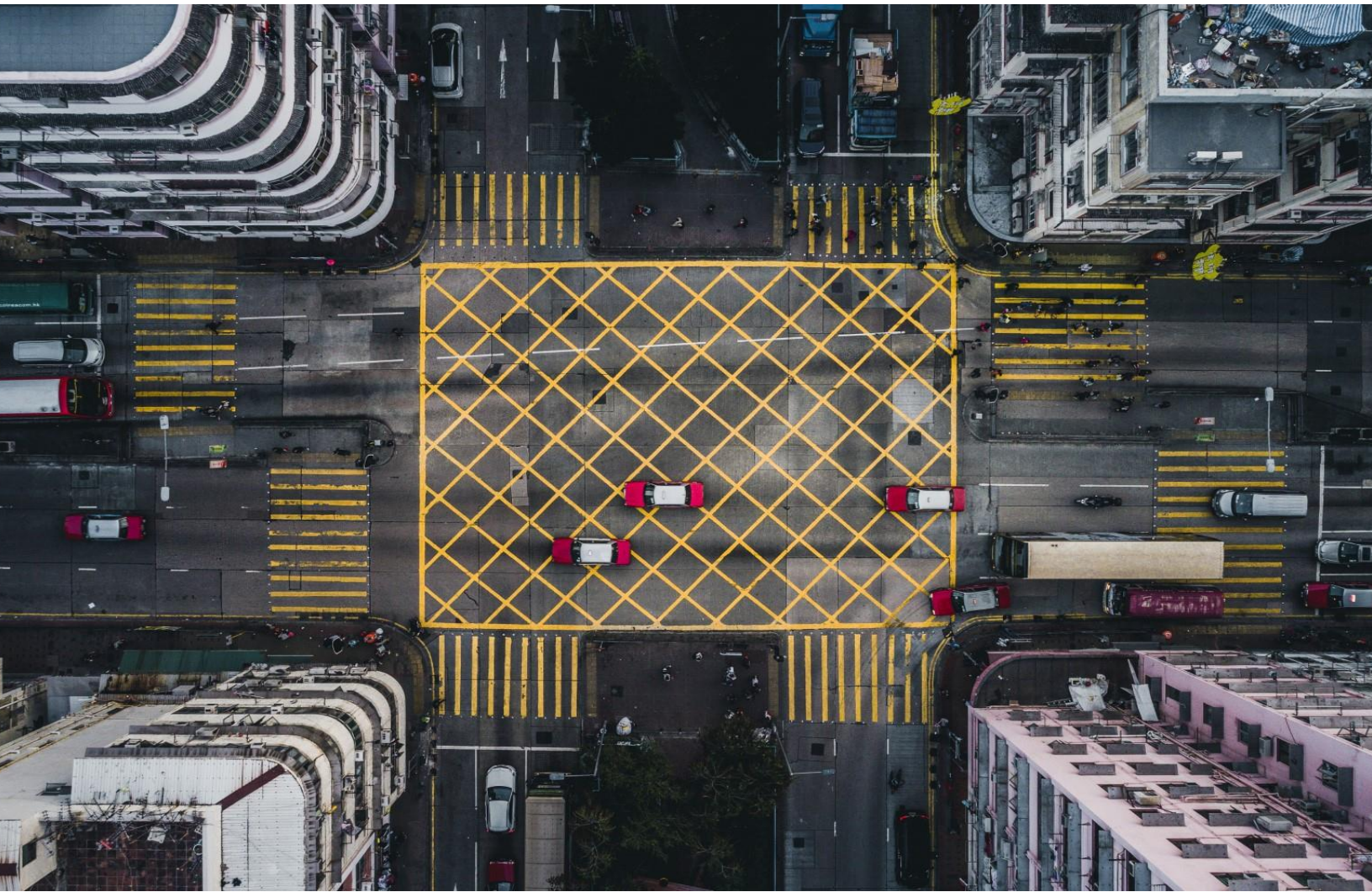
Traffic Impact Study

4631 Sideroad 20 North, Township of Puslinch, Ontario

Puslinch Development GP Inc.

28 May 2025

→ **The Power of Commitment**



Executive Summary

GHD Limited is pleased to provide the following updated Traffic Impact Study in support of the proposed industrial development located in an area generally bounded by Side Road 20, Concession Road 4, and Highway 6/Hanlon Parkway, in the Township of Puslinch, Wellington County. This report has been updated to address comments received from the County of Wellington and the Township of Puslinch based on their review of the first submission dated February 2025.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network and site driveways during the weekday a.m. and p.m. peak hours for future background operating conditions for a future planning horizon in 2028 (anticipated build-out), 2033 (five years post build-out), and 2038 (ten years post build-out).

Based on the approved Terms of Reference for the study, the following existing intersections were included in the study area:

- Downey Road/Wellington Road 35 and Forestell Road
- Wellington Road 34 and Concession Road 4
- Concession Road 4 and Side Road 20
- Wellington Road 35 and Side Road 20

The following proposed new intersections and site accesses are also included:

- Highway 6 Interchanges
- Concession Road 4 and the proposed site access
- Side Road 20 and the proposed site accesses

The subject site consists of five buildings that include manufacturing, warehousing, office, retail, gym, and daycare space. The breakdown for each building is as follows:

- Industrial Building 1
    - 4,645 m^2 of office GFA
    - 32,515 m^2 of warehouse GFA, plus 12,774 m^2 of expansion area
    - 4,645 m^2 of manufacturing GFA, plus 1,161 m^2 of expansion area
    - 2,323 m^2 of retail GFA
        - Ancillary uses
            - 1,858 m^2 of conference GFA
            - 465 m^2 of food service GFA
- Industrial Building 2
    - 929 m^2 of office GFA
    - 10,219 m^2 of manufacturing GFA, plus 6,968 m^2 of expansion area
- Industrial Building 3
    - 465 m^2 of office GFA
    - 12,588 m^2 of manufacturing GFA
- Building 4 – Gym
    - 1,394 m^2 of gym GFA

- Building 5 – Daycare
    - 929 m^2 of daycare GFA

Access to the subject site will be provided via a proposed full-moves access on Sideroad 20 North and three full-moves accesses on Concession Road 4.

Trip generation for the proposed phases of development was completed using ITE Trip Generation Manual 11th Edition. The proposed development is expected to generate a total of 655 two-way vehicle trips during the a.m. peak hour consisting of 473 inbound and 182 outbound trips. During the p.m. peak hour, it is expected to generate 849 new two-way vehicle trips consisting of 288 inbound and 561 outbound trips.

Under existing traffic conditions, the study intersections are operating at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2028 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2033 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2038 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

A separate analysis completed assuming a new Service Road connection from the site access on Concession Road 4 to the new east/west midblock crossing also confirmed that all study intersections within the revised road network are expected to continue to operate at satisfactory levels.

Application of the Township of Puslinch By-Law 023-18 parking rates to the subject site results in a requirement of a minimum of 745 vehicular parking spaces (including 26 accessible parking spaces), 167 bicycle parking spaces and 17 loading spaces.

The subject site provides a total of 894 vehicular parking spaces, including 26 barrier free spaces, 25 bicycle parking spaces and 66 loading spaces. The Township's minimum By-Law requirements are met for all uses. It is to be noted that the location of the bicycle parking will be determined at the detailed design phase and will meet the minimum By-law requirements.

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

Sincerely,

GHD

[redacted]

Rafael Andrenacci, B.Eng.

Transportation Planner

[redacted]

William Maha, P. Eng.

Transportation Planning Lead

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1. Introduction

1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study for a proposed industrial development located in an area generally bounded by Side Road 20, Concession Road 4, and Highway 6/Hanlon Parkway, in the Township of Puslinch, Wellington County.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2024 and determine future background operating conditions for a future planning horizon in 2028, 2033, and 2038.
- Estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peek periods through intersection capacity analysis.
- Review the proposed site new public road intersection and site accesses for sightlines and geometric requirements based on TAC and/or Region and Town standards.

1.2 Study Team

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

- William Maria, P. Eng., Transportation Planning Lead
- Raf Andrenacci, B.Eng., Transportation Planner
- Muhammad Safder Haider, B.Eng., Transportation Planner

Figure 1 Site Location

2. Site Characteristics

2.1 Study Area

As per the agreed Terms of Reference for the study attached in **Appendix A**, the following existing intersections were included in the study area:

- Downey Road/Wellington Road 35 and Forestell Road
- Wellington Road 34 and Concession Road 4
- Concession Road 4 and Side Road 20
- Wellington Road 35 and Side Road 20

The following proposed new intersections and site accesses are also included:

- Future Highway 6 Interchange
- Concession Road 4 and the proposed site accesses
- Side Road 20 and the proposed site accesses

2.2 Proposed Development Content

As per the proposed site plan shown in **Figure 2** and provided in **Appendix B**, the subject site is proposed to consist of six buildings with the breakdown and land use for each building is as follows:

- Industrial Building 1
  - 4,645 m^2 of office GFA
  - 32,515 m^2 of warehouse GFA, plus 12,774 m^2 of expansion area
  - 4,645 m^2 of manufacturing GFA, plus 1,161 m^2 of expansion area
  - 2,323 m^2 of retail GFA
    - Ancillary uses
      - 1,858 m^2 of conference GFA
      - 465 m^2 of food service GFA
- Industrial Building 2
  - 929 m^2 of office GFA
  - 10,219 m^2 of manufacturing GFA, plus 6,968 m^2 of expansion area
- Industrial Building 3
  - 465 m^2 of office GFA
  - 12,588 m^2 of manufacturing GFA
- Building 4 – Gym
  - 1,394 m^2 of gym GFA
- Building 5 – Daycare
  - 929 m^2 of daycare GFA

Access to the subject site from the municipal road network will be provided from four full-moves accesses with one access located on Sideroad 20 North and three accesses located on Concession Road 4.

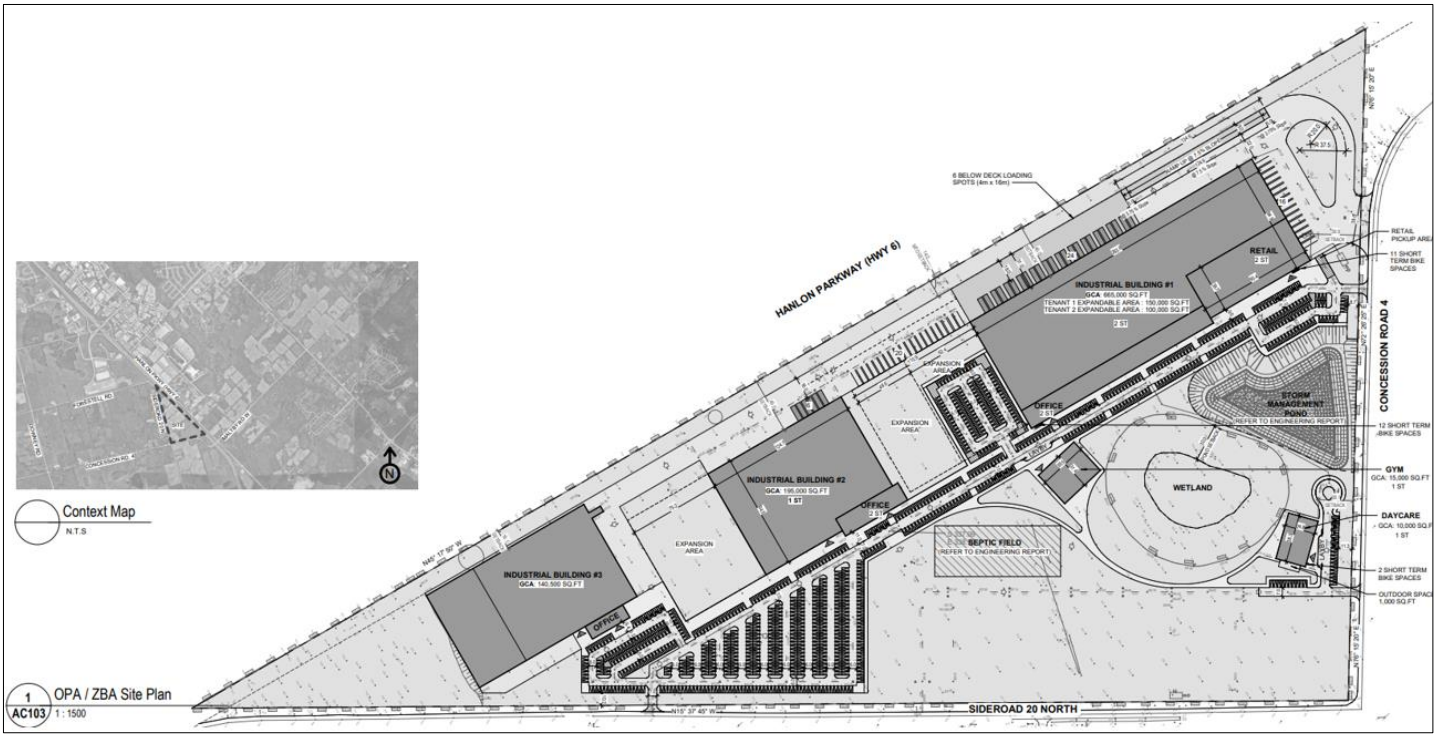

Figure 2 Site Plan

2.2.1 Phasing

Although this report assumes full build-out of the development by 2028 for the purpose of the capacity analysis, construction may occur over a longer period of time based on market conditions and other factors. It is likely that the initial phase will be developed between 2026 and 2027, followed by the second phase around 2029–2030, and the third phase proceeding approximately in 2031–2032.

The following outlines each phase of development:

Phase 1

- The initial phase will include Industrial Building 1, the gym, the daycare and associated parking. Access for the initial phase is planned from Concession Road 4 via a truck access, an access to the parking area for the industrial building and an access for the daycare building. The stormwater management facility and central amenity area are also proposed in the first phase.
- A total of three accesses will all be provided along Concession Road 4 and as a result most of the site generated traffic from the north will access the site via Downey Road/Wellington County Road 35 and travel east/west along Concession Road 4.

Phase 2

- The second phase includes Industrial Building 2 and associated parking. No additional access is proposed for the second phase.
- With access to the site continued to only be provided from the three accesses on Concession Road 4, site generated traffic will continue to access the site via Downey Road/Wellington County Road 35 and travel east/west along Concession Road 4.

Phase 3

- The third phase includes Industrial Building 3 in addition to a fourth access at the northerly portion of the site on Side Road 20 and is required for the parking areas associated with the third phase.

- With the addition of an access on Side Road 20, traffic will continue to primarily access the site via Downey Road/Wellington County Road 35 and travel east/west along Concession Road 4, however some additional traffic will be generated along Side Road 20 in order to access Industrial Building 3.

Each phase will require a separate site plan application, which will refine the detailed design and confirm the specific timing of development.

3. Existing Conditions

3.1 Existing Road Network

Highway 6/Hanlon Expressway is a north/south Type 1B Staged Freeway under the jurisdiction of the Ministry of Transportation. Adjacent to the study area, Highway 6 has a six-lane cross-section. Highway 6 currently intersects Wellington Road 34 (signalized) and Sideroad 20 (unsignalized) at grade. However, these intersections will be closed in the future and replaced with an interchange at a new east/west roadway.

Wellington Road 34 is an east/west arterial road under the jurisdiction of the County of Wellington. Within the study area Wellington Road 34 has a two-lane rural cross-section. Its intersections with Concession RoadForestell Road, Concession Road and Sideroad 20 are unsignalized with the stop-control only provided along the minor approach at both intersections. The posted speed limit along Wellington Road 35 is 80 km/h. North of Forestell Road, Wellington Road 35 continues as Downey Road.

Wellington Road 35 is a north/south arterial road under the jurisdiction of the County of Wellington. Within the study area Wellington Road 35 has a two-lane rural cross-section. Its intersections with Sideroad 20 is unsignalized with the stop-control only provided along the minor approach. The posted speed limit along Wellington Road 34 is 80 km/h.

Downey Road is a north/south arterial road under the jurisdiction of the Township of Guelph. Within the study area it has a two-lane rural cross-section. Its intersection with Forestell Road is unsignalized with the stop-control only provided on the minor approach. The posted speed limit along Downey Road is 70 km/h. South of Forestell Road, Downey Road continues as Wellington Road 35.

Forestell Road is an east/west local road under the jurisdiction of the Township of Puslinch. Within the study area it has a two-lane rural cross-section. Its intersection with Wellington Road 35 is unsignalized, with the stop-control only provided on the minor approach along Forestell Road. The posted speed limit along Forestell Road is 60 km/h. At its eastern limit, Forestell Road continues in the north/south direction along Sideroad 20.

Concession Road 4 is an east/west local road under the jurisdiction of the Township of Puslinch. Within the study area it has a two-lane rural cross-section. Its intersection with Wellington Road 35 is unsignalized, with the stop-control only provided on the minor approach along Concession Road 4. The assumed posted speed limit along Concession Road 4 is 50 km/h. Concession Road 4 currently ends at its intersection with Highway 6, however this unsignalized intersection will be closed in the future.

Sideroad 20 is a north/south local road under the jurisdiction of the Township of Puslinch. Within the study area, Sideroad 20 has a two-lane rural cross-section. Its intersections with Concession Road 4 and Wellington Road 34 are both unsignalized with the stop-control only provided along the minor approach at both intersections. The assumed posted speed limit along Sideroad 20 is 50 km/h.

The existing lane configurations and intersection controls for study intersections are shown in the figure below.

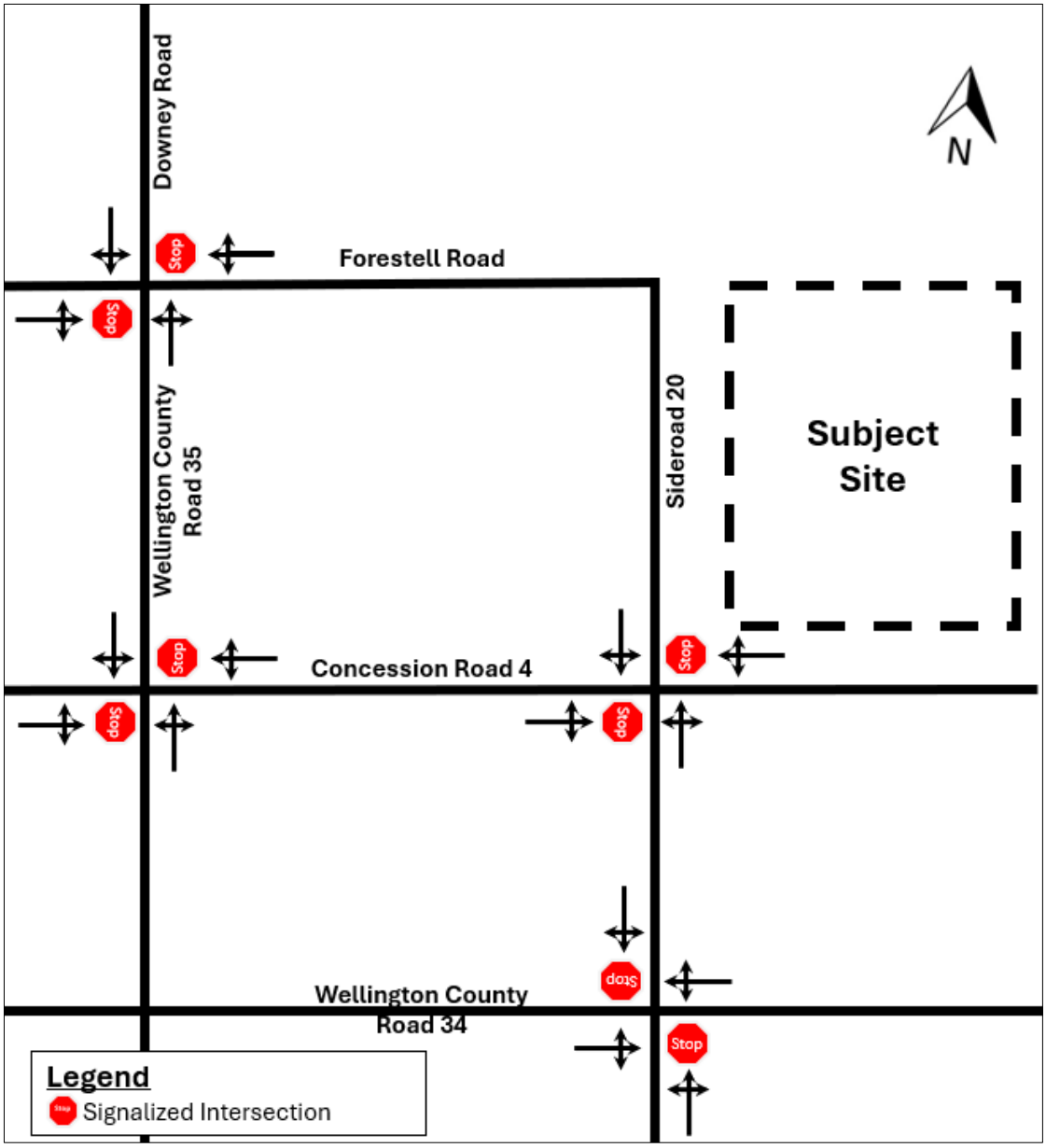

Figure 3 Existing Lane Configuration and Traffic Controls

3.2 Recently Completed Road Network Improvements

Highway 6/Hanlon Expressway Midblock Interchange

The Highway 6/Hanlon Expressway Midblock Interchange has recently been completed as part of the broader "Highways 6 and 401 Improvements from Hamilton to Guelph" project. As per past discussions with the MTO, construction was anticipated to be completed by the end of 2025 with the interchange fully operation and the Highway 6 and Maltby Road/Concession Road 4 intersection closed, however the interchange has been completed and is fully operational.

In addition to the new mid-block interchange, both existing at-grade intersections along Highway 6 at Concession Road 4/Maltby Road West and Wellington Road 34 have been closed with the Wellington Road intersection being replaced by a new bridge over Highway 6/Hanlon Expressway.

The project is currently in its next phase of construction for the Wellington County Road 34 underpass, with Wellington County Road 34 closed from the new midblock connection road (west of Highway 6) to Heritage Lake Drive (east of Highway 6).

The current plan for the Hanlon Expressway/Highway 6 Interchange is provided in **Figure 4** and is assumed to be built-out and operational within the 2028 horizon year. The traffic volumes at the off-ramps along the new midblock crossing and the intersection of the new midblock crossing with Wellington Road 34 were provided to GHD by the MTO and consisted of the future background volumes for the three intersections.

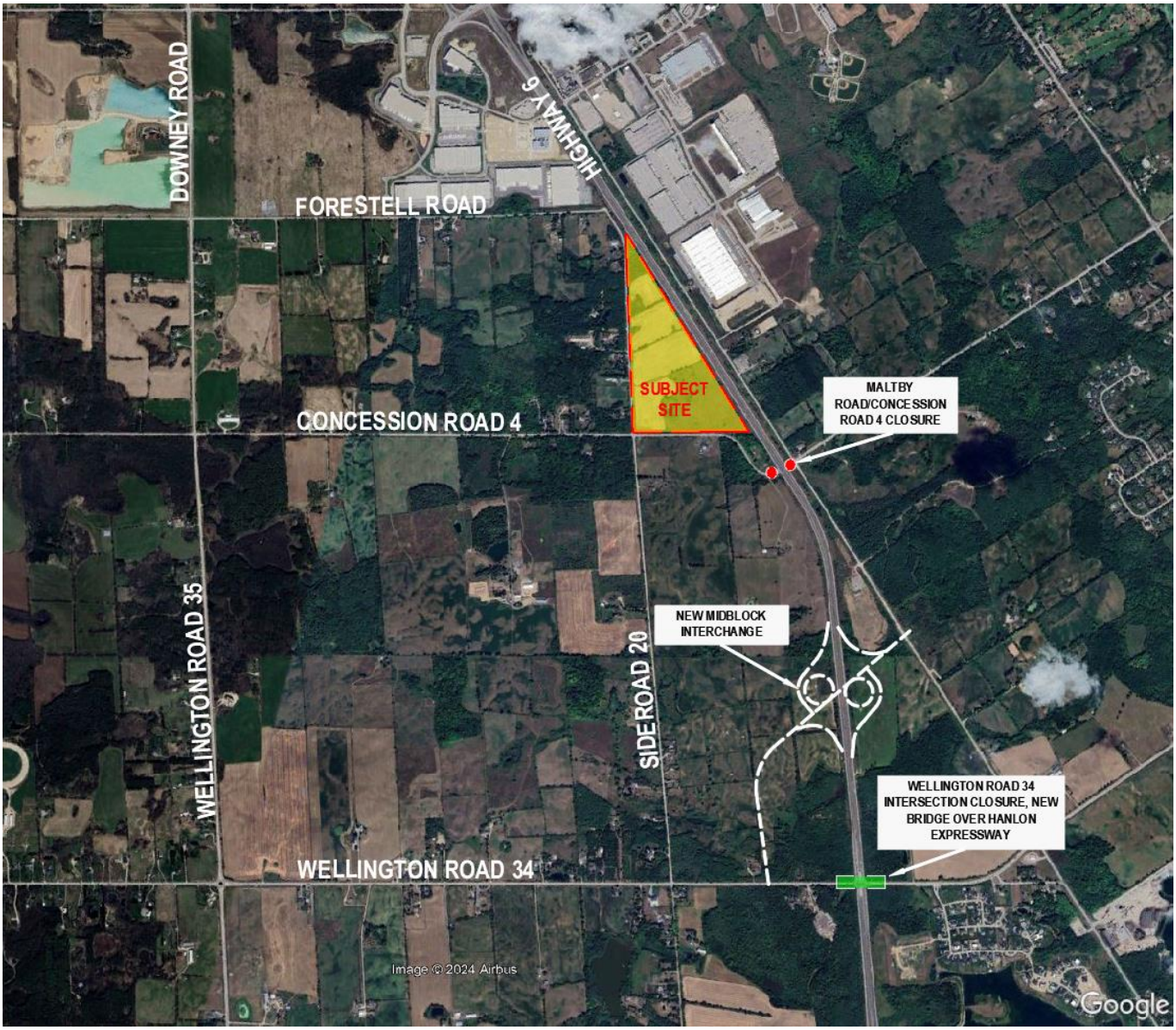

Figure 4 Hanlon Expressway/Highway 6 Interchange

3.3 Pedestrian and Bicycle Facilities

Within the study area, there are currently no sidewalks or cycling infrastructure.

3.4 Transit Services

Public transit service is provided within the study area through the County of Wellington's RIDE WELL program. The service is a demand based public transit service that provides transportation from door-to-door within the boundaries of Wellington County using a ride-share model.

Rides can be booked through the service up to 7 days in advance and is recommended to be booked at least 3 hours in advance for same-day rides. The service operates Monday through Friday (except statutory holidays), from 6:00 a.m. to 7:00 p.m.

3.5 Existing Traffic Data

GHD contracted Ontario Traffic Inc. to conduct updated turning movement counts at all the study intersections in February 2024. The baseline 2024 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 5** below with the full turning movement counts provided in **Appendix C.**

Figure 5 Baseline 2024 Traffic Volumes

4. Future Conditions

4.1 Study Horizon Year

As confirmed through the terms of reference, future horizon years of 2028 (build-out), 2033 (five years post build-out), and 2038 (ten years post build-out) were selected and is generally consistent with the MTO's TIS guidelines.

The future lane configuration is provided in **Figure 6**, and includes the proposed site accesses.

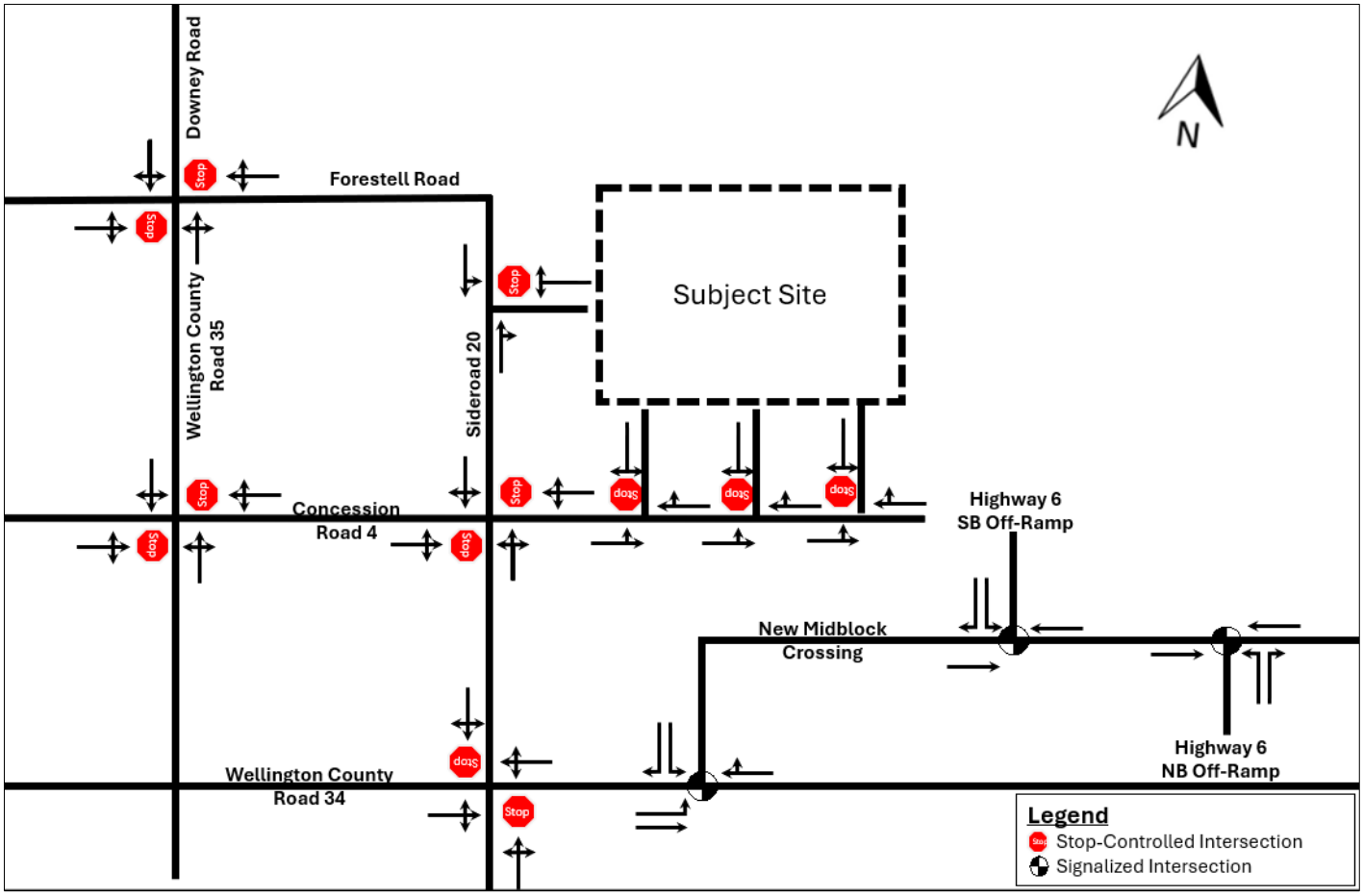

Figure 6 Future Lane Configuration

4.2 Proposed Network Improvement

In order to travel between the new interchange and the subject site, motorists would be required to backtrack as they follow the most direct route available.

To reduce the distance between the subject site and the new interchange, a second option is being assessed as part of a sensitivity analysis which would involve constructing a new service road between Concession Road 4 and the new planned new road constructed as part of the midblock interchange. The proposed route of the service road is shown in **Figure 7** below and would intersect the new midblock road at a 90-degree angle along its curvature.

Figure 7 Proposed Service Road Connection

The future lane configuration with the proposed Service Road is provided in **Figure 8**.

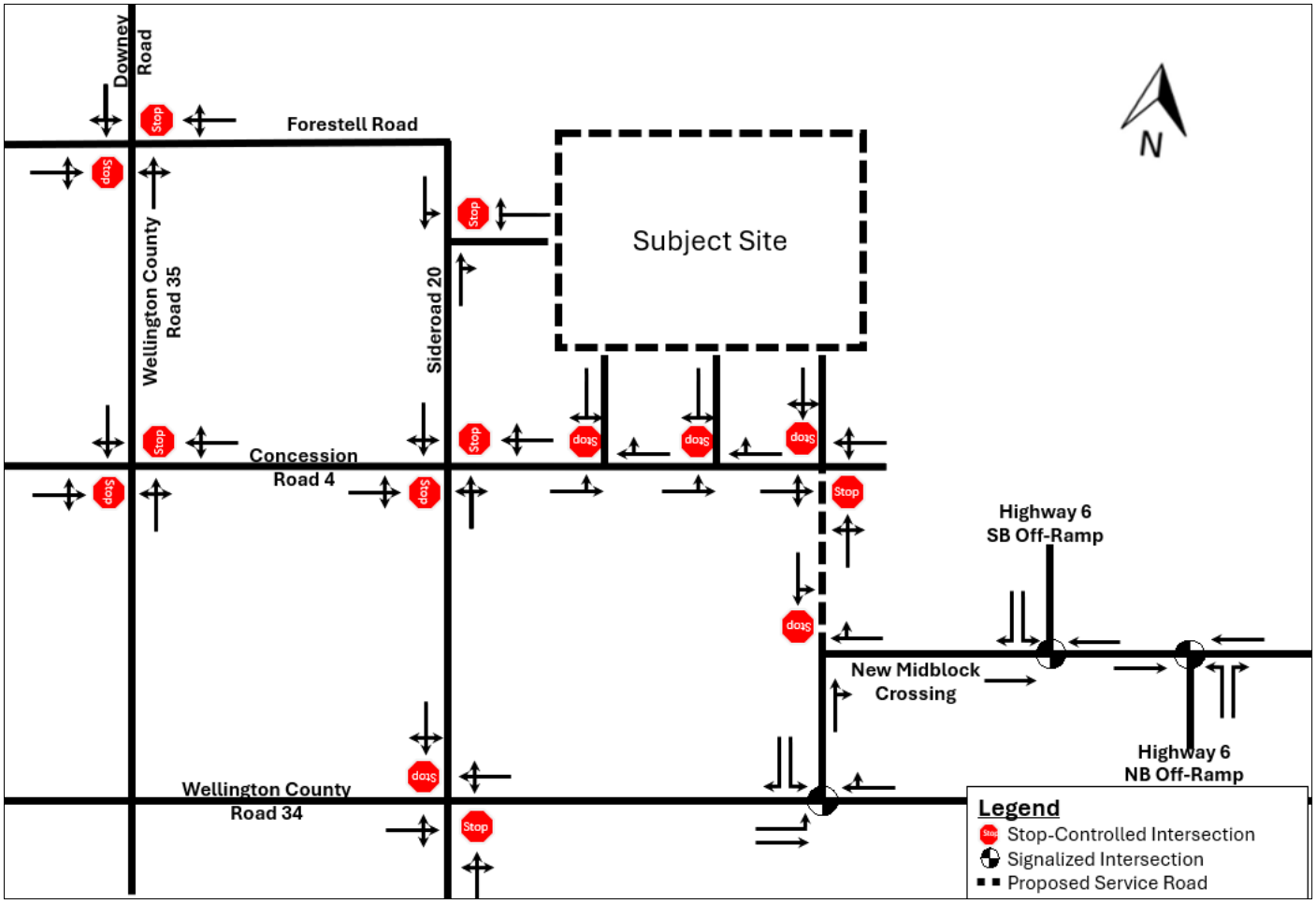

Figure 8 Future Lane Configuration with Service Road Option

4.3 Corridor Growth and Future Hwy Ramp Volumes

As confirmed with Township staff, a 2% per annum growth rate was applied to all movements along each road within the study area with the exception of roadways under the jurisdiction of the MTO.

