto passenger
Auto passenger	681	School bus
Taxi passenger	19	Taxi passenger
		Paid rideshare
Walk	207	Walk
	5237	

AM TOTAL		
Transit excluding GO rail	440	8%
cycle	39	1%
Auto driver	3004	58%
GO rail only	522	10%
motorcycle	0	0%
Joint GO rail and local transi	103	2%
Auto passenger	508	10%
School bus	119	2%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	461	9%
	5196	100%

PM TOTAL		
Transit excluding GO rail	342	7%
cycle	0	0%
Auto driver	3426	65%
GO rail only	388	7%
motorcycle	0	0%
Joint GO rail and local transit	142	3%
Auto passenger	32	1%
School bus	681	13%
Taxi passenger	19	0%
Paid rideshare	0	0%
Walk	207	4%
	5237	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	23%	30%
Auto driver	58%	65%
Auto passenger	10%	1%
Walk	10%	4%
TOTAL	100%	100%

	32%	34%



AM
OUTBOUND

Mon Dec 12 2022 14:44:22 GMT-0500 (Eastern Standard Time) - Run Time: 2397ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(3349,3492)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

	1	
Transit excluding GO rail	151	Transit excluding GO rail
		cycle
Auto driver	682	Auto driver
	30	GO rail only
		motorcycle
Joint GO rail and local transit	35	Joint GO rail and local transit
Auto passenger	85	Auto passenger
	59	School bus
		Taxi passenger
		Paid rideshare
	139	Walk
	1181	

PM
OUTBOUND

Mon Dec 12 2022 14:25:41 GMT-0500 (Eastern Standard Time) - Run Time: 2343ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(3349,3492)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

	1	
Transit excluding GO rail	64	Transit excluding GO rail
		cycle
Auto driver	980	Auto driver
GO rail only	30	GO rail only
		motorcycle
Joint GO rail and local transit	35	Joint GO rail and local transit
Auto passenger	92	Auto passenger
	59	School bus
Taxi passenger	0	Taxi passenger
		Paid rideshare
Walk	44	Walk
	1304	

AM TOTAL

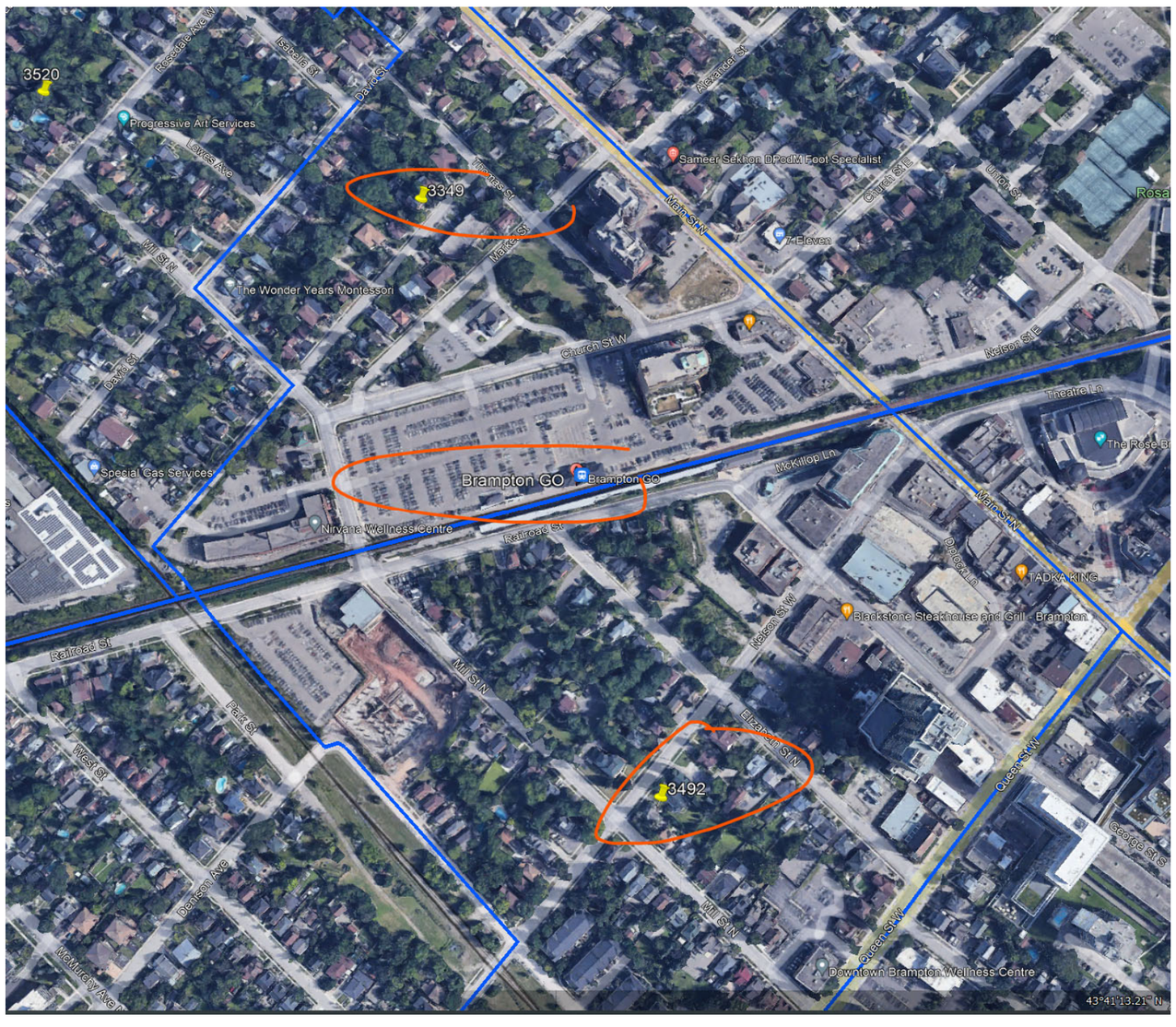
Transit excluding GO rail	151	13%
cycle	0	0%
Auto driver	682	58%
GO rail only	30	3%
motorcycle	0	0%
Joint GO rail and local transi	35	3%
Auto passenger	85	7%
School bus	59	5%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	139	12%
	1181	100%

PM TOTAL

Transit excluding GO rail	64	5%
cycle	0	0%
Auto driver	980	75%
GO rail only	30	2%
motorcycle	0	0%
Joint GO rail and local transit	35	3%
Auto passenger	92	7%
School bus	59	5%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	44	3%
	1304	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	23%	14%
Auto driver	58%	75%
Auto passenger	7%	7%
Walk	12%	3%
TOTAL	100%	100%

35% 18%



AM
OUTBOUND

Mon Dec 12 2022 15:05:31 GMT-0500 (Eastern Standard Time) - Run Time: 2585ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(2243 2245)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

	1	
Transit excluding GO rail	618	Transit excluding GO rail
Cycle	42	cycle
Auto driver	2992	Auto driver
GO rail only	103	GO rail only
		motorcycle
		Joint GO rail and local transit
Auto passenger	490	Auto passenger
School bus	44	School bus
		Taxi passenger
		Paid rideshare
Walk	355	Walk
	4644	

PM
OUTBOUND

Mon Dec 12 2022 15:07:10 GMT-0500 (Eastern Standard Time) - Run Time: 2475ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(2243 2245)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

	1	
Transit excluding GO rail	337	Transit excluding GO rail
Cycle	42	cycle
Auto driver	3115	Auto driver
GO rail only	103	GO rail only
		motorcycle
		Joint GO rail and local transit
Auto passenger	459	Auto passenger
		School bus
		Taxi passenger
		Paid rideshare
Walk	112	Walk
	4168	

AM TOTAL

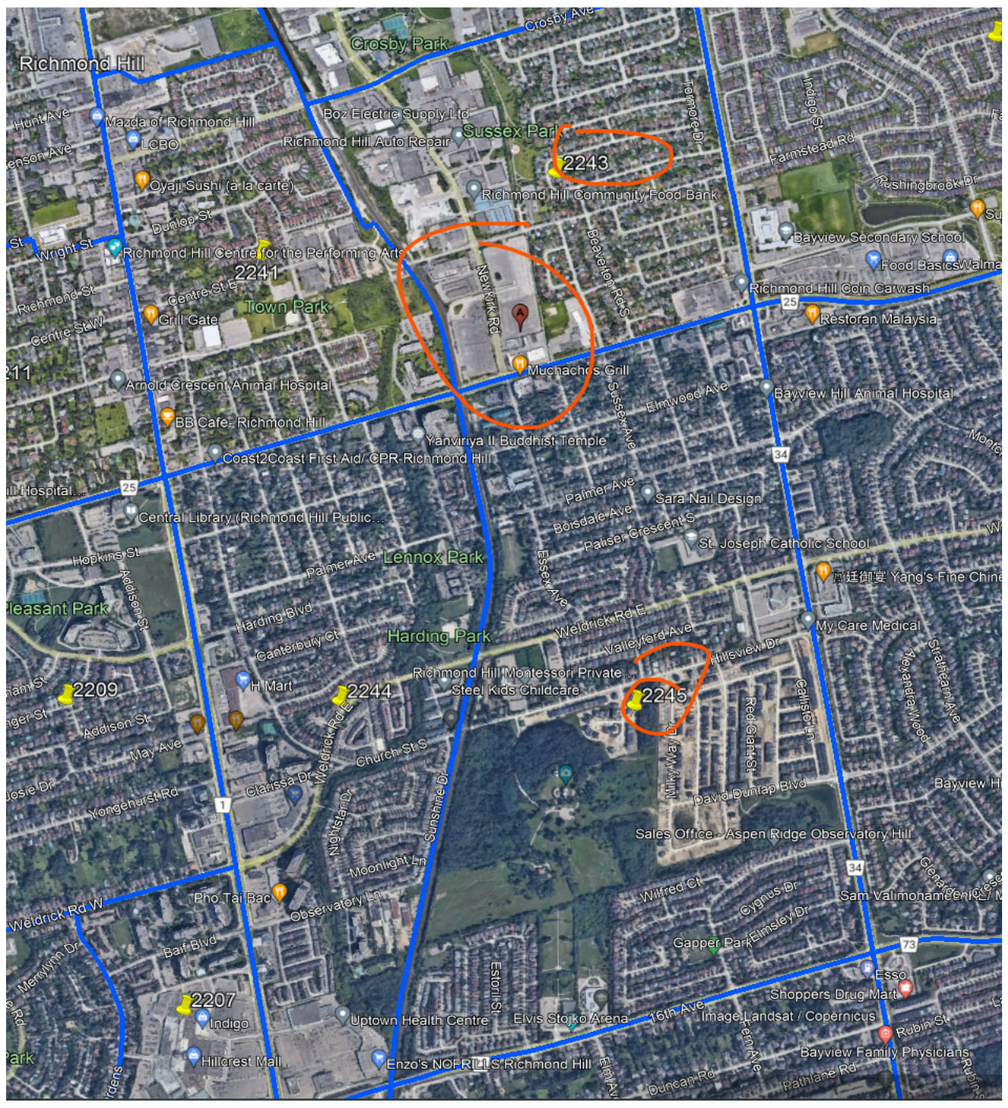
Transit excluding GO rail	618	13%
cycle	42	1%
Auto driver	2992	64%
GO rail only	103	2%
motorcycle	0	0%
Joint GO rail and local transi	0	0%
Auto passenger	490	11%
School bus	44	1%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	355	8%
	4644	100%

PM TOTAL

Transit excluding GO rail	337	8%
cycle	42	1%
Auto driver	3115	75%
GO rail only	103	2%
motorcycle	0	0%
Joint GO rail and local transit	0	0%
Auto passenger	459	11%
School bus	0	0%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	112	3%
	4168	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	16%	11%
Auto driver	64%	75%
Auto passenger	11%	11%
Walk	9%	4%
TOTAL	100%	100%

25% 14%



AM
OUTBOUND

Mon Dec 12 2022 15:18:47 GMT-0500 (Eastern Standard Time) - Run Time: 2529ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(8812)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

	1	
Transit excluding GO rail	250	Transit excluding GO rail
Cycle	276	cycle
Auto driver	1631	Auto driver
		GO rail only
		motorcycle
		Joint GO rail and local transit
Auto passenger	109	Auto passenger
Taxi passenger	33	School bus
		Taxi passenger
		Paid rideshare
Walk	253	Walk
	2302	

PM
OUTBOUND

Mon Dec 12 2022 15:16:42 GMT-0500 (Eastern Standard Time) - Run Time: 2532ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(8812)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

	1	
Transit excluding GO rail	255	Transit excluding GO rail
Cycle	340	cycle
Auto driver	1815	Auto driver
		GO rail only
		motorcycle
		Joint GO rail and local transit
Auto passenger	239	Auto passenger
Taxi passenger	71	School bus
		Taxi passenger
		Paid rideshare
Walk	239	Walk
	2959	

AM TOTAL

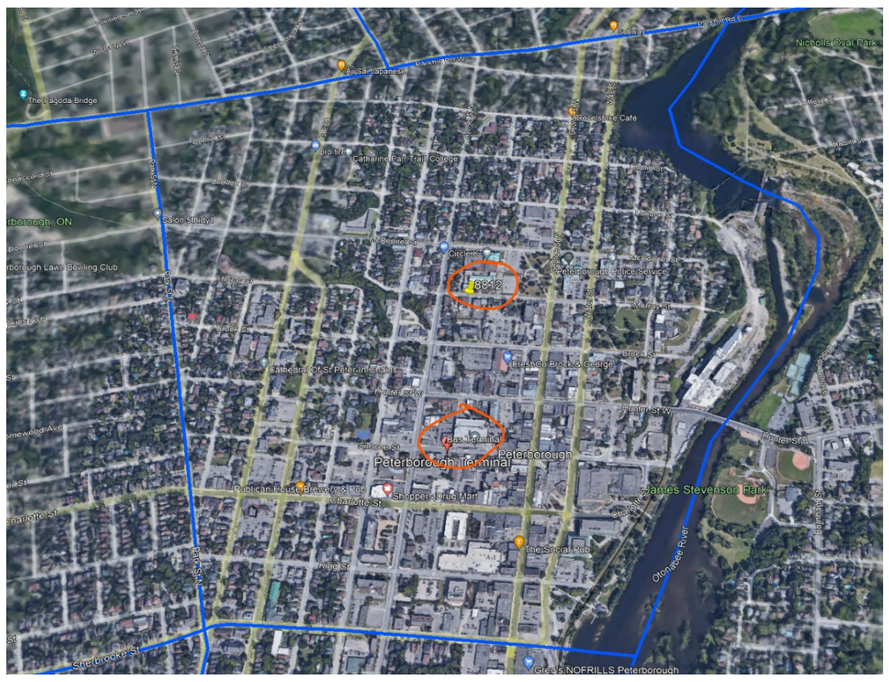
Transit excluding GO rail	250	11%
cycle	276	12%
Auto driver	1631	71%
GO rail only	0	0%
motorcycle	0	0%
Joint GO rail and local transi	0	0%
Auto passenger	109	5%
School bus	33	1%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	253	11%
	2302	111%

PM TOTAL

Transit excluding GO rail	255	9%
cycle	340	11%
Auto driver	1815	61%
GO rail only	0	0%
motorcycle	0	0%
Joint GO rail and local transit	0	0%
Auto passenger	239	8%
School bus	71	2%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	239	8%
	2959	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	12%	11%
Auto driver	71%	61%
Auto passenger	5%	8%
Walk	23%	20%
TOTAL	111%	100%

35% 31%



AM
OUTBOUND

Mon Dec 12 2022 15:10:21 GMT-0500 (Eastern Standard Time) - Run Time: 2606ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(2670 2672)

TblG:

Filters:

Start time of trip - start_time In 600-900

Trip 2016

Table:

	1	
		Transit excluding GO rail
		cycle
Auto driver	1151	Auto driver
GO rail only	37	GO rail only
		motorcycle
Joint GO rail and local transit	56	Joint GO rail and local transit
Auto passenger	159	Auto passenger
School bus	49	School bus
Taxi passenger	47	Taxi passenger
		Paid rideshare
Walk	78	Walk
	1577	

PM
OUTBOUND

Mon Dec 12 2022 15:13:57 GMT-0500 (Eastern Standard Time) - Run Time: 2664ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime

Column: 2006 GTA zone of household - gta06_hhld

RowG:

ColG:(2670 2672)

TblG:

Filters:

Start time of trip - start_time In 1600-1900

Trip 2016

Table:

	1	
Transit excluding GO rail	14	Transit excluding GO rail
		cycle
Auto driver	1552	Auto driver
GO rail only	37	GO rail only
		motorcycle
Joint GO rail and local transit	56	Joint GO rail and local transit
Auto passenger	30	Auto passenger
		School bus
		Taxi passenger
		Paid rideshare
		Walk
	1689	

AM TOTAL

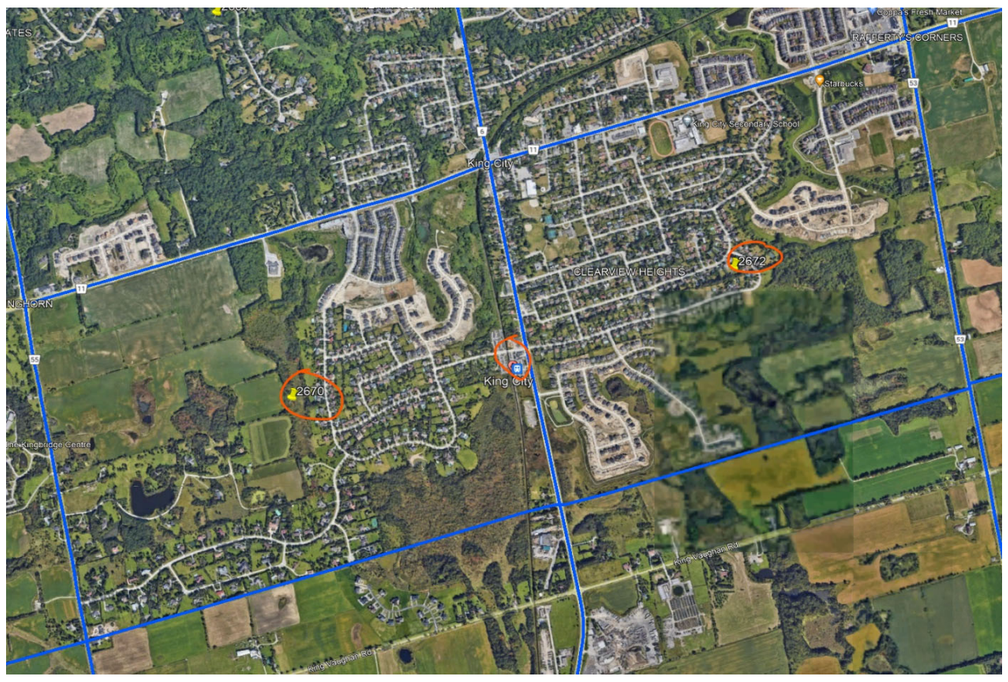
Transit excluding GO rail	0	0%
cycle	0	0%
Auto driver	1151	73%
GO rail only	37	2%
motorcycle	0	0%
Joint GO rail and local transi	56	4%
Auto passenger	159	10%
School bus	49	3%
Taxi passenger	47	3%
Paid rideshare	0	0%
Walk	78	5%
	1577	100%

PM TOTAL

Transit excluding GO rail	14	1%
cycle	0	0%
Auto driver	1552	92%
GO rail only	37	2%
motorcycle	0	0%
Joint GO rail and local transit	56	3%
Auto passenger	30	2%
School bus	0	0%
Taxi passenger	0	0%
Paid rideshare	0	0%
Walk	0	0%
	1689	100%

Transportation Mode	Percentage Split	
	AM	PM
Transit	9%	6%
Auto driver	73%	92%
Auto passenger	13%	2%
Walk	5%	0%
TOTAL	100%	100%

14% 6%



summary		
	Percentage Split	
portation	AM	PM
Transit	17%	14%
Auto driver	65%	74%
Auto passe	9%	7%
Walk	10%	5%
TOTAL	102%	100%

Appendix K

SimTraffic

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4488	4590	4585	4525	4689	4574
Vehs Exited	4488	4594	4568	4542	4659	4569
Starting Vehs	161	128	118	136	119	128
Ending Vehs	161	124	135	119	149	133
Travel Distance (km)	3039	3061	3039	3061	3116	3063
Travel Time (hr)	134.1	137.2	136.8	135.4	136.4	136.0
Total Delay (hr)	64.8	67.3	67.4	65.7	65.4	66.1
Total Stops	6992	7013	7042	6973	7121	7029
Fuel Used (l)	334.7	339.9	339.4	337.9	344.6	339.3

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4488	4590	4585	4525	4689	4574
Vehs Exited	4488	4594	4568	4542	4659	4569
Starting Vehs	161	128	118	136	119	128
Ending Vehs	161	124	135	119	149	133
Travel Distance (km)	3039	3061	3039	3061	3116	3063
Travel Time (hr)	134.1	137.2	136.8	135.4	136.4	136.0
Total Delay (hr)	64.8	67.3	67.4	65.7	65.4	66.1
Total Stops	6992	7013	7042	6973	7121	7029
Fuel Used (l)	334.7	339.9	339.4	337.9	344.6	339.3

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	13.3	21.0	0.1	18
	6	9.8	33.6	0.3	36
Total		23.2	54.6	0.4	29

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	9.4	23.0	0.2	31
Anne St S	5	8.4	32.6	0.3	37
Total		17.8	55.6	0.5	35

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (m)	95.0	78.0	45.9	53.9	41.3	78.4	27.5
Average Queue (m)	51.0	29.2	17.1	20.4	19.3	27.2	21.8
95th Queue (m)	85.7	64.7	37.4	40.3	33.9	58.2	32.0
Link Distance (m)	94.9	94.9	310.0	310.0	114.2	532.2	
Upstream Blk Time (%)	1	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)							25.0
Storage Blk Time (%)						4	5
Queuing Penalty (veh)						11	6

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	47.6	57.8	41.0	45.7	42.9	18.0	60.7	22.4
Average Queue (m)	13.9	23.4	12.3	18.6	14.4	3.6	24.7	5.6
95th Queue (m)	34.8	45.5	30.2	38.3	31.9	14.1	47.6	20.9
Link Distance (m)	310.0	310.0	170.0	170.0	109.4		275.6	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					11	0	16	0
Queuing Penalty (veh)					3	0	8	0

Zone Summary

Zone wide Queuing Penalty: 29

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	4676	4626	4805	4863	4795	4752
Vehs Exited	4671	4652	4807	4867	4778	4755
Starting Vehs	140	147	135	138	137	137
Ending Vehs	145	121	133	134	154	136
Travel Distance (km)	3107	3037	3233	3238	3167	3156
Travel Time (hr)	144.5	132.8	144.5	149.2	142.5	142.7
Total Delay (hr)	73.2	63.4	70.7	75.0	70.1	70.5
Total Stops	7205	7174	7632	7697	7487	7440
Fuel Used (l)	350.7	336.4	357.6	364.6	354.9	352.9