The projected future traffic volumes and growth rate at MTO's future Highway 6 off-ramps were derived from the "Draft Traffic Data.pdf" excerpts of the draft traffic operation report, dated July 7, 2021. This report, prepared for the MTO project, included projected turning movements and signal warrants. The data was adjusted to represent both the base and horizon years. Specifically, the 2041 ramp volumes from the report were used for the 2033 and 2038 future background volumes, while the 2031 volumes were used for the 2028 future background scenario. This conservative approach incorporates future growth already accounted for in the MTO report.

4.4 Background Development Traffic

Through discussion with Township staff, it was identified that a series of developments are proposed on the east side of Highway 6. GHD requested the list of developments from Township staff however the information was not provided at the time of the study.

However, Township staff did note that the developments on the east side of Highway 6 would have a negligible effect on traffic levels on the west side of the Highway.

4.5 Future Background Traffic Volumes

The background traffic volumes for the 2028, 2033, and 2038 horizon years were derived by applying the respective growth rates to the study area roads. The resulting 2028, 2033, and 2038 future background traffic volumes are summarized in **Figure 9, Figure 10,** and **Figure 11,** respectively.

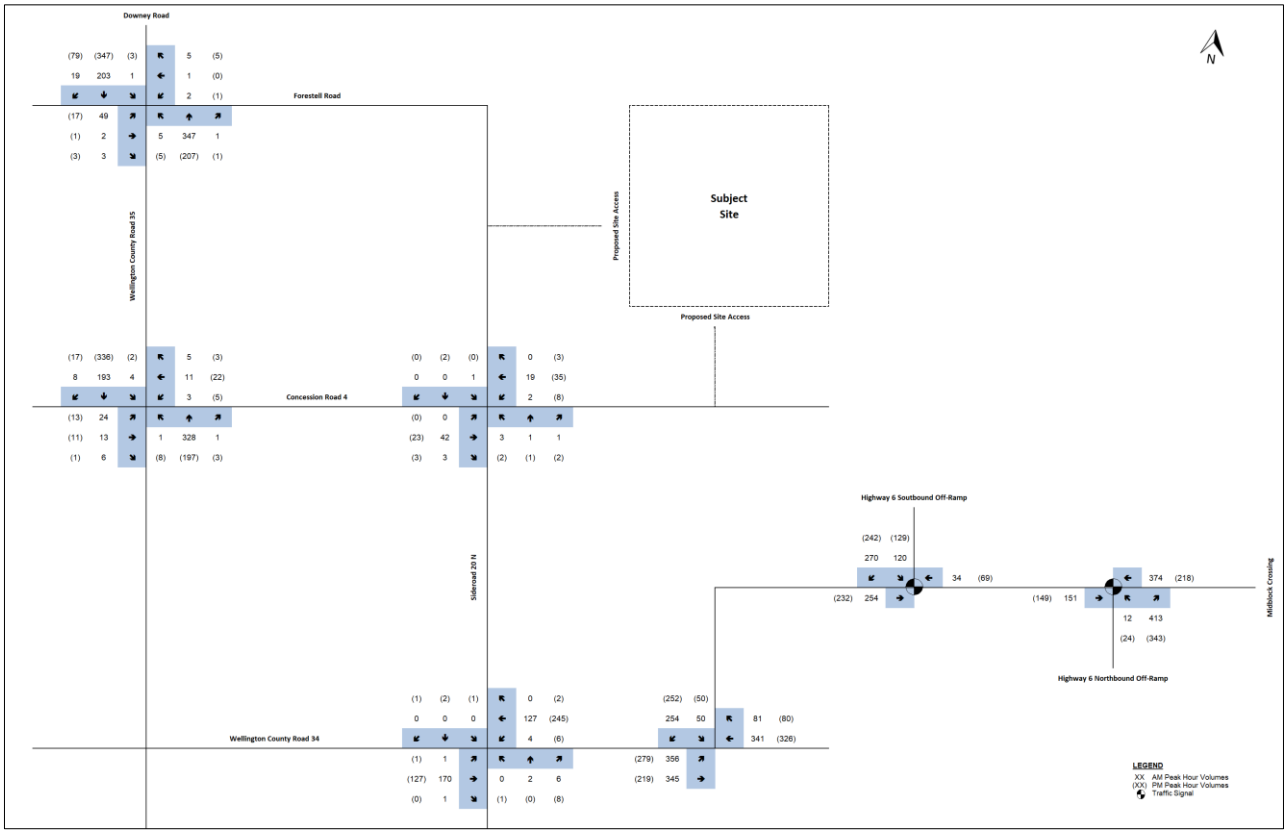

Figure 9 2028 Future Background Traffic Volumes

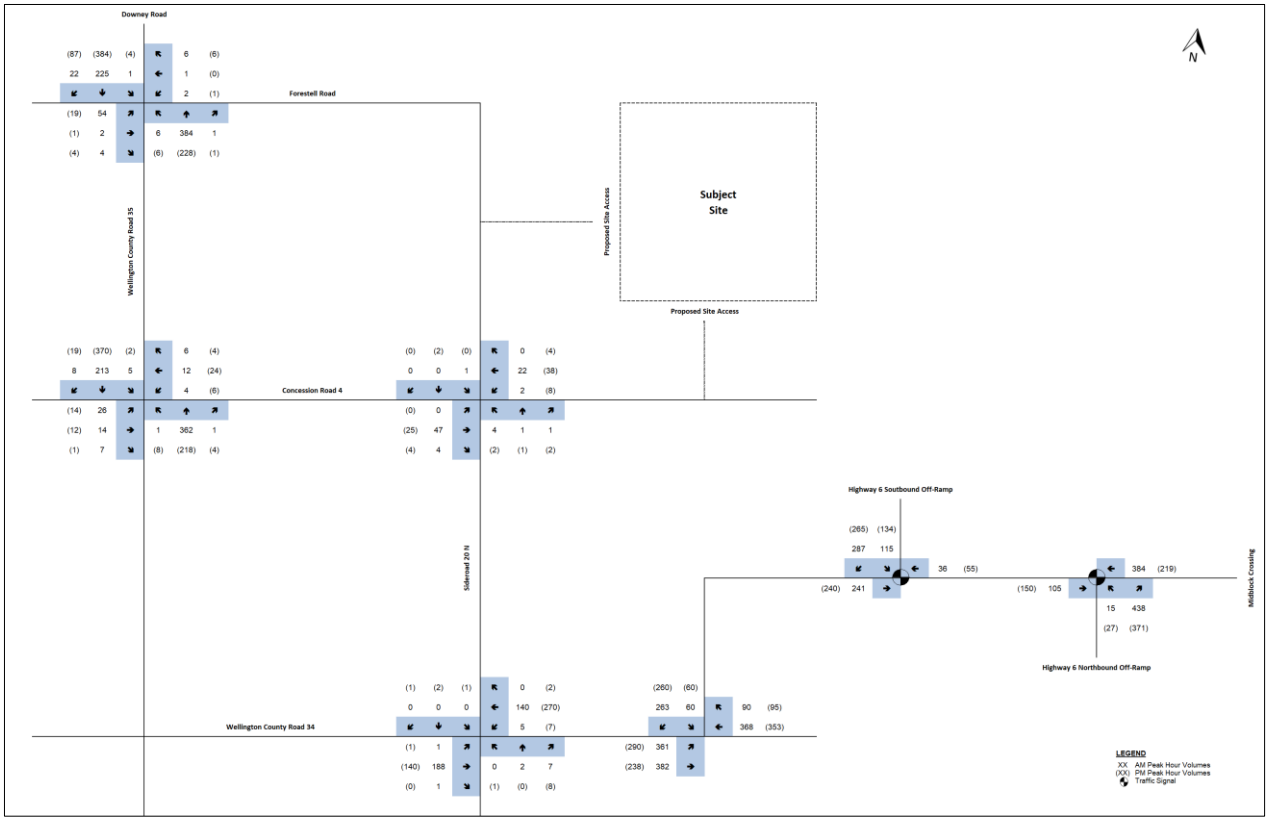

Figure 10 2033 Future Background Traffic Volumes

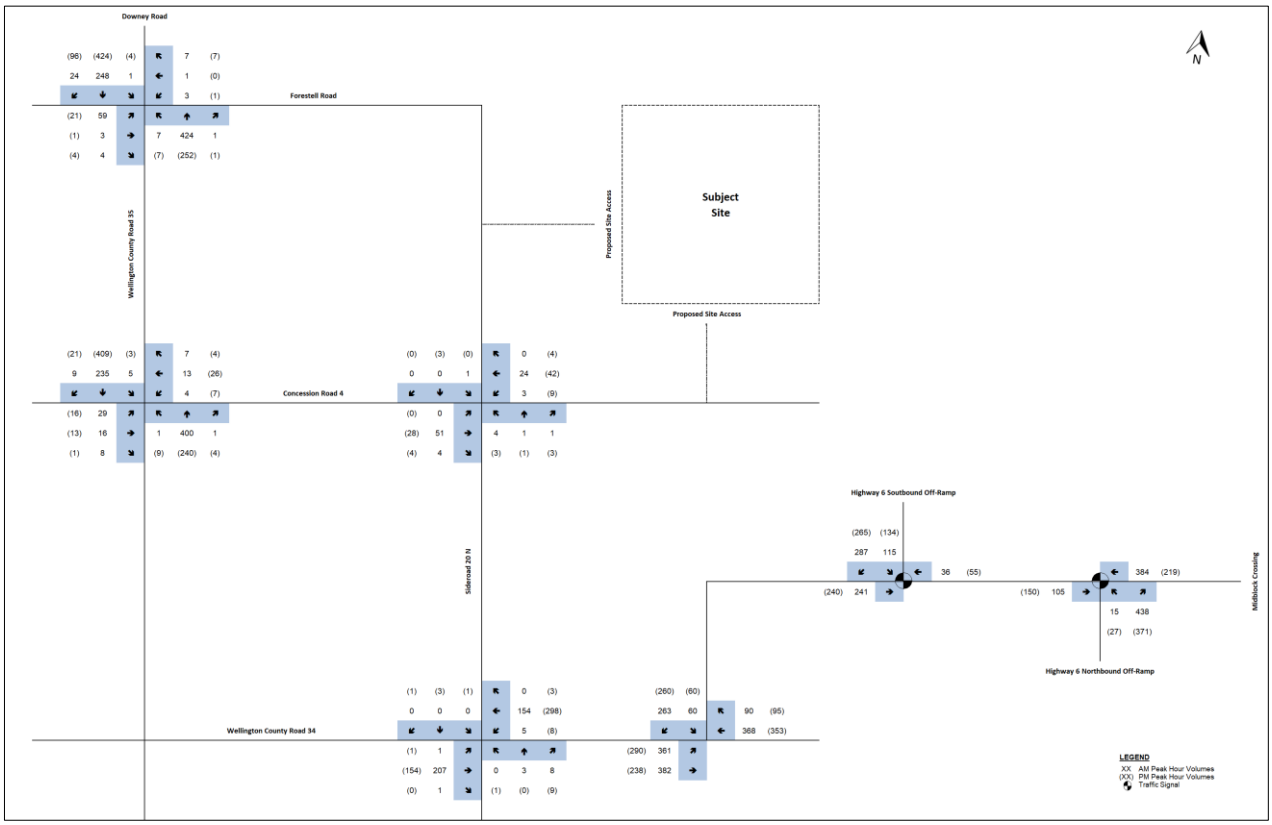

Figure 11 2038 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Site Trip Generation

The subject site consists of five proposed buildings with the breakdown and land use for each building is as follows. For the purpose of trip generation, the conference and food service areas are assumed to be ancillary uses as they would typically be used by people who are already on-site for the industrial/office uses.:

- Industrial Building 1
  - 4,645 m^2 of office GFA
  - 32,515 m^2 of warehouse GFA, plus 12,774 m^2 of expansion area
  - 4,645 m^2 of manufacturing GFA, plus 1,161 m^2 of expansion area
  - 2,323 m^2 of retail GFA
    - Ancillary uses
      - 1,858 m^2 of conference GFA
      - 465 m^2 of food service GFA
- Industrial Building 2
  - 929 m^2 of office GFA
  - 10,219 m^2 of manufacturing GFA, plus 6,968 m^2 of expansion area
- Industrial Building 3
  - 465 m^2 of office GFA
  - 12,588 m^2 of manufacturing GFA
- Building 4 – Gym
  - 1,394 m^2 of gym GFA
- Building 5 – Daycare
  - 929 m^2 of daycare GFA

Trip generation for the industrial, daycare, and gym development was calculated using rates provided in the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition. Land Use Code (LUC) 140 (Warehousing) and LUC 150 (Warehousing) to the corresponding industrial uses, LUC 710 (General Office Building) for Building 1's office space and LUC 712 (Small Office Building) for Building 2 and 3's office space based on their size (greater than 10,000 ft^2 for LUC 710, less than or equal to 10,000 ft^2 for LUC 712), LUC 492 (Health/Fitness Club) for Gym GFA, and LUC 565 (Daycare Center) to the Daycare GFA. The trip generation for each building and the total trip generation for the subject site is summarized in **Table 1**

Table 1 Total Site Trip Generation

Building	Land Use (LUC)	GFA	Parameters	Peak Hour Trip Generation					
				Weekday AM			Weekday PM		
				In	Out	Total	In	Out	Total
Building 1	Office (LUC 710)	50,000 ft^2	Trip Ratio	88%	12%	100%	17%	83%	100%
			New Trips	81	11	92	16	77	93
	Warehousing (LUC 150)	487,500 ft^2	Trip Ratio	77%	23%	100%	28%	72%	100%
			New Trips	64	19	83	25	63	88
	Manufacturing (LUC 140)	62,500 ft^2	Trip Ratio	77%	23%	100%	28%	72%	100%
			New Trips	37	11	48	13	33	46
	Retail (LUC 822)	25,000 ft^2	Trip Ratio	60%	40%	100%	50%	50%	100%
			New Trips	35	24	59	83	82	165
Building 2	Small Office (LUC 712)	10,000 ft^2	Trip Ratio	82%	18%	100%	34%	66%	100%
			New Trips	14	3	17	7	15	22
	Manufacturing (LUC 140)	185,000 ft^2	Trip Ratio	77%	23%	100%	28%	72%	100%
			New Trips	97	29	126	40	103	143
Building 3	Small Office (LUC 712)	5,000 ft^2	Trip Ratio	82%	18%	100%	22%	78%	100%
			New Trips	7	1	8	4	7	11
	Manufacturing (LUC 140)	135,500 ft^2	Trip Ratio	77%	23%	100%	28%	72%	100%
			New Trips	71	21	92	28	72	100
Gym	Health/Fitness Club (LUC 492)	15,000 ft^2	Trip Ratio	51%	49%	100%	28%	72%	100%
			New Trips	10	10	20	20	50	70
Daycare	Daycare Centre (LUC 565)	10,000 ft^2	Trip Ratio	53%	47%	100%	47%	53%	100%
			New Trips	57	53	110	52	59	111
			Total Trips	**473**	**182**	**655**	**288**	**561**	**849**

The subject site is expected to generate a total of 655 two-way vehicle trips during the a.m. peak hour consisting of 473 inbound and 182 outbound trips. During the p.m. peak hour, it is expected to generate 849 new two-way vehicle trips consisting of 288 inbound and 561 outbound trips.

ITE Trip Generation also provides estimated truck trip generation for the Warehousing and Manufacturing Land Use Codes as summarized in **Table 2** below. The estimated volume of truck trips are already included in the total trip generation estimates from **Table 1**.

Table 2 Estimated Site Trips (Trucks)

Building	Land Use (LUC)	GFA	Parameters	Peak Hour Trip Generation					
				Weekday AM			Weekday PM		
				In	Out	Total	In	Out	Total
Building 1	Warehousing (LUC 150)	487,500 ft^2	Trip Ratio	77%	23%	100%	52%	48%	100%
			New Trips	1	0	1	1	1	2
	Manufacturing (LUC 140)	62,500 ft^2	Trip Ratio	56%	44%	100%	41%	59%	100%
			New Trips	1	1	2	1	1	2
Building 2	Manufacturing (LUC 140)	185,000 ft^2	Trip Ratio	56%	44%	100%	41%	59%	100%
			New Trips	3	3	6	2	4	6
Building 3	Manufacturing (LUC 140)	135,500 ft^2	Trip Ratio	56%	44%	100%	41%	59%	100%
			New Trips	2	2	4	2	2	4
Total				**7**	**6**	**13**	**6**	**8**	**14**

The subject site is expected to generate a total of 13 two-way truck trips during the a.m. peak hour consisting of 7 inbound and 6 outbound trips. During the p.m. peak hour, it is expected to generate 14 new two-way truck trips consisting of 6 inbound and 8 outbound trips. The potential truck routes are illustrated in the figure below.

Figure 12 Potential Truck Routes

The total trip generation for the subject site split between vehicle and truck trips is summarized in **Table 3**.

Table 3 Total Site Trip Generation

Vehicle Type	Peak Hour Trip Generation					
	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
Passenger Vehicle Trips	466	176	642	282	553	835
Trucks Trips	7	6	13	6	8	14
Total	**473**	**182**	**655**	**288**	**561**	**849**

5.2 Site Traffic Distribution and Assignment

The site generated traffic for the subject site was distributed to the local network primarily based on first principles considering the future road network within the study area. It is assumed that most motorists would use Highway 6 to arrive and depart from the site due to its proximity to the site, with the remainder of trips travelling to the north along Downey Road.

The distribution of traffic between the accesses was based on the general layout of the site and the location of parking spaces. With the provision of three accesses along Concession Road 4, it is assumed that most of the site traffic arriving from and departing towards the north would use Wellington County Road 35 and Concession Road 4 to access the three accesses. As the final phase of development will be completed and the fourth site access will be constructed along Side Road 20, some traffic will begin to use Side Road 20 in order to access the site with uses associated with Building 3.

The directional distribution is provided in **Table 4** with the site generated traffic assignment to the study area road network for the weekday a.m. and p.m. peak hours provided in **Figure 13**.

Table 4 Site Traffic Distribution

Peak Period	Direction	North (Downey Road)	North (Highway 6)	South (Highway 6)	South (Wellington County Road 35)	East	West
AM	Inbound	60%	10%	10%	10%	5%	5%
	Outbound	60%	10%	10%	10%	5%	5%
PM	Inbound	60%	10%	10%	5%	5%	10%
	Outbound	60%	10%	10%	5%	5%	10%

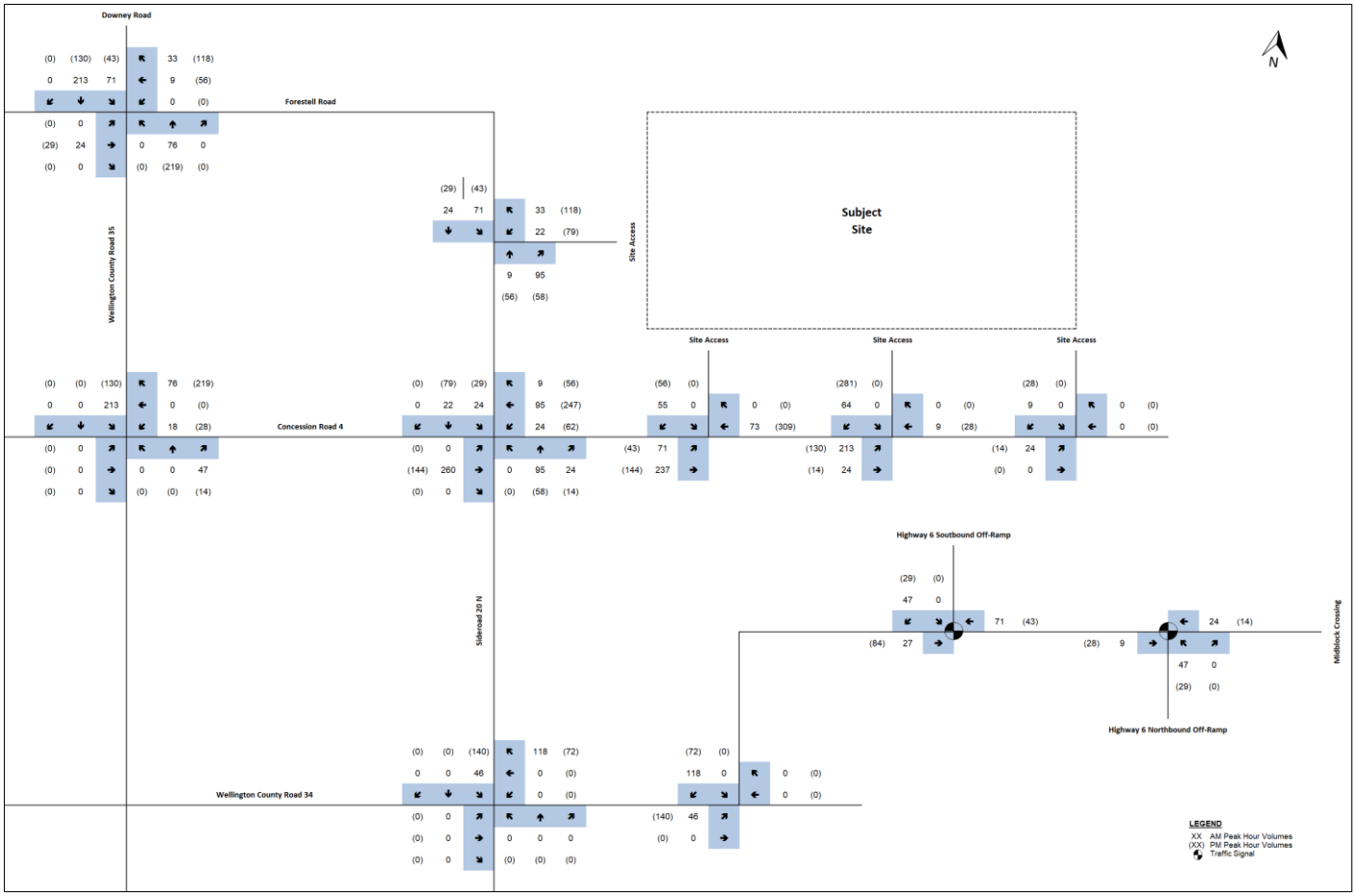

Figure 13 Total Site Trips

Under the proposed Service Road option which provides a direct connection between the subject site and the new interchange, it is expected that the site traffic assignment at the accesses would shift as a result of the shorter route being provided for drivers. It is anticipated that some traffic arriving from the north would arrive from via Highway 6 and the service road, with approximately 20% of traffic assigned from the north reassigned to the Highway 6 off-ramp. The revised site trip assignment as a result of the new Service Road is provided in **Figure 14**.

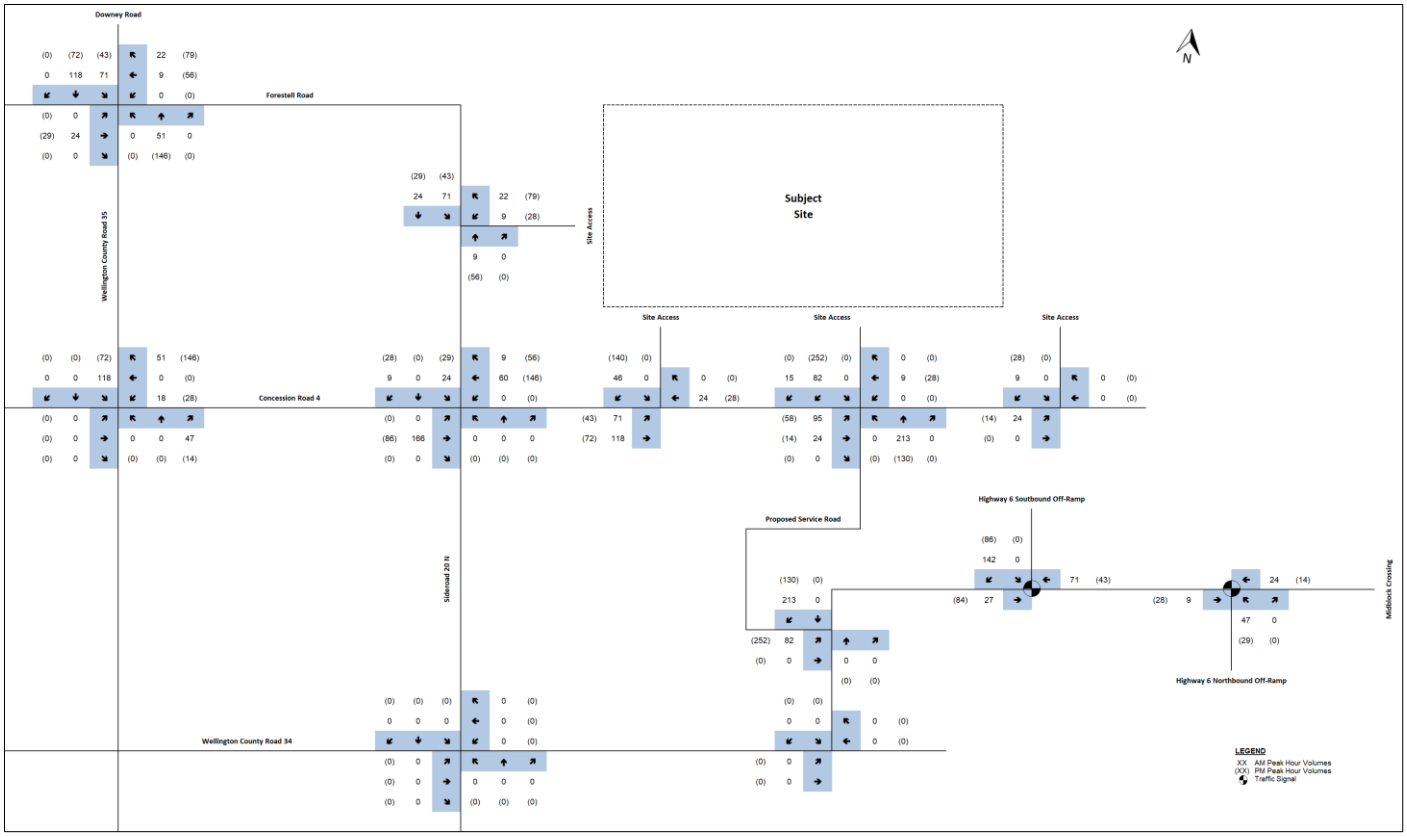

Figure 14 Total Site Trips (with Service Road Option)

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2028, 2033, and 2038 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 15, Figure 16,** and **Figure 17** with the existing and planned road network, and in **Figure 18, Figure 19,** and **Figure 20** with the proposed Service Road.

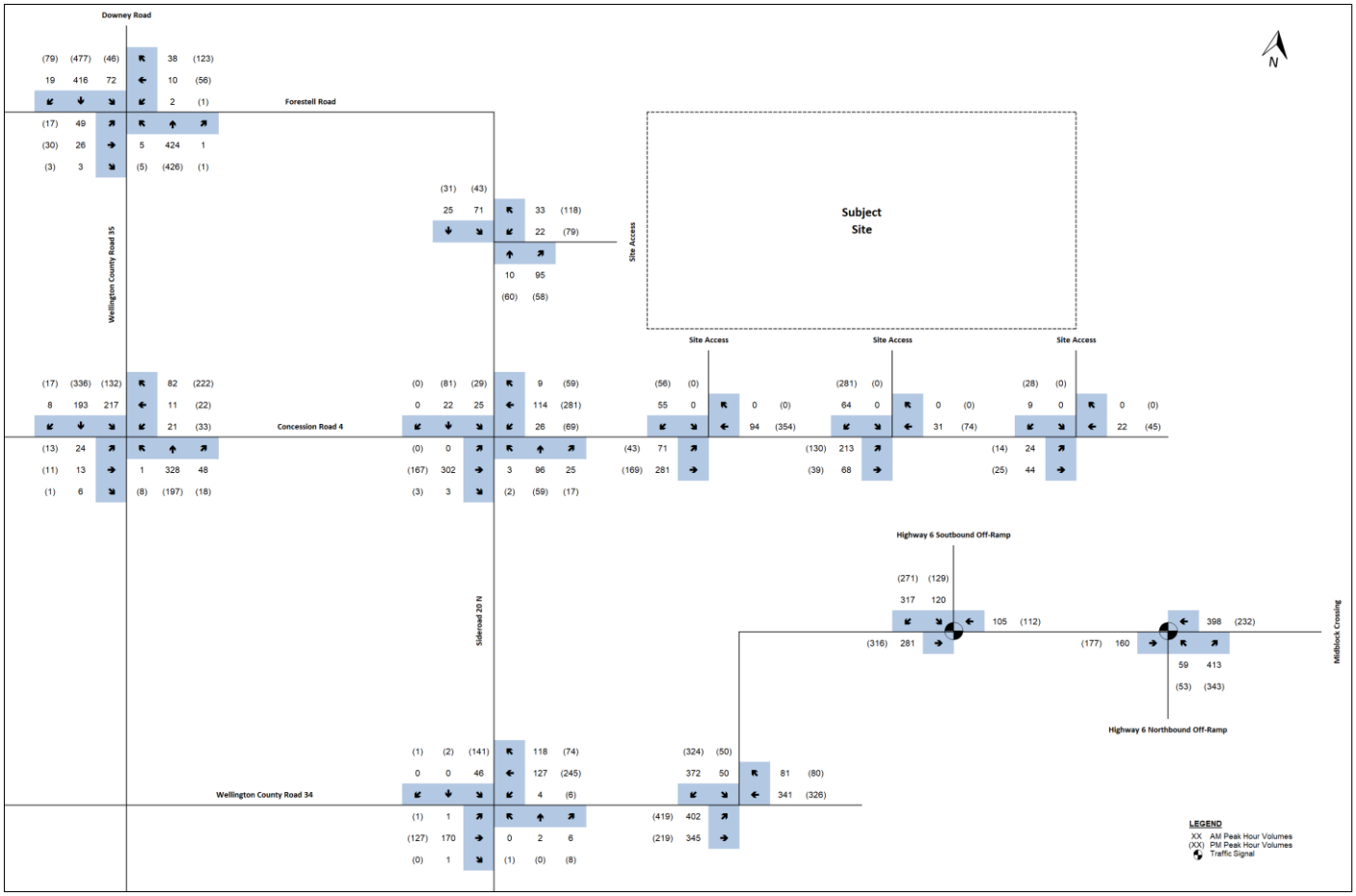

Figure 15 2028 Future Total Traffic Volumes

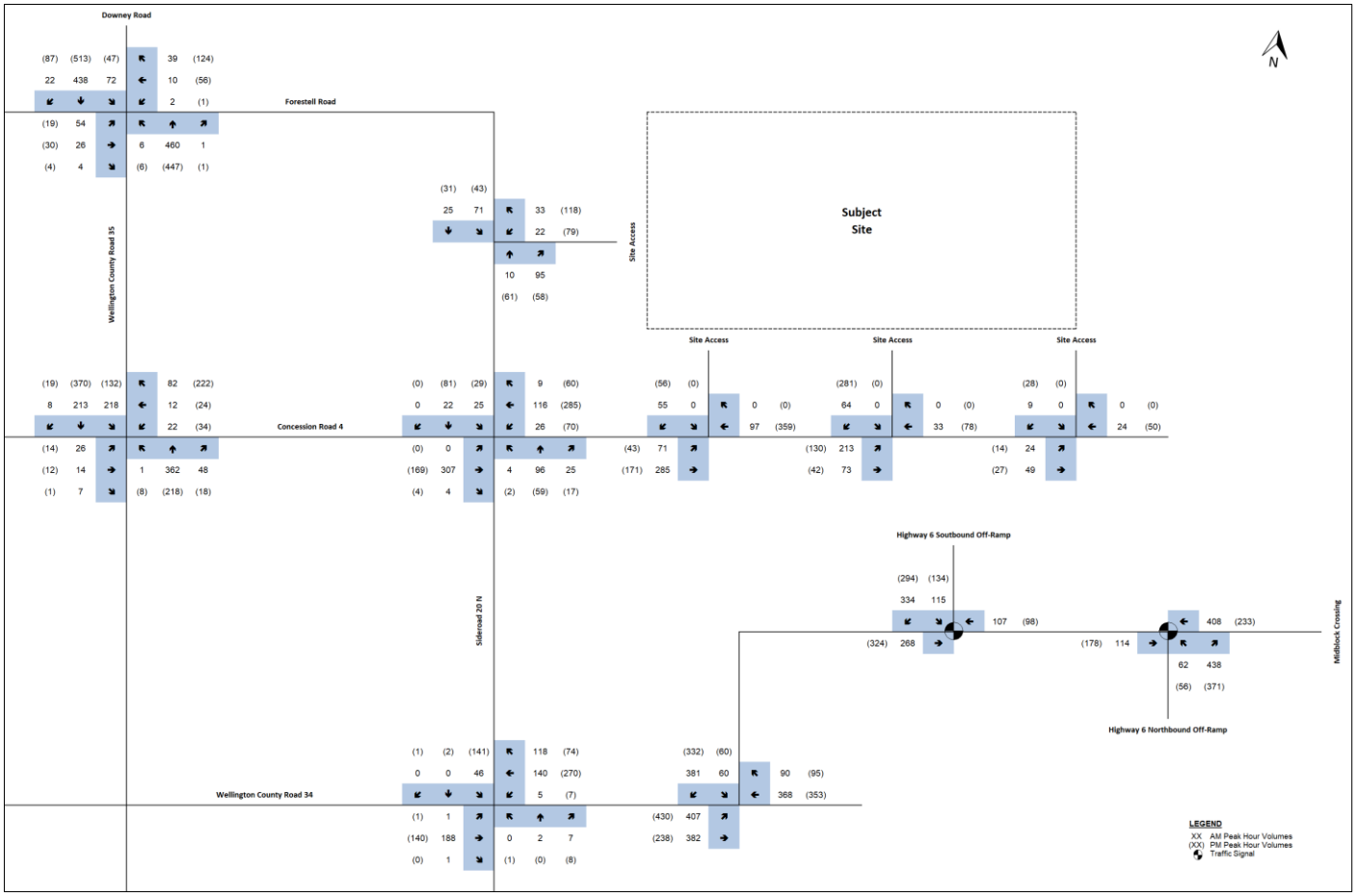

Figure 16 2033 Future Total Traffic Volumes

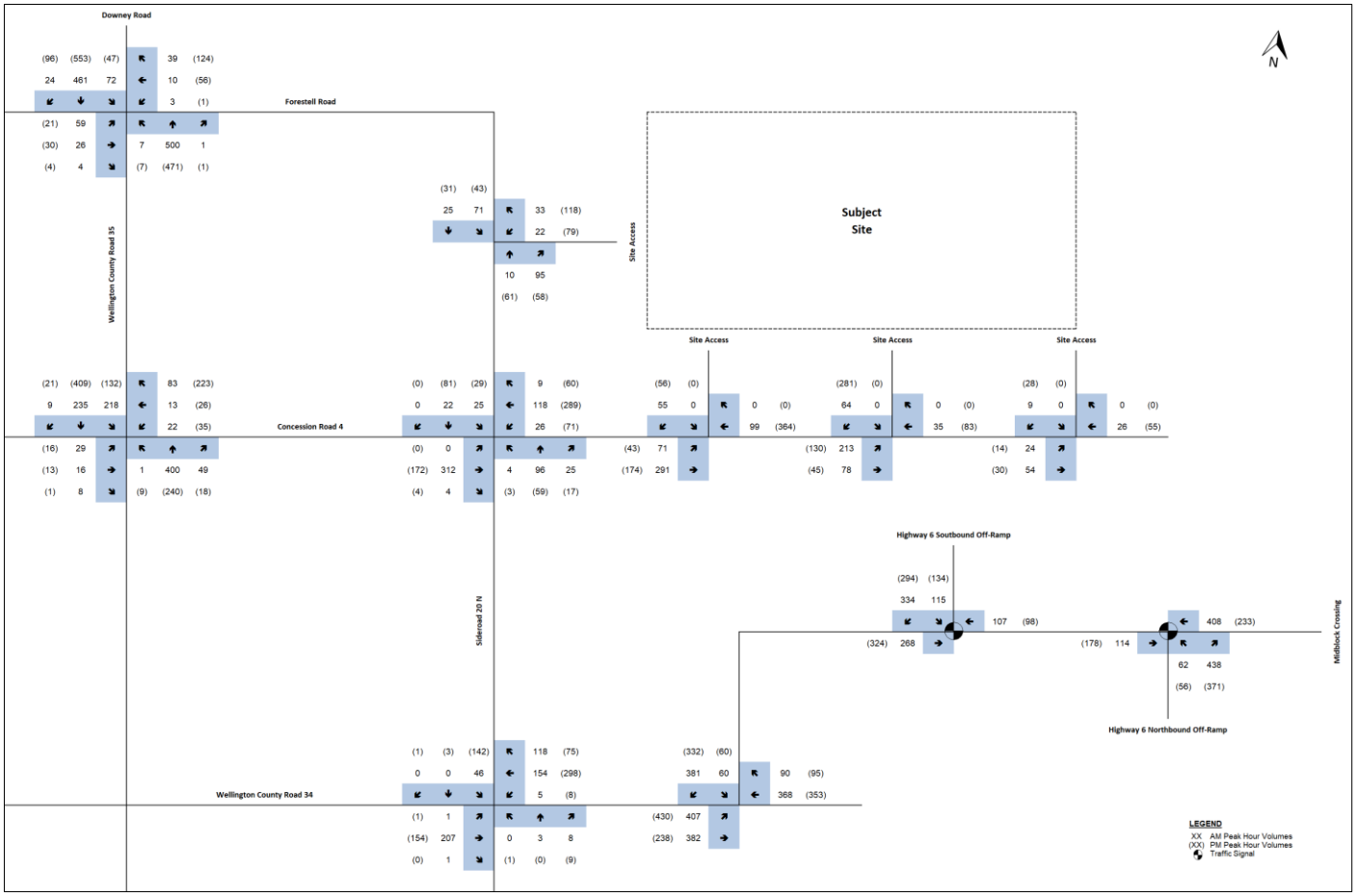

Figure 17 2038 Future Total Traffic Volumes

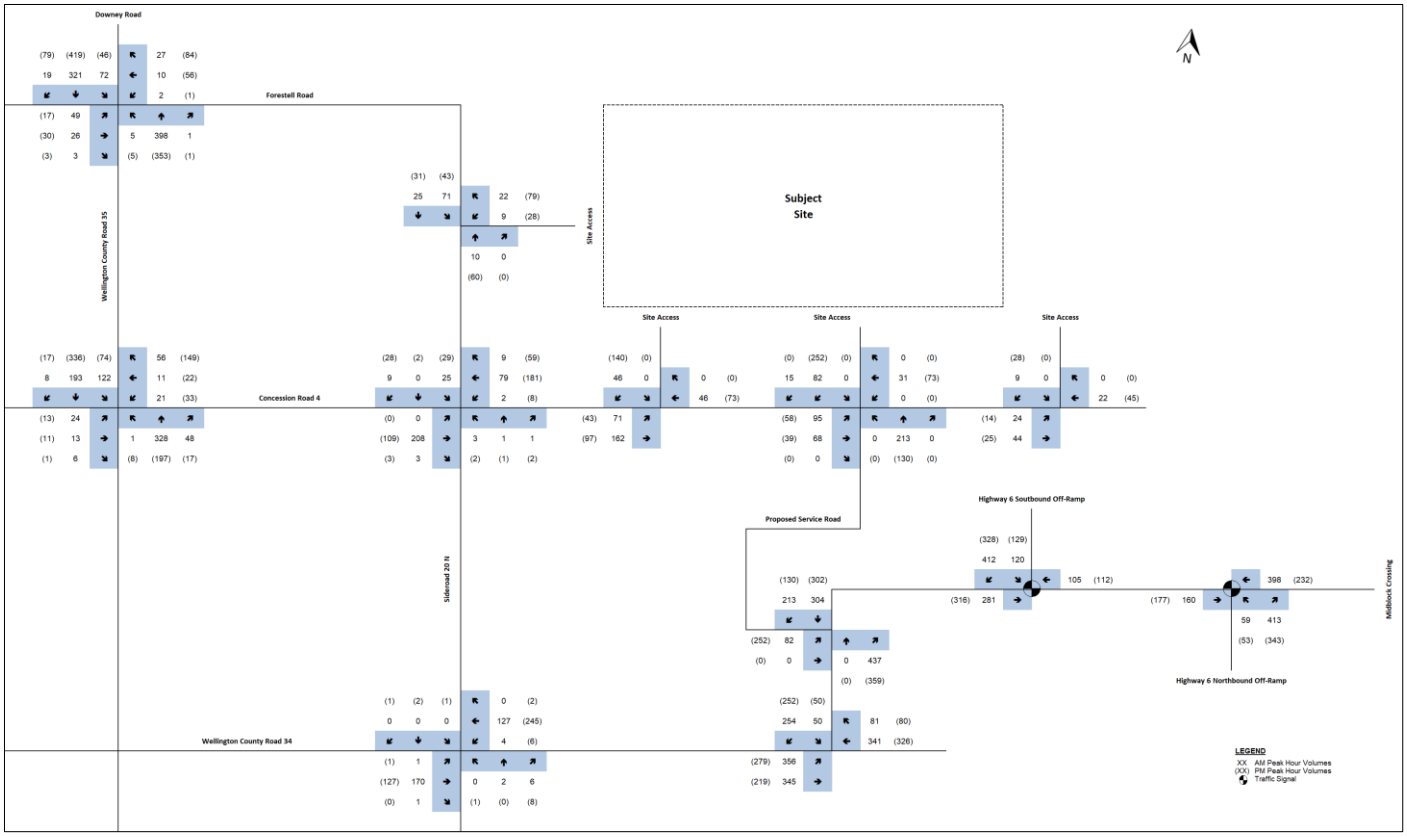

Figure 18 2028 Future Total Traffic Volumes (with Service Road Connection)

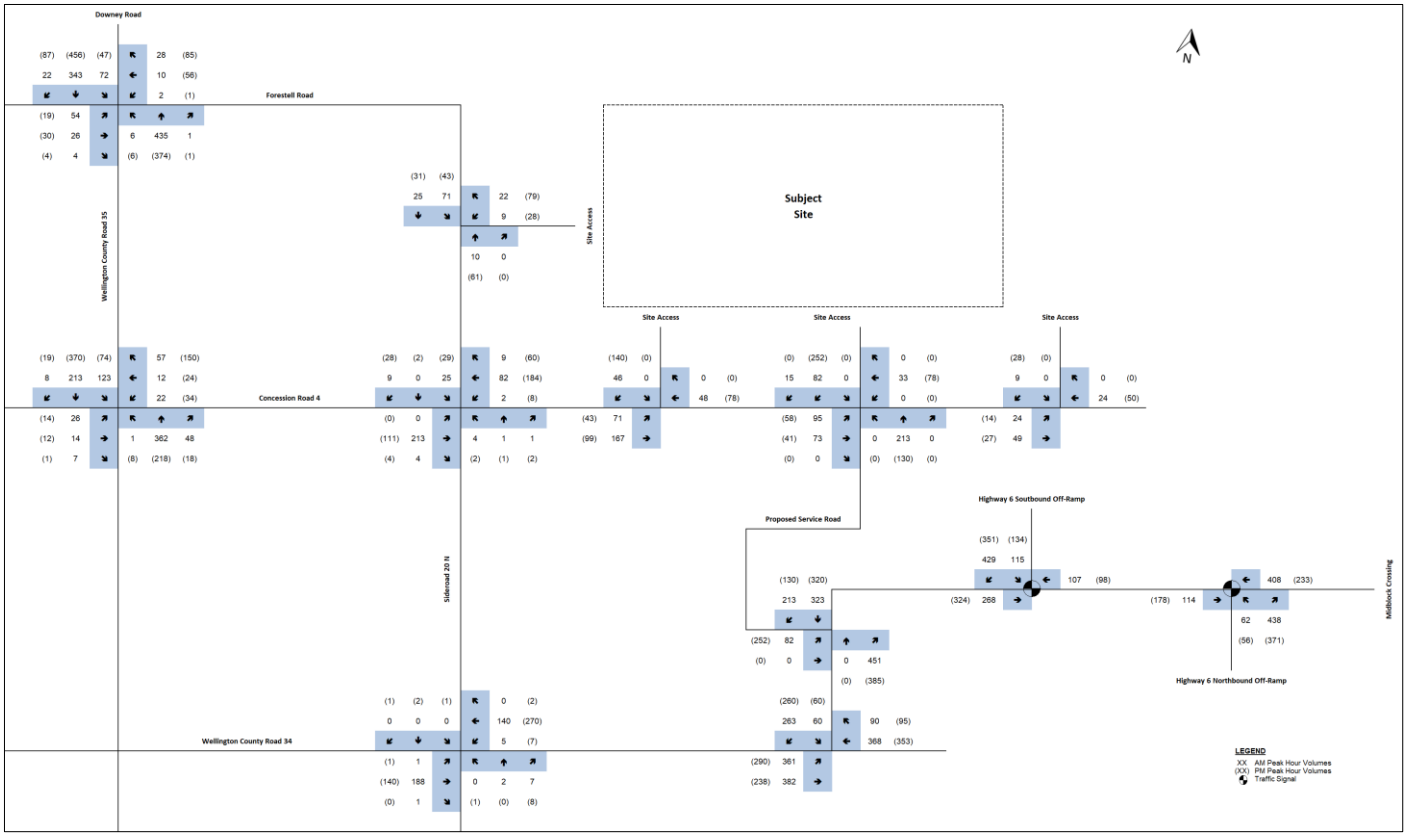

Figure 19 2033 Future Total Traffic Volumes (with Service Road Connection)

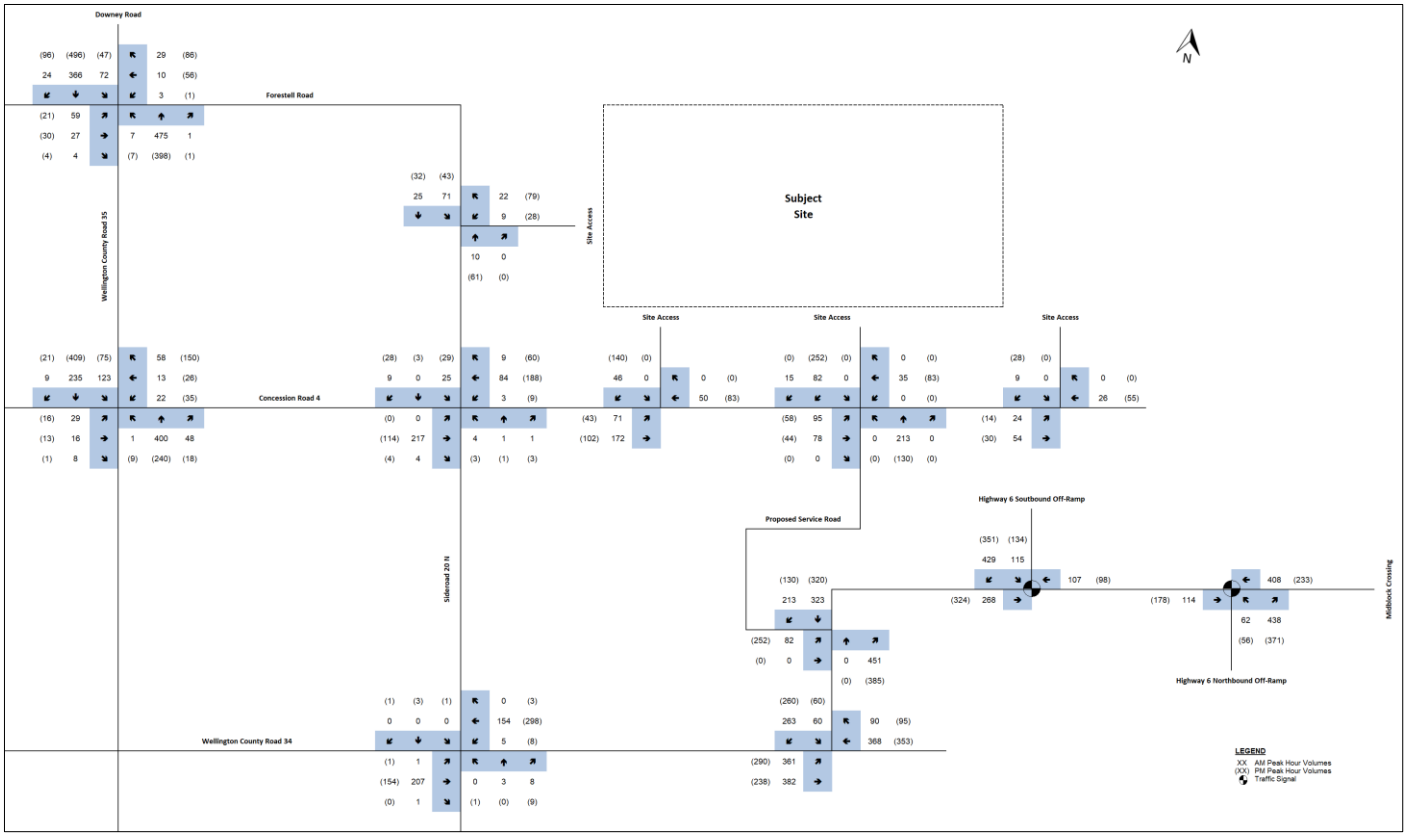

Figure 20 2038 Future Total Traffic Volumes (with new Service Road Connection)

7. 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 11 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. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the counts were used to analyze existing traffic conditions. Existing peak hour factors were also used for future traffic conditions.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

<u>Intersections within the County of Wellington and Township of Puslinch jurisdiction:</u>

'Critical' intersections and movements for a signalized intersection include:

- V/C ratios for overall intersections operations, through movements, or shared through/turning movements is greater than 0.85;
- V/C ratios for a dedicated left or right turn movement is greater than 0.90; and/or
- 95th percentile queues exceed available storage

'Critical' intersections and movements for an unsignalized intersection include:

- Level of Services (LOS) exceeds LOS "D"; or

- Queue length for individual movements that exceeds the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2024), future background (2028, 2033, and 2038) and future total (2028, 2033, and 2038) traffic conditions. The detailed calculation sheets are provided in **Appendix D**.

7.1 Downey Road/Wellington Road 35 and Forestell 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 5 Capacity analysis of Downey Road/Wellington Road 35 and Forestell Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2024	EBTLR = 0.14 (C) 16 WBTLR = 0.02 (B) 12 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.05 (B) 14 WBTLR = 0.01 (B) 10 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Background 2028	EBTLR = 0.16 (C) 17 WBTLR = 0.02 (B) 12 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.06 (B) 15 WBTLR = 0.01 (B) 10 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2028	EBTLR = 0.69 (**F**) 81 WBTLR = 0.17 (C) 18 NBTLR = 0.01 (A) 0 SBTLR = 0.11 (A) 3	EBTLR = 30 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.41 (**F**) 52 WBTLR = 0.54 (D) 27 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 15 m WBTLR = 25 m NBTLR = 5 m SBTLR = 5 m
Future Background 2033	EBTLR = 0.2 (C) 18 WBTLR = 0.02 (B) 13 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.07 (C) 16 WBTLR = 0.01 (B) 11 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2033	EBTLR = 0.85 (**F**) 119 WBTLR = 0.19 (C) 19 NBTLR = 0.01 (A) 0 SBTLR = 0.11 (A) 3	EBTLR = 40 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.49 (**F**) 66 WBTLR = 0.58 (D) 30 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 20 m WBTLR = 30 m NBTLR = 5 m SBTLR = 5 m
Future Background 2038	EBTLR = 0.25 (C) 21 WBTLR = 0.02 (B) 14 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 10 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.08 (C) 17 WBTLR = 0.01 (B) 11 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2038	EBTLR = 0.96 (**F**) 153 WBTLR = 0.2 (C) 20 NBTLR = 0.01 (A) 0 SBTLR = 0.08 (A) 2	EBTLR = 45 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.61 (**F**) 92 WBTLR = 0.63 (E) 35 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 25 m WBTLR = 30 m NBTLR = 5 m SBTLR = 5 m

Under existing traffic conditions, the unsignalized intersection is operating at satisfactory levels with the greatest delays reported in the eastbound approach with a 16 second delay during the a.m. peak hour and 14 second delay during the p.m. peak hour.

With the addition of corridor growth for the 2028 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the greatest delays continued to be reported in the eastbound approach with the delays increasing marginally by 1 second to 17 seconds during the a.m. peak hour and 15 seconds during the p.m. peak hour.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with the delay in the southbound approach reported at 81 seconds during the a.m. peak hour and 52 seconds during the p.m. peak hour.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the maximum delay increasing to 153 seconds in the southbound approach during the a.m. peak hour and 92 seconds during the p.m. peak hour under the ultimate horizon year.

No geometric improvements are recommended as a result of the proposed development.

7.2 Wellington Road 34 and Side Road 20

Capacity analysis for 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 6 Capacity analysis of Wellington Road 34 and Side Road 20

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2024	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.09 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (B) 11	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Background 2028	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.09 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2028	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.08 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.35 (C) 16	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 15 m
Future Background 2033	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.09 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2033	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (B) 10 SBTLR = 0.09 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.37 (C) 18	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 15 m
Future Background 2038	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.09 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2038	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (B) 10 SBTLR = 0.09 (B) 13	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.41 (C) 20	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 15 m

Under existing traffic conditions, the unsignalized intersection is operating at satisfactory levels with the greatest delays occurring in northbound approach during the a.m. peak hour with a 10 second delay and in the southbound approach during the p.m. peak hour with an 11 second delay.

With the addition of corridor growth for the 2028 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the greatest delays continued to be reported in the northbound and southbound approaches with the maximum delay remaining at 10 seconds in the northbound approach during the a.m. peak hour and increasing marginally to 12 seconds during the p.m. peak hour.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with the greatest delays now reported in the southbound approach during both peak hours, with a 12 second delay during the a.m. peak hour and 16 second delay during the p.m. peak hour.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the maximum delay reported to increase in the southbound approach to 13 seconds during the a.m. peak hour and 20 seconds during the p.m. peak hour under the ultimate horizon year.

No geometric improvements are recommended as a result of the proposed development.

7.3 Concession Road 4 and Sideroad 20

Capacity analysis for 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 of Concession Road 4 and Sideroad 20

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2024	EBTLR = 0.06 (A) 9 WBTLR = 0.03 (A) 9 NBTLR = 0 (A) 5 SBTLR = 0 (A) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.03 (A) 9 WBTLR = 0.05 (A) 9 NBTLR = 0 (A) 3 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 0 m
Future Background 2028	EBTLR = 0.07 (A) 9 WBTLR = 0.03 (A) 9 NBTLR = 0 (A) 5 SBTLR = 0 (A) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.03 (A) 9 WBTLR = 0.05 (A) 9 NBTLR = 0 (A) 3 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 0 m
Future Total 2028	EBTLR = 0.6 (C) 19 WBTLR = 0.37 (C) 16 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 4	EBTLR = 30 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.26 (B) 12 WBTLR = 0.67 (C) 21 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 2	EBTLR = 10 m WBTLR = 40 m NBTLR = 0 m SBTLR = 5 m
Future Background 2033	EBTLR = 0.07 (A) 9 WBTLR = 0.04 (A) 9 NBTLR = 0 (A) 5 SBTLR = 0 (A) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.03 (A) 9 WBTLR = 0.06 (A) 9 NBTLR = 0 (A) 3 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 0 m
Future Total 2033	EBTLR = 0.61 (C) 19 WBTLR = 0.38 (C) 16 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 4	EBTLR = 35 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.26 (B) 12 WBTLR = 0.68 (C) 21 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 2	EBTLR = 10 m WBTLR = 40 m NBTLR = 0 m SBTLR = 5 m
Future Background 2038	EBTLR = 0.08 (A) 10 WBTLR = 0.04 (A) 9 NBTLR = 0 (A) 5 SBTLR = 0 (A) 7	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0.04 (A) 9 WBTLR = 0.06 (A) 9 NBTLR = 0 (A) 3 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 0 m

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2038	EBTLR = 0.68 (C) 22 WBTLR = 0.42 (C) 17 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 4	EBTLR = 40 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.27 (B) 13 WBTLR = 0.69 (C) 22 NBTLR = 0 (A) 0 SBTLR = 0.02 (A) 2	EBTLR = 10 m WBTLR = 45 m NBTLR = 0 m SBTLR = 5 m

Under existing traffic conditions, the unsignalized intersection is operating at satisfactory levels with the greatest delays occurring in the eastbound and westbound approaches during both peak hours with 9 second delays.

With the addition of corridor growth for the 2028 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the greatest delays continued to be reported in the eastbound and westbound approaches during both peak hours, each continuing to operate with a reported 9 second delay.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with the delay in the eastbound approach increasing to 19 seconds during the a.m. peak hour the delay in the westbound approaching increasing to 21 seconds during the p.m. peak hour.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the maximum delay in the eastbound approach increasing to 22 seconds during the a.m. peak hour the delay in the westbound approaching increasing to 22 seconds during the p.m. peak hour under the ultimate horizon year.

No geometric improvements are recommended as a result of the proposed development.

7.4 Wellington Road 35 and Concession Road 4

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 of Wellington Road 35 and Concession Road 4

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2024	EBTLR = 0.1 (B) 14 WBTLR = 0.04 (B) 13 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.05 (B) 14 WBTLR = 0.06 (B) 13 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m
Future Background 2028	EBTLR = 0.11 (B) 15 WBTLR = 0.04 (B) 14 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.05 (B) 14 WBTLR = 0.07 (B) 14 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m
Future Total 2028	EBTLR = 0.31 (**E**) 39 WBTLR = 0.38 (C) 22 NBTLR = 0 (A) 0 SBTLR = 0.19 (A) 5	EBTLR = 10 m WBTLR = 15 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.13 (D) 28 WBTLR = 0.48 (C) 17 NBTLR = 0.01 (A) 0 SBTLR = 0.09 (A) 3	EBTLR = 5 m WBTLR = 20 m NBTLR = 5 m SBTLR = 5 m
Future Background 2033	EBTLR = 0.14 (C) 16 WBTLR = 0.05 (B) 14 NBTLR = 0 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.07 (C) 15 WBTLR = 0.08 (B) 15 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2033	EBTLR = 0.4 (**E**) 48 WBTLR = 0.43 (D) 26 NBTLR = 0 (A) 0 SBTLR = 0.19 (A) 5	EBTLR = 15 m WBTLR = 15 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.17 (D) 32 WBTLR = 0.52 (C) 18 NBTLR = 0.01 (A) 0 SBTLR = 0.09 (A) 2	EBTLR = 5 m WBTLR = 25 m NBTLR = 5 m SBTLR = 5 m
Future Background 2038	EBTLR = 0.17 (C) 18 WBTLR = 0.07 (C) 15 NBTLR = 0 (A) 0 SBTLR = 0.01 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.08 (C) 16 WBTLR = 0.1 (C) 16 NBTLR = 0.01 (A) 0 SBTLR = 0 (A) 0	EBTLR = 5 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m
Future Total 2038	EBTLR = 0.57 (**F**) 80 WBTLR = 0.55 (**E**) 37 NBTLR = 0 (A) 0 SBTLR = 0.23 (A) 6	EBTLR = 20 m WBTLR = 25 m NBTLR = 0 m SBTLR = 10 m	EBTLR = 0.21 (**E**) 37 WBTLR = 0.57 (C) 21 NBTLR = 0.01 (A) 0 SBTLR = 0.09 (A) 2	EBTLR = 5 m WBTLR = 30 m NBTLR = 5 m SBTLR = 5 m

Under existing traffic conditions, the unsignalized intersection is operating at satisfactory levels with the greatest delays occurring in eastbound approach with a 14 second delay during both peak hours.

With the addition of corridor growth for the 2028 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the greatest delays continued to be reported in the eastbound and westbound approaches with the maximum delays increasing marginally to 15 seconds in the eastbound approach during the a.m. peak hour and 14 seconds in the eastbound and westbound approaches during the p.m. peak hour.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with the delay in the eastbound approach increasing to 39 seconds during the a.m. peak hour and 28 seconds during the p.m. peak hour.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the maximum delay increasing to 80 seconds in the eastbound approach during the a.m. peak hour and 37 seconds during the p.m. peak hour in the eastbound approach under the ultimate horizon year.

No geometric improvements are recommended as a result of the proposed development.

7.5 New East/West Road and Highway 6 Southbound Off-Ramp

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 of New East/West Road and Highway 6 Southbound Off-Ramp

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2028	Overall: 0.29 (B) 14 EBT = 0.25 (A) 6 WBT = 0.03 (A) 5 SBL = 0.44 (C) 22 SBR = 0.18 (C) 20	EBT = 25 m WBT = 5 m SBL = 25 m SBR = 20 m	Overall: 0.27 (B) 15 EBT = 0.22 (A) 6 WBT = 0.06 (A) 5 SBL = 0.48 (C) 25 SBR = 0.16 (C) 22	EBT = 25 m WBT = 10 m SBL = 30 m SBR = 20 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	Overall: 0.33 (B) 14 EBT = 0.3 (A) 6 WBT = 0.1 (A) 5 SBL = 0.43 (C) 22 SBR = 0.22 (C) 20	 EBT = 35 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.39 (B) 14 EBT = 0.37 (A) 7 WBT = 0.11 (A) 5 SBL = 0.48 (C) 25 SBR = 0.18 (C) 23	 EBT = 40 m WBT = 15 m SBL = 30 m SBR = 20 m
Future Background 2033	Overall: 0.28 (B) 14 EBT = 0.24 (A) 6 WBT = 0.04 (A) 5 SBL = 0.42 (C) 21 SBR = 0.2 (B) 20	 EBT = 25 m WBT = 5 m SBL = 25 m SBR = 20 m	Overall: 0.28 (B) 14 EBT = 0.22 (A) 6 WBT = 0.19 (A) 6 SBL = 0.49 (C) 25 SBR = 0.18 (C) 23	 EBT = 25 m WBT = 15 m SBL = 30 m SBR = 20 m
Future Total 2033	Overall: 0.32 (B) 14 EBT = 0.29 (A) 6 WBT = 0.11 (A) 5 SBL = 0.41 (C) 21 SBR = 0.23 (C) 20	 EBT = 30 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.41 (B) 13 EBT = 0.39 (A) 7 WBT = 0.24 (A) 6 SBL = 0.49 (C) 25 SBR = 0.2 (C) 23	 EBT = 45 m WBT = 20 m SBL = 30 m SBR = 20 m
Future Background 2038	Overall: 0.28 (B) 14 EBT = 0.24 (A) 6 WBT = 0.04 (A) 5 SBL = 0.42 (C) 21 SBR = 0.2 (B) 20	 EBT = 25 m WBT = 5 m SBL = 25 m SBR = 20 m	Overall: 0.28 (B) 14 EBT = 0.22 (A) 6 WBT = 0.19 (A) 6 SBL = 0.49 (C) 25 SBR = 0.18 (C) 23	 EBT = 25 m WBT = 15 m SBL = 30 m SBR = 20 m
Future Total 2038	Overall: 0.32 (B) 14 EBT = 0.29 (A) 6 WBT = 0.11 (A) 5 SBL = 0.41 (C) 21 SBR = 0.23 (C) 20	 EBT = 30 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.41 (B) 13 EBT = 0.39 (A) 7 WBT = 0.24 (A) 6 SBL = 0.49 (C) 25 SBR = 0.2 (C) 23	 EBT = 45 m WBT = 20 m SBL = 30 m SBR = 20 m

Under the 2028 future background traffic scenario, with the traffic volumes derived from the study completed for the midblock interchange, the signalized southbound off-ramp operates with an overall v/c ratio of 0.29 LOS B during the a.m. peak hour and 0.28 LOS B during the p.m. peak hour without any critical movements.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with an overall v/c ratio of 0.33 LOS B during the a.m. peak hour and 0.39 LOS B during the p.m. peak hour and continues to operate without any critical movements.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the overall v/c ratio reported at 0.32 LOS B during the a.m. peak hour and 0.41 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

No geometric improvements are recommended as a result of the proposed development.

7.6 New East/West Road and Highway 6 Northbound Off-Ramp

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 of New East/West Road and Highway 6 Northbound Off-Ramp

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2028	Overall: 0.31 (B) 16 EBT = 0.12 (A) 4 WBT = 0.31 (A) 5 NBL = 0.06 (C) 29 NBR = 0.28 (C) 31	EBT = 20 m WBT = 45 m NBL = 5 m NBR = 25 m	Overall: 0.19 (B) 17 EBT = 0.12 (A) 4 WBT = 0.18 (A) 4 NBL = 0.13 (C) 30 NBR = 0.23 (C) 31	EBT = 20 m WBT = 25 m NBL = 10 m NBR = 20 m
Future Total 2028	Overall: 0.33 (B) 16 EBT = 0.15 (A) 4 WBT = 0.33 (A) 6 NBL = 0.27 (C) 30 NBR = 0.28 (C) 30	EBT = 20 m WBT = 50 m NBL = 20 m NBR = 20 m	Overall: 0.2 (B) 16 EBT = 0.19 (A) 4 WBT = 0.19 (A) 4 NBL = 0.26 (C) 31 NBR = 0.23 (C) 30	EBT = 25 m WBT = 25 m NBL = 15 m NBR = 20 m
Future Background 2033	Overall: 0.32 (B) 17 EBT = 0.09 (A) 4 WBT = 0.32 (A) 5 NBL = 0.07 (C) 29 NBR = 0.3 (C) 31	EBT = 15 m WBT = 50 m NBL = 10 m NBR = 25 m	Overall: 0.19 (B) 18 EBT = 0.12 (A) 4 WBT = 0.18 (A) 4 NBL = 0.14 (C) 30 NBR = 0.25 (C) 31	EBT = 20 m WBT = 25 m NBL = 10 m NBR = 20 m
Future Total 2033	Overall: 0.34 (B) 17 EBT = 0.11 (A) 4 WBT = 0.34 (A) 6 NBL = 0.28 (C) 30 NBR = 0.3 (C) 30	EBT = 15 m WBT = 55 m NBL = 20 m NBR = 25 m	Overall: 0.21 (B) 17 EBT = 0.2 (A) 4 WBT = 0.19 (A) 4 NBL = 0.27 (C) 30 NBR = 0.25 (C) 30	EBT = 25 m WBT = 25 m NBL = 15 m NBR = 20 m
Future Background 2038	Overall: 0.32 (B) 17 EBT = 0.09 (A) 4 WBT = 0.32 (A) 5 NBL = 0.07 (C) 29 NBR = 0.3 (C) 31	EBT = 15 m WBT = 50 m NBL = 10 m NBR = 25 m	Overall: 0.19 (B) 18 EBT = 0.12 (A) 4 WBT = 0.18 (A) 4 NBL = 0.14 (C) 30 NBR = 0.25 (C) 31	EBT = 20 m WBT = 25 m NBL = 10 m NBR = 20 m
Future Total 2038	Overall: 0.34 (B) 17 EBT = 0.11 (A) 4 WBT = 0.34 (A) 6 NBL = 0.28 (C) 30 NBR = 0.3 (C) 30	EBT = 15 m WBT = 55 m NBL = 20 m NBR = 25 m	Overall: 0.21 (B) 17 EBT = 0.2 (A) 4 WBT = 0.19 (A) 4 NBL = 0.27 (C) 30 NBR = 0.25 (C) 30	EBT = 25 m WBT = 25 m NBL = 15 m NBR = 20 m

Under the 2028 future background traffic scenario, with the traffic volumes derived from the study completed for the midblock interchange, the signalized northbound off-ramp operates with an overall v/c ratio of 0.31 LOS B during the a.m. peak hour and 0.19 LOS B during the p.m. peak hour without any critical movements.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with an overall v/c ratio of 0.33 LOS B during the a.m. peak hour and 0.20 LOS B during the p.m. peak hour while continuing to operate without any critical movements.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the overall v/c ratio reported at 0.34 LOS B during the a.m. peak hour and 0.21 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

No geometric improvements are recommended as a result of the proposed development.