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	4676	4626	4805	4863	4795	4752
Vehs Exited	4671	4652	4807	4867	4778	4755
Starting Vehs	140	147	135	138	137	137
Ending Vehs	145	121	133	134	154	136
Travel Distance (km)	3107	3037	3233	3238	3167	3156
Travel Time (hr)	144.5	132.8	144.5	149.2	142.5	142.7
Total Delay (hr)	73.2	63.4	70.7	75.0	70.1	70.5
Total Stops	7205	7174	7632	7697	7487	7440
Fuel Used (l)	350.7	336.4	357.6	364.6	354.9	352.9

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	14.8	22.5	0.1	17
	6	10.7	34.6	0.3	35
Total		25.5	57.2	0.4	28

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	9.8	23.3	0.2	30
Anne St S	5	9.0	32.9	0.3	37
Total		18.8	56.2	0.5	34

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (m)	105.1	88.6	49.3	54.7	42.3	69.8	27.5
Average Queue (m)	60.0	34.6	18.4	22.5	20.6	25.6	22.9
95th Queue (m)	100.5	73.7	36.8	43.1	35.7	55.5	32.2
Link Distance (m)	94.9	94.9	310.0	310.0	114.2	532.2	
Upstream Blk Time (%)	2	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)							25.0
Storage Blk Time (%)						4	4
Queuing Penalty (veh)						11	5

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	49.2	66.5	39.2	47.2	41.4	17.7	64.5	22.5
Average Queue (m)	16.9	25.7	12.9	17.9	14.2	4.0	26.0	9.3
95th Queue (m)	37.4	51.7	29.9	36.0	33.0	14.9	51.6	26.4
Link Distance (m)	310.0	310.0	170.1	170.1	109.4		159.0	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					9	0	14	1
Queuing Penalty (veh)					3	0	12	1

Zone Summary

Zone wide Queuing Penalty: 32

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5894	5760	5788	5893	5874	5835
Vehs Exited	5884	5792	5814	5875	5821	5837
Starting Vehs	189	184	185	177	134	171
Ending Vehs	199	152	159	195	187	173
Travel Distance (km)	3529	3433	3448	3482	3452	3469
Travel Time (hr)	239.5	191.2	214.9	264.0	228.9	227.7
Total Delay (hr)	158.7	112.5	135.7	184.3	149.7	148.2
Total Stops	9462	8820	9198	9928	8859	9252
Fuel Used (l)	468.3	418.6	439.4	483.2	453.9	452.7

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5894	5760	5788	5893	5874	5835
Vehs Exited	5884	5792	5814	5875	5821	5837
Starting Vehs	189	184	185	177	134	171
Ending Vehs	199	152	159	195	187	173
Travel Distance (km)	3529	3433	3448	3482	3452	3469
Travel Time (hr)	239.5	191.2	214.9	264.0	228.9	227.7
Total Delay (hr)	158.7	112.5	135.7	184.3	149.7	148.2
Total Stops	9462	8820	9198	9928	8859	9252
Fuel Used (l)	468.3	418.6	439.4	483.2	453.9	452.7

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	7.5	15.0	0.1	25
	6	13.7	37.7	0.3	32
Total		21.2	52.7	0.4	30

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	11.6	25.1	0.2	28
Anne St S	5	15.7	39.9	0.3	30
Total		27.3	64.9	0.5	30

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	56.3	53.5	47.5	1.7	65.7	65.9	37.2	25.7	22.5	65.2	27.5
Average Queue (m)	26.1	22.9	18.1	0.1	32.6	35.4	17.1	9.7	8.4	20.7	22.6
95th Queue (m)	46.3	42.3	38.9	1.2	56.0	60.3	33.3	21.0	19.3	49.3	31.8
Link Distance (m)	93.2	93.2	93.2		305.4	305.4	112.2	112.2	530.3	530.3	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				50.0							25.0
Storage Blk Time (%)					1					1	7
Queuing Penalty (veh)					0					4	5

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	59.4	66.8	49.4	59.2	46.2	17.9	70.6	22.5
Average Queue (m)	24.7	32.2	17.6	21.9	13.7	4.4	31.0	10.2
95th Queue (m)	49.2	60.1	38.3	44.6	33.9	15.5	62.2	27.3
Link Distance (m)	305.4	305.4	167.9	167.9	106.3			
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					11	0	17	1
Queuing Penalty (veh)					3	0	19	1

Zone Summary

Zone wide Queuing Penalty: 33

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5372	5462	5391	5540	5482	5450
Vehs Exited	5405	5411	5414	5502	5457	5438
Starting Vehs	211	141	192	162	157	174
Ending Vehs	178	192	169	200	182	180
Travel Distance (km)	3572	3570	3531	3606	3575	3571
Travel Time (hr)	213.2	212.5	245.3	275.5	185.9	226.5
Total Delay (hr)	131.3	130.8	164.6	192.8	104.0	144.7
Total Stops	9471	9056	9136	9821	9085	9313
Fuel Used (l)	442.5	444.2	470.3	498.9	423.6	455.9

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5372	5462	5391	5540	5482	5450
Vehs Exited	5405	5411	5414	5502	5457	5438
Starting Vehs	211	141	192	162	157	174
Ending Vehs	178	192	169	200	182	180
Travel Distance (km)	3572	3570	3531	3606	3575	3571
Travel Time (hr)	213.2	212.5	245.3	275.5	185.9	226.5
Total Delay (hr)	131.3	130.8	164.6	192.8	104.0	144.7
Total Stops	9471	9056	9136	9821	9085	9313
Fuel Used (l)	442.5	444.2	470.3	498.9	423.6	455.9

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	7.4	14.9	0.1	26
	6	14.1	38.0	0.3	32
Total		21.6	53.0	0.4	30

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	11.8	25.2	0.2	28
Anne St S	5	15.6	39.7	0.3	31
Total		27.4	64.8	0.5	30

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	56.6	41.2	39.6	3.4	67.2	75.0	35.4	24.6	21.4	75.5	27.5
Average Queue (m)	28.1	22.6	16.8	0.2	32.0	35.3	15.0	9.9	8.8	23.8	22.8
95th Queue (m)	49.9	39.5	34.6	2.5	55.9	61.6	29.9	20.4	18.9	55.2	31.5
Link Distance (m)	93.2	93.2	93.2		305.4	305.4	112.2	112.2	530.3	530.3	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				50.0							25.0
Storage Blk Time (%)					1					2	9
Queuing Penalty (veh)					0					6	6

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	69.7	72.4	45.4	58.5	44.8	17.4	66.6	22.5
Average Queue (m)	27.7	30.5	17.1	22.3	15.1	4.5	28.1	13.1
95th Queue (m)	54.4	59.4	37.2	44.8	34.1	15.3	57.2	29.8
Link Distance (m)	305.4	305.4	167.9	167.9	106.3		154.0	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					11	0	15	1
Queuing Penalty (veh)					3	0	22	1

Zone Summary

Zone wide Queuing Penalty: 40

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6027	6147	6255	6275	6217	6188
Vehs Exited	6036	6139	6244	6313	6211	6189
Starting Vehs	178	158	172	187	183	169
Ending Vehs	169	166	183	149	189	165
Travel Distance (km)	3895	3940	4002	4083	4006	3985
Travel Time (hr)	173.8	177.0	180.0	183.6	183.5	179.6
Total Delay (hr)	84.3	86.5	87.9	89.9	91.5	88.0
Total Stops	9369	9564	9785	9754	9649	9623
Fuel Used (l)	435.2	442.1	450.2	458.5	454.1	448.0

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6027	6147	6255	6275	6217	6188
Vehs Exited	6036	6139	6244	6313	6211	6189
Starting Vehs	178	158	172	187	183	169
Ending Vehs	169	166	183	149	189	165
Travel Distance (km)	3895	3940	4002	4083	4006	3985
Travel Time (hr)	173.8	177.0	180.0	183.6	183.5	179.6
Total Delay (hr)	84.3	86.5	87.9	89.9	91.5	88.0
Total Stops	9369	9564	9785	9754	9649	9623
Fuel Used (l)	435.2	442.1	450.2	458.5	454.1	448.0

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	7.3	14.8	0.1	26
	6	14.7	38.4	0.3	32
Total		22.0	53.2	0.4	30

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	12.3	25.6	0.2	28
Anne St S	5	20.2	44.4	0.3	27
Total		32.5	70.0	0.5	27

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	66.6	52.4	45.4	5.1	80.3	91.1	40.8	27.0	18.9	83.6	27.5
Average Queue (m)	28.3	23.0	19.1	0.2	39.2	43.5	17.2	10.0	8.1	35.6	24.2
95th Queue (m)	50.8	42.7	39.0	2.2	68.5	76.3	31.9	22.3	18.9	76.8	31.7
Link Distance (m)	93.2	93.2	93.2		302.6	302.6	112.2	112.2		530.6	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				50.0					15.0		25.0
Storage Blk Time (%)					4				7	14	12
Queuing Penalty (veh)					0				26	52	15

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	TR	L	T	TR	LT	R	L	TR	
Maximum Queue (m)	32.4	63.8	69.4	5.5	52.4	59.2	49.2	17.5	34.4	71.2	
Average Queue (m)	4.6	21.1	32.3	0.5	19.2	23.7	15.1	4.7	6.9	27.7	
95th Queue (m)	18.0	45.8	58.3	4.1	39.6	44.9	37.0	16.4	22.8	55.3	
Link Distance (m)		302.6	302.6		164.4	164.4	104.4			160.2	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	50.0			50.0				15.0	50.0		
Storage Blk Time (%)	0	0			0		12	0	0	1	
Queuing Penalty (veh)	0	0			0		4	0	0	1	

Zone Summary

Zone wide Queuing Penalty: 98

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	11.6	19.9	0.1	20
	6	20.3	44.1	0.3	28
Total		32.0	64.0	0.4	25

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	19.0	32.9	0.2	21
Anne St S	5	18.7	42.5	0.3	29
Total		37.7	75.4	0.5	25

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	TR	LTR	LT	R
Maximum Queue (m)	97.8	103.1	90.5	93.6	44.5	87.0	27.5
Average Queue (m)	38.7	54.4	38.8	43.5	18.0	43.2	25.1
95th Queue (m)	70.6	96.2	74.2	77.8	33.7	82.7	32.5
Link Distance (m)	95.0	95.0	309.9	309.9	112.2	530.6	
Upstream Blk Time (%)	0	1					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)							25.0
Storage Blk Time (%)						13	9
Queuing Penalty (veh)						48	16

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	83.2	85.7	77.1	80.8	56.9	17.4	180.3	22.5
Average Queue (m)	37.6	45.5	35.9	39.8	23.4	4.6	85.3	17.8
95th Queue (m)	68.3	75.6	65.3	70.9	48.9	16.0	159.9	31.6
Link Distance (m)	309.9	309.9	170.0	170.0	109.4		275.6	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					20	0	50	2
Queuing Penalty (veh)					5	0	69	5

Zone Summary

Zone wide Queuing Penalty: 144

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6289	6563	6408	6504	6459	6451
Vehs Exited	6307	6563	6364	6427	6398	6413
Starting Vehs	252	278	222	236	211	237
Ending Vehs	234	278	266	313	272	272
Travel Distance (km)	3994	4148	4010	4056	4036	4049
Travel Time (hr)	887.0	897.5	829.6	917.4	914.3	889.1
Total Delay (hr)	795.0	802.3	737.4	824.2	821.7	796.1
Total Stops	10314	11251	10374	10892	10637	10693
Fuel Used (l)	1060.4	1082.9	1015.1	1093.8	1089.1	1068.2

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6289	6563	6408	6504	6459	6451
Vehs Exited	6307	6563	6364	6427	6398	6413
Starting Vehs	252	278	222	236	211	237
Ending Vehs	234	278	266	313	272	272
Travel Distance (km)	3994	4148	4010	4056	4036	4049
Travel Time (hr)	887.0	897.5	829.6	917.4	914.3	889.1
Total Delay (hr)	795.0	802.3	737.4	824.2	821.7	796.1
Total Stops	10314	11251	10374	10892	10637	10693
Fuel Used (l)	1060.4	1082.9	1015.1	1093.8	1089.1	1068.2

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	11.9	20.4	0.1	19
	6	21.1	44.9	0.3	27
Total		33.0	65.3	0.4	25

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	18.6	32.5	0.2	22
Anne St S	5	18.5	42.1	0.3	29
Total		37.1	74.6	0.5	26

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	TR	LTR	LT	R
Maximum Queue (m)	96.6	100.0	81.9	83.9	43.7	89.6	27.5
Average Queue (m)	42.0	57.4	38.2	43.6	18.2	37.5	24.5
95th Queue (m)	75.2	101.9	70.2	75.7	34.6	72.5	33.2
Link Distance (m)	95.0	95.0	309.9	309.9	112.2	530.6	
Upstream Blk Time (%)	0	3					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (m)							25.0
Storage Blk Time (%)						11	9
Queuing Penalty (veh)						39	17

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	85.0	84.8	77.2	99.2	58.9	17.5	151.8	22.5
Average Queue (m)	40.1	48.2	37.5	42.3	24.4	3.8	79.6	18.7
95th Queue (m)	70.1	80.9	67.4	76.1	49.4	14.5	149.0	31.4
Link Distance (m)	309.9	309.9	170.2	170.2	109.4		155.0	
Upstream Blk Time (%)							4	
Queuing Penalty (veh)							20	
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					23	0	45	3
Queuing Penalty (veh)					6	0	71	8

Zone Summary

Zone wide Queuing Penalty: 162

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6582	6415	6448	6515	6513	6494
Vehs Exited	6538	6340	6433	6507	6544	6471
Starting Vehs	308	290	353	300	334	307
Ending Vehs	352	365	368	308	303	343
Travel Distance (km)	4267	4084	4230	4191	4214	4197
Travel Time (hr)	1522.7	1549.0	1600.9	1531.7	1357.2	1512.3
Total Delay (hr)	1424.8	1455.4	1503.9	1435.5	1260.5	1416.0
Total Stops	12516	12099	12541	12659	12886	12542
Fuel Used (l)	1628.6	1633.1	1685.4	1630.0	1475.1	1610.4

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6582	6415	6448	6515	6513	6494
Vehs Exited	6538	6340	6433	6507	6544	6471
Starting Vehs	308	290	353	300	334	307
Ending Vehs	352	365	368	308	303	343
Travel Distance (km)	4267	4084	4230	4191	4214	4197
Travel Time (hr)	1522.7	1549.0	1600.9	1531.7	1357.2	1512.3
Total Delay (hr)	1424.8	1455.4	1503.9	1435.5	1260.5	1416.0
Total Stops	12516	12099	12541	12659	12886	12542
Fuel Used (l)	1628.6	1633.1	1685.4	1630.0	1475.1	1610.4

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	7.3	14.9	0.1	26
	6	24.1	48.3	0.3	25
Total		31.4	63.2	0.4	25

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	17.8	31.7	0.2	22
Anne St S	5	18.0	42.0	0.3	29
Total		35.9	73.6	0.5	26

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	89.9	74.3	55.0	5.1	86.0	95.4	27.3	30.7	47.8	67.9	27.5
Average Queue (m)	42.6	31.9	23.1	0.2	39.8	45.1	11.2	12.8	13.9	24.9	23.5
95th Queue (m)	75.0	57.3	46.0	2.5	74.6	79.8	22.4	26.2	30.8	58.0	31.7
Link Distance (m)	93.2	93.2	93.2		305.4	305.4	112.2	112.2		530.6	
Upstream Blk Time (%)	0	0									
Queuing Penalty (veh)	0	0									
Storage Bay Dist (m)				50.0					50.0		25.0
Storage Blk Time (%)					5				0	4	9
Queuing Penalty (veh)					0				0	20	17

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	96.2	99.2	76.3	87.1	79.4	17.5	157.3	22.7
Average Queue (m)	54.6	59.3	37.1	41.8	28.0	6.4	154.3	20.0
95th Queue (m)	88.4	93.9	63.7	73.6	57.2	18.9	163.2	30.1
Link Distance (m)	305.4	305.4	166.9	166.9	106.3		152.1	
Upstream Blk Time (%)							57	
Queuing Penalty (veh)							331	
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					28	0	76	6
Queuing Penalty (veh)					8	1	142	19

Zone Summary

Zone wide Queuing Penalty: 538

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	6448	6560	6592	6457	6405	6489
Vehs Exited	6385	6551	6560	6475	6343	6463
Starting Vehs	322	332	332	376	290	335
Ending Vehs	385	341	364	358	352	359
Travel Distance (km)	4205	4312	4320	4207	4126	4234
Travel Time (hr)	1566.7	1615.3	1630.5	1653.7	1486.0	1590.4
Total Delay (hr)	1470.0	1516.5	1531.2	1557.0	1391.5	1493.2
Total Stops	12692	13108	12783	12720	12558	12772
Fuel Used (l)	1656.3	1704.8	1722.6	1730.0	1581.3	1679.0

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	6448	6560	6592	6457	6405	6489
Vehs Exited	6385	6551	6560	6475	6343	6463
Starting Vehs	322	332	332	376	290	335
Ending Vehs	385	341	364	358	352	359
Travel Distance (km)	4205	4312	4320	4207	4126	4234
Travel Time (hr)	1566.7	1615.3	1630.5	1653.7	1486.0	1590.4
Total Delay (hr)	1470.0	1516.5	1531.2	1557.0	1391.5	1493.2
Total Stops	12692	13108	12783	12720	12558	12772
Fuel Used (l)	1656.3	1704.8	1722.6	1730.0	1581.3	1679.0

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	7.2	14.8	0.1	26
	6	23.4	47.5	0.3	26
Total		30.6	62.2	0.4	26

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	18.1	31.7	0.2	22
Anne St S	5	19.8	43.7	0.3	28
Total		37.8	75.4	0.5	25

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	87.5	67.1	60.1	3.4	85.7	96.1	24.4	35.0	46.1	69.9	27.5
Average Queue (m)	44.4	31.1	22.1	0.3	41.5	47.7	10.5	13.5	12.3	23.2	22.5
95th Queue (m)	77.1	57.0	45.8	2.6	74.1	81.8	20.8	28.9	30.1	56.7	31.9
Link Distance (m)	93.2	93.2	93.2		305.4	305.4	112.2	112.2		530.6	
Upstream Blk Time (%)	0										
Queuing Penalty (veh)	0										
Storage Bay Dist (m)				50.0					50.0		25.0
Storage Blk Time (%)					5				0	2	8
Queuing Penalty (veh)					0				0	12	16

Intersection: 6: Essa Rd & Innisfil St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (m)	113.4	112.3	76.7	90.4	69.7	17.4	157.8	22.7
Average Queue (m)	60.0	60.4	37.7	41.7	29.0	5.0	153.9	20.7
95th Queue (m)	103.7	101.1	64.4	71.9	59.2	16.5	165.5	29.4
Link Distance (m)	305.4	305.4	166.9	166.9	106.3		152.1	
Upstream Blk Time (%)							55	
Queuing Penalty (veh)							321	
Storage Bay Dist (m)						15.0		20.0
Storage Blk Time (%)					29	0	75	6
Queuing Penalty (veh)					9	0	158	19

Zone Summary

Zone wide Queuing Penalty: 535

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:00	7:00	7:00	7:00	7:00	7:00
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	90	90	90	90	90	90
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	8169	8297	8170	8084	8181	8178
Vehs Exited	8205	8260	8206	8124	8125	8184
Starting Vehs	337	302	362	323	310	323
Ending Vehs	301	339	326	283	366	320
Travel Distance (km)	5230	5285	5207	5225	5174	5224
Travel Time (hr)	857.4	837.1	838.5	860.4	877.7	854.2
Total Delay (hr)	737.1	715.3	718.8	740.1	758.9	734.1
Total Stops	14334	14818	14171	14331	14220	14375
Fuel Used (l)	1132.2	1119.4	1114.2	1135.6	1146.8	1129.6

Interval #0 Information Seeding

Start Time	7:00
End Time	7:30
Total Time (min)	30

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	8169	8297	8170	8084	8181	8178
Vehs Exited	8205	8260	8206	8124	8125	8184
Starting Vehs	337	302	362	323	310	323
Ending Vehs	301	339	326	283	366	320
Travel Distance (km)	5230	5285	5207	5225	5174	5224
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Total Stops	14334	14818	14171	14331	14220	14375
Fuel Used (l)	1132.2	1119.4	1114.2	1135.6	1146.8	1129.6

Arterial Level of Service: EB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
	5	8.7	16.6	0.1	24
	6	21.8	45.6	0.3	27
Total		30.4	62.2	0.4	26

Arterial Level of Service: WB Essa Rd

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (km)	Arterial Speed
Innisfil St	6	28.3	41.9	0.2	17
Anne St S	5	24.9	48.6	0.3	25
Total		53.2	90.5	0.5	21

Intersection: 5: Essa Rd & Anne St S

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (m)	100.7	90.0	70.3	16.7	115.8	115.3	29.8	35.4	17.4	115.2	27.5
Average Queue (m)	62.8	42.8	31.3	0.9	63.6	68.7	12.4	14.0	12.9	44.0	25.3
95th Queue (m)	104.6	77.9	61.5	8.7	109.6	110.6	26.2	28.6	21.8	89.5	32.0
Link Distance (m)	93.2	93.2	93.2		300.2	300.2	112.2	112.2		530.6	
Upstream Blk Time (%)	4	0									
Queuing Penalty (veh)	0	0									
Storage Bay Dist (m)				50.0					15.0		25.0
Storage Blk Time (%)				0	16				18	20	13
Queuing Penalty (veh)				0	0				101	109	27