7.7 New East/West Road and Wellington Road 34 Connection

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 of New East/West Road and Wellington Road 34

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2028	Overall: 0.5 (B) 15 EBL = 0.51 (A) 6 EBT = 0.24 (A) 3 WBTR = 0.3 (A) 3 SBL = 0.4 (E) 58 SBR = 0.17 (E) 56	 EBL = 55 m EBT = 35 m WBTR = 40 m SBL = 30 m SBR = 30 m	Overall: 0.43 (B) 11 EBL = 0.46 (A) 7 EBT = 0.18 (A) 4 WBTR = 0.34 (A) 5 SBL = 0.26 (C) 29 SBR = 0.17 (C) 28	 EBL = 40 m EBT = 20 m WBTR = 40 m SBL = 15 m SBR = 20 m
Future Total 2028	Overall: 0.56 (B) 19 EBL = 0.58 (A) 8 EBT = 0.25 (A) 3 WBTR = 0.31 (A) 4 SBL = 0.37 (E) 58 SBR = 0.25 (E) 57	 EBL = 80 m EBT = 40 m WBTR = 50 m SBL = 30 m SBR = 35 m	Overall: 0.63 (B) 14 EBL = 0.7 (B) 13 EBT = 0.18 (A) 4 WBTR = 0.34 (A) 5 SBL = 0.25 (C) 29 SBR = 0.22 (C) 29	 EBL = 100 m EBT = 25 m WBTR = 45 m SBL = 15 m SBR = 20 m
Future Background 2033	Overall: 0.53 (B) 16 EBL = 0.54 (A) 7 EBT = 0.27 (A) 3 WBTR = 0.33 (A) 4 SBL = 0.46 (E) 60 SBR = 0.18 (E) 58	 EBL = 60 m EBT = 40 m WBTR = 45 m SBL = 35 m SBR = 30 m	Overall: 0.48 (B) 12 EBL = 0.51 (A) 8 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.31 (C) 29 SBR = 0.18 (C) 28	 EBL = 45 m EBT = 25 m WBTR = 45 m SBL = 20 m SBR = 20 m
Future Total 2033	Overall: 0.6 (B) 19 EBL = 0.61 (A) 9 EBT = 0.27 (A) 4 WBTR = 0.33 (A) 4 SBL = 0.43 (E) 60 SBR = 0.26 (E) 58	 EBL = 90 m EBT = 45 m WBTR = 55 m SBL = 35 m SBR = 35 m	Overall: 0.69 (B) 14 EBL = 0.77 (B) 16 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.29 (C) 29 SBR = 0.23 (C) 29	 EBL = 115 m EBT = 25 m WBTR = 50 m SBL = 20 m SBR = 20 m
Future Background 2038	Overall: 0.53 (B) 16 EBL = 0.54 (A) 7 EBT = 0.27 (A) 3 WBTR = 0.33 (A) 4 SBL = 0.46 (E) 60 SBR = 0.18 (E) 58	 EBL = 60 m EBT = 40 m WBTR = 45 m SBL = 35 m SBR = 30 m	Overall: 0.48 (B) 12 EBL = 0.51 (A) 8 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.31 (C) 29 SBR = 0.18 (C) 28	 EBL = 45 m EBT = 25 m WBTR = 45 m SBL = 20 m SBR = 20 m
Future Total 2038	Overall: 0.6 (B) 19 EBL = 0.61 (A) 9 EBT = 0.27 (A) 4 WBTR = 0.33 (A) 4 SBL = 0.43 (E) 60 SBR = 0.26 (E) 58	 EBL = 90 m EBT = 45 m WBTR = 55 m SBL = 35 m SBR = 35 m	Overall: 0.69 (B) 14 EBL = 0.77 (B) 16 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.29 (C) 29 SBR = 0.23 (C) 29	 EBL = 115 m EBT = 25 m WBTR = 50 m SBL = 20 m SBR = 20 m

Under the 2028 future background traffic scenario, with the traffic volumes derived from the study completed for the midblock interchange, the signalized intersection of Wellington Road 34 and the new east/west road operates with an overall v/c ratio of 0.50 LOS B during the a.m. peak hour and 0.43 LOS B during the p.m. peak hour without any critical movements.

With the addition of site traffic under the 2028 future total conditions, the intersection is reported to continue to operate at a satisfactory level with an overall v/c ratio of 0.56 LOS B during the a.m. peak hour and 0.63 LOS B during the p.m. peak hour while continuing to operate without any critical movements.

The intersection is reported to continue to operate at satisfactory levels during both future background and future total scenarios under the 2033 and 2038 horizon years, with the overall v/c ratio reported at 0.06 LOS C during the a.m. peak hour and 0.69 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

No geometric improvements are recommended as a result of the proposed development.

7.8 Sideroad 20 and the Site Access

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 of Sideroad 20 and the Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	WBLR = 0.07 (A) 10 NBTR = 0.05 (A) 0 SBTL = 0.07 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.25 (B) 11 NBTR = 0.06 (A) 0 SBTL = 0.04 (A) 5	WBLR = 10 m NBTR = 0 m SBTL = 5 m
Future Total 2033	WBLR = 0.07 (A) 10 NBTR = 0.05 (A) 0 SBTL = 0.07 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.25 (B) 11 NBTR = 0.06 (A) 0 SBTL = 0.04 (A) 5	WBLR = 10 m NBTR = 0 m SBTL = 5 m
Future Total 2038	WBLR = 0.07 (A) 10 NBTR = 0.07 (A) 0 SBTL = 0.05 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.25 (B) 11 NBTR = 0.06 (A) 0 SBTL = 0.04 (A) 5	WBLR = 10 m NBTR = 0 m SBTL = 5 m

Under the three horizon years, the proposed site access on Sideroad 20 is reported to operate at satisfactory levels with low levels of delay and queuing. The access operates with a 10 second delay and a 95th percentile queue of 5 metres (approximately 1 vehicle) during the a.m. and an 11 second delay and 95th percentile queue length of 10 metres during the p.m. peak hour.

No additional improvements are recommended on Sideroad 20 as a result of the proposed development.

7.9 Concession Road 4 and the West Site Access

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 13 Capacity analysis of Concession Road 4 and the West Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTL = 0.05 (A) 2 WBTR = 0.06 (A) 0 SBLR = 0.06 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.04 (A) 2 WBTR = 0.23 (A) 0 SBLR = 0.09 (B) 11	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2033	EBTL = 0.05 (A) 2 WBTR = 0.06 (A) 0 SBLR = 0.06 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.04 (A) 2 WBTR = 0.23 (A) 0 SBLR = 0.09 (B) 11	EBTL = 5 m WBTR = 0 m SBLR = 5 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2038	EBTL = 0.05 (A) 2 WBTR = 0.06 (A) 0 SBLR = 0.06 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.04 (A) 2 WBTR = 0.23 (A) 0 SBLR = 0.09 (B) 11	EBTL = 5 m WBTR = 0 m SBLR = 5 m

Under the three horizon years, the proposed west site access on Concession Road 4 is reported to operate at satisfactory levels with low levels of delay and queuing. The access operates with a 9 second delay during the a.m. peak hour, 11 second delay during the p.m. peak hour, and a 95th percentile queue of 5 metres (approximately 1 vehicle) during both peak hours. Along Concession Road 4, the eastbound approach is reported to operate with a 2 second delay during both peak hours.

No additional improvements are recommended on Concession Road 4 as a result of the proposed development.

7.10 Concession Road 4 and the Centre Site Access

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 14 Capacity analysis of Concession Road 4 and the Centre Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTL = 0.15 (A) 6 WBTR = 0.02 (A) 0 SBLR = 0.07 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.09 (A) 6 WBTR = 0.05 (A) 0 SBLR = 0.31 (B) 10	EBTL = 5 m WBTR = 0 m SBLR = 10 m
Future Total 2033	EBTL = 0.15 (A) 6 WBTR = 0.02 (A) 0 SBLR = 0.07 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.09 (A) 6 WBTR = 0.05 (A) 0 SBLR = 0.31 (B) 10	EBTL = 5 m WBTR = 0 m SBLR = 10 m
Future Total 2038	EBTL = 0.15 (A) 6 WBTR = 0.02 (A) 0 SBLR = 0.07 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.09 (A) 6 WBTR = 0.05 (A) 0 SBLR = 0.31 (B) 10	EBTL = 5 m WBTR = 0 m SBLR = 10 m

Under the three horizon years, the proposed centre site access on Concession Road 4 is reported to operate at satisfactory levels with low levels of delay and queuing. The access operates with a 9 second delay during the a.m. peak hour, 10 second delay during the p.m. peak hour, and a 95th percentile queue of 5 metres (approximately 1 vehicle) during both peak hours. Along Concession Road 4, the eastbound approach is reported to operate with a 6 second delay during both peak hours.

No additional improvements are recommended on Concession Road 4 as a result of the proposed development.

7.11 Concession Road 4 and the East Site Access

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 15 Capacity analysis of Concession Road 4 and the East Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTL = 0.02 (A) 3 WBTR = 0.01 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 3 WBTR = 0.03 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2033	EBTL = 0.02 (A) 2 WBTR = 0.01 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 3 WBTR = 0.03 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2038	EBTL = 0.02 (A) 2 WBTR = 0.02 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 2 WBTR = 0.04 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m

Under the three horizon years, the proposed west site access on Concession Road 4 is reported to operate at satisfactory levels with low levels of delay and queuing. The access operates with an 8 second delay during the a.m. peak hour, 9 second delay during the p.m. peak hour, and a 95th percentile queue of 5 metres (approximately 1 vehicle) during both peak hours. Along Concession Road 4, the eastbound approach is reported to operate with a 2 second delay during both peak hours.

No additional improvements are recommended on Concession Road 4 as a result of the proposed development.

8. Capacity Analysis – With Service Road Option

GHD also completed a capacity analysis for the scenario that includes a proposed new Service Road from the site access on Concession Road 4 to the new midblock crossing. The updated capacity analysis was only completed for the study intersections in which site traffic was revised from the scenario without the proposed Service Road.

8.1 Downey Road/Wellington Road 35 and Forestell 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 16 Capacity analysis of Downey Road/Wellington Road 35 and Forestell Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0.45 (**E**) 37 WBTLR = 0.1 (C) 16 NBTLR = 0.01 (A) 0 SBTLR = 0.07 (A) 2	EBTLR = 15 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.3 (D) 34 WBTLR = 0.4 (C) 21 NBTLR = 0 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 10 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m
Future Total 2033	EBTLR = 0.53 (**E**) 46 WBTLR = 0.11 (C) 17 NBTLR = 0.01 (A) 0 SBTLR = 0.08 (A) 2	EBTLR = 20 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.36 (**E**) 41 WBTLR = 0.43 (C) 23 NBTLR = 0 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 15 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m
Future Total 2038	EBTLR = 0.65 (**F**) 63 WBTLR = 0.13 (C) 18 NBTLR = 0.01 (A) 0 SBTLR = 0.08 (A) 2	EBTLR = 30 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.43 (**F**) 51 WBTLR = 0.47 (D) 26 NBTLR = 0.01 (A) 0 SBTLR = 0.05 (A) 1	EBTLR = 15 m WBTLR = 20 m NBTLR = 5 m SBTLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the delay under the ultimate horizon year decreasing from 153 seconds to 63 seconds in the southbound approach during the a.m. peak hour and reduced from 92 to 51 seconds during the p.m. peak hour.

8.2 Wellington Road 34 and Side Road 20

Capacity analysis for 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 17 Capacity analysis of Wellington Road 34 and Side Road 20

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2033	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 9 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m
Future Total 2038	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0 (A) 0	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 0 m	EBTLR = 0 (A) 0 WBTLR = 0.01 (A) 0 NBTLR = 0.01 (A) 10 SBTLR = 0.01 (B) 12	EBTLR = 0 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the northbound approach operating with a 10 second delay during the a.m. peak hour and the delay in the southbound approach reduced from 20 seconds to 12 seconds during the p.m. peak hour.

8.3 Concession Road 4 and Sideroad 20

Capacity analysis for 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 18 Capacity analysis of Concession Road 4 and Sideroad 20

Scenario	Am Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0.28 (B) 11 WBTLR = 0.13 (B) 10 NBTLR = 0 (A) 5 SBTLR = 0.02 (A) 5	EBTLR = 10 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.16 (B) 10 WBTLR = 0.33 (B) 11 NBTLR = 0 (A) 3 SBTLR = 0.02 (A) 4	EBTLR = 5 m WBTLR = 10 m NBTLR = 0 m SBTLR = 5 m
Future Total 2033	EBTLR = 0.29 (B) 11 WBTLR = 0.14 (B) 10 NBTLR = 0 (A) 5 SBTLR = 0.02 (A) 5	EBTLR = 10 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.16 (B) 10 WBTLR = 0.33 (B) 12 NBTLR = 0 (A) 3 SBTLR = 0.02 (A) 4	EBTLR = 5 m WBTLR = 15 m NBTLR = 0 m SBTLR = 5 m
Future Total 2038	EBTLR = 0.3 (B) 12 WBTLR = 0.14 (B) 10 NBTLR = 0 (A) 5 SBTLR = 0.02 (A) 5	EBTLR = 10 m WBTLR = 5 m NBTLR = 5 m SBTLR = 5 m	EBTLR = 0.16 (B) 10 WBTLR = 0.34 (B) 12 NBTLR = 0 (A) 3 SBTLR = 0.02 (A) 4	EBTLR = 5 m WBTLR = 15 m NBTLR = 0 m SBTLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the delays in the eastbound and westbound approaches reduced by a maximum of 10 seconds during both peak hours.

8.4 Wellington Road 35 and Concession Road 4

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 19 Capacity analysis of Wellington Road 35 and Concession Road 4

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0.17 (C) 21 WBTLR = 0.22 (C) 17 NBTLR = 0 (A) 0 SBTLR = 0.07 (A) 3	EBTLR = 5 m WBTLR = 10 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.09 (C) 21 WBTLR = 0.36 (B) 15 NBTLR = 0.01 (A) 0 SBTLR = 0.06 (A) 2	EBTLR = 5 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m
Future Total 2033	EBTLR = 0.22 (C) 23 WBTLR = 0.24 (C) 18 NBTLR = 0 (A) 0 SBTLR = 0.08 (A) 3	EBTLR = 10 m WBTLR = 10 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.12 (C) 24 WBTLR = 0.39 (C) 16 NBTLR = 0.01 (A) 0 SBTLR = 0.06 (A) 2	EBTLR = 5 m WBTLR = 15 m NBTLR = 5 m SBTLR = 5 m
Future Total 2038	EBTLR = 0.27 (D) 27 WBTLR = 0.28 (C) 21 NBTLR = 0 (A) 0 SBTLR = 0.08 (A) 3	EBTLR = 10 m WBTLR = 10 m NBTLR = 0 m SBTLR = 5 m	EBTLR = 0.15 (D) 26 WBTLR = 0.43 (C) 18 NBTLR = 0.01 (A) 0 SBTLR = 0.06 (A) 2	EBTLR = 5 m WBTLR = 20 m NBTLR = 5 m SBTLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the delay in the eastbound approach reduced from 80 seconds to 27 seconds during the a.m. peak hour and from 37 seconds to 37 seconds during the p.m. peak hour under the ultimate horizon year.

8.5 New East/West Road and Highway 6 Southbound Off-Ramp

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 20 Capacity analysis of New East/West Road and Highway 6 Southbound Off-Ramp

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	Overall: 0.39 (B) 15 EBT = 0.39 (A) 8 WBT = 0.1 (A) 6 SBL = 0.4 (C) 21 SBR = 0.31 (C) 21	EBT = 45 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.53 (B) 15 EBT = 0.55 (A) 9 WBT = 0.11 (A) 5 SBL = 0.47 (C) 25 SBR = 0.22 (C) 23	EBT = 65 m WBT = 15 m SBL = 30 m SBR = 20 m
Future Total 2033	Overall: 0.38 (B) 15 EBT = 0.38 (A) 8 WBT = 0.11 (A) 6 SBL = 0.38 (C) 21 SBR = 0.32 (C) 20	EBT = 45 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.58 (B) 14 EBT = 0.61 (B) 11 WBT = 0.24 (A) 6 SBL = 0.49 (C) 25 SBR = 0.24 (C) 23	EBT = 75 m WBT = 20 m SBL = 30 m SBR = 20 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2038	Overall: 0.38 (B) 15 EBT = 0.38 (A) 8 WBT = 0.11 (A) 6 SBL = 0.38 (C) 21 SBR = 0.32 (C) 20	 EBT = 45 m WBT = 15 m SBL = 25 m SBR = 20 m	Overall: 0.58 (B) 14 EBT = 0.61 (B) 11 WBT = 0.24 (A) 6 SBL = 0.49 (C) 25 SBR = 0.24 (C) 23	 EBT = 75 m WBT = 20 m SBL = 30 m SBR = 20 m

With the redistribution of site traffic as a result of the proposed service road, the overall v/c ratio is reported to increase to 0.38 LOS B during the a.m. peak hour and 0.58 LOS B during the p.m. peak hour under the ultimate horizon year.

8.6 New East/West Road and Highway 6 Northbound Off-Ramp

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 21 Capacity analysis of New East/West Road and Highway 6 Northbound Off-Ramp

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	Overall: 0.33 (B) 16 EBT = 0.15 (A) 4 WBT = 0.34 (A) 6 NBL = 0.27 (C) 30 NBR = 0.28 (C) 30	 EBT = 20 m WBT = 50 m NBL = 20 m NBR = 20 m	Overall: 0.2 (B) 16 EBT = 0.19 (A) 4 WBT = 0.19 (A) 4 NBL = 0.27 (C) 31 NBR = 0.23 (C) 30	 EBT = 25 m WBT = 25 m NBL = 15 m NBR = 20 m
Future Total 2033	Overall: 0.34 (B) 17 EBT = 0.11 (A) 4 WBT = 0.34 (A) 6 NBL = 0.28 (C) 30 NBR = 0.3 (C) 30	 EBT = 15 m WBT = 55 m NBL = 20 m NBR = 25 m	Overall: 0.21 (B) 17 EBT = 0.2 (A) 4 WBT = 0.19 (A) 4 NBL = 0.27 (C) 30 NBR = 0.25 (C) 30	 EBT = 25 m WBT = 25 m NBL = 20 m NBR = 20 m
Future Total 2038	Overall: 0.34 (B) 17 EBT = 0.11 (A) 4 WBT = 0.34 (A) 6 NBL = 0.28 (C) 30 NBR = 0.3 (C) 30	 EBT = 15 m WBT = 55 m NBL = 20 m NBR = 25 m	Overall: 0.21 (B) 17 EBT = 0.2 (A) 4 WBT = 0.19 (A) 4 NBL = 0.27 (C) 30 NBR = 0.25 (C) 30	 EBT = 25 m WBT = 25 m NBL = 20 m NBR = 20 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the overall v/c ratio remaining at 0.34 LOS B and 0.21 LOS B during the a.m. and p.m. peak hours, respectively, under the ultimate horizon year.

8.7 New East/West Road and Wellington Road 34 Connection

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 22 Capacity analysis of New East/West Road and Wellington Road 34

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	Overall: 0.5 (B) 15 EBL = 0.51 (A) 6 EBT = 0.24 (A) 3 WBTR = 0.3 (A) 3 SBL = 0.4 (E) 58 SBR = 0.17 (E) 56	 EBL = 55 m EBT = 35 m WBTR = 40 m SBL = 30 m SBR = 30 m	Overall: 0.43 (B) 11 EBL = 0.46 (A) 7 EBT = 0.18 (A) 4 WBTR = 0.34 (A) 5 SBL = 0.26 (C) 29 SBR = 0.17 (C) 28	 EBL = 40 m EBT = 20 m WBTR = 40 m SBL = 15 m SBR = 20 m
Future Total 2033	Overall: 0.53 (B) 16 EBL = 0.54 (A) 7 EBT = 0.27 (A) 3 WBTR = 0.33 (A) 4 SBL = 0.46 (E) 60 SBR = 0.18 (E) 58	 EBL = 60 m EBT = 40 m WBTR = 45 m SBL = 35 m SBR = 30 m	Overall: 0.48 (B) 12 EBL = 0.51 (A) 8 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.31 (C) 29 SBR = 0.18 (C) 28	 EBL = 45 m EBT = 25 m WBTR = 45 m SBL = 20 m SBR = 20 m
Future Total 2038	Overall: 0.53 (B) 16 EBL = 0.54 (A) 7 EBT = 0.27 (A) 3 WBTR = 0.33 (A) 4 SBL = 0.46 (E) 60 SBR = 0.18 (E) 58	 EBL = 60 m EBT = 40 m WBTR = 45 m SBL = 35 m SBR = 30 m	Overall: 0.48 (B) 12 EBL = 0.51 (A) 8 EBT = 0.2 (A) 4 WBTR = 0.38 (A) 6 SBL = 0.31 (C) 29 SBR = 0.18 (C) 28	 EBL = 45 m EBT = 25 m WBTR = 45 m SBL = 20 m SBR = 20 m

With the redistribution of site traffic as a result of the proposed service road, the intersection continues to operate at satisfactory levels with the overall v/c ratio reduced to 0.53 LOS B during the a.m. peak hour and 0.48 LOS B during the p.m. peak hour under the ultimate horizon year.

8.8 New East/West Road and Proposed Service 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 23 Capacity analysis of New East/West Road and Proposed Service Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBLR = 0.38 (C) 25 NBTL = 0 (A) 0 SBTR = 0.36 (A) 0	EBLR = 15 m NBTL = 0 m SBTR = 0 m	EBLR = 0.76 (E) 41 NBTL = 0 (A) 0 SBTR = 0.28 (A) 0	EBLR = 50 m NBTL = 0 m SBTR = 0 m
Future Total 2033	EBLR = 0.39 (D) 26 NBTL = 0 (A) 0 SBTR = 0.37 (A) 0	EBLR = 15 m NBTL = 0 m SBTR = 0 m	EBLR = 0.81 (E) 49 NBTL = 0 (A) 0 SBTR = 0.29 (A) 0	EBLR = 55 m NBTL = 0 m SBTR = 0 m
Future Total 2038	EBLR = 0.39 (D) 26 NBTL = 0 (A) 0 SBTR = 0.37 (A) 0	EBLR = 15 m NBTL = 0 m SBTR = 0 m	EBLR = 0.81 (E) 49 NBTL = 0 (A) 0 SBTR = 0.29 (A) 0	EBLR = 55 m NBTL = 0 m SBTR = 0 m

With the proposed service road intersecting the new east/west roadway, the intersection is reported to operate at a satisfactory level with a delay of 26 seconds during the a.m. peak hour and 49 seconds during the p.m. peak hour reported for the eastbound approach under the ultimate horizon year.

8.9 Sideroad 20 and the Site Access

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 24 Capacity analysis of Sideroad 20 and the Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	WBLR = 0.03 (A) 9 NBTR = 0.01 (A) 0 SBTL = 0.05 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.12 (A) 9 NBTR = 0.04 (A) 0 SBTL = 0.03 (A) 4	WBLR = 5 m NBTR = 0 m SBTL = 5 m
Future Total 2033	WBLR = 0.03 (A) 9 NBTR = 0.01 (A) 0 SBTL = 0.05 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.12 (A) 9 NBTR = 0.04 (A) 0 SBTL = 0.03 (A) 4	WBLR = 5 m NBTR = 0 m SBTL = 5 m
Future Total 2038	WBLR = 0.03 (A) 9 NBTR = 0.01 (A) 0 SBTL = 0.05 (A) 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.13 (A) 9 NBTR = 0.04 (A) 0 SBTL = 0.03 (A) 4	WBLR = 5 m NBTR = 0 m SBTL = 5 m

With the redistribution of site traffic as a result of the proposed service road, the access is reported to continue to operate at satisfactory levels with the delay reduced in the westbound approach to 9 seconds during both peak hours and a 95th percentile queue of 5 metres during both peak hours.

8.10 Concession Road 4 and the West Site Access

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 25 Capacity analysis of Concession Road 4 and the West Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTL = 0.05 (A) 3 WBTR = 0.02 (A) 0 SBLR = 0.05 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.03 (A) 2 WBTR = 0.05 (A) 0 SBLR = 0.15 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2033	EBTL = 0.05 (A) 3 WBTR = 0.02 (A) 0 SBLR = 0.05 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.03 (A) 2 WBTR = 0.05 (A) 0 SBLR = 0.16 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2038	EBTL = 0.05 (A) 3 WBTR = 0.02 (A) 0 SBLR = 0.05 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.03 (A) 2 WBTR = 0.05 (A) 0 SBLR = 0.16 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the west site access on Concession Road 4 is reported to operate at satisfactory levels with low levels of delay and queuing. The access operates with a 9 second delay during the a.m. and p.m. peak hours and a 95th percentile queue of 5 metres (approximately 1 vehicle) during both peak hours. Along Concession Road 4, the eastbound approach is reported to operate with a 3 second delay during the a.m. peak hour and 2 second delay during the p.m. peak hour.

No additional improvements are recommended on Concession Road 4 as a result of the proposed development.

8.11 Concession Road 4 and the Centre Site Access/Proposed Service 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 26 Capacity analysis of Concession Road 4 and the Centre Site Access/Proposed Service Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0.03 (A) 3 WBTLR = 0 (A) 0 NBTLR = 0.43 (B) 14 SBTLR = 0.17 (B) 11	EBTLR = 5 m WBTLR = 0 m NBTLR = 20 m SBTLR = 5 m	EBTLR = 0.04 (A) 5 WBTLR = 0 (A) 0 NBTLR = 0.22 (B) 12 SBTLR = 0.44 (C) 15	EBTLR = 5 m WBTLR = 0 m NBTLR = 10 m SBTLR = 20 m
Future Total 2033	EBTLR = 0.03 (A) 3 WBTLR = 0 (A) 0 NBTLR = 0.43 (B) 14 SBTLR = 0.17 (B) 12	EBTLR = 5 m WBTLR = 0 m NBTLR = 20 m SBTLR = 5 m	EBTLR = 0.04 (A) 4 WBTLR = 0 (A) 0 NBTLR = 0.23 (B) 12 SBTLR = 0.44 (C) 15	EBTLR = 5 m WBTLR = 0 m NBTLR = 10 m SBTLR = 20 m
Future Total 2038	EBTLR = 0.03 (A) 3 WBTLR = 0 (A) 0 NBTLR = 0.43 (B) 15 SBTLR = 0.17 (B) 12	EBTLR = 5 m WBTLR = 0 m NBTLR = 20 m SBTLR = 5 m	EBTLR = 0.04 (A) 4 WBTLR = 0 (A) 0 NBTLR = 0.23 (B) 13 SBTLR = 0.45 (C) 16	EBTLR = 5 m WBTLR = 0 m NBTLR = 10 m SBTLR = 20 m

With the addition of the proposed service road intersecting Concession Road and the centre site access and its corresponding redistribution of site traffic, the intersection is reported to operate at satisfactory levels with the greatest delay reported in the northbound approach during the a.m. peak hour (15 second delay) and the southbound approach during the p.m. peak hour (16 seconds).

8.12 Concession Road 4 and the East Site Access

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 27 Capacity analysis of Concession Road 4 and the East Site Access

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTL = 0.02 (A) 3 WBTR = 0.01 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 3 WBTR = 0.03 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2033	EBTL = 0.02 (A) 2 WBTR = 0.01 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 3 WBTR = 0.03 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m
Future Total 2038	EBTL = 0.02 (A) 2 WBTR = 0.02 (A) 0 SBLR = 0.01 (A) 8	EBTL = 5 m WBTR = 0 m SBLR = 5 m	EBTL = 0.01 (A) 2 WBTR = 0.04 (A) 0 SBLR = 0.03 (A) 9	EBTL = 5 m WBTR = 0 m SBLR = 5 m

With the redistribution of site traffic as a result of the proposed service road, the east site access is reported to continue to operate at satisfactory levels with the delay and queueing remaining unchanged at 8 seconds during the a.m. peak hour, 9 second delay during the p.m. peak hour, and a 95th percentile queue of 5 metres (approximately 1 vehicle) during both peak hours. Along Concession Road 4, the eastbound approach is reported to operate with a 2 second delay during both peak hours.

9. Parking Review

GHD reviewed the Township's current Zoning By-Law parking and loading requirements for the subject site.

9.1 Township of Puslinch By-Law 023-18

9.1.1 Vehicular Parking

The current Township of Puslinch Zoning By-Law 023-18 minimum parking requirements are found in Section 5.2.2, Table 5.2. The minimum By-Law requirement for the subject site is as follows:

- Warehouse
    - 1 parking space per 200 m²
- Industrial use
    - 1 parking space per 100 m² for the first 10,000 m² of floor area and 1 parking space per 200 m² for any floor area after the first 10,000 m²
- Gym
    - 1 parking space per 20 m²
- Day Care Centre
    - 1 parking space per 40 m²
- Food Services
    - 1 parking space per 10 m²

The minimum parking required for the two industrial buildings and daycare facility is as follow:

- Building 1
    - 1 parking space per 200 m² x 45,289 m² = 226 spaces - warehouse
    - 1 parking space per 100 m² x 10,000 m² = 100 spaces, plus
    - 1 parking space per 100 m² x 4,632 m² = 23 spaces (+100 spaces) = 123 spaces – manufacturing, office, retail, and conference
    - 1 parking space per 10 m² x 465 m² = 47 spaces – food services
- Building 2
    - 1 parking space per 100 m² x 10,000 m² = 100 spaces, plus
    - 1 parking space per 200 m² x 8,116 m² = 41 spaces (+100 spaces) = 141 spaces – manufacturing and office
- Building 3
    - 1 parking space per 100 m² x 10,000 m² = 100 spaces, plus
    - 1 parking space per 200 m² x 3,053 m² = 15 spaces (+100 spaces) = 115 spaces – manufacturing and office
- Building 4
    - 1 parking space per 20 m² x 1,394 m² = 70 spaces - gym

- Building 5
    - 1 parking space per 40 m² x 929 m² = 23 spaces - daycare

In total, 745 vehicle parking spaces are required under the Township's By-Law 023-18.

9.1.2 Accessible Parking

The minimum requirement for accessible parking spaces can also be found in the Township of Puslinch Zoning By-Law 023-18, Section 5.2.14. The minimum By-Law requirement for accessible parking for the subject site is based on the number of parking spaces provided, and is as follows:

- Number of parking spaces provided:
    - 3 to 25: a minimum of 1 space
    - 26-100: a minimum of 1 space plus 3% of the number of spaces provided
    - 101 to 200: a minimum of 4 spaces plus 2% of the number of spaces provided
    - 201 and greater: a minimum of 8 spaces plus 2% of the number of spaces provided

The minimum number of accessible parking spaces required for the subject site is as follow:

- Number of parking spaces provided = 894
- 8 spaces, plus 2% of 704 spaces = 26 barrier-free spaces

In total, 26 barrier-free parking spaces are required under the Township's current By-Law.

9.1.3 Bicycle Parking

Under the Township's Zoning By-Law 023-18, the bicycle parking requirements are found in Section 5.2.15, Table 5.6. The minimum By-Law requirement for bicycle parking for the subject site is as follows:

- Retail, personal, institutional
    - The greater of 2 spaces or 1 space per 1,000 m² net floor area
- Industrial
    - 2 spaces per 1,000 m² net floor area

The minimum number of bicycle parking spaces required for the subject site is as follow:

- Building 1
    - 2 parking space per 1,000 m² x 51,095 m² = 102 spaces – industrial
    - Greater of 2 spaces or 1 parking space per 1,000 m² x 2,323 m² = 2 spaces - retail
- Building 2
    - 2 parking space per 1,000 m² x 17,187 m² = 34 spaces – industrial
- Building 3
    - 2 parking space per 1,000 m² x 12,588 m² = 25 spaces – industrial
- Building 4
    - The greater of 2 spaces or 1 space per 1,000 m² net floor area x 1,394 m² = 2 spaces
- Building 5
    - The greater of 2 spaces or 1 space per 1,000 m² net floor area x 929 m² = 2 spaces

In total, 167 bicycle parking spaces are required for the site.

9.1.4 Loading Spaces

The minimum requirement for loading spaces is also found in the Zoning By-Law 023-18, with the minimum loading space requirement found in Section 5.1.2, Tables 5.1. Loading spaces are only required for buildings or structures used or erected for any purpose involving the receiving, shipping, loading or unloading of goods, wares, merchandise, or raw materials, other than an agricultural use. The minimum By-Law requirement for loading spaces for the subject site is as follows:

- Less than 250 m² of net floor area: None
- Between 250 m² and 2,500 m² of net floor area: 1 loading space
- Greater than 2,500 m² and less than 5,000 m² of net floor area: 2 loading spaces
- Greater than 5,000 m² of net floor area: 3 loading spaces + 1 additional space for each 10,000 m² in excess of 5,000 m²

The minimum By-law requirement for loading spaces for the subject site is as follows:

- Building 1: (51,095 m^2): 8 loading spaces
- Building 2: (17,187 m^2): 5 loading spaces
- Building 3: (12,588 m^2): 4 loading spaces
- Building 4: gym use, not required
- Building 5: daycare use, not required

In total, the subject site is required to provide a total of 17 loading spaces under the Township's current By-Law.

9.2 Proposed Parking Supply

The following table summarizes the minimum By-law requirements and the proposed parking/loading supply for the subject site.

Table 28 Parking Requirements and Provisions

Type	GFA	By-Law 023-18 Requirement	Provided
Vehicle Parking	<u>Building 1</u> • 4,645 m^2 of office GFA • 32,515 m^2 of warehouse GFA, plus 12,774 m2 of expansion • 4,645 m^2 of manufacturing GFA, plus 1,161 m^2 of expansion area • 2,323 m^2 of retail GFA • 1,858 m^2 of conference GFA • 465 m^2 of restaurant GFA <u>Building 2</u> • 929 m^2 of office GFA	745 vehicle parking spaces	894 vehicle spaces
Barrier Free Parking		26 barrier free spaces	26 barrier free spaces

Bicycle Parking	• 10,219 m^2 of manufacturing GFA, plus 6,968 m^2 of expansion <u>Building 3</u> • 465 m^2 of office GFA • 12,588 m^2 of manufacturing GFA <u>Building 4</u> • 1,394 m^2 of gym GFA <u>Building 5</u> • 929 m^2 of daycare GFA	167 bicycle parking spaces	At least 167 bicycle parking spaces
Loading Spaces		Building 1: 8 loading spaces Building 2: 5 loading spaces Building 3: 4 loading spaces	66 loading spaces

The proposed parking supply of 894 vehicular parking spaces satisfies the minimum Zoning By-law requirement of 745 vehicular parking spaces. The location of the bicycle parking will be determined at the detailed design phase and will meet the minimum By-law requirements.