Intersection: 6: Essa Rd & Innisfil St

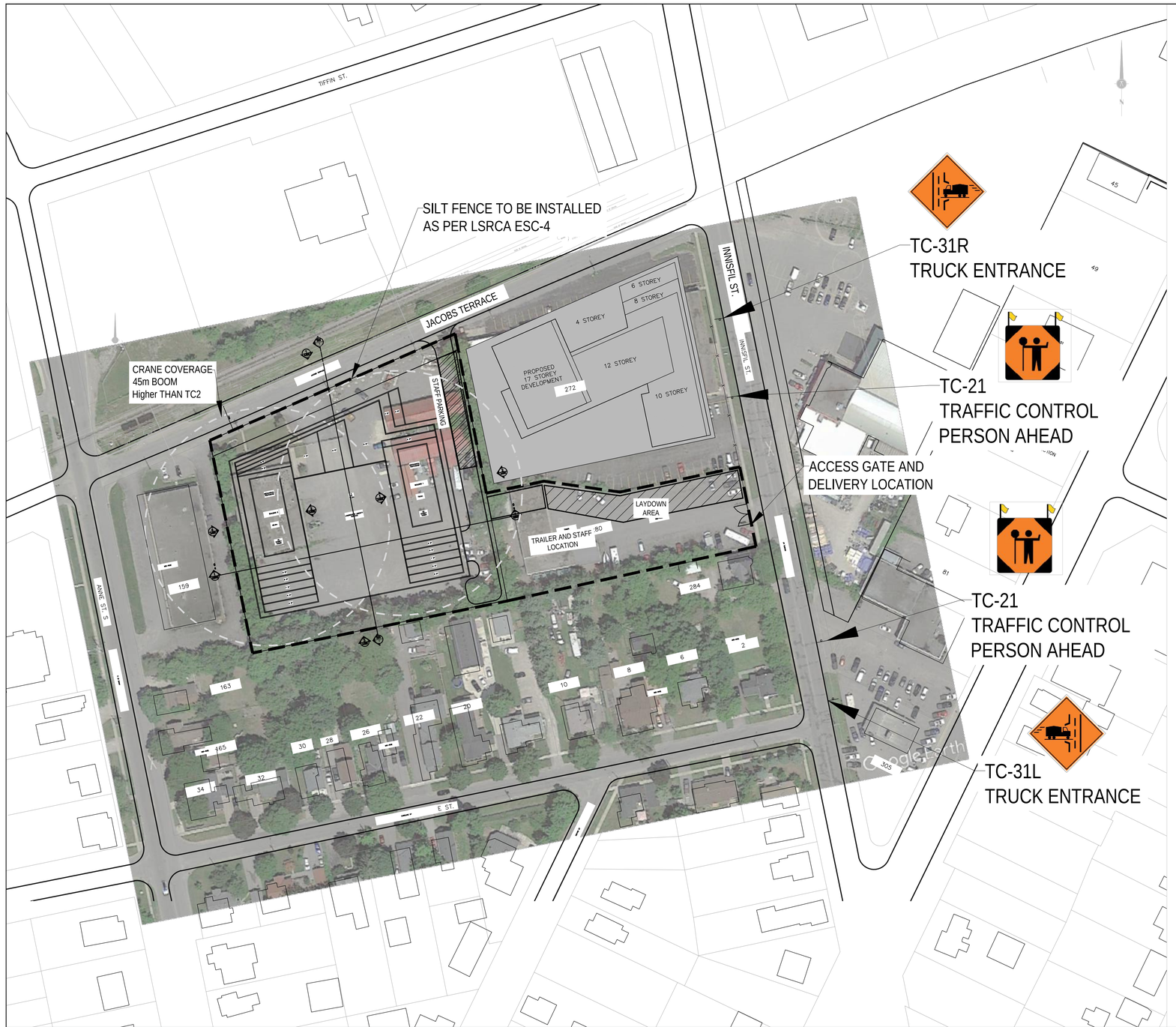
Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	L	TR
Maximum Queue (m)	52.4	101.4	105.3	52.2	105.0	112.9	75.2	17.5	52.4	130.1
Average Queue (m)	21.7	43.0	54.5	6.8	59.8	69.0	35.7	6.1	27.4	61.7
95th Queue (m)	50.2	87.1	90.9	33.2	95.0	107.3	81.7	18.7	59.8	120.3
Link Distance (m)		300.2	300.2		164.0	164.0	104.4			161.6
Upstream Blk Time (%)							6			0
Queuing Penalty (veh)							0			2
Storage Bay Dist (m)	50.0			50.0				15.0	50.0	
Storage Blk Time (%)	0	5		0	11		37	0	1	15
Queuing Penalty (veh)	1	10		0	4		12	1	3	23

Zone Summary

Zone wide Queuing Penalty: 292

Appendix L

Construction Management Plan (CMP)



LEGEND

PLYWOOD HOARDING

CONSTRUCTION SIGN AND POST

TRAFFIC CONTROL PERSON

EXCAVATION, SHORING, CAISSON AND CONCRETE WORK NOTES

1. ALL PARKING WILL BE WITHIN PROPERTY BOUNDARIES. SITE ACCESS IS OFF OF BIG BAY POINT ROAD AND BAYVIEW DRIVE TO INCREASE OVER PUBLIC SAFETY.
2. THE MUD MAT WILL BE COMPLETED AS PER EROSION AND SEDIMENT CONTROL PLAN DETAIL.
3. MATERIAL STORAGE, WHEN REQUIRED, WILL BE WITHIN PROPERTY BOUNDARIES.
4. THROUGHOUT THE DURATION OF WORKS, ALL TRUCKS WILL BE EXPOSED TO HOSING PRIOR TO EXITING THE SITE WHEN REQUIRED. STREET CLEANING AND STREET SWEEPING WILL BE CONSTANT ALONG BAYVIEW DRIVE AND BIG BAY POINT ROAD WHEN AND IF REQUIRED.
5. ALL WORK TO BE COMPLETED WITHIN THE BOUNDARY OF THE IDENTIFIED FENCING TO MAINTAIN SAFETY, TREE PROTECTION, SEDIMENT CONTROL, AND PUBLIC SAFETY.
6. STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED OR AMENDED AS SITE CONDITIONS CHANGE.
7. STORAGE OF CONSTRUCTION MATERIALS AND EQUIPMENT FOR THE CONSTRUCTION OF THE DEVELOPMENT WILL BE ON SITE WITH NO IMPACTS TO THE ADJACENT ROAD RIGHT-OF-WAYS.
8. ON-SITE PARKING WILL BE PROVIDED FOR ALL WORKERS COMPLETING THE WORK. NO CONSTRUCTION VEHICLES WILL BE PARKING ON THE STREET OR WITHIN THE ADJACENT RESIDENTIAL NEIGHBOURHOODS.
9. PARKING FOR THE WORK SHALL BE ON SITE WITH NO IMPACTS TO THE ADJACENT ROAD RIGHT-OF-WAYS. PARKING IS CENTRAL TO THE SITE.
10. NO ROAD OCCUPANCY OR ROAD CLOSURES ARE REQUIRED FOR THIS WORK AS ALL WORK REQUIRED WILL BE CONTAINED TO THE SITE.
11. CURRENT TRAFFIC MEASURES IDENTIFIED ON THE PLAN ARE FOR THE SAFETY OF PEDESTRIAN TRAFFIC, AS PER ONTARIO TRAFFIC MANUAL, BOOK 7. THE CURRENT TRAFFIC MANAGEMENT MEASURES IS TO ENSURE SAFE PEDESTRIAN AND VEHICULAR TRAFFIC MOVEMENT DURING SITE WORK.

ADDITIONAL NOTES:

A: NO OFF-LOADING ON ROAD

B: NO STORAGE IN CITY RIGHT-OF-WAY

C: NO PARKING IN CITY RIGHT-OF-WAY

D: NO REVERSING WITHOUT FLAGMAN

E: NO IDLING IN CITY RIGHT-OF-WAY

F: FLAGMAN WILL BE A FULL-TIME DEDICATED PERSON AS NEEDED

G: WORKING HOURS FOR SITE WORKS TO FOLLOW CITY OF BARRIE BY-LAWS. NO WORK IS TO TAKE PLACE ON STATUTORY HOLIDAYS.

H: PARKING IS TO CONFORM TO ALL CITY PARKING REGULATIONS

I: WORKERS AND DELIVERY VEHICLES ARE REQUIRED TO FOLLOW THE CITY'S ANTI-IDLING POLICIES

J: NO MATERIALS OR EQUIPMENT IS TO BE STORED IN THE CITY'S ROW UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE CITY.

*All traffic and signage will be placed as per the Ontario Traffic Manual 7.

No.	Revision	Drawn	Approved	Date
A	Issued for First Submission	S.B.	W.M.	2023/10/20

CITY OF BARRIE

ENGINEERING SERVICES DEPARTMENT

COMMISSIONER OF ENGINEERING SERVICES/ DIRECTOR OF COMMUNITY SERVICES

MANAGER OF DEVELOPMENT ENGINEERING/ MANAGER OF PARKS AND OPEN SPACE

Bar is one inch on original size sheet

0 1"

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LICENSED PROFESSIONAL ENGINEER
Oct 20, 2023
W.C. MARIA
PROVINCE OF ONTARIO

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Mississauga Ontario L5N 5M4 Canada
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Drawn	S.B	Designer	S.B
Drafting Check	S.B	Design Check	W.M
Project Manager	W.M	Date	2023/10/20
		Scale	1:800

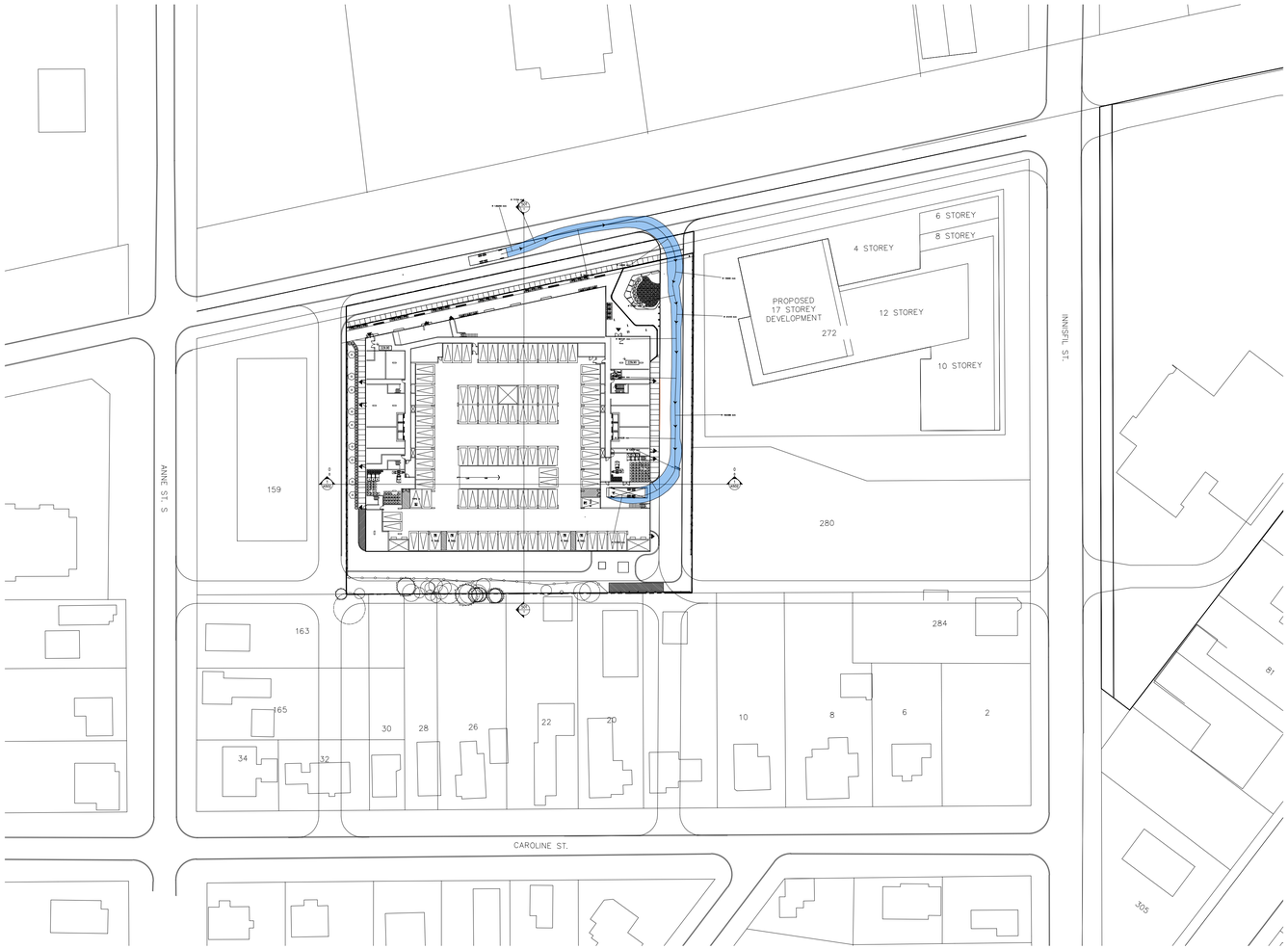
This document shall not be used for construction unless signed and sealed for construction.

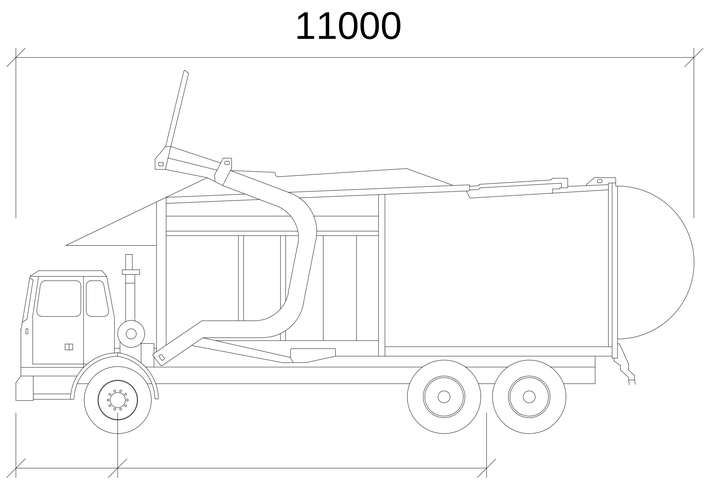
Client: Innovative Planning Solutions
Project: 647 Welham Rd., Barrie ON
Title: Construction Management Plan
Project No.
Original Size: Arch D
Sheet No. CMP - 01
Sheet 1 of 1

Plot Date: 20 October 2023 - 1:21 PM Plotted By: Santosh Baral Filename: N:\CA\Mississauga\Projects\Legacy\SernasTransTech\Projects\2021\Jacobs Terrace\Drawings\Survey reference.dwg