10. Sightline Assessment

GHD completed a sightline assessment for each of the site driveways along Sideroad 20 North and Concession Road 4. Adjacent to the proposed site, both roadways have assumed speed limits of 50 km/h. For the purpose of Sight Distance assessment, a design speed of 60 km/h was assumed along both roadways.

Section 9.9 of the Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC GDGCR) 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 driveways.

A vehicle entering the major road from the site driveways is assumed to stop a distance of approximately 4.4 metres to the pavement edge of the major road 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 intersecting drive aisle.

The required intersection sight distances are provided in TAC GDGCR Tables 9.9.4, 9.9.6 and 9.9.12 for passenger vehicles rucks turning left from stop, turning right from stop, or turning left from the major road.

The required intersection sight distance is calculated from the equation.

$$ISD = 0.278\, V_{major}\, t_g$$

Where:

$$ISD = intersection\ sight\ distance$$

$$V_{major} = design\ speed\ of\ the\ major\ road\ \left(\frac{km}{h}\right)$$

$$t_g = time\ gap\ for\ the\ minor\ road\ vehicle\ to\ enter\ the\ major\ road\ (s)$$

The intersection sight distance requirement for passenger cars was determined by the equation above, where the time gap for the minor road vehicle to enter the major road for passenger vehicles is 7.5 seconds for turning left from stop, 6.5 seconds for vehicles turning right from a stop and 5.5 seconds for left turns from the major road.

The intersection sight distance requirement for trucks was determined by the equation above, where the time gap for the minor road vehicle to enter the major road for trucks is 11.5 seconds for vehicles turning left from stop, 10.5 seconds for vehicles turning right from a stop and 7.5 seconds for left turns from the major road.

Table 10 Minimum Intersection Sight Distance

Case (Design Speed of 60 km/h)	Minimum Intersection Sight Distance for Passenger Cars (TAC 2017)	Minimum Intersection Sight Distance for Combination Trucks (TAC 2017)	TAC Reference
B1: Vehicles turning left from stop	130 m	195 m	Table 9.9.4
B2: Vehicles turning right from stop	110 m	180 m	Table 9.9.6
F: Left turns from the major road	95 m	130 m	Table 9.9.12

Truck traffic will only be using the easternmost access along Concession Road 4 with the sight distance requirements for combination trucks only applicable to that access. The remaining accesses will be reviewed based on the sight distance requirements for passenger cars. It should also be noted that vehicles exiting from the Concession Road 4 accesses are likely to only turn right out of the access (Case B2) and as a result Case B1 was not considered for the three Concession Road 4 accesses.

The sightline assessments are provided below for each access, with the assessment for the Sideroad 20 access provided in **Figure 21,** for the west Concession Road 4 access in **Figure 22**, the centre Concession Road 4 access in **Figure 23**, and for the east Concession Road 4 access in **Figure 24**.

Figure 21 Sightline Assessment – Sideroad 20 Access

Based on a desktop review and field observations of Sideroad 20, GHD did not identify any concerns with the location of the access. When the proposed development proceeds to a site plan application, the location of the access can be further confirmed through field measurements that can include both the height of the access road in addition to the vertical elevation of the road.

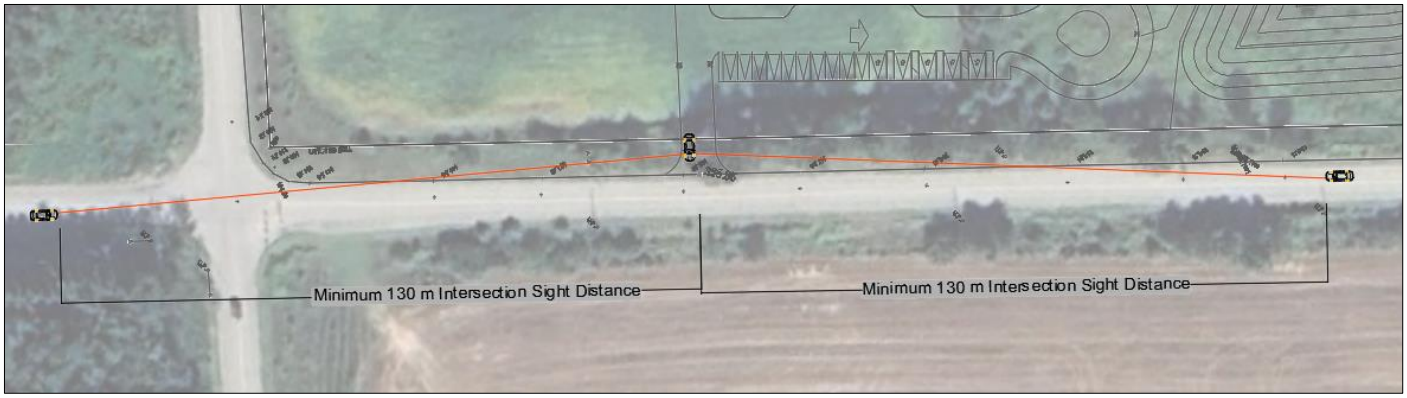

Figure 22 Sightline Assessment – Concession Road 4, West Access

GHD did not identify any concerns with the proposed west access on Concession Road 4. Although the intersection is located within the minimum 130 metres of intersection sight distance, a vehicle turning from Sideroad 20 would do so at a lower speed than the 60 km/h design speed used for the sightline assessment and the driver turning from the access would have a full view of the intersection to observe any oncoming traffic.

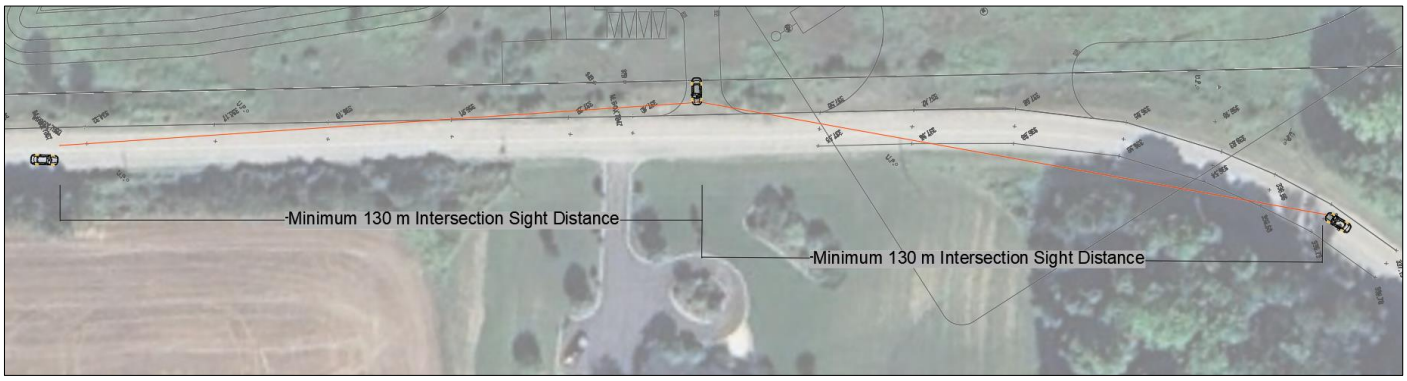

Figure 23 Sightline Assessment – Concession Road 4, Centre Access

GHD did not identify any concerns with the proposed centre access on Concession Road 4. Although the driver's field of view towards the east is potential limited by the vegetation located within the right-of-way on the south side of the road, it is recommended that vegetation within the municipal right-of-way be cleared to maintain adequate sightlines.

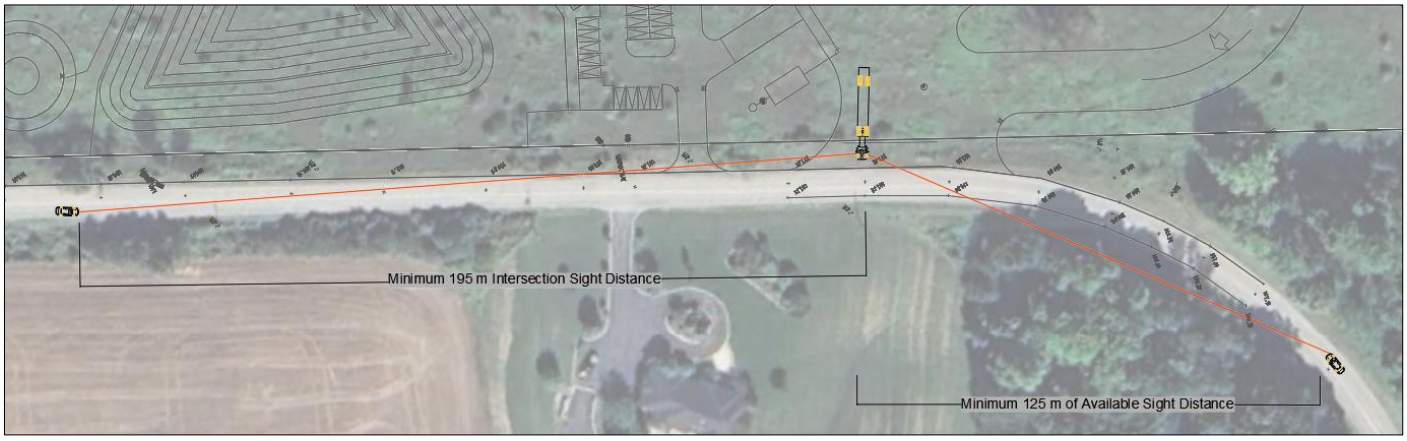

Figure 24 Sightline Assessment – Concession Road 4, East Access

GHD did not identify any concerns with the proposed east access on Concession Road 4. Although a truck driver turning left would require 195 metres of sight distance, all truck traffic is expected to turn right towards Sideroad 20.

When only considering Case B2 for a truck turning right onto Concession Road 4, the 180 m of intersection distance for a 60 km/h design speed is not available. However, based on an AutoTURN analysis of the curve, a driver can comfortably complete the turn traveling westbound on Concession Road 4 at a speed of approximately 40 km/h. At a design speed of 40 km/h, the suggested intersection sight distance would be reduced to 120 m with 125 m available from the east access. Additionally, with the at-grade intersection of Concession Road 4 and Highway 6 now closed, there is a very low volume of westbound traffic traveling along this section of the roadway. As such, based on existing and future operating conditions and typical usage patterns, GHD is of the opinion that there is sufficient available sight distance to support the access.

11. Existing Intersection Review

GHD completed a review of at key intersections to confirm if they can accommodate truck traffic, including existing restrictions (i.e. no truck traffic or load restrictions) and geometric reviews.

Load Restrictions

A series of roads in the immediate vicinity of the subject site have load restrictions. These restrictions include the prohibition of all trucks, load restrictions of 5 tonne per axles, and load restrictions of 5 tonnes per axles from March 1st to April 30th. These weight restrictions and truck restrictions should be considered when determining possible trucks routes to/from the subject site. The location of the signage indicating the existing load restrictions is shown in **Figure 25** and are as follows:

No Trucks

- Northbound on Downey Road, north of Laird Road
- Eastbound and westbound on Forestell Road, at Wellington Road 35
- Westbound on Forestell Road, at Side Road 20
- Westbound on Concession Road 4, at Wellington Road 35

Load Restriction in effect (5 tonnes per axle)

- Eastbound and westbound on Concession Road 4, at Wellington Road 35
- Westbound on Concession Road 4, at Highway 6
- Northbound on Side Road 20, at Wellington Road 34
- Southbound on Wellington Road 35, at Wellington Road 34

Load Restriction in effect (5 tonnes per axle), March 1st to April 30th

- Eastbound on Forestell Road, at Wellington Road 35

Figure 25 Existing Load Restrictions

As illustrated in **Figure 25**, all roads leading to the subject site have a load restriction of 5 tonnes per axle and/or a prohibition for truck traffic. Further investigation will be required to determine if pavement upgrades would be sufficient to remove the load restrictions and allow these roads to accommodate regular truck traffic.

Road Segments of Concern

GHD has reviewed through aerial photography and Google Street View images of the surrounding area to identify areas of concern, especially for larger commercial trucks (WB-20). The area of greatest concern was found just north of the site, where Side Road 20 turns to the west and becomes Forestell Road as shown in **Figure 26** below.

Figure 26 Street View of Sideroad 20 Looking North Towards Forestell Road

A vehicle swept path analysis was completed on this portion of the road in both the eastbound and westbound direction to determine if this road bend could accommodate a WB-20 truck, the result of the swept path analysis is shown in **Figure 27** and **Figure 28**. The review of the swept path included a passenger car in the opposing direction to confirm if there are any conflicting movements between the two directions.

The swept path confirms that there are no conflicting movements when a WB-20 truck is travelling in the northbound/westbound direction (Figure 4) but it is required to use the shoulder area outside of the paved road to make the turn to reduce any conflict with oncoming vehicles. If this section of Side Road 20 and Forestell Road is to be used as a truck route for the subject site, improvements to this road geometry will be required.

Figure 27 Westbound WB-20 Truck and Eastbound Passenger Car

Figure 28 Eastbound WB-20 Truck and Westbound Passenger Car

However, a WB-20 truck travelling in the eastbound/southbound direction requires the width of the opposing lane to complete a turn due to the nearly 90-degree bend in the road. A vehicle traveling in the northbound direction along Sideroad 20 would be required to stop at least 30 metres before the turn in the road in order to avoid any conflicts with oncoming trucks.

As illustrated in **Figure 29, Figure 30, Figure 31 and Figure 32,** localized improvements to the intersections of Forestell Road and Downey Road/Wellington Road 35, Concession Road 4 and Wellington Road 35, Concession Road 4 and Side Road 20 and Wellington Road 34 and Side Road 20 may be required to accommodate the swept path of a WB-20 truck through the intersection.

Figure 29 Intersection of Forestell Road and Downey Road/Wellington Road 35

Figure 30 Intersection of Concession Road 4 and Wellington Road 35

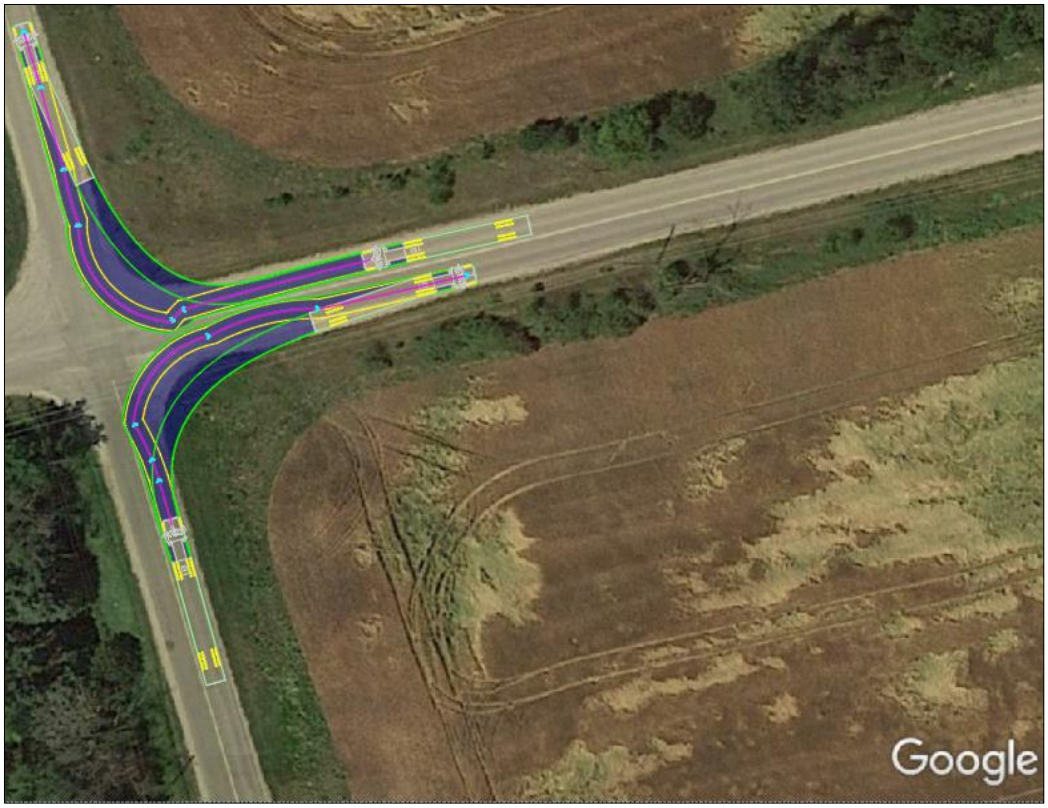

Figure 31 Intersection of Concession Road 4 and Side Road 20

Figure 32 Intersection of Wellington Road 34 and Side Road 20

All other intersections along potential truck routes leading to/from the subject site were reviewed and found to be able to accommodate a WB-20 truck with no significant issues.

12. Conclusion

The subject site consists of five buildings that include manufacturing, warehousing, office, retail, gym, and daycare space. The breakdown for each building is as follows:

- Industrial Building 1
  - 4,645 m^2 of office GFA
  - 32,515 m^2 of warehouse GFA, plus 12,774 m^2 of expansion area
  - 4,645 m^2 of manufacturing GFA, plus 1,161 m^2 of expansion area
  - 2,323 m^2 of retail GFA
    - Ancillary uses
      - 1,858 m^2 of conference GFA
      - 465 m^2 of food service GFA
- Industrial Building 2
  - 929 m^2 of office GFA
  - 10,219 m^2 of manufacturing GFA, plus 6,968 m^2 of expansion area
- Industrial Building 3
  - 465 m^2 of office GFA
  - 12,588 m^2 of manufacturing GFA
- Building 4 – Gym
  - 1,394 m^2 of gym GFA
- Building 5 – Daycare
  - 929 m^2 of daycare GFA

Access to the subject site will be provided via a proposed full-moves access on Sideroad 20 North and three full-moves accesses on Concession Road 4.

Trip generation for the proposed phases of development was completed using ITE Trip Generation Manual 11th Edition. The proposed development is expected to generate a total of 655 two-way vehicle trips during the a.m. peak hour consisting of 473 inbound and 182 outbound trips. During the p.m. peak hour, it is expected to generate 849 new two-way vehicle trips consisting of 288 inbound and 561 outbound trips.

Under existing traffic conditions, the study intersections are operating at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2028 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2033 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

With the addition of corridor growth under the 2038 future background and future total traffic conditions, all study intersections are reported to continue to operate at satisfactory levels with low levels of delay and queuing.

A separate analysis completed assuming a new Service Road connection from the site access on Concession Road 4 to the new east/west midblock crossing also confirmed that all study intersections within the revised road network are expected to continue to operate at satisfactory levels.

Application of the Township of Puslinch By-Law 023-18 parking rates to the subject site results in a requirement of a minimum of 745 vehicular parking spaces (including 26 accessible parking spaces), 167 bicycle parking spaces and 17 loading spaces.

The subject site provides a total of 894 vehicular parking spaces, including 26 barrier free spaces, 25 bicycle parking spaces and 66 loading spaces. The Township's minimum By-Law requirements are met for all uses. It is to be noted that the location of the bicycle parking will be determined at the detailed design phase and will meet the minimum By-law requirements.

Appendix A

Terms of Reference

Raf Andrenacci

From: Will Maria
Sent: Tuesday, April 2, 2024 12:28 PM
To: Raf Andrenacci
Subject: FW: Review of TOR for TIS 4631 Sideroad 20 N

Sensitivity: Confidential

DISABLEFILINGSTATUS: 0

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: will.maria@ghd.com
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | **www.ghd.com**

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Please consider our environment before printing this email

From: Lynne Banks <lbanks@puslinch.ca>
Sent: Monday, November 6, 2023 1:17 PM
To: Will Maria <William.Maria@ghd.com>
Cc: Julia Salvini <julia@salviniconsulting.com>; Raf Andrenacci <Raf.Andrenacci@ghd.com>
Subject: RE: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Hi Will –

No, I haven't received anything from them yet.

Thanks –

Lynne

Lynne Banks
Development and Legislative Coordinator
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 226 Fax 519-736-5846 www.puslinch.ca

From: Will Maria <William.Maria@ghd.com>
Sent: Monday, November 6, 2023 11:12 AM

To: Lynne Banks <lbanks@puslinch.ca>
Cc: Julia Salvini <julia@salviniconsulting.com>; Raf Andrenacci <Raf.Andrenacci@ghd.com>
Subject: RE: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Good morning Lynne, it is my understanding that the Town submitted our TOR to MTO for their comments. Have you received a response?

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: will.maria@ghd.com
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | **www.ghd.com**

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Please consider our environment before printing this email

From: Julia Salvini <julia@salviniconsulting.com>
Sent: Monday, October 16, 2023 2:31 PM
To: Will Maria <William.Maria@ghd.com>
Subject: FW: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Will, see below and attached from Lynne. Did you have these precon comments from MTO? You can wait for us to hear back or reach out to Jessica now. She may copy you on her response to the Township if she knows you're working on this.

I don't have any of the traffic forecasts in the area from MTO, so I'm also curious to see what they can provide.

Julia

From: Lynne Banks <lbanks@puslinch.ca>
Sent: Monday, October 16, 2023 11:47 AM
To: Julia Salvini <julia@salviniconsulting.com>
Subject: RE: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Hi Julia –

I sent it to Jessica Pegelo at the MTO for comments. She did provide comments on their preconsultation last September (attached) and I have asked her for any additional comments she might have.

Thanks –

Lynne

Lynne Banks
Development and Legislative Coordinator
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 226 Fax 519-736-5846 www.puslinch.ca

From: Julia Salvini <julia@salviniconsulting.com>
Sent: Monday, October 16, 2023 10:24 AM
To: Lynne Banks <lbanks@puslinch.ca>
Subject: FW: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

How do you want to proceed with MTO? It would probably be best if everything went through the Township, but how do you feel about taking that on?
Julia

From: Will Maria <William.Maria@ghd.com>
Sent: Friday, October 13, 2023 3:40 PM
To: julia@salviniconsulting.com
Subject: FW: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Hi Julia, would you happen to know who at MTO we should circulate the ToR for this area?
Also, is the expectation that GHD circulates the ToR to MTO or is that something that has to be initiated by the Town?
I've seen it both ways where MTO will not review our ToR unless the request comes from the Town.
I was expecting to reach out to MTO as we need to get some projected traffic volumes for the interchange.
I'm hoping they will share some volumes from their EA.
Thanks,
Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: will.maria@ghd.com
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | **www.ghd.com**

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Please consider our environment before printing this email

From: Julia Salvini <julia@salviniconsulting.com>
Sent: Tuesday, October 10, 2023 7:11 PM
To: Lynne Banks <lbanks@puslinch.ca>
Subject: RE: Review of TOR for TIS 4631 Sideroad 20 N
Sensitivity: Confidential

Lynne, I've reviewed the proposed TOR for the Transportation Impact Study and offer the following comments:

- I suspect an MTO building and land use permit will be required and MTO will want to review this TIS. The TOR should be provided to MTO for review and comment. The study will likely require an additional horizon year 10 years beyond development.
- Given the proximity to the City of Guelph, it would probably be a good idea to circulate the terms of reference to City staff for review or even just for information.
- Both proposed access points should be reviewed for compliance with TAC intersection sight distance requirements.
- The consultant has asked about the timing of the new Highway 6 interchange. We understand from MTO that the new interchange will likely open at the end of 2024 at which point the Maltby Road intersection will be closed. If there is a scenario where there will be site traffic before the new interchange is open, an interim scenario should be studied, and the proposed driveway connections will need to meet the sight distance requirements both before and after the Maltby Road intersection closure with Highway 6.
- Otherwise, the proposed scope of the study is acceptable.

Let me know if there is anything further you would like to discuss about this application or anything I'm missing.
Julia

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Raf Andrenacci

From: Munshif Muccaram <Munshif.Muccaram@guelph.ca>
Sent: Tuesday, January 30, 2024 10:51 AM
To: Raf Andrenacci; Gwen Zhang
Cc: Will Maria
Subject: RE: Estill Innovation Community - TIS Terms of Reference

You don't often get email from munshif.muccaram@guelph.ca. Learn why this is important

Hi Raf,

Thank you for sharing the TOR for the TIS. As you noted in your email, TOR has been circulated with MTO and all Highway #6 improvements (i.e. new interchange, Malby Road West and Concession Road 4 closure at highway etc.) are to be confirmed by MTO.

Pleas note that the Forestell Road between Downey Road and Side Road 20 is a local roadway under the Jurisdiction of City of Guelph. Heavy vehicles are restricted on Forestell Road. The development must be designed to prevent truck traffic via Forestell Road.

No further comments for the proposed TOR for this development.

Thank you,

Munshif Muccaram
Development Engineering Transportation Technologist II
Engineering and Transportation Services
City of Guelph
519-822-1260 extension 2043
TTY 519-826-9771
munshif.muccaram@guelph.ca

From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Monday, January 29, 2024 12:28 PM
To: Gwen Zhang <Gwen.Zhang@guelph.ca>; Munshif Muccaram <Munshif.Muccaram@guelph.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: Fw: Estill Innovation Community - TIS Terms of Reference

[EXTERNAL EMAIL] This email originates outside the City of Guelph. Do not click links or attachments unless you recognize the sender and know the content is safe.

Hi Gwen and Munshif,

I have included below the Terms of Reference that was circulated to the Township of Puslinch and the MTO. Based on the general comments received to date, we been advised to also circulate the TOR to the City of Guelph due to the site's proximity to the city. Could you please let us know if the City would like to provide any comments to the TOR below? We have also been advised to add an additional horizon year of 10-year post build-out.

Thanks,

Raf

From: Dominic Cho <Do-Hyun.Cho@ghd.com>
Sent: Wednesday, September 6, 2023 1:05 PM
To: lbanks@puslinch.ca <lbanks@puslinch.ca>
Cc: Will Maria <William.Maria@ghd.com>; Raf Andrenacci <Raf.Andrenacci@ghd.com>; Peter Zytner <Peter.Zytner@ghd.com>; Jason Haelzle <Jason.Haelzle@ghd.com>; Dave Aston <daston@mhbcplan.com>; Emily Elliott <eelliott@mhbcplan.com>; JEstill@danby.com <JEstill@danby.com>; Lynda Murray <LMurray@danby.com>
Subject: Estill Innovation Community - TIS Terms of Reference

Dear Town of Puslinch,

GHD is pleased to present the following Terms of Reference for the Transportation Impact Study of the proposed Estill Innovation Community.

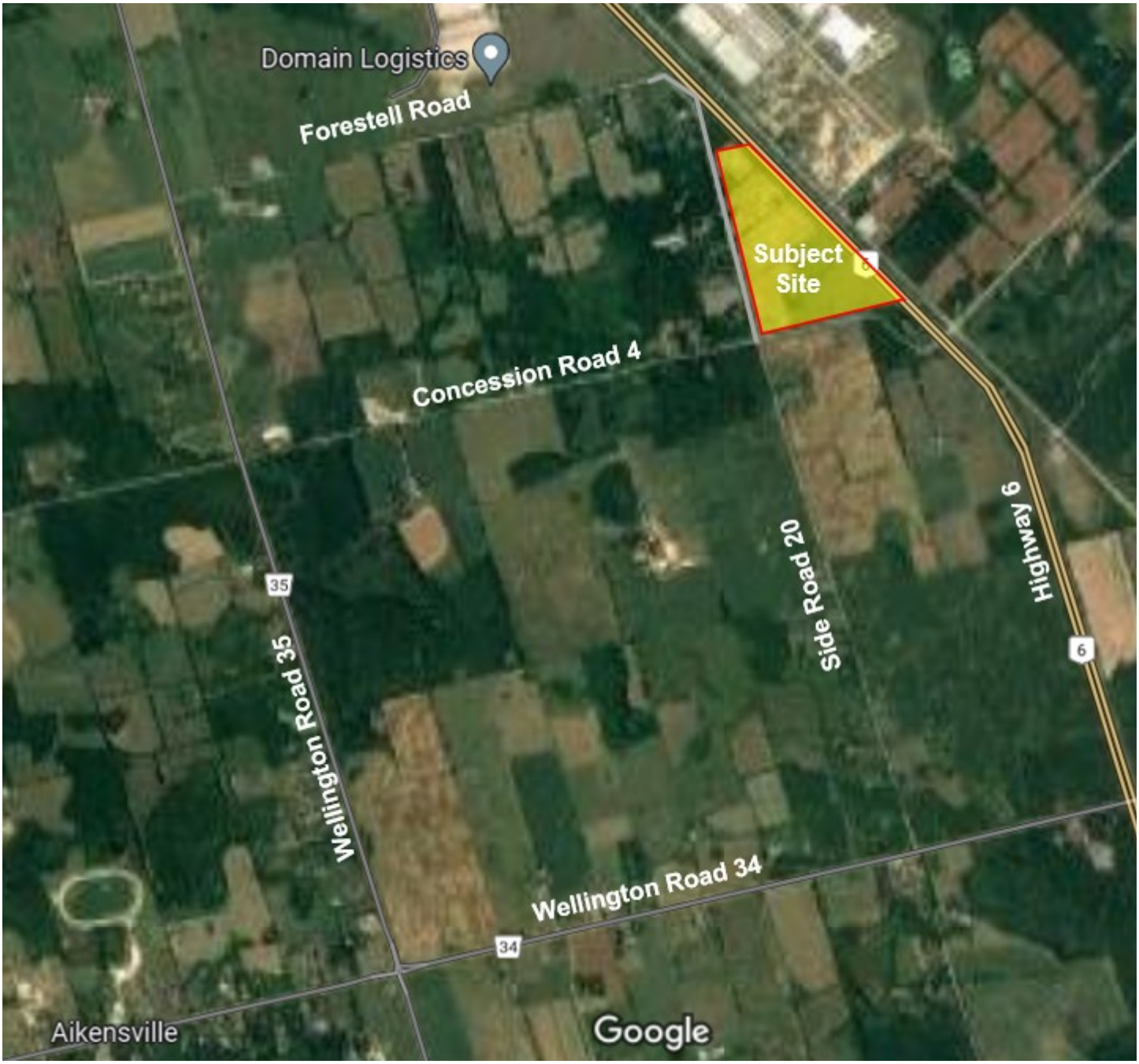
Please let us know of any questions or concerns upon review.

Estill Innovation Community

Terms of Reference

Introduction

GHD Limited has been retained to prepare a Transportation Impact Study for a proposed industrial development located in an area generally bounded by Side Road 20, Concession Road 4, and Highway 6/Hanlon Parkway, in the Township of Puslinch, Wellington County, Ontario.



The subject site consists of three proposed buildings, with Building A and Building B consisting of warehouse uses and a daycare facility in a separate building.

Access to the subject site is proposed via two driveways. The first driveway is proposed to be located along Side Road 20 and would provide access to both the daycare and industrial facility parking areas. The second driveway is proposed to be located along Concession Road 4 near the eastern property limit and would provide access to the industrial building loading spaces, additional parking and a second access to the primary parking area previously mentioned.

In order to properly scope this project, we ask that the Township review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

The following will be addressed in the study:

- Establish existing and future operating conditions for the study intersections, including anticipated corridor growth, future development of Estill Innovation Community.

- Forecast trip generation and distribution of the proposed development and determine its impact to the study intersections and surrounding traffic.

- Review the proposed road network within the study area for feasibility and safety.

Wellington County's Guidelines for Traffic Impact Studies, dated October 29, 2021 has been reviewed in preparation of this Terms of Reference and the TIS will follow the TIS requirements:

Study intersections

Existing:

- Downey Road/Wellington Road 35 and Forestell Road
- Wellington Road 35 and Concession Road 4

- Concession Road 4 and Side Road 20
- Wellington Road 35 and Side Road 20

Future:

- Concession Road 4 and the proposed site access
- Side Road 20 and the proposed site access
- Future Highway 6 Interchange

GHD requests further, or direction to information regarding the Future Highway 6 Interchange, including the projected traffic volumes.

Domain Logistics
Forestell Road
Concession Road 4
35
Wellington Road 35
Wellington Roa

Traffic Data

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

Study Peak Hours

Weekday a.m. and p.m. peak hours

Study Horizon Year and Scenarios

2023 (existing), 2028 (year of full build-out), 2033 (5 years post build-out), generally consistent with the Wellington County TIS Guidelines. GHD will assess the future horizon years based on the existing road network in addition to the proposed improvements currently contemplated by the Township.

Future Roadway Improvement

GHD will assess each future horizon year based on the existing road network in addition to the proposed improvements currently contemplated by the Township, County or MTO.

Background Growth Rate

GHD to contact staff to determine the growth rates along the study area roadways.

Background Development Traffic

GHD to contact staff to determine what future background developments to include in close proximity to the subject site that would contribute to additional traffic along the study area road network. Please confirm if there are any developments to include.

Trip Generation

Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 150 (Warehousing) and LUC 565 (Day Care Center).

The directional distribution of traffic approaching and departing the site will be determined based on the 2016 TTS data, existing local travel patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC, MTO and Township guidelines will be reviewed in order to complete an access management review for the site accesses that reviews corner clearance, auxiliary lanes, corner radii, and clear throat distance.

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If the above scope is acceptable, it will form the basis of our scope of work.

Thank you,

Dominic Cho, **B.ASc., P.Eng.**
Transportation Planner

GHD

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D +1 905 752 4317 **V** 884317 **E** do-hyun.cho@ghd.com

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Raf Andrenacci

From: Amy Douglas
Sent: Monday, January 8, 2024 8:54 AM
To: Dominic Cho; Will Maria; Raf Andrenacci; Peter Zytner; Jason Haelzle; Dave Aston; Emily Elliott; Jim Estill; Lynda Murray
Cc: Lynne Banks
Subject: FW: Estill Innovation Community - TIS Terms of Reference
Attachments: HWY 6 @ CON RD 4.pdf; HWY 6 @ HWY 6_LAIRD RD - RAMP 24.pdf; HWY 6 @ HWY 6 _LAIRD RD - RAMP 34.pdf; HWY 6 @ WELLINGTON ROAD 34.pdf; PIC-Roll-Plan_Midblock-November-2021.pdf; Traffic Impact Studies Guideline - 2023.pdf

CompleteRepository: 12618927
Description: Danby & UCF- TIS
JobNo: 12618927
OperatingCentre: 662
RepoEmail: 12618927@ghd.com
RepoType: Proposal

Hi everyone,
Please see attached.