Appendix M

Vehicular Swept Path





2024-Barrie Front Loader

	mm
Width	: 2600
Track	: 2700
Lock to Lock Time	: 6.0
Steering Angle	: 24.2

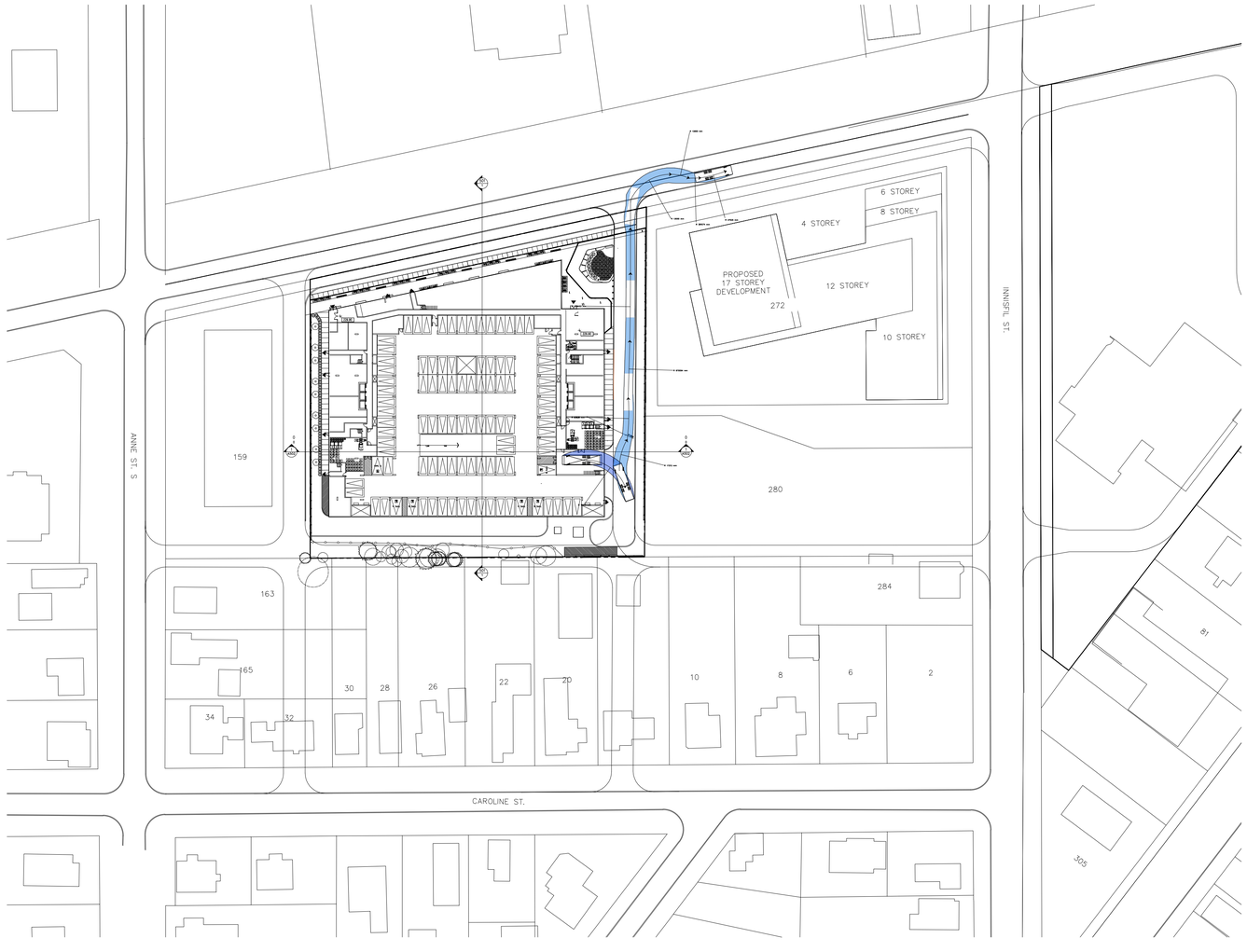
Vehicle Circulation Plan

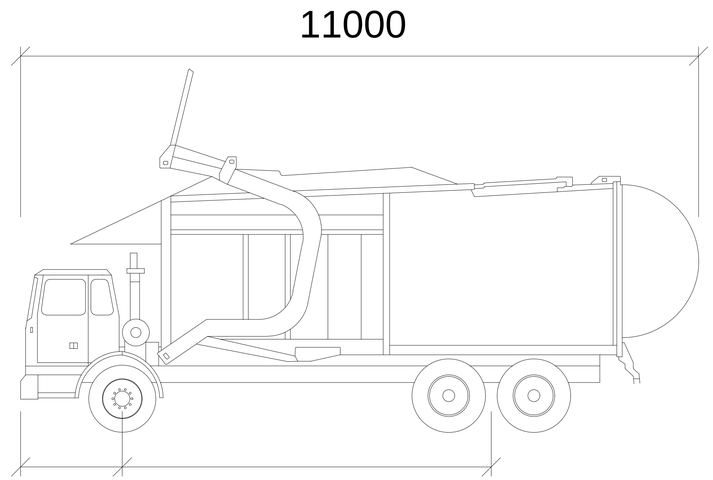
Waste Collection - inbound

Jacobs Terrace

Figure AT- 1

Project No.	11227860
Date	19/03/2024





2024-Barrie Front Loader

	mm
Width	: 2600
Track	: 2700
Lock to Lock Time	: 6.0
Steering Angle	: 24.2

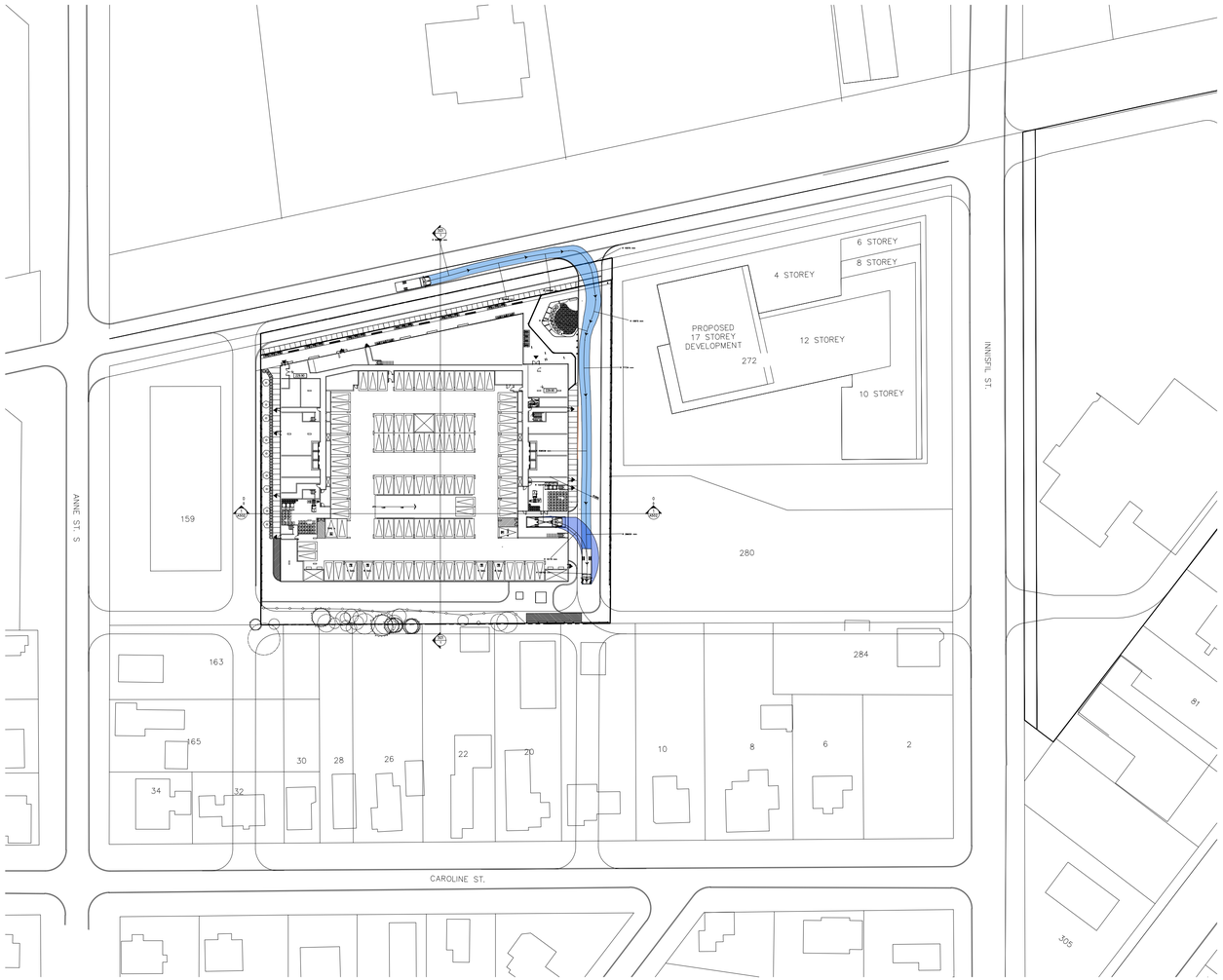
Vehicle Circulation Plan

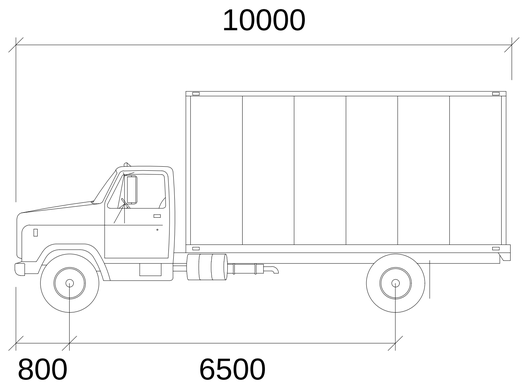
Waste Collection - Outbound

Jacobs Terrace

Figure AT- 2

Project No.	11227860
Date	19/03/2024





MSU

		mm
Width	:	2600
Track	:	2600
Lock to Lock Time	:	6.0
Steering Angle	:	40.2

GHD

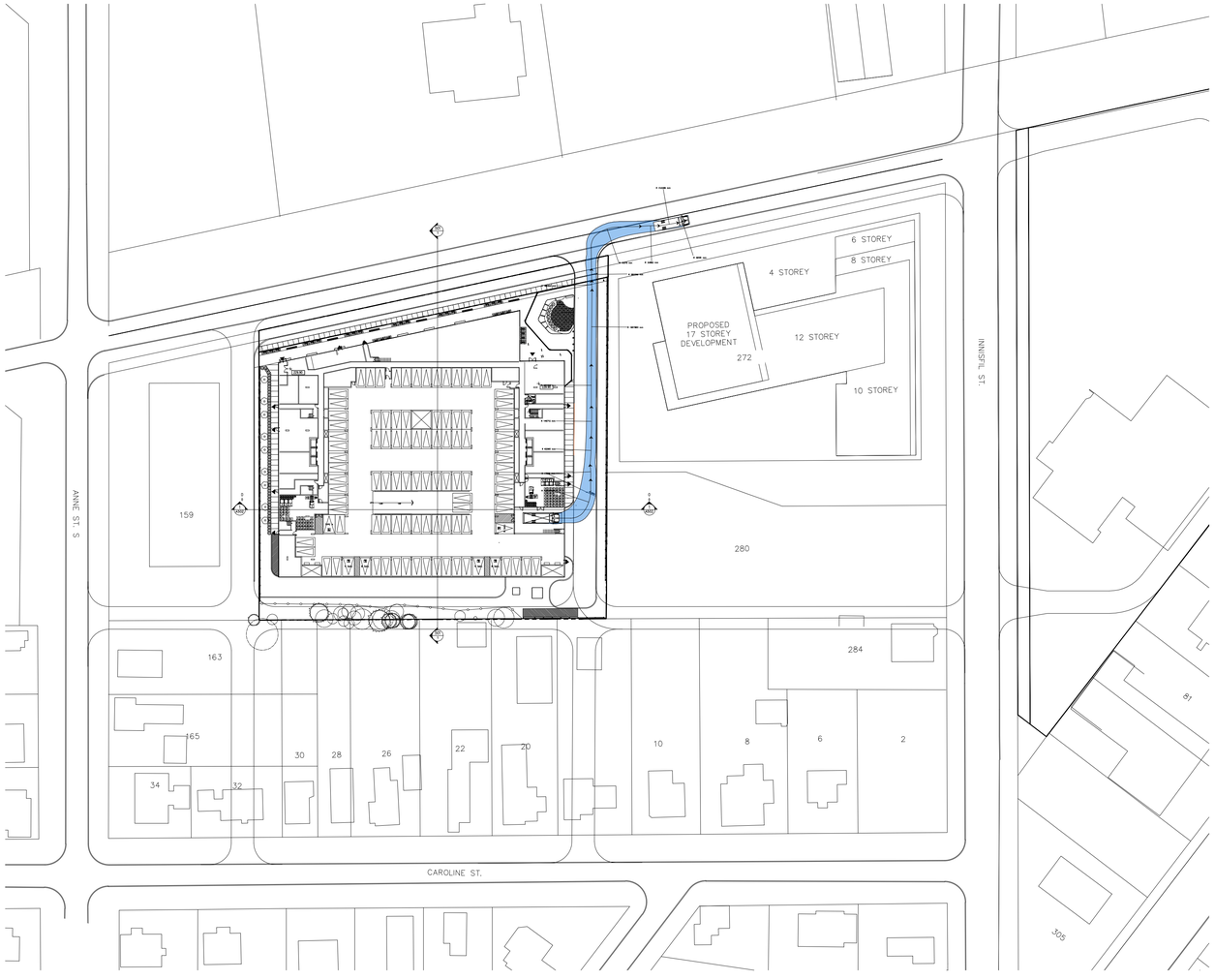
Vehicle Circulation Plan

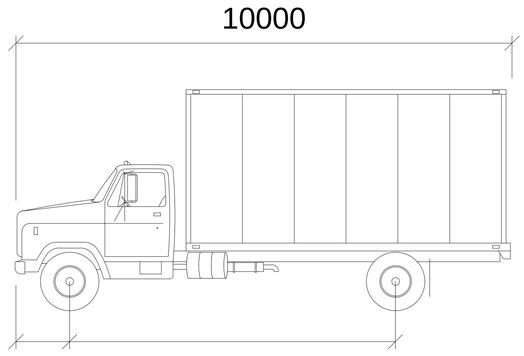
MSU - Inbound

Jacobs Terrace

Figure AT- 3

Project No.	11227860
Date	19/03/2024





MSU

		mm
Width	:	2600
Track	:	2600
Lock to Lock Time	:	6.0
Steering Angle	:	40.2

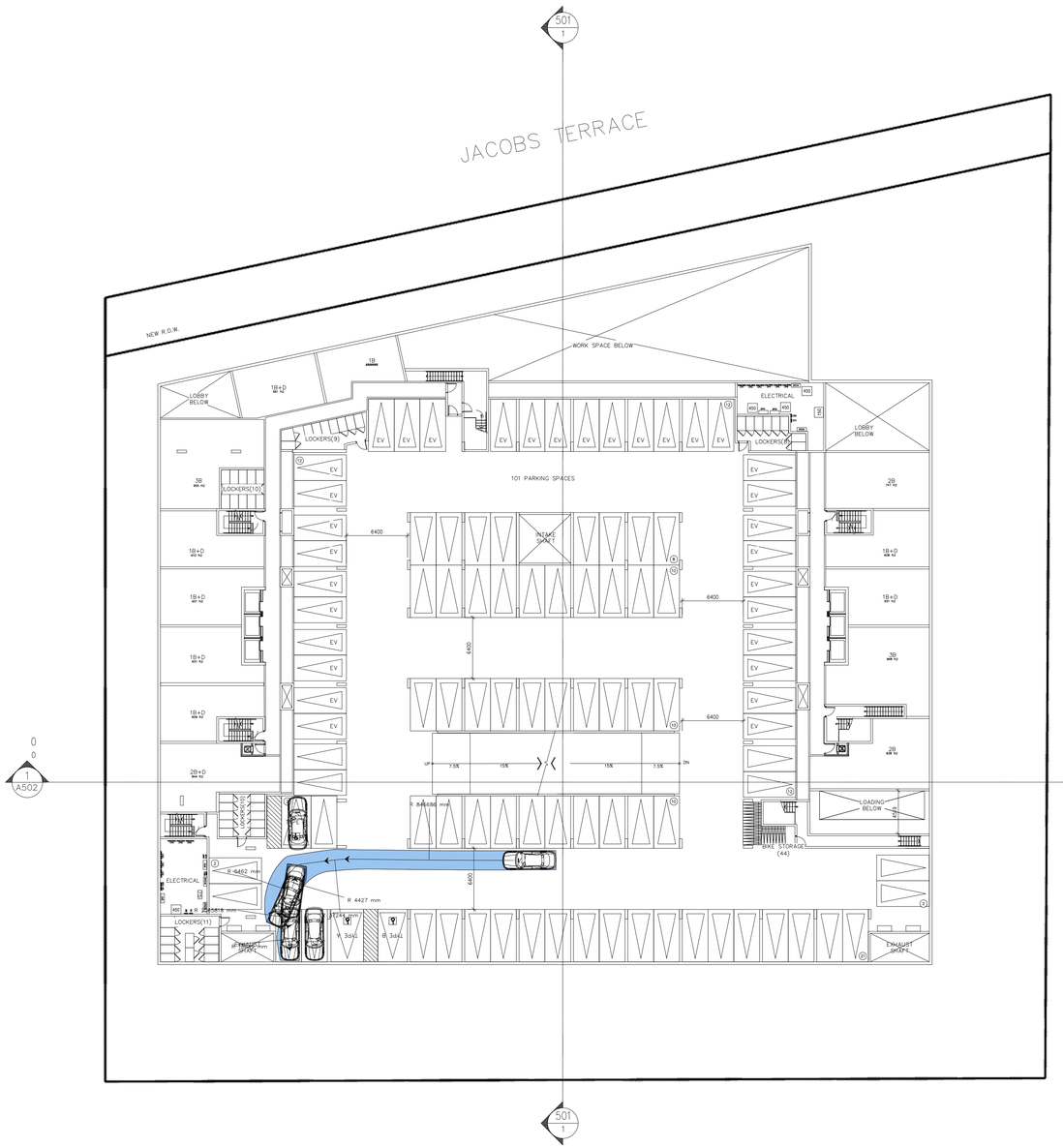
Vehicle Circulation Plan

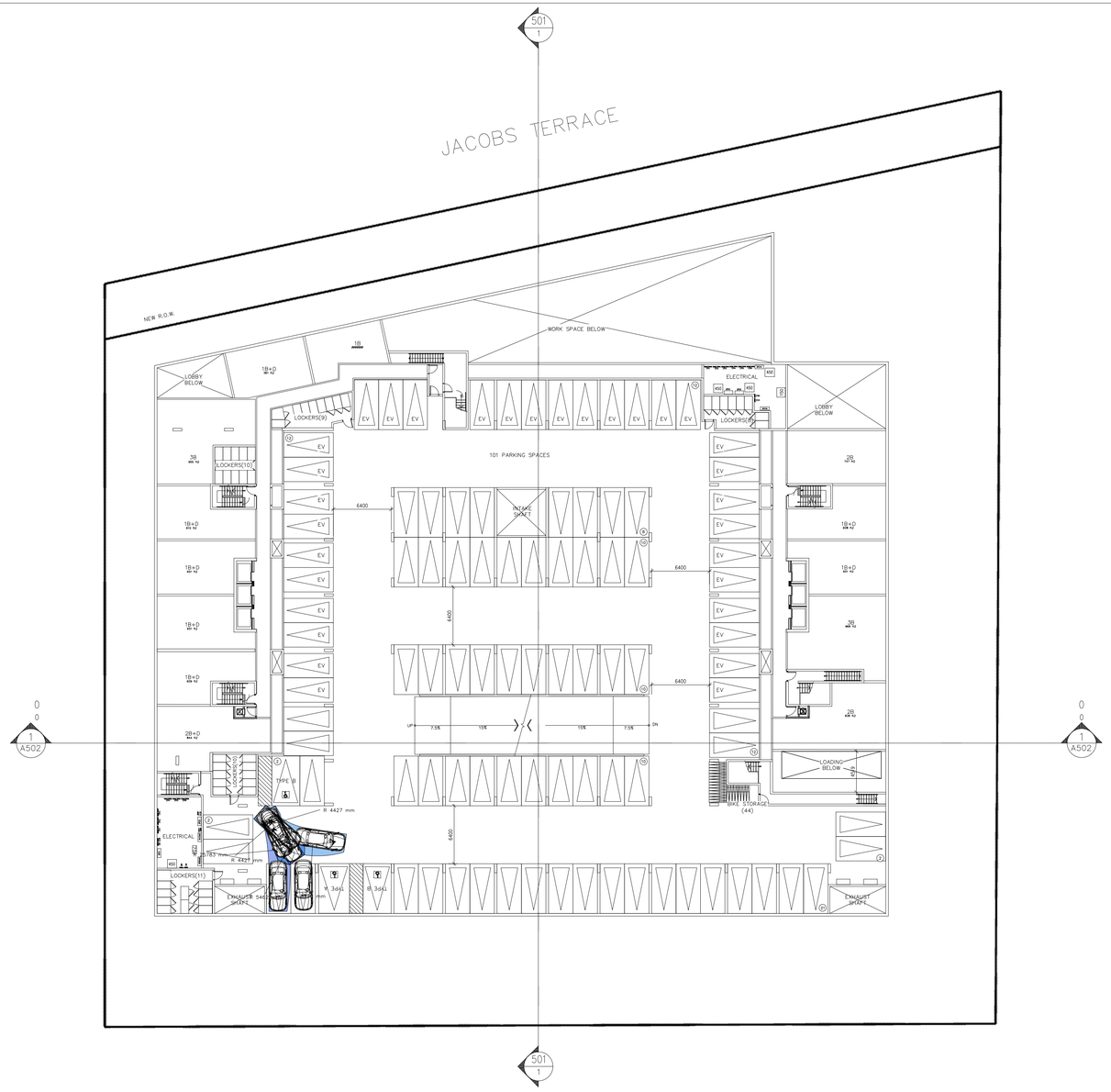
MSU - Outbound

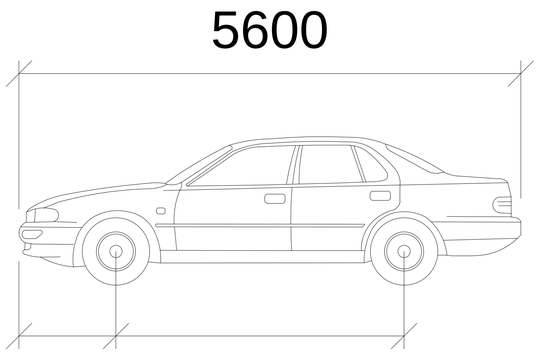
Jacobs Terrace

Figure AT- 4

Project No.	11227860
Date	19/03/2024


501
1
JACOBS TERRACE
NEW R.O.W.
WORK SPACE BELOW
LOBBY BELOW
1B
1B+D
LOCKERS(9)
LOCKERS(8)
ELECTRICAL
101 PARKING SPACES
EV
INTAKE SHAFT
6400
3B
LOCKERS(10)
2B
3G
2G
LOADING BELOW
BIKE STORAGE (44)
LOCKERS(11)
EXHAUST SHAFT
R 6462 mm
R 4427 mm
R 8468 mm
R 3614 mm
R 3614 mm
R 3614