Amy Douglas
[she/her]

M.Sc.
Team Lead (Natural Resources Waterloo)
Ecologist / Project Manager

GHD
Proudly employee-owned | ghd.com
455 Phillip Street Waterloo Ontario N2L 3X2 Canada
D +1 519 340 3871 **M** +1 226 748 9930 **E** amy.douglas@ghd.com

GHD FIRST Emergency Spill Hotline: +1 800 679 9082

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From: Lynne Banks <lbanks@puslinch.ca>
Sent: Thursday, January 4, 2024 9:30 AM
To: Amy Douglas <Amy.Douglas@ghd.com>
Subject: FW: Estill Innovation Community - TIS Terms of Reference

You don't often get email from lbanks@puslinch.ca. Learn why this is important

Hi Amy –

I have received the comments back from the MTO (below and attached) for your review.

Regards –

Lynne

Lynne Banks
Development and Legislative Coordinator
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 226 Fax 519-736-5846 www.puslinch.ca

From: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Sent: Wednesday, December 20, 2023 9:42 AM
To: Lynne Banks <lbanks@puslinch.ca>
Subject: RE: Estill Innovation Community - TIS Terms of Reference

Hello Lynne,

MTO has reviewed the Terms of Reference for the TIS to support the Estill Innovation Community north west of the Highway 6 and Concession Road 4 intersection, prepared by GHD, the following outlines out comments:

The TIS shall be prepared following the MTO Traffic Impact Study Guideline – 2023, see attached.

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The study should confirm whether the warehouse will not be open on weekends.

- If it is open on weekends, Saturday analysis should be included in the study peak hours.

Study horizon and scenario requires opening date of development, 5 and 10 year analysis from opening date.

Please let us know should your consultant require any further information or clarification with respect to MTO requirements, please note Jessica is no longer a required recipient.

Regards,

Allan Hodgins | Corridor Management Planner
Ph. (226) 973-8580 | Fax (519) 873-4228
E-mail: allan.hodgins@ontario.ca

The Ministry of Transportation of Ontario
West Operations Branch | Corridor Management Section, West
1st Floor | 659 Exeter Road, London, Ontario, N6E 1L3
For General Inquiries, Pre-consultations or Permit Application, please see our automated system: https://www.hcms.mto.gov.on.ca

From: Lynne Banks <lbanks@puslinch.ca>
Sent: December 8, 2023 12:31 PM
To: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Cc: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Subject: FW: Estill Innovation Community - TIS Terms of Reference

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Hi Jessica –

I'm following up on the email chain below to see if the MTO has any further comments.

Thanks –

Lynne

Lynne Banks
Development and Legislative Coordinator
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 226 Fax 519-736-5846 www.puslinch.ca

From: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Sent: Wednesday, October 18, 2023 3:18 PM
To: Lynne Banks <lbanks@puslinch.ca>
Subject: RE: Estill Innovation Community - TIS Terms of Reference

Good afternoon Lynne,

Thank you for providing a TOR for the TIS for MTO review.

MTO will review and provide comments/concerns and data if available.

Traffic reviews generally take four to six weeks.

If there are any questions, please let me know.

Kind Regards,

Jessica Pegelo
Ministry of Transportation
Corridor Management Planner
Highway Corridor Management Section
659 Exeter Rd. London, ON N6E 1L3
Telephone: 519-379-4397 Fax: 519-376-6842
E-mail: jessica.pegelo@ontario.ca

From: Lynne Banks <lbanks@puslinch.ca>
Sent: October 16, 2023 11:42 AM
To: Pegelo, Jessica (MTO) <Jessica.Pegelo@ontario.ca>
Subject: FW: Estill Innovation Community - TIS Terms of Reference

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HI Jessica –

The traffic consultant for 4631 Sideroad 20 N. has provided the TOR for a TIS that they will be completing (see below). The Township's traffic consultant has provided comments (attached). I don't know if Domenic Cho (the owner's consultant) has reached out to you. The MTO did provide comments in September 2022 as part of the precon. Would you please review the attached, and below, and provide any further comments you might have by November 25th?

Thanks –

Lynne

Lynne Banks
Development and Legislative Coordinator
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 226 Fax 519-736-5846 www.puslinch.ca

From: Dominic Cho <Do-Hyun.Cho@ghd.com>
Sent: Wednesday, September 6, 2023 1:05 PM
To: Lynne Banks <lbanks@puslinch.ca>
Cc: Will Maria <William.Maria@ghd.com>; Raf Andrenacci <Raf.Andrenacci@ghd.com>; Peter Zytner <Peter.Zytner@ghd.com>; Jason Haelzle <Jason.Haelzle@ghd.com>; Dave Aston <daston@mhbcplan.com>; Emily Elliott <eelliott@mhbcplan.com>; JEstill@danby.com; Lynda Murray <LMurray@danby.com>
Subject: Estill Innovation Community - TIS Terms of Reference

Dear Town of Puslinch,

GHD is pleased to present the following Terms of Reference for the Transportation Impact Study of the proposed Estill Innovation Community.

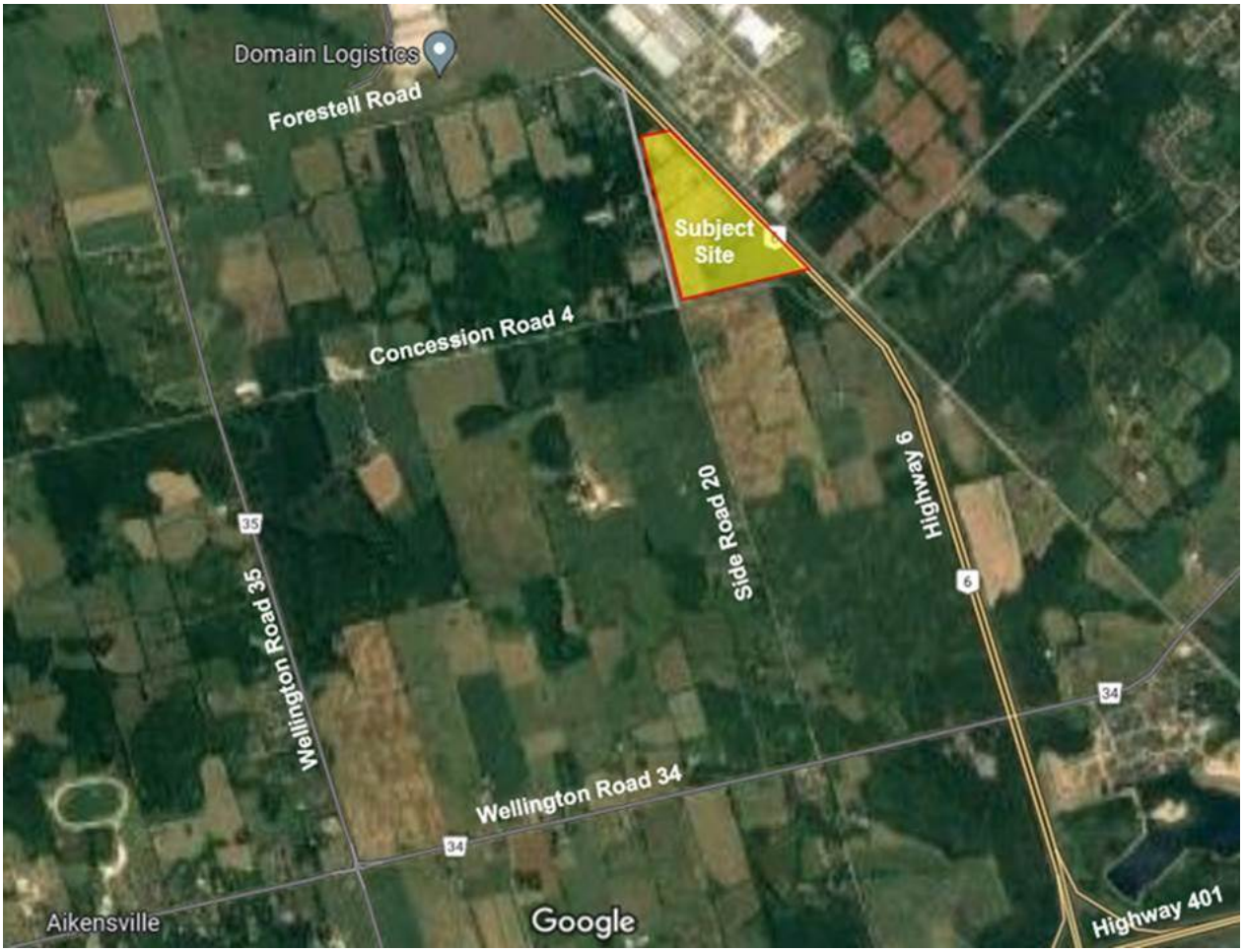
Please let us know of any questions or concerns upon review.

Estill Innovation Community

Terms of Reference

Introduction

GHD Limited has been retained to prepare a Transportation Impact Study for a proposed industrial development located in an area generally bounded by Side Road 20, Concession Road 4, and Highway 6/Hanlon Parkway, in the Township of Puslinch, Wellington County, Ontario.



The subject site consists of three proposed buildings, with Building A and Building B consisting of warehouse uses and a daycare facility in a separate building.

Access to the subject site is proposed via two driveways. The first driveway is proposed to be located along Side Road 20 and would provide access to both the daycare and industrial facility parking areas. The second driveway is proposed to be located along Concession Road 4 near the eastern property limit and would provide access to the industrial building loading spaces, additional parking and a second access to the primary parking area previously mentioned.

In order to properly scope this project, we ask that the Township review and provide comments on the following scope and confirm if there are any additional items required as part of the study.

The following will be addressed in the study:

- Establish existing and future operating conditions for the study intersections, including anticipated corridor growth, future development of Estill Innovation Community.
- Forecast trip generation and distribution of the proposed development and determine its impact to the study intersections and surrounding traffic.
- Review the proposed road network within the study area for feasibility and safety.

Wellington County's Guidelines for Traffic Impact Studies, dated October 29, 2021 has been reviewed in preparation of this Terms of Reference and the TIS will follow the TIS requirements:

Study intersections

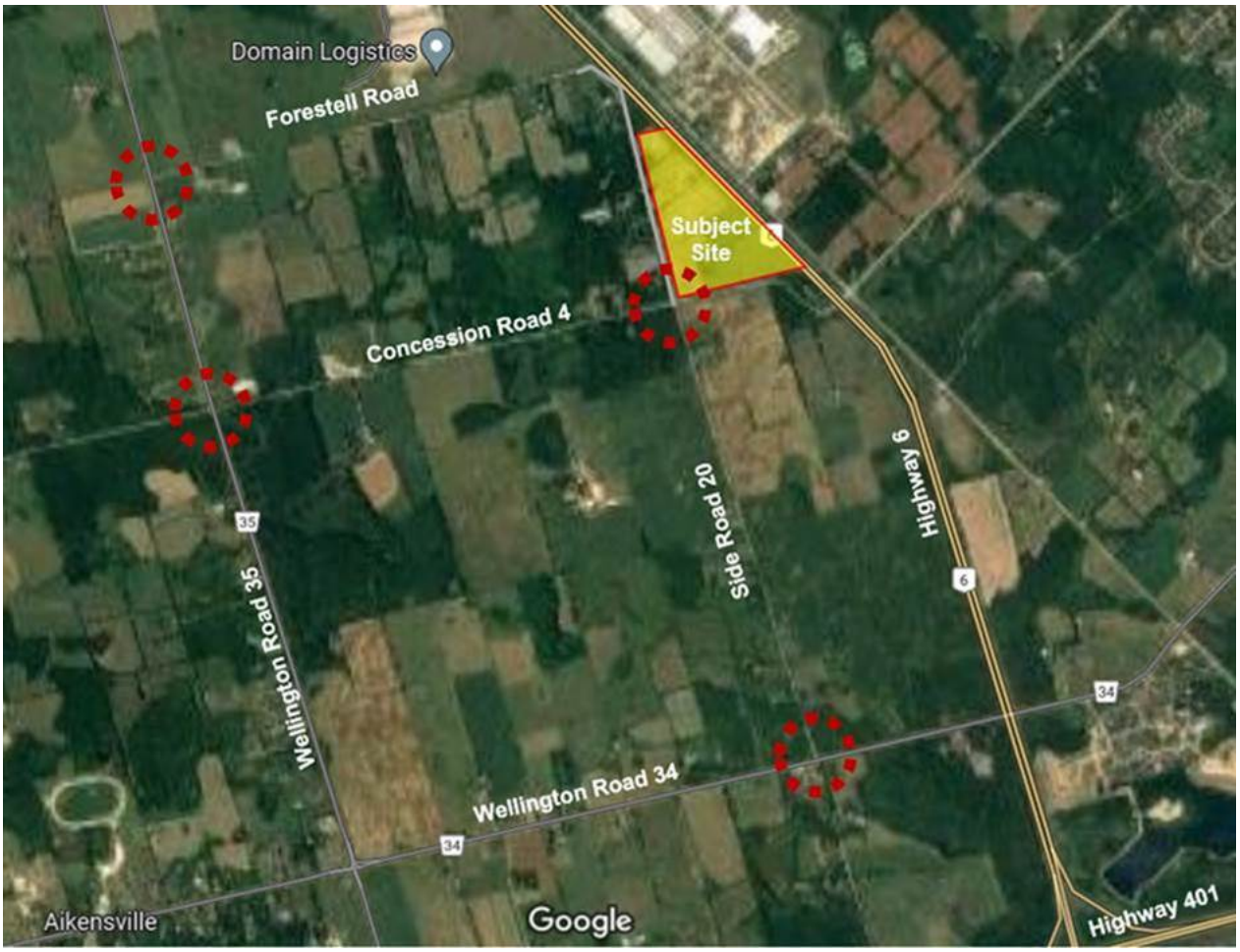
Existing:

- Downey Road/Wellington Road 35 and Forestell Road
- Wellington Road 35 and Concession Road 4
- Concession Road 4 and Side Road 20
- Wellington Road 35 and Side Road 20

Future:

- Concession Road 4 and the proposed site access
- Side Road 20 and the proposed site access
- Future Highway 6 Interchange

GHD requests further, or direction to information regarding the Future Highway 6 Interchange, including the projected traffic volumes.



Traffic Data
Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours.

Study Peak Hours
Weekday a.m. and p.m. peak hours

Study Horizon Year and Scenarios
2023 (existing), 2028 (year of full build-out), 2033 (5 years post build-out), generally consistent with the Wellington County TIS Guidelines. GHD will assess the future horizon years based on the existing road network in addition to the proposed improvements currently contemplated by the Township.

Future Roadway Improvement
GHD will assess each future horizon year based on the existing road network in addition to the proposed improvements currently contemplated by the Township, County or MTO.

Background Growth Rate
GHD to contact staff to determine the growth rates along the study area roadways.

Background Development Traffic
GHD to contact staff to determine what future background developments to include in close proximity to the subject site that would contribute to additional traffic along the study area road network. Please confirm if there are any developments to include.

Trip Generation
Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 150 (Warehousing) and LUC 565 (Day Care Center).

The directional distribution of traffic approaching and departing the site will be determined based on the 2016 TTS data, existing local travel patterns and first principles.

The analysis will Identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

TAC, MTO and Township guidelines will be reviewed in order to complete an access management review for the site accesses that reviews corner clearance, auxiliary lanes, corner radii, and clear throat distance.

Complete AutoTurn assessment of the proposed site with the anticipated design vehicles.

The proposed parking supply will be reviewed in accordance with the Town's Zoning By-law.

If the above scope is acceptable, it will form the basis of our scope of work.

Thank you,

Dominic Cho, **B.ASc., P.Eng.**
Transportation Planner

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Raf Andrenacci

From: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Sent: Wednesday, April 3, 2024 11:01 AM
To: Will Maria
Cc: Raf Andrenacci
Subject: RE: Estill Innovation Community - TIS Terms of Reference
Attachments: Draft Traffic Data.pdf

Hello Will,

The attached "Draft Traffic Data.pdf" are excerpts from the draft traffic operation report, dated July 7, 2021, prepared for the MTO project including the projected turning movements and signal warrants. This data is acceptable for the report and should be adjusted using an appropriate growth rate to represent the base and horizon years.

> ***DISCLAIMER****: This information is to be used for the requested purposes only and based on existing/known conditions at the time the draft report was prepared. This information cannot be shared or published without MTO authorization.*

The final signal timing will be developed by Design-Builder and MTO as the project continues forward, and is not available at this time. However, for the purposes of this report assume the ramp terminals are coordinated and:

- EW
  - Green - 40 seconds
  - Amber - 5.4 seconds
  - All Red - 1.8 seconds

- Ramp approach (actuated)
  - Green - 35 seconds
  - Amber - 5.0 seconds
  - All Red - 1.5 seconds

Please let me know should you wish to discuss or have any further questions prior to continuing the with the TIS including the new interchange at Highway 6 as noted in the TOR initially.

Regards,

Allan Hodgins
Corridor Management Planner | West Operations | Operations Division
Ministry of Transportation | Ontario Public Service
226-973-8580 | allan.hodgins@ontario.ca

Ontario

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---

From: Will Maria <William.Maria@ghd.com>
Sent: April 3, 2024 9:39 AM

To: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Cc: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Subject: Estill Innovation Community - TIS Terms of Reference

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning Allan,
GHD recently had a meeting with the Town concerning the proposed Terms of Reference for this project and we discussed the new Hwy 6 interchange.
In our original Terms of Reference, we had included in the list of study intersections the new interchange at Hwy 6 with the expectation that MTO would be able to provide future traffic volumes for us to complete the capacity analysis.
Considering that MTO does not have any future projected traffic volumes to share at this time, can we eliminate this interchange from our study?
It would be a considerable exercise to generate future turning movement volumes for this interchange in line with an EA study which is beyond the scope of this study and our client's budget.
Please advise.
Sincerely,

Will

William C. Maria, P.Eng.
Transportation Planning Lead

GHD Ltd.
T: 905 814 4397 | C: 647 229 8541 | F: 905 890 8499 | E: will.maria@ghd.com
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | **www.ghd.com**

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From: Hodgins, Allan (MTO) <Allan.Hodgins@ontario.ca>
Sent: Wednesday, December 20, 2023 9:42 AM
To: Lynne Banks <lbanks@puslinch.ca>
Subject: RE: Estill Innovation Community - TIS Terms of Reference

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Allan Hodgins | Corridor Management Planner
Ph. (226) 973-8580 | Fax (519) 873-4228
E-mail: allan.hodgins@ontario.ca

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West Operations Branch | Corridor Management Section, West
1st Floor | 659 Exeter Road, London, Ontario, N6E 1L3
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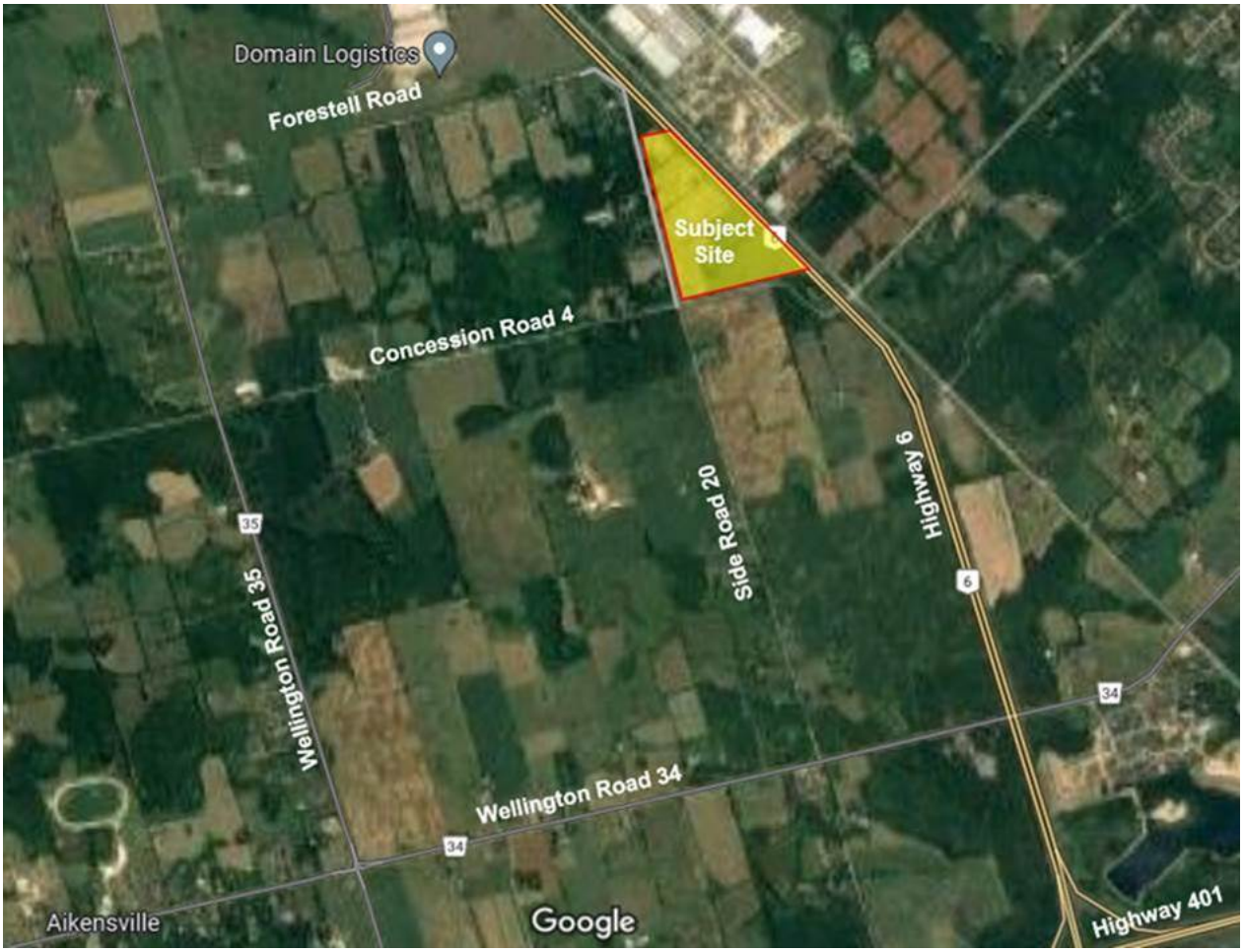

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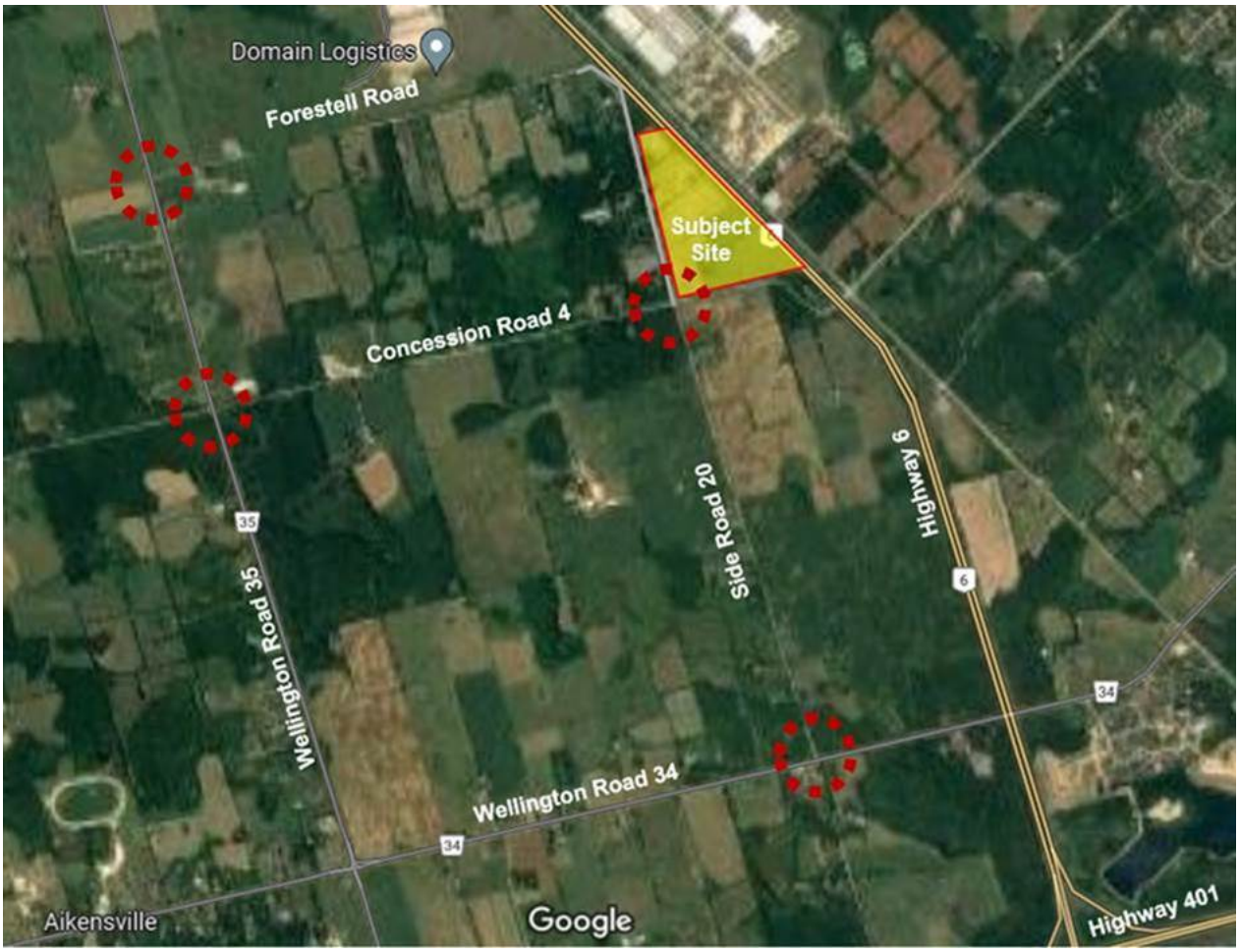

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Thank you,

Dominic Cho, **B.ASc., P.Eng.**
Transportation Planner

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Appendix B

Site Plan

Puslinch Industrial Develpoment
21-Jan-25

2421

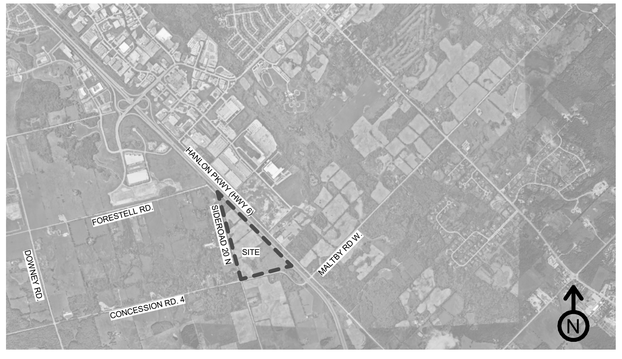
*** NOTE: SURVEY INFORMATION TAKEN TOPOGRAPHIC PLAN CI-101 DATED 2024-01-09**

*** NOTE: WETLAND TAKEN FROM GHD TOPOGRAPHIC PLAN CI-101 DATED 2024-01-09**

Gross Constructed Area Summary

		Total GCA	Office	Warehouse	Manufacturing	Retail	Conference	Food Service	Gym	Daycare
Industrial Bldg #1	Tenant 1	245,000 sf *22,761 m2*	30,000 sf *2,787 m2*	150,000 sf *13,935 m2*	50,000 sf *4,645 m2*	15,000 sf *1,394 m2*				
	Tenant 1 Expansion	50,000 sf *4,645 m2*		37,500 sf *3,484 m2*	12,500 s.f *1,161 m2*					
	Tenant 2	230,000 sf *21,368 m2*	20,000 sf *1,858 m2*	200,000 sf *18,580 m2*		10,000 sf *929 m2*				
	Tenant 2 Expansion	100,000 sf *9,290 m2*		100,000 sf *9,290 m2*						
	Retail	15,000 sf *1,394 m2*			15,000 s.f *1,394 m2*					
	Shared Spaces	25,000 sf *2,323 m2*					20,000 sf *1,858 m2*	5,000 sf *465 m2*		
		665,000 sf ***61,780 m2***								
Industrial Bldg #2		120,000 sf *11,148 m2*	10,000 sf *929 m2*		110,000 sf *10,219 m2*					
Expansion		75,000 sf *6,968 m2*			75,000 sf *6,968 m2*					
		195,000 sf **18,115.94 m2**								
Industrial Bldg #3		140,500 sf *13,053 m2*	5,000 sf *465 m2*		135,500 sf *12,588 m2*					
		140,500 ft **13,053 m2**								
Gym		15,000 sf *1,394 m2*							15,000 sf *1,394 m2*	
		15,000 sf ***1,394 m2***								
Daycare		10,000 sf *929 m2*								10,000 s.f *929 m2*
		10,000 sf ***929 m2***								
Total GCA		**1,025,500 sf** ***95,271 m2***	65,000 sf *6,039 m2*	487,500 sf *45,290 m2*	398,000 sf *36,975 m2*	25,000 sf *2,323 m2*	20,000 sf *1,858 m2*	5,000 sf *465 m2*	15,000 sf *1,394 m2*	10,000 sf *929 m2*

VEHICULAR PARKING			
TENANT	**REQUIRED**		**PROVIDED**
Industrial Building #1		631	631
Industrial Building #2	1/200 sq.m	56	56
Industrtial Building #3	1/100 sq.m	114	114
Gym	1/20 sq.m	70	70
Daycare	1/40 sq.m	23	23
TOTAL PARKING		**894**	**894**
ACCESSIBLE PARKING			
All Buildings	8 + 2% of Total Parking	**26**	**26**



Context Map
N.T.S

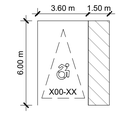
CAR PARKING SPACE:

NOTES:

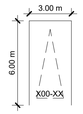
- DRIVE AISLE MINIMUM 6.0m UNLESS OTHERWISE NOTED.

MINIMUM PARKING SPACE DIMENSIONS:

ACCESSIBLE :
WIDTH: 3.6m
LENGTH: 6.0m



STANDARD :
WIDTH: 3.0m
LENGTH: 6.0m



BICYCLE PARKING SPACE:

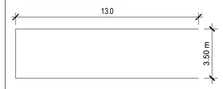
MINIMUM BICYCLE PARKING SPACE DIMENSIONS:

HORIZONTAL:
WIDTH: 0.60m
LENGTH: 1.80m

TYPICAL LOADING SPACE:

MINIMUM TRAILER SPACE DIMENSIONS:

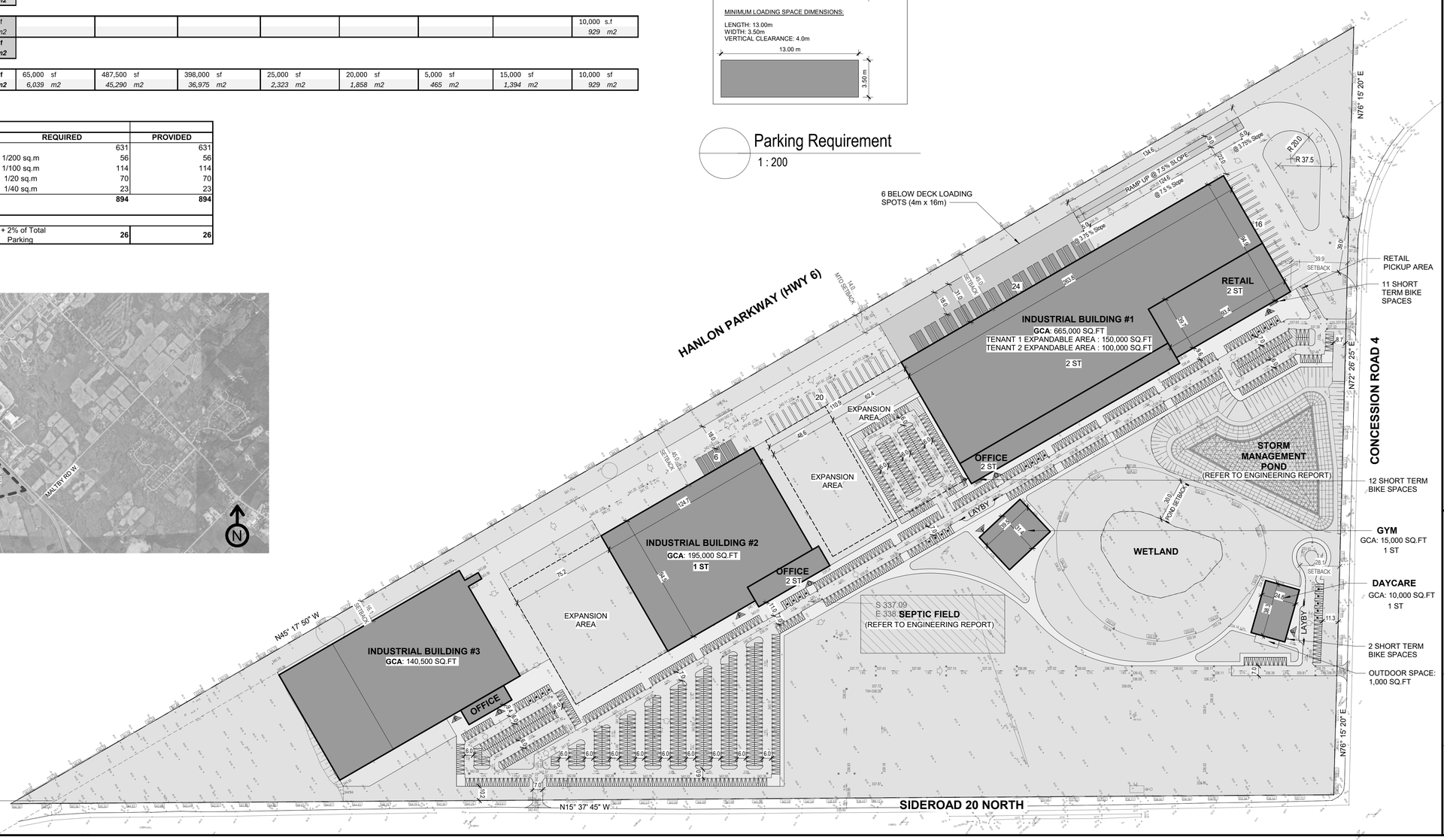
LENGTH: 13.00m
WIDTH: 3.50m
VERTICAL CLEARANCE: 4.0m



MINIMUM LOADING SPACE DIMENSIONS:

LENGTH: 13.00m
WIDTH: 3.50m
VERTICAL CLEARANCE: 4.0m

Parking Requirement
1 : 200



1
AC103
OPA / ZBA Site Plan
1 : 1500

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

ISSUED / REVISED yy-mm-dd

ISSUED FOR OPA / ZBA	2025-02-07

SITE SYMBOL LEGEND:

- F — FACILITY ENTRANCE
- R — RETAIL ENTRANCE
- O — OFFICE ENTRANCE

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
Puslinch Industrial
4631 Sideroad 20 N
Puslinch Township

OWNER
Estill Innovation Hub

DWG TITLE
Site Plan, Contect Plan, Area Statistics

DATE:	2025-01-27
SCALE :	As indicated
DRAWN :	AT
CHECKED :	GD
PROJ. No. :	2421

DWG No.
AC103

C:\Users\andreas\Documents\2421_A_R23_Puslinch Industrial Development_Central 2ST Scheme_andreasA623L.rvt

2025-01-27 2:46:04 PM

Appendix C

Traffic Data

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #24-045 - GHD

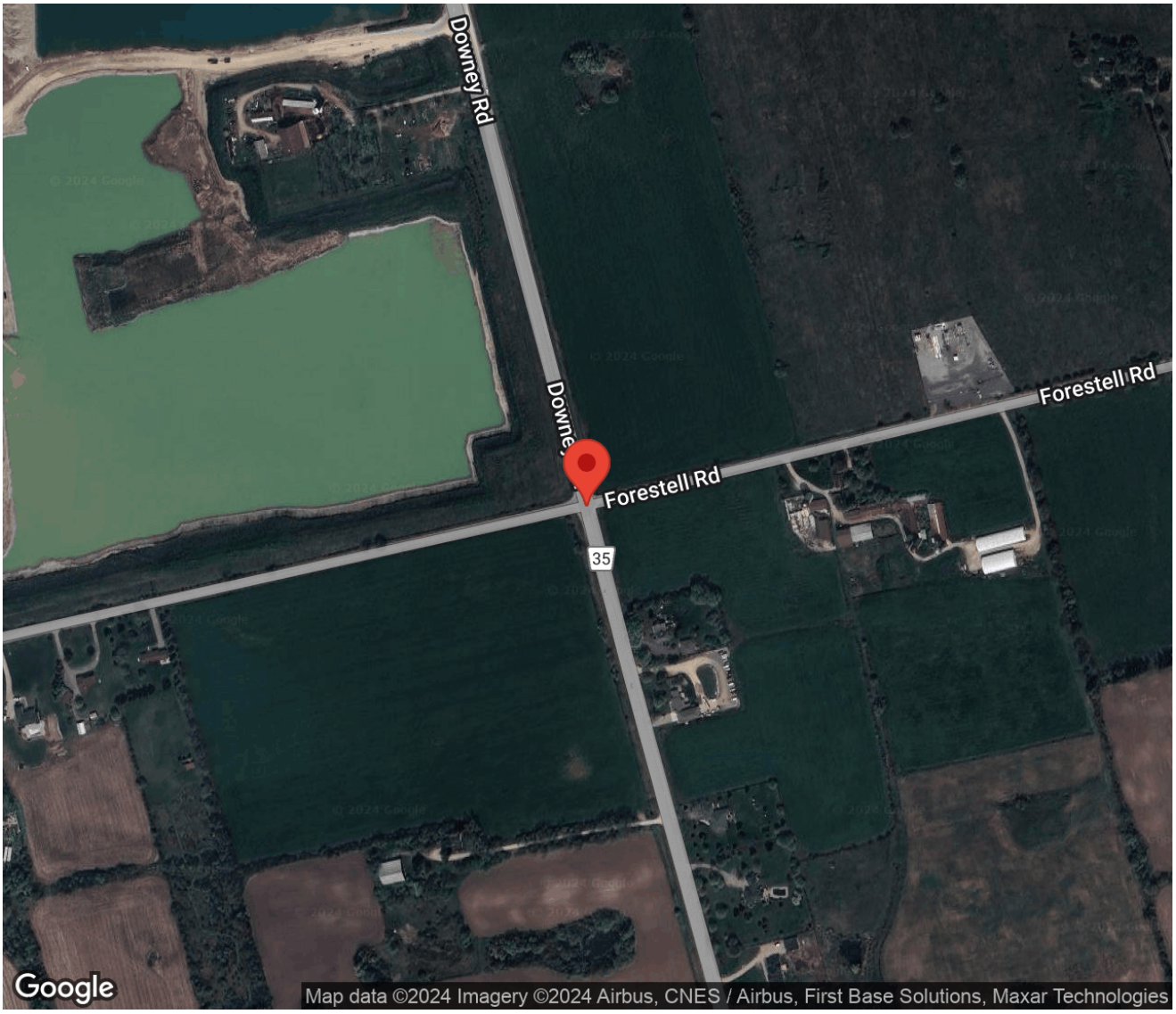
Intersection Count Report

Intersection:	Downey Rd - Wellington Rd 35 & Forestell Rd
Municipality:	Puslinch
Count Date:	Wednesday, Feb 07, 2024
Site Code:	2404500001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code:	2404500001
Municipality:	Puslinch
Count Date:	Feb 07, 2024



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code:	2404500001
Municipality:	Puslinch
Count Date:	Feb 07, 2024

Downey Rd - 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	2	171	13	0	186	0	1	224	1	0	226	0	412
08:00 - 09:00	1	150	22	0	173	0	6	321	0	0	327	0	500
BREAK													
16:00 - 17:00	3	314	78	1	396	0	5	182	1	0	188	0	584
17:00 - 18:00	3	261	49	0	313	0	4	167	1	1	173	0	486
GRAND TOTAL	**9**	**896**	**162**	**1**	**1068**	**0**	**16**	**894**	**3**	**1**	**914**	**0**	**1982**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code:	2404500001
Municipality:	Puslinch
Count Date:	Feb 07, 2024

Forestell Rd - 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	2	1	3	0	6	0	25	1	2	0	28	0	34
08:00 - 09:00	0	2	3	0	5	0	44	1	3	0	48	0	53
BREAK													
16:00 - 17:00	2	0	3	0	5	0	22	1	3	0	26	0	31
17:00 - 18:00	1	2	3	0	6	0	23	1	2	0	26	0	32
GRAND TOTAL	**5**	**5**	**12**	**0**	**22**	**0**	**114**	**4**	**10**	**0**	**128**	**0**	**150**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Downey Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	36	1	0	37	0	0	0	0	0	0	0	0	0	0	0
07:15	1	35	2	0	38	0	2	0	0	2	0	0	0	0	0	0
07:30	0	42	6	0	48	0	1	0	0	1	0	0	0	0	0	0
07:45	1	54	4	0	59	0	1	0	0	1	0	0	0	0	0	0
08:00	0	50	3	0	53	0	0	0	0	0	0	0	0	0	0	0
08:15	0	38	5	0	43	0	2	0	0	2	0	0	0	0	0	0
08:30	0	28	7	0	35	0	0	0	0	0	0	0	0	0	0	0
08:45	1	30	7	0	38	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	3	313	35	0	351	0	8	0	0	8	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Downey Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	68	18	1	87	0	3	1	0	4	0	0	0	0	0	0
16:15	0	76	16	0	92	0	3	0	0	3	0	0	0	0	0	0
16:30	2	84	21	0	107	1	1	0	0	2	0	0	0	0	0	0
16:45	0	76	22	0	98	0	3	0	0	3	0	0	0	0	0	0
17:00	0	78	14	0	92	0	0	0	0	0	0	0	0	0	0	0
17:15	1	68	13	0	82	0	1	0	0	1	0	0	0	0	0	0
17:30	2	63	11	0	76	0	1	0	0	1	0	0	0	0	0	0
17:45	0	50	11	0	61	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	5	563	126	1	695	1	12	1	0	14	0	0	0	0	0	0
GRAND TOTAL	8	876	161	1	1046	1	20	1	0	22	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	43	0	0	43	0	0	0	0	0	0	0	0	0	0	0
07:15	0	39	0	0	39	0	2	0	0	2	0	0	0	0	0	0
07:30	0	64	1	0	65	0	2	0	0	2	0	0	0	0	0	0
07:45	1	73	0	0	74	0	1	0	0	1	0	0	0	0	0	0
08:00	0	70	0	0	70	2	1	0	0	3	0	0	0	0	0	0
08:15	1	101	0	0	102	1	9	0	0	10	0	0	0	0	0	0
08:30	1	69	0	0	70	1	0	0	0	1	0	0	0	0	0	0
08:45	0	67	0	0	67	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	3	526	1	0	530	4	19	0	0	23	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	1	36	0	0	37	0	0	0	0	0	0	0	0	0	0	0
16:15	1	50	0	0	51	0	1	0	0	1	0	0	0	0	0	0
16:30	0	42	1	0	43	0	1	0	0	1	0	0	0	0	0	0
16:45	3	51	0	0	54	0	1	0	0	1	0	0	0	0	0	0
17:00	1	45	0	0	46	0	0	0	0	0	0	0	0	0	0	0
17:15	1	45	0	1	47	0	0	0	0	0	0	0	0	0	0	0
17:30	0	39	0	0	39	0	0	0	0	0	0	0	0	0	0	0
17:45	2	37	1	0	40	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	9	345	2	1	357	0	4	0	0	4	0	0	0	0	0	0
GRAND TOTAL	12	871	3	1	887	4	23	0	0	27	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Forestell Rd

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45	1	0	3	0	4	1	0	0	0	1	0	0	0	0	0	0
08:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:45	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	1	3	6	0	10	1	0	0	0	1	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Forestell Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0
17:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	3	2	5	0	10	0	0	1	0	1	0	0	0	0	0	0
GRAND TOTAL	4	5	11	0	20	1	0	1	0	2	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Forestell Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:30	7	0	0	0	7	0	1	0	0	1	0	0	0	0	0	0
07:45	13	0	2	0	15	0	0	0	0	0	0	0	0	0	0	0
08:00	11	1	1	0	13	0	0	0	0	0	0	0	0	0	0	0
08:15	12	0	0	0	12	2	0	0	0	2	0	0	0	0	0	0
08:30	10	0	1	0	11	0	0	1	0	1	0	0	0	0	0	0
08:45	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	67	1	4	0	72	2	1	1	0	4	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Forestell Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	8	0	0	0	8	0	0	1	0	1	0	0	0	0	0	0
16:15	6	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0
16:30	3	0	1	0	4	0	0	0	0	0	0	1	0	0	1	0
16:45	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:00	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
17:15	11	0	1	0	12	0	0	0	0	0	0	0	0	0	0	0
17:30	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
17:45	6	1	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	45	1	4	0	50	0	0	1	0	1	0	1	0	0	1	0
GRAND TOTAL	**112**	**2**	**8**	**0**	**122**	**2**	**1**	**2**	**0**	**5**	**0**	**1**	**0**	**0**	**1**	**0**

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 07:30:00
To: 08:30:00

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Downey Rd runs N/S

North Approach

	Out	In	Total
Cars	203	356	559
Trucks	4	15	19
Bicycles	0	0	0
	207	**371**	**578**

Downey Rd

Bicycles	0	0	0	0
Trucks	0	4	0	0
Cars	18	184	1	0
Totals	**18**	**188**	**1**	**0**

East Approach

	Out	In	Total
Cars	7	3	10
Trucks	1	1	2
Bicycles	0	0	0
	8	**4**	**12**

Forestell Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	2	43	**45**
0	1	1	**2**
0	0	3	**3**

Peds: 0

Peds: 0

Peds: 0

Forestell Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
5	5	0	0
1	1	0	0
2	1	1	0

West Approach

	Out	In	Total
Cars	47	21	68
Trucks	3	3	6
Bicycles	0	0	0
	50	**24**	**74**

Totals	**5**	**321**	**1**	**0**
Cars	2	308	1	0
Trucks	3	13	0	0
Bicycles	0	0	0	0

Wellington Rd 35

South Approach

	Out	In	Total
Cars	311	188	499
Trucks	16	5	21
Bicycles	0	0	0
	327	**193**	**520**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Count Date: Feb 07, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Downey Rd						South Approach Wellington Rd 35						East Approach Forestell Rd						West Approach Forestell Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	0	43	6	0	0	49	0	66	1	0	0	67	0	1	0	0	0	1	7	1	0	0	0	8	125
07:45	1	55	4	0	0	60	1	74	0	0	0	75	2	0	3	0	0	5	13	0	2	0	0	15	155
08:00	0	50	3	0	0	53	2	71	0	0	0	73	0	0	1	0	0	1	11	1	1	0	0	13	140
08:15	0	40	5	0	0	45	2	110	0	0	0	112	0	0	1	0	0	1	14	0	0	0	0	14	172
Grand Total	**1**	**188**	**18**	**0**	**0**	**207**	**5**	**321**	**1**	**0**	**0**	**327**	**2**	**1**	**5**	**0**	**0**	**8**	**45**	**2**	**3**	**0**	**0**	**50**	**592**
Approach %	0.5	90.8	8.7	0		-	1.5	98.2	0.3	0		-	25	12.5	62.5	0		-	90	4	6	0		-	
Totals %	0.2	31.8	3	0		35	0.8	54.2	0.2	0		55.2	0.3	0.2	0.8	0		1.4	7.6	0.3	0.5	0		8.4	
PHF	**0.25**	**0.85**	**0.75**	**0**		**0.86**	**0.63**	**0.73**	**0.25**	**0**		**0.73**	**0.25**	**0.25**	**0.42**	**0**		**0.4**	**0.8**	**0.5**	**0.38**	**0**		**0.83**	**0.86**
Cars	1	184	18	0		203	2	308	1	0		311	1	1	5	0		7	43	1	3	0		47	568
% Cars	100	97.9	100	0		98.1	40	96	100	0		95.1	50	100	100	0		87.5	95.6	50	100	0		94	95.9
Trucks	0	4	0	0		4	3	13	0	0		16	1	0	0	0		1	2	1	0	0		3	24
% Trucks	0	2.1	0	0		1.9	60	4	0	0		4.9	50	0	0	0		12.5	4.4	50	0	0		6	4.1
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:15:00
To:	18:00:00	To:	17:15:00

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Downey Rd runs N/S

North Approach

	Out	In	Total
Cars	389	208	597
Trucks	8	4	12
Bicycles	0	0	0
	397	**212**	**609**

Downey Rd

Bicycles	0	0	0	0
Trucks	0	7	1	0
Cars	73	314	2	0
Totals	**73**	**321**	**3**	**0**

East Approach

	Out	In	Total
Cars	5	3	8
Trucks	1	1	2
Bicycles	0	1	1
	6	**5**	**11**

Forestell Rd

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	16	**16**	
1	0	0	**1**	
0	0	3	**3**	

Peds: 0

N
W E
S

Peds: 0

Peds: 0

Forestell Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	5	4	1	0
	0	0	0	0
	1	1	0	0

West Approach

	Out	In	Total
Cars	19	78	97
Trucks	0	0	0
Bicycles	1	0	1
	20	**78**	**98**

Totals	**5**	**191**	**1**	**0**
Cars	5	188	1	0
Trucks	0	3	0	0
Bicycles	0	0	0	0

Wellington Rd 35

South Approach

	Out	In	Total
Cars	194	318	512
Trucks	3	7	10
Bicycles	0	0	0
	197	**325**	**522**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Downey Rd - Wellington Rd 35 & Forestell Rd
Site Code: 2404500001
Count Date: Feb 07, 2024
Period: 16:00 - 18:00

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

Start Time	North Approach Downey Rd						South Approach Wellington Rd 35						East Approach Forestell Rd						West Approach Forestell Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:15	0	79	16	0	0	95	1	51	0	0	0	52	1	0	0	0	0	1	6	0	1	0	0	7	155
16:30	3	85	21	0	0	109	0	43	1	0	0	44	0	0	1	0	0	1	3	1	1	0	0	5	159
16:45	0	79	22	0	0	101	3	52	0	0	0	55	0	0	2	0	0	2	5	0	0	0	0	5	163
17:00	0	78	14	0	0	92	1	45	0	0	0	46	0	0	2	0	0	2	2	0	1	0	0	3	143
Grand Total	**3**	**321**	**73**	**0**	**0**	**397**	**5**	**191**	**1**	**0**	**0**	**197**	**1**	**0**	**5**	**0**	**0**	**6**	**16**	**1**	**3**	**0**	**0**	**20**	**620**
Approach %	0.8	80.9	18.4	0		-	2.5	97	0.5	0		-	16.7	0	83.3	0		-	80	5	15	0		-	
Totals %	0.5	51.8	11.8	0		64	0.8	30.8	0.2	0		31.8	0.2	0	0.8	0		1	2.6	0.2	0.5	0		3.2	
PHF	**0.25**	**0.94**	**0.83**	**0**		**0.91**	**0.42**	**0.92**	**0.25**	**0**		**0.9**	**0.25**	**0**	**0.63**	**0**		**0.75**	**0.67**	**0.25**	**0.75**	**0**		**0.71**	**0.95**
Cars	2	314	73	0		389	5	188	1	0		194	1	0	4	0		5	16	0	3	0		19	607
% Cars	66.7	97.8	100	0		98	100	98.4	100	0		98.5	100	0	80	0		83.3	100	0	100	0		95	97.9
Trucks	1	7	0	0		8	0	3	0	0		3	0	0	1	0		1	0	0	0	0		0	12
% Trucks	33.3	2.2	0	0		2	0	1.6	0	0		1.5	0	0	20	0		16.7	0	0	0	0		0	1.9
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	100	0	0		5	0.2
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
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Project #24-045 - GHD

Intersection Count Report

Intersection:	Wellington Rd 35 & Concession Rd 4
Municipality:	Puslinch
Count Date:	Wednesday, Feb 07, 2024
Site Code:	2404500002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
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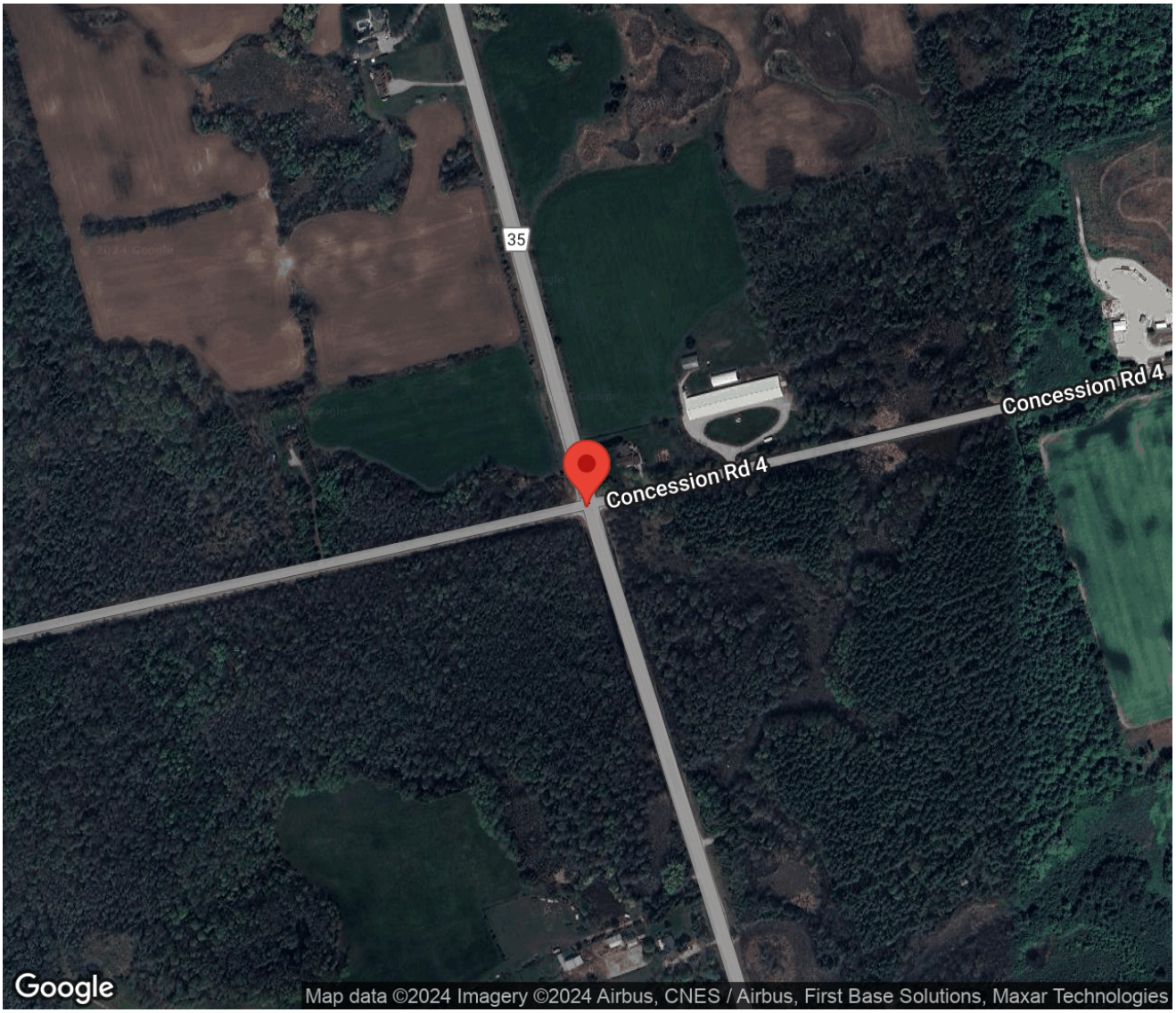
Traffic Count Map

Intersection:	Wellington Rd 35 & Concession Rd 4
Site Code:	2404500002
Municipality:	Puslinch
Count Date:	Feb 07, 2024



Ontario Traffic Inc.
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Traffic Count Summary

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

Wellington Rd 35 - 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	4	167	3	0	174	0	1	214	0	0	215	0	389
08:00 - 09:00	5	140	6	0	151	0	1	297	4	0	302	0	453
BREAK													
16:00 - 17:00	1	306	12	0	319	0	7	171	3	0	181	0	500
17:00 - 18:00	3	245	14	0	262	0	3	166	1	0	170	0	432
GRAND TOTAL	**13**	**858**	**35**	**0**	**906**	**0**	**12**	**848**	**8**	**0**	**868**	**0**	**1774**

Ontario Traffic Inc.
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Traffic Count Summary

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

Concession Rd 4 - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Bicycles)						West Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	1	10	2	0	13	0	13	14	7	0	34	0	47
08:00 - 09:00	4	13	10	0	27	0	20	14	3	0	37	0	64
BREAK													
16:00 - 17:00	6	25	5	0	36	0	12	9	3	0	24	0	60
17:00 - 18:00	2	13	2	0	17	0	5	5	2	0	12	0	29
GRAND TOTAL	**13**	**61**	**19**	**0**	**93**	**0**	**50**	**42**	**15**	**0**	**107**	**0**	**200**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	36	0	0	36	0	0	0	0	0	0	0	0	0	0	0
07:15	1	34	0	0	35	0	2	0	0	2	0	0	0	0	0	0
07:30	1	37	2	0	40	0	2	0	0	2	0	0	0	0	0	0
07:45	2	56	0	0	58	0	0	1	0	1	0	0	0	0	0	0
08:00	0	46	3	0	49	0	2	0	0	2	0	0	0	0	0	0
08:15	1	35	1	0	37	0	0	0	0	0	0	0	0	0	0	0
08:30	2	26	1	0	29	1	0	0	0	1	0	0	0	0	0	0
08:45	1	28	1	0	30	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	8	298	8	0	314	1	9	1	0	11	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	68	1	0	69	0	3	1	0	4	0	0	0	0	0	0
16:15	0	76	3	0	79	0	3	0	0	3	0	0	0	0	0	0
16:30	0	82	2	0	84	0	1	0	0	1	0	0	0	0	0	0
16:45	1	70	5	0	76	0	3	0	0	3	0	0	0	0	0	0
17:00	1	74	6	0	81	0	1	0	0	1	0	0	0	0	0	0
17:15	1	65	4	0	70	0	1	0	0	1	0	0	0	0	0	0
17:30	0	59	2	0	61	0	0	0	0	0	0	0	0	0	0	0
17:45	1	45	2	0	48	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	4	539	25	0	568	0	12	1	0	13	0	0	0	0	0	0
GRAND TOTAL	12	837	33	0	882	1	21	2	0	24	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	1	43	0	0	44	0	0	0	0	0	0	0	0	0	0	0
07:15	0	37	0	0	37	0	1	0	0	1	0	0	0	0	0	0
07:30	0	62	0	0	62	0	1	0	0	1	0	0	0	0	0	0
07:45	0	69	0	0	69	0	1	0	0	1	0	0	0	0	0	0
08:00	0	65	1	0	66	0	3	0	0	3	0	0	0	0	0	0
08:15	1	94	0	0	95	0	8	0	0	8	0	0	0	0	0	0
08:30	0	63	1	0	64	0	0	0	0	0	0	0	0	0	0	0
08:45	0	61	2	0	63	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	2	494	4	0	500	0	17	0	0	17	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Wellington Rd 35

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	1	32	0	0	33	0	0	0	0	0	0	0	0	0	0	0
16:15	2	48	1	0	51	0	0	0	0	0	0	0	0	0	0	0
16:30	1	39	0	0	40	0	2	0	0	2	0	0	0	0	0	0
16:45	2	50	2	0	54	0	0	0	0	0	1	0	0	0	1	0
17:00	1	43	0	0	44	0	0	0	0	0	0	0	0	0	0	0
17:15	0	44	0	0	44	0	0	0	0	0	0	0	0	0	0	0
17:30	2	38	1	0	41	0	0	0	0	0	0	0	0	0	0	0
17:45	0	40	0	0	40	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	9	334	4	0	347	0	3	0	0	3	1	0	0	0	1	0
GRAND TOTAL	**11**	**828**	**8**	**0**	**847**	**0**	**20**	**0**	**0**	**20**	**1**	**0**	**0**	**0**	**1**	**0**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Concession Rd 4

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	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0
07:45	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0
08:00	0	1	1	0	2	1	0	0	0	1	0	0	0	0	0	0
08:15	1	2	2	0	5	0	0	0	0	0	0	0	0	0	0	0
08:30	2	4	3	0	9	0	0	1	0	1	0	0	0	0	0	0
08:45	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	4	23	10	0	37	1	0	2	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
16:00	1	9	3	0	13	0	0	0	0	0	0	0	0	0	0	0
16:15	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0
16:30	2	7	1	0	10	0	0	0	0	0	0	0	0	0	0	0
16:45	1	2	1	0	4	0	0	0	0	0	0	0	0	0	0	0
17:00	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:30	2	5	1	0	8	0	0	0	0	0	0	0	0	0	0	0
17:45	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	8	38	7	0	53	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	12	61	17	0	90	1	0	2	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:15	2	3	1	0	6	1	0	0	0	1	0	0	0	0	0	0
07:30	4	4	2	0	10	0	0	0	0	0	0	0	0	0	0	0
07:45	5	4	3	0	12	0	0	1	0	1	0	0	0	0	0	0
08:00	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0
08:15	6	3	0	0	9	2	0	0	0	2	0	0	0	0	0	0
08:30	4	8	1	0	13	0	0	0	0	0	0	0	0	0	0	0
08:45	3	2	2	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	30	28	9	0	67	3	0	1	0	4	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	1	2	1	0	4	0	0	1	0	1	0	0	0	0	0	0
16:15	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
16:30	3	4	0	0	7	0	0	0	0	0	0	0	0	0	0	0
16:45	3	3	1	0	7	0	0	0	0	0	0	0	0	0	0	0
17:00	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
17:15	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
17:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	17	14	4	0	35	0	0	1	0	1	0	0	0	0	0	0
GRAND TOTAL	**47**	**42**	**13**	**0**	**102**	**3**	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:30:00
To:	09:00:00	To:	08:30:00

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wellington Rd 35 runs N/S

North Approach

	Out	In	Total
Cars	184	314	498
Trucks	5	16	21
Bicycles	0	0	0
	189	**330**	**519**

Wellington Rd 35

Bicycles	0	0	0	0
Trucks	1	4	0	0
Cars	6	174	4	0
Totals	**7**	**178**	**4**	**0**

East Approach

	Out	In	Total
Cars	16	17	33
Trucks	2	0	2
Bicycles	0	0	0
	18	**17**	**35**

Peds: 0

Concession Rd 4

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	2	20	**22**
0	0	12	**12**
0	1	5	**6**

Peds: 0

Peds: 0

Concession Rd 4

Totals	Cars	Trucks	Bicycles
0	0	0	0
5	4	1	0
10	10	0	0
3	2	1	0

Peds: 0

West Approach

	Out	In	Total
Cars	37	17	54
Trucks	3	1	4
Bicycles	0	0	0
	40	**18**	**58**

Wellington Rd 35

Totals	**1**	**303**	**1**	**0**
Cars	1	290	1	0
Trucks	0	13	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	292	181	473
Trucks	13	6	19
Bicycles	0	0	0
	305	**187**	**492**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Count Date: Feb 07, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Wellington Rd 35						South Approach Wellington Rd 35						East Approach Concession Rd 4						West Approach Concession Rd 4						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
07:30	1	39	2	0	0	42	0	63	0	0	0	63	1	0	1	0	0	2	4	4	2	0	0	10	117
07:45	2	56	1	0	0	59	0	70	0	0	0	70	0	7	1	0	0	8	5	4	4	0	0	13	150
08:00	0	48	3	0	0	51	0	68	1	0	0	69	1	1	1	0	0	3	5	1	0	0	0	6	129
08:15	1	35	1	0	0	37	1	102	0	0	0	103	1	2	2	0	0	5	8	3	0	0	0	11	156
Grand Total	**4**	**178**	**7**	**0**	**0**	**189**	**1**	**303**	**1**	**0**	**0**	**305**	**3**	**10**	**5**	**0**	**0**	**18**	**22**	**12**	**6**	**0**	**0**	**40**	**552**
Approach %	2.1	94.2	3.7	0		-	0.3	99.3	0.3	0		-	16.7	55.6	27.8	0		-	55	30	15	0		-	
Totals %	0.7	32.2	1.3	0		34.2	0.2	54.9	0.2	0		55.3	0.5	1.8	0.9	0		3.3	4	2.2	1.1	0		7.2	
PHF	**0.5**	**0.79**	**0.58**	**0**		**0.8**	**0.25**	**0.74**	**0.25**	**0**		**0.74**	**0.75**	**0.36**	**0.63**	**0**		**0.56**	**0.69**	**0.75**	**0.38**	**0**		**0.77**	**0.88**
Cars	4	174	6	0		184	1	290	1	0		292	2	10	4	0		16	20	12	5	0		37	529
% Cars	100	97.8	85.7	0		97.4	100	95.7	100	0		95.7	66.7	100	80	0		88.9	90.9	100	83.3	0		92.5	95.8
Trucks	0	4	1	0		5	0	13	0	0		13	1	0	1	0		2	2	0	1	0		3	23
% Trucks	0	2.2	14.3	0		2.6	0	4.3	0	0		4.3	33.3	0	20	0		11.1	9.1	0	16.7	0		7.5	4.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:15:00
To:	18:00:00	To:	17:15:00

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wellington Rd 35 runs N/S

North Approach

	Out	In	Total
Cars	320	195	515
Trucks	8	2	10
Bicycles	0	0	0
	328	**197**	**525**

Wellington Rd 35

Bicycles	0	0	0	0
Trucks	0	8	0	0
Cars	16	302	2	0
Totals	**16**	**310**	**2**	**0**

East Approach

	Out	In	Total
Cars	28	15	43
Trucks	0	0	0
Bicycles	0	0	0
	28	**15**	**43**

Concession Rd 4

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	12	**12**	
0	0	10	**10**	
0	0	1	**1**	

Peds: 0

Peds: 0

Peds: 0

Concession Rd 4

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	3	3	0	0
	20	20	0	0
	5	5	0	0

West Approach

	Out	In	Total
Cars	23	42	65
Trucks	0	0	0
Bicycles	0	1	1
	23	**43**	**66**

Wellington Rd 35

Totals	**7**	**182**	**3**	**0**
Cars	6	180	3	0
Trucks	0	2	0	0
Bicycles	1	0	0	0

South Approach

	Out	In	Total
Cars	189	308	497
Trucks	2	8	10
Bicycles	1	0	1
	192	**316**	**508**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

Intersection: Wellington Rd 35 & Concession Rd 4
Site Code: 2404500002
Count Date: Feb 07, 2024
Period: 16:00 - 18:00

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

Start Time	North Approach Wellington Rd 35						South Approach Wellington Rd 35						East Approach Concession Rd 4						West Approach Concession Rd 4						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:15	0	79	3	0	0	82	2	48	1	0	0	51	2	7	0	0	0	9	5	0	0	0	0	5	147
16:30	0	83	2	0	0	85	1	41	0	0	0	42	2	7	1	0	0	10	3	4	0	0	0	7	144
16:45	1	73	5	0	0	79	3	50	2	0	0	55	1	2	1	0	0	4	3	3	1	0	0	7	145
17:00	1	75	6	0	0	82	1	43	0	0	0	44	0	4	1	0	0	5	1	3	0	0	0	4	135
Grand Total	**2**	**310**	**16**	**0**	**0**	**328**	**7**	**182**	**3**	**0**	**0**	**192**	**5**	**20**	**3**	**0**	**0**	**28**	**12**	**10**	**1**	**0**	**0**	**23**	**571**
Approach %	0.6	94.5	4.9	0		-	3.6	94.8	1.6	0		-	17.9	71.4	10.7	0		-	52.2	43.5	4.3	0		-	
Totals %	0.4	54.3	2.8	0		57.4	1.2	31.9	0.5	0		33.6	0.9	3.5	0.5	0		4.9	2.1	1.8	0.2	0		4	
PHF	**0.5**	**0.93**	**0.67**	**0**		**0.96**	**0.58**	**0.91**	**0.38**	**0**		**0.87**	**0.63**	**0.71**	**0.75**	**0**		**0.7**	**0.6**	**0.63**	**0.25**	**0**		**0.82**	**0.97**
Cars	2	302	16	0		320	6	180	3	0		189	5	20	3	0		28	12	10	1	0		23	560
% Cars	100	97.4	100	0		97.6	85.7	98.9	100	0		98.4	100	100	100	0		100	100	100	100	0		100	98.1
Trucks	0	8	0	0		8	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	10
% Trucks	0	2.6	0	0		2.4	0	1.1	0	0		1	0	0	0	0		0	0	0	0	0		0	1.8
Bicycles	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0	0	0	0		0	14.3	0	0	0		0.5	0	0	0	0		0	0	0	0	0		0	0.2
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
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Project #24-045 - GHD