P

	mm
Width	: 2000
Track	: 2000
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

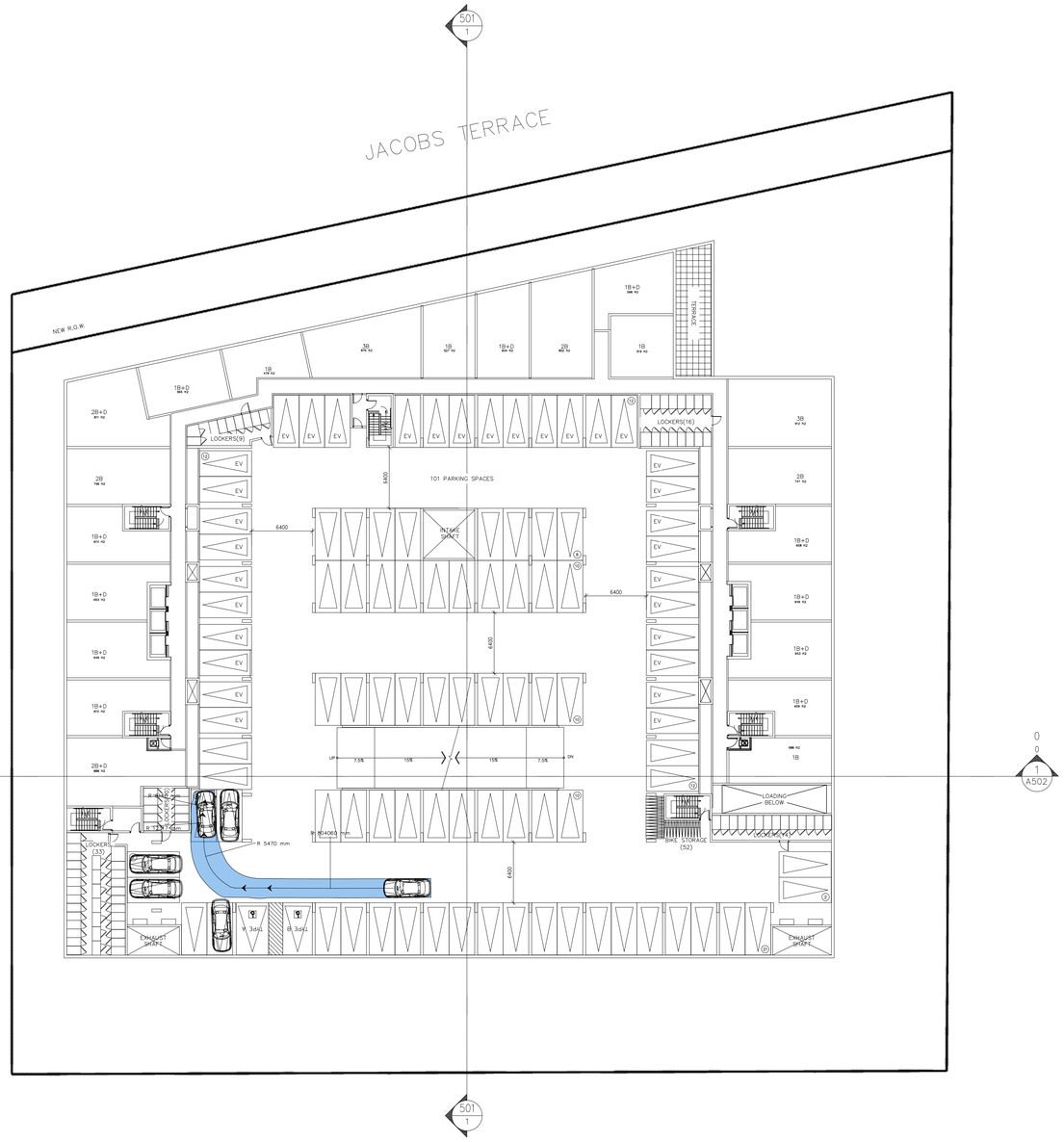
Vehicle Circulation Plan

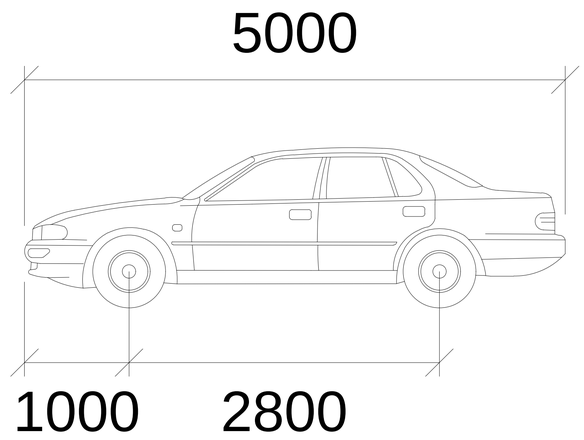
Passenger Vehicle - Outbound

Jacobs Terrace

Figure AT- 6

Project No.	11227860
Date	19/03/2024





P

		mm
Width	:	2000
Track	:	2000
Lock to Lock Time	:	6.0
Steering Angle	:	30.8

GHD

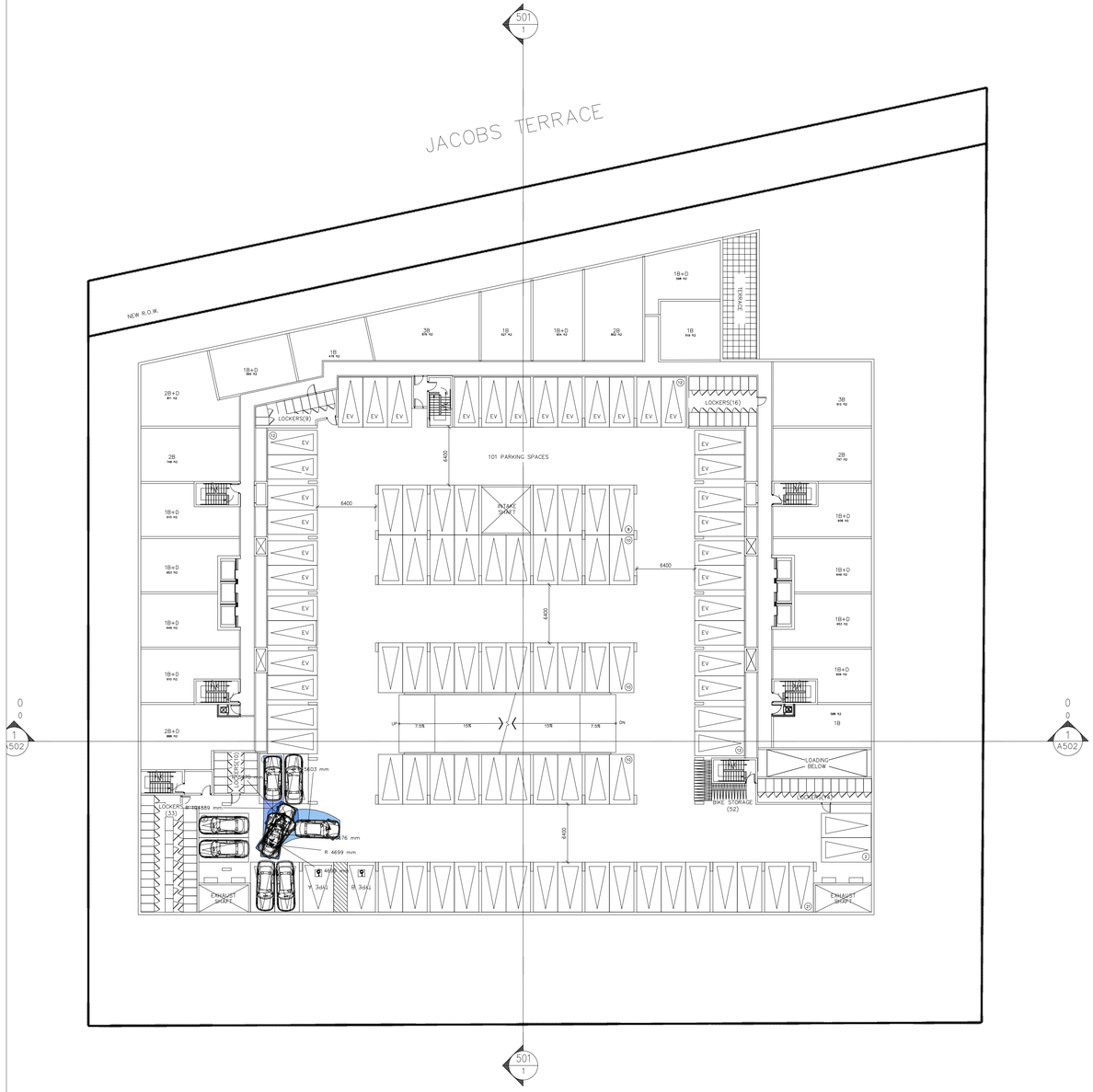
Vehicle Circulation Plan

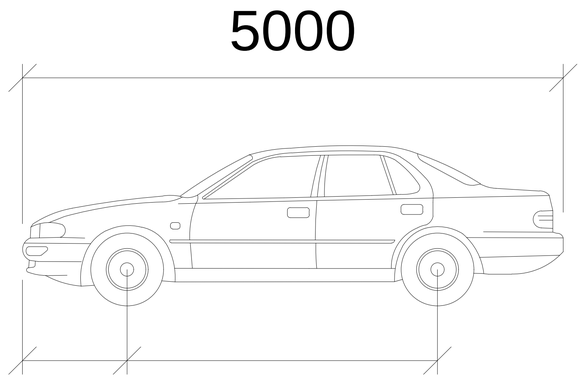
Passenger Vehicle - Inbound

Jacobs Terrace

Figure AT- 7

Project No.	11227860
Date	19/03/2024





P

		mm
Width	:	2000
Track	:	2000
Lock to Lock Time	:	6.0
Steering Angle	:	30.8

Vehicle Circulation Plan

Passenger Vehicle - Outbound

Jacobs Terrace

Figure AT- 8

Project No.	11227860
Date	19/03/2024