Intersection Count Report

Intersection:	Concession Rd 4 & Side Rd 20
Municipality:	Puslinch
Count Date:	Wednesday, Feb 07, 2024
Site Code:	2404500003
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
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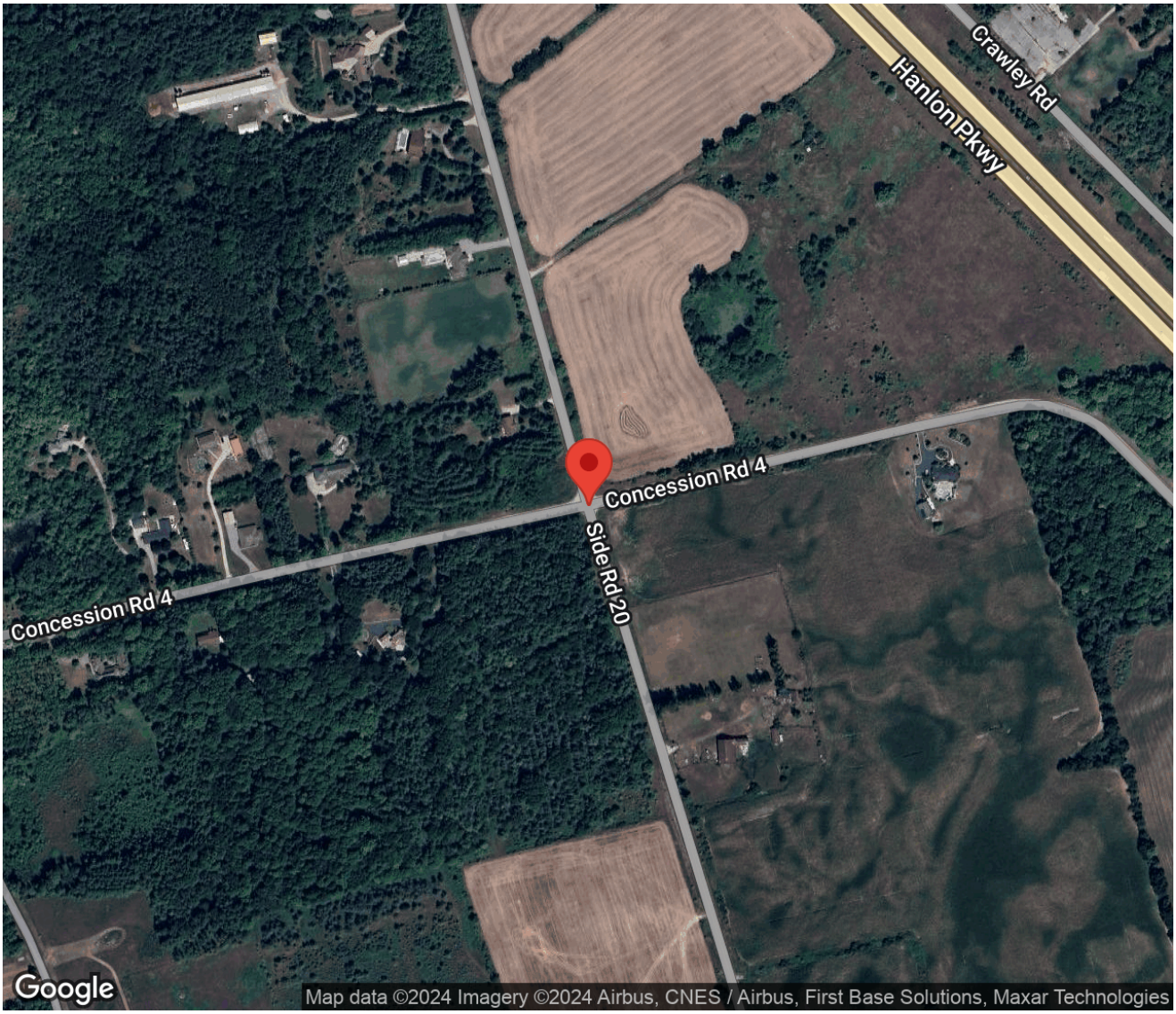
Traffic Count Map

Intersection:	Concession Rd 4 & Side Rd 20
Site Code:	2404500003
Municipality:	Puslinch
Count Date:	Feb 07, 2024



Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Concession Rd 4 & Side Rd 20
Site Code:	2404500003
Municipality:	Puslinch
Count Date:	Feb 07, 2024

Side Rd 20 - 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	1	0	1	0	2	0	0	2	2	0	4	0	6
08:00 - 09:00	2	0	0	0	2	0	4	1	2	0	7	0	9
BREAK													
16:00 - 17:00	0	2	0	0	2	0	2	1	2	0	5	0	7
17:00 - 18:00	0	2	0	0	2	0	0	2	2	0	4	0	6
GRAND TOTAL	**3**	**4**	**1**	**0**	**8**	**0**	**6**	**6**	**8**	**0**	**20**	**0**	**28**

Ontario Traffic Inc.
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Traffic Count Summary

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

Concession Rd 4 - 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	2	11	0	0	13	0	0	27	1	0	28	0	41
08:00 - 09:00	3	16	1	0	20	0	0	35	3	0	38	0	58
BREAK													
16:00 - 17:00	7	32	3	0	42	0	0	21	3	0	24	0	66
17:00 - 18:00	1	23	3	0	27	0	0	11	1	0	12	0	39
GRAND TOTAL	**13**	**82**	**7**	**0**	**102**	**0**	**0**	**94**	**8**	**0**	**102**	**0**	**204**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Side Rd 20

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	1	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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Side Rd 20

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

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Side Rd 20

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

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Side Rd 20

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
16:30	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	3	4	0	9	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	4	5	8	0	17	2	1	0	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
08:00	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0
08:15	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0
08:30	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
08:45	1	6	1	0	8	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	5	26	1	0	32	0	1	0	0	1	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	3	8	1	0	12	0	0	0	0	0	0	0	0	0	0	0
16:15	2	8	0	0	10	0	0	0	0	0	0	0	0	0	0	0
16:30	1	8	2	0	11	0	0	0	0	0	0	0	0	0	0	0
16:45	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	0
17:00	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
17:15	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0
17:30	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:45	1	4	1	0	6	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	8	55	6	0	69	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	13	81	7	0	101	0	1	0	0	1	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
07:00	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:30	0	8	1	0	9	0	0	0	0	0	0	0	0	0	0	0
07:45	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
08:00	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
08:15	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
08:30	0	12	2	0	14	0	0	1	0	1	0	0	0	0	0	0
08:45	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	60	3	0	63	0	2	1	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Concession Rd 4

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	0	4	2	0	6	0	0	1	0	1	0	0	0	0	0	0
16:15	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0
16:30	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
16:45	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:00	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0
17:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	31	3	0	34	0	1	1	0	2	0	0	0	0	0	0
GRAND TOTAL	0	91	6	0	97	0	3	2	0	5	0	0	0	0	0	0

Peak Hour Diagram

Ontario Traffic Inc.
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Specified Period		One Hour Peak	
From:	07:00:00	From:	07:45:00
To:	09:00:00	To:	08:45:00

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Concession Rd 4 runs E/W

North Approach

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

Side Rd 20

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

Peds: 0

East Approach

	Out	In	Total
Cars	19	39	58
Trucks	1	2	3
Bicycles	0	0	0
	20	**41**	**61**

Concession Rd 4

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	0	**0**
0	2	37	**39**
0	1	2	**3**

Peds: 0

Peds: 0

Concession Rd 4

Totals	Cars	Trucks	Bicycles
0	0	0	0
0	0	0	0
18	17	1	0
2	2	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	39	18	57
Trucks	3	3	6
Bicycles	0	0	0
	42	**21**	**63**

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

South Approach

	Out	In	Total
Cars	3	4	7
Trucks	2	1	3
Bicycles	0	0	0
	5	**5**	**10**

Side Rd 20

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Count Date: Feb 07, 2024
Period: 07:00 - 09:00

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

Start Time	North Approach Side Rd 20						South Approach Side Rd 20						East Approach Concession Rd 4						West Approach Concession Rd 4						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	11	0	0	0	11	19
08:00	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	0	0	3	0	6	0	0	0	6	10
08:15	1	0	0	0	0	1	0	1	0	0	0	1	1	3	0	0	0	4	0	10	0	0	0	10	16
08:30	0	0	0	0	0	0	2	0	1	0	0	3	0	5	0	0	0	5	0	12	3	0	0	15	23
Grand Total	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**1**	**1**	**0**	**0**	**5**	**2**	**18**	**0**	**0**	**0**	**20**	**0**	**39**	**3**	**0**	**0**	**42**	**68**
Approach %	100	0	0	0		-	60	20	20	0		-	10	90	0	0		-	0	92.9	7.1	0		-	
Totals %	1.5	0	0	0		1.5	4.4	1.5	1.5	0		7.4	2.9	26.5	0	0		29.4	0	57.4	4.4	0		61.8	
PHF	**0.25**	**0**	**0**	**0**		**0.25**	**0.38**	**0.25**	**0.25**	**0**		**0.42**	**0.5**	**0.56**	**0**	**0**		**0.63**	**0**	**0.81**	**0.25**	**0**		**0.7**	**0.74**
Cars	1	0	0	0		1	1	1	1	0		3	2	17	0	0		19	0	37	2	0		39	62
% Cars	100	0	0	0		100	33.3	100	100	0		60	100	94.4	0	0		95	0	94.9	66.7	0		92.9	91.2
Trucks	0	0	0	0		0	2	0	0	0		2	0	1	0	0		1	0	2	1	0		3	6
% Trucks	0	0	0	0		0	66.7	0	0	0		40	0	5.6	0	0		5	0	5.1	33.3	0		7.1	8.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

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

Intersection: Concession Rd 4 & Side Rd 20
Site Code: 2404500003
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Concession Rd 4 runs E/W

North Approach

	Out	In	Total
Cars	1	4	5
Trucks	0	0	0
Bicycles	1	0	1
	2	**4**	**6**

Side Rd 20

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

East Approach

	Out	In	Total
Cars	42	22	64
Trucks	0	1	1
Bicycles	0	0	0
	42	**23**	**65**

Concession Rd 4

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	0	**0**	
0	1	20	**21**	
0	1	2	**3**	

Peds: 0

Peds: 0

Peds: 0

Concession Rd 4

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	3	3	0	0
	32	32	0	0
	7	7	0	0

West Approach

	Out	In	Total
Cars	22	34	56
Trucks	2	0	2
Bicycles	0	0	0
	24	**34**	**58**

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

Side Rd 20

South Approach

	Out	In	Total
Cars	5	10	15
Trucks	0	1	1
Bicycles	0	1	1
	5	**12**	**17**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

Intersection:	Concession Rd 4 & Side Rd 20
Site Code:	2404500003
Count Date:	Feb 07, 2024
Period:	16:00 - 18:00

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

Start Time	North Approach Side Rd 20						South Approach Side Rd 20						East Approach Concession Rd 4						West Approach Concession Rd 4						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	3	8	1	0	0	12	0	4	3	0	0	7	19
16:15	0	0	0	0	0	0	1	0	2	0	0	3	2	8	0	0	0	10	0	5	0	0	0	5	18
16:30	0	2	0	0	0	2	1	1	0	0	0	2	1	8	2	0	0	11	0	5	0	0	0	5	20
16:45	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	9	0	7	0	0	0	7	16
Grand Total	**0**	**2**	**0**	**0**	**0**	**2**	**2**	**1**	**2**	**0**	**0**	**5**	**7**	**32**	**3**	**0**	**0**	**42**	**0**	**21**	**3**	**0**	**0**	**24**	**73**
Approach %	0	100	0	0		-	40	20	40	0		-	16.7	76.2	7.1	0		-	0	87.5	12.5	0		-	
Totals %	0	2.7	0	0		2.7	2.7	1.4	2.7	0		6.8	9.6	43.8	4.1	0		57.5	0	28.8	4.1	0		32.9	
PHF	**0**	**0.25**	**0**	**0**		**0.25**	**0.5**	**0.25**	**0.25**	**0**		**0.42**	**0.58**	**1**	**0.38**	**0**		**0.88**	**0**	**0.75**	**0.25**	**0**		**0.86**	**0.91**
Cars	0	1	0	0		1	2	1	2	0		5	7	32	3	0		42	0	20	2	0		22	70
% Cars	0	50	0	0		50	100	100	100	0		100	100	100	100	0		100	0	95.2	66.7	0		91.7	95.9
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	1	0		2	2
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	4.8	33.3	0		8.3	2.7
Bicycles	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0	50	0	0		50	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1.4
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
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Project #24-045 - GHD

Intersection Count Report

Intersection:	Wellington Rd 34 & Side Rd 20
Municipality:	Puslinch
Count Date:	Wednesday, Feb 07, 2024
Site Code:	2404500004
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
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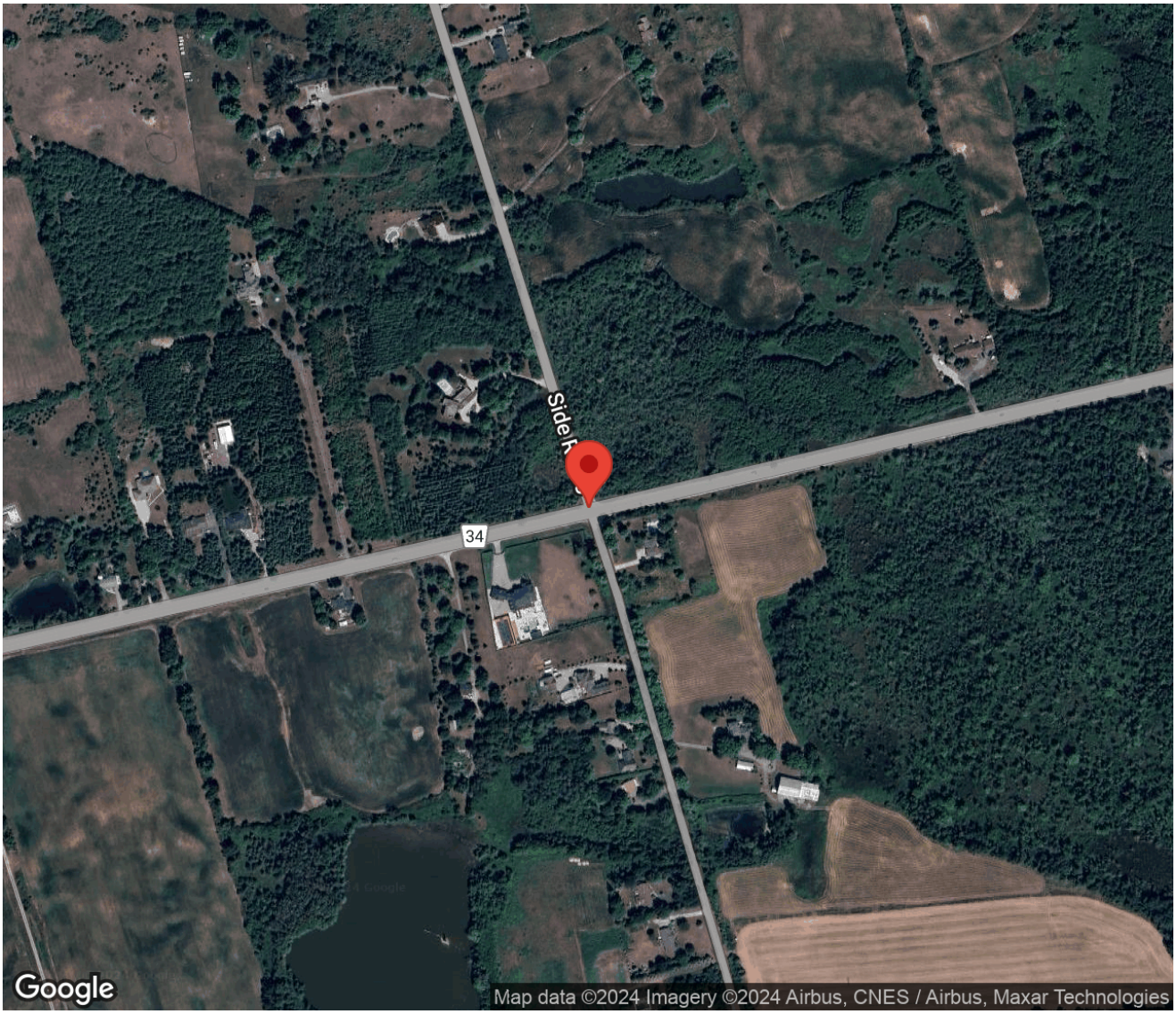
Traffic Count Map

Intersection:	Wellington Rd 34 & Side Rd 20
Site Code:	2404500004
Municipality:	Puslinch
Count Date:	Feb 07, 2024



Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Wellington Rd 34 & Side Rd 20
Site Code:	2404500004
Municipality:	Puslinch
Count Date:	Feb 07, 2024

Side Rd 20 - 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	3	0	0	0	3	0	0	1	3	0	4	0	7
08:00 - 09:00	3	0	2	0	5	0	2	3	5	0	10	0	15
BREAK													
16:00 - 17:00	2	4	4	0	10	0	0	0	3	0	3	0	13
17:00 - 18:00	1	0	0	0	1	1	1	0	8	0	9	0	10
GRAND TOTAL	**9**	**4**	**6**	**0**	**19**	**1**	**3**	**4**	**19**	**0**	**26**	**0**	**45**

Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Wellington Rd 34 & Side Rd 20
Site Code:	2404500004
Municipality:	Puslinch
Count Date:	Feb 07, 2024

Wellington Rd 34 - 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	4	91	0	1	96	0	2	133	0	0	135	1	231
08:00 - 09:00	6	102	1	0	109	1	2	144	1	0	147	2	256
BREAK													
16:00 - 17:00	5	205	2	0	212	0	1	104	0	0	105	0	317
17:00 - 18:00	4	216	5	0	225	0	0	110	1	0	111	0	336
GRAND TOTAL	**19**	**614**	**8**	**1**	**642**	**1**	**5**	**491**	**2**	**0**	**498**	**3**	**1140**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Side Rd 20

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
07:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	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	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
08:45	1	0	1	0	2	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	6	0	1	0	7	0	0	1	0	1	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

North Approach - Side Rd 20

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	2	2	0	0	4	0	0	1	0	1	0	0	0	0	0	0
16:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
16:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	3	4	3	0	10	0	0	1	0	1	0	0	0	0	0	1
GRAND TOTAL	9	4	4	0	17	0	0	2	0	2	0	0	0	0	0	1

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Side Rd 20

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	1	0	2	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	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
08:15	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0
08:30	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	4	8	0	14	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

South Approach - Side Rd 20

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	0	0	0	0	0	0	0	0	0	0	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	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	1	0	11	0	12	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	3	4	19	0	26	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Wellington Rd 34

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	0	15	0	0	15	0	1	0	0	1	0	0	0	0	0	0
07:15	3	18	0	0	21	0	0	0	0	0	0	0	0	0	0	0
07:30	1	30	0	1	32	0	0	0	0	0	0	0	0	0	0	0
07:45	0	26	0	0	26	0	1	0	0	1	0	0	0	0	0	0
08:00	1	26	0	0	27	0	0	0	0	0	0	0	0	0	0	0
08:15	1	32	0	0	33	0	2	0	0	2	0	0	0	0	0	0
08:30	2	23	1	0	26	1	2	0	0	3	0	0	0	0	0	0
08:45	1	16	0	0	17	0	1	0	0	1	0	0	0	0	0	1
SUBTOTAL	9	186	1	1	197	1	7	0	0	8	0	0	0	0	0	1

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

East Approach - Wellington Rd 34

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
16:00	0	43	0	0	43	0	0	0	0	0	0	0	0	0	0	0
16:15	1	53	1	0	55	0	3	0	0	3	0	0	0	0	0	0
16:30	1	53	1	0	55	0	1	0	0	1	0	0	0	0	0	0
16:45	3	50	0	0	53	0	2	0	0	2	0	0	0	0	0	0
17:00	1	52	1	0	54	0	1	0	0	1	0	0	0	0	0	0
17:15	1	65	0	0	66	0	2	0	0	2	0	0	0	0	0	0
17:30	1	50	3	0	54	0	2	0	0	2	0	0	0	0	0	0
17:45	1	43	1	0	45	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	9	409	7	0	425	0	12	0	0	12	0	0	0	0	0	0
GRAND TOTAL	**18**	**595**	**8**	**1**	**622**	**1**	**19**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**1**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Wellington Rd 34

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	1	26	0	0	27	0	4	0	0	4	0	0	0	0	0	1
07:15	0	24	0	0	24	1	3	0	0	4	0	0	0	0	0	0
07:30	0	27	0	0	27	0	9	0	0	9	0	0	0	0	0	0
07:45	0	39	0	0	39	0	1	0	0	1	0	0	0	0	0	0
08:00	0	41	0	0	41	1	4	0	0	5	0	0	0	0	0	2
08:15	0	33	1	0	34	0	3	0	0	3	0	0	0	0	0	0
08:30	0	30	0	0	30	1	4	0	0	5	0	0	0	0	0	0
08:45	0	28	0	0	28	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	1	248	1	0	250	3	29	0	0	32	0	0	0	0	0	3

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Municipality: Puslinch
Count Date: Feb 07, 2024

West Approach - Wellington Rd 34

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	0	29	0	0	29	0	0	0	0	0	0	0	0	0	0	0
16:15	0	18	0	0	18	0	2	0	0	2	0	0	0	0	0	0
16:30	0	27	0	0	27	0	2	0	0	2	0	0	0	0	0	0
16:45	1	24	0	0	25	0	2	0	0	2	0	0	0	0	0	0
17:00	0	26	0	0	26	0	3	0	0	3	0	0	0	0	0	0
17:15	0	31	0	0	31	0	2	0	0	2	0	0	0	0	0	0
17:30	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	0
17:45	0	25	1	0	26	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	1	203	1	0	205	0	11	0	0	11	0	0	0	0	0	0
GRAND TOTAL	2	451	2	0	455	3	40	0	0	43	0	0	0	0	0	3

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 07:30:00
To: 08:30:00

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wellington Rd 34 runs E/W

North Approach

	Out	In	Total
Cars	0	2	2
Trucks	0	1	1
Bicycles	0	0	0
	0	**3**	**3**

Side Rd 20

Bicycles	0	0	0	0
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

Peds: 0

East Approach

	Out	In	Total
Cars	118	147	265
Trucks	3	17	20
Bicycles	0	0	0
	121	**164**	**285**

Wellington Rd 34

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	1	0	**1**
0	17	140	**157**
0	0	1	**1**

Peds: 2

Peds: 0

Peds: 0

Wellington Rd 34

	Totals	Cars	Trucks	Bicycles
	1	1	0	0
	0	0	0	0
	117	114	3	0
	3	3	0	0

West Approach

	Out	In	Total
Cars	141	114	255
Trucks	18	3	21
Bicycles	0	0	0
	159	**117**	**276**

Totals	**0**	**2**	**6**	**0**
Cars	0	2	6	0
Trucks	0	0	0	0
Bicycles	0	0	0	0

Side Rd 20

South Approach

	Out	In	Total
Cars	8	4	12
Trucks	0	0	0
Bicycles	0	0	0
	8	**4**	**12**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
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Peak Hour Summary

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Count Date: Feb 07, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Side Rd 20						South Approach Side Rd 20						East Approach Wellington Rd 34						West Approach Wellington Rd 34						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	0	0	0	0	0	0	0	0	1	0	0	1	1	30	0	1	0	32	0	36	0	0	0	36	69
07:45	0	0	0	0	0	0	0	0	1	0	0	1	0	27	0	0	0	27	0	40	0	0	0	40	68
08:00	0	0	0	0	0	0	0	0	3	0	0	3	1	26	0	0	0	27	1	45	0	0	2	46	76
08:15	0	0	0	0	0	0	0	2	1	0	0	3	1	34	0	0	0	35	0	36	1	0	0	37	75
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**6**	**0**	**0**	**8**	**3**	**117**	**0**	**1**	**0**	**121**	**1**	**157**	**1**	**0**	**2**	**159**	**288**
Approach %	0	0	0	0		-	0	25	75	0		-	2.5	96.7	0	0.8		-	0.6	98.7	0.6	0		-	
Totals %	0	0	0	0		0	0	0.7	2.1	0		2.8	1	40.6	0	0.3		42	0.3	54.5	0.3	0		55.2	
PHF	**0**	**0**	**0**	**0**		**0**	**0**	**0.25**	**0.5**	**0**		**0.67**	**0.75**	**0.86**	**0**	**0.25**		**0.86**	**0.25**	**0.87**	**0.25**	**0**		**0.86**	**0.95**
Cars	0	0	0	0		0	0	2	6	0		8	3	114	0	1		118	0	140	1	0		141	267
% Cars	0	0	0	0		0	0	100	100	0		100	100	97.4	0	100		97.5	0	89.2	100	0		88.7	92.7
Trucks	0	0	0	0		0	0	0	0	0		0	0	3	0	0		3	1	17	0	0		18	21
% Trucks	0	0	0	0		0	0	0	0	0		0	0	2.6	0	0		2.5	100	10.8	0	0		11.3	7.3
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					2	-	2
% Peds					0	-					0	-					0	-					100	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:30:00
To:	18:00:00	To:	17:30:00

Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Count Date: Feb 07, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wellington Rd 34 runs E/W

North Approach

	Out	In	Total
Cars	4	3	7
Trucks	0	0	0
Bicycles	0	0	0
	4	**3**	**7**

Side Rd 20

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

Peds: 1

East Approach

	Out	In	Total
Cars	228	116	344
Trucks	6	9	15
Bicycles	0	0	0
	234	**125**	**359**

Wellington Rd 34

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	1	**1**
0	9	108	**117**
0	0	0	**0**

Peds: 0

Peds: 0

Wellington Rd 34

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	2	2	0	0
	226	220	6	0
	6	6	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	109	222	331
Trucks	9	6	15
Bicycles	0	0	0
	118	**228**	**346**

Side Rd 20

Totals	**1**	**0**	**7**	**0**
Cars	1	0	7	0
Trucks	0	0	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	8	8	16
Trucks	0	0	0
Bicycles	0	0	0
	8	**8**	**16**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

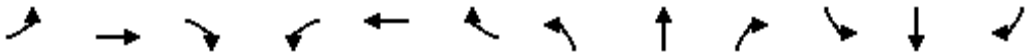
Intersection: Wellington Rd 34 & Side Rd 20
Site Code: 2404500004
Count Date: Feb 07, 2024
Period: 16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Side Rd 20						South Approach Side Rd 20						East Approach Wellington Rd 34						West Approach Wellington Rd 34						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	0	2	0	0	0	2	0	0	0	0	0	0	1	54	1	0	0	56	0	29	0	0	0	29	87
16:45	0	0	1	0	0	1	0	0	3	0	0	3	3	52	0	0	0	55	1	26	0	0	0	27	86
17:00	1	0	0	0	0	1	0	0	0	0	0	0	1	53	1	0	0	55	0	29	0	0	0	29	85
17:15	0	0	0	0	1	0	1	0	4	0	0	5	1	67	0	0	0	68	0	33	0	0	0	33	106
Grand Total	**1**	**2**	**1**	**0**	**1**	**4**	**1**	**0**	**7**	**0**	**0**	**8**	**6**	**226**	**2**	**0**	**0**	**234**	**1**	**117**	**0**	**0**	**0**	**118**	**364**
Approach %	25	50	25	0		-	12.5	0	87.5	0		-	2.6	96.6	0.9	0		-	0.8	99.2	0	0		-	
Totals %	0.3	0.5	0.3	0		1.1	0.3	0	1.9	0		2.2	1.6	62.1	0.5	0		64.3	0.3	32.1	0	0		32.4	
PHF	**0.25**	**0.25**	**0.25**	**0**		**0.5**	**0.25**	**0**	**0.44**	**0**		**0.4**	**0.5**	**0.84**	**0.5**	**0**		**0.86**	**0.25**	**0.89**	**0**	**0**		**0.89**	**0.86**
Cars	1	2	1	0		4	1	0	7	0		8	6	220	2	0		228	1	108	0	0		109	349
% Cars	100	100	100	0		100	100	0	100	0		100	100	97.3	100	0		97.4	100	92.3	0	0		92.4	95.9
Trucks	0	0	0	0		0	0	0	0	0		0	0	6	0	0		6	0	9	0	0		9	15
% Trucks	0	0	0	0		0	0	0	0	0		0	0	2.7	0	0		2.6	0	7.7	0	0		7.6	4.1
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					1	-					0	-					0	-					0	-	1
% Peds					100	-					0	-					0	-					0	-	

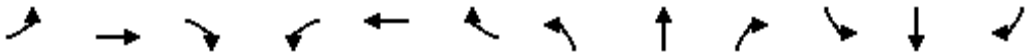
Appendix D

Synchro Outputs



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2	3	2	1	5	5	321	1	1	188	18
Future Volume (vph)	45	2	3	2	1	5	5	321	1	1	188	18
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		0.993			0.910						0.988	
Flt Protected		0.956			0.989			0.999				
Satd. Flow (prot)	0	1730	0	0	1556	0	0	1830	0	0	1864	0
Flt Permitted		0.956			0.989			0.999				
Satd. Flow (perm)	0	1730	0	0	1556	0	0	1830	0	0	1864	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	52	2	3	2	1	6	6	373	1	1	219	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	9	0	0	380	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)		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
Sign Control		Stop			Stop			Free			Free	

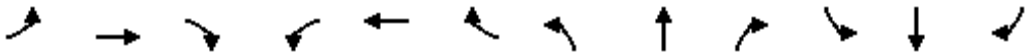
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	2	3	2	1	5	5	321	1	1	188	18
Future Volume (Veh/h)	45	2	3	2	1	5	5	321	1	1	188	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	52	2	3	2	1	6	6	373	1	1	219	21
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	624	618	230	621	628	374	240			374		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	624	618	230	621	628	374	240			374		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	87	99	100	99	100	99	99			100		
cM capacity (veh/h)	389	346	815	334	400	677	1051			1196		

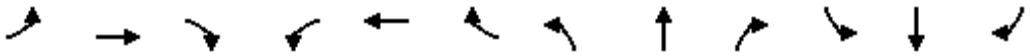
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	9	380	241
Volume Left	52	2	6	1
Volume Right	3	6	1	21
cSH	398	519	1051	1196
Volume to Capacity	0.14	0.02	0.01	0.00
Queue Length 95th (m)	3.8	0.4	0.1	0.0
Control Delay (s)	15.5	12.1	0.2	0.0
Lane LOS	C	B	A	A
Approach Delay (s)	15.5	12.1	0.2	0.0
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	35.2%	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)	22	12	6	3	10	5	1	303	1	4	178	7
Future Volume (vph)	22	12	6	3	10	5	1	303	1	4	178	7
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		0.979			0.959						0.995	
Flt Protected		0.974			0.993						0.999	
Satd. Flow (prot)	0	1704	0	0	1649	0	0	1848	0	0	1865	0
Flt Permitted		0.974			0.993						0.999	
Satd. Flow (perm)	0	1704	0	0	1649	0	0	1848	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	25	14	7	3	11	6	1	344	1	5	202	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	20	0	0	346	0	0	215	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												
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	

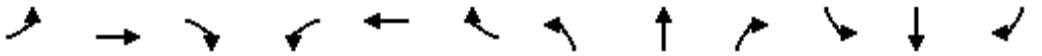
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	12	6	3	10	5	1	303	1	4	178	7
Future Volume (Veh/h)	22	12	6	3	10	5	1	303	1	4	178	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	25	14	7	3	11	6	1	344	1	5	202	8
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	574	563	206	576	566	344	210			345		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	574	563	206	576	566	344	210			345		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	94	97	99	99	97	99	100			100		
cM capacity (veh/h)	406	436	798	371	434	659	1373			1225		

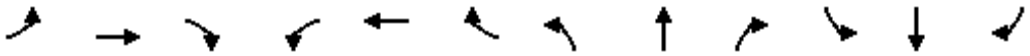
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	20	346	215
Volume Left	25	3	1	5
Volume Right	7	6	1	8
cSH	449	470	1373	1225
Volume to Capacity	0.10	0.04	0.00	0.00
Queue Length 95th (m)	2.6	1.0	0.0	0.1
Control Delay (s)	13.9	13.0	0.0	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	13.9	13.0	0.0	0.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	28.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	157	1	4	117	0	0	2	6	0	0	0
Future Volume (vph)	1	157	1	4	117	0	0	2	6	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		0.999						0.899				
Flt Protected					0.998							
Satd. Flow (prot)	0	1919	0	0	1863	0	0	1727	0	0	1921	0
Flt Permitted					0.998							
Satd. Flow (perm)	0	1919	0	0	1863	0	0	1727	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	165	1	4	123	0	0	2	6	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	127	0	0	8	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)		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
Sign Control		Free			Free			Stop			Stop	

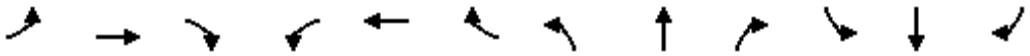
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	157	1	4	117	0	0	2	6	0	0	0
Future Volume (Veh/h)	1	157	1	4	117	0	0	2	6	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	165	1	4	123	0	0	2	6	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	123			166			298	298	166	306	299	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123			166			298	298	166	306	299	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1477			1424			656	615	884	643	614	928

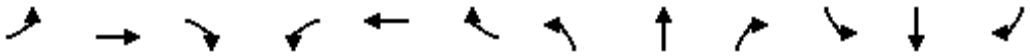
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	167	127	8	0
Volume Left	1	4	0	0
Volume Right	1	0	6	0
cSH	1477	1424	797	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.2	0.0
Control Delay (s)	0.1	0.3	9.6	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.3	9.6	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	18.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	39	3	2	18	0	3	1	1	1	0	0
Future Volume (vph)	0	39	3	2	18	0	3	1	1	1	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		0.991						0.977				
Flt Protected					0.994			0.968			0.950	
Satd. Flow (prot)	0	1780	0	0	1813	0	0	1256	0	0	1825	0
Flt Permitted					0.994			0.968			0.950	
Satd. Flow (perm)	0	1780	0	0	1813	0	0	1256	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	53	4	3	24	0	4	1	1	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	27	0	0	6	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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
Sign Control		Stop			Stop			Free			Free	

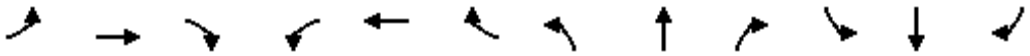
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	39	3	2	18	0	3	1	1	1	0	0
Future Volume (Veh/h)	0	39	3	2	18	0	3	1	1	1	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	53	4	3	24	0	4	1	1	1	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	24	12	0	42	12	2	0			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	12	0	42	12	2	0			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	94	100	100	97	100	100			100		
cM capacity (veh/h)	970	873	1001	915	872	1089	1284			1634		

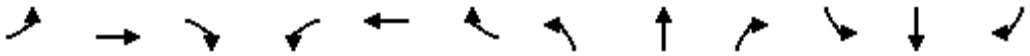
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	27	6	1
Volume Left	0	3	4	1
Volume Right	4	0	1	0
cSH	881	877	1284	1634
Volume to Capacity	0.06	0.03	0.00	0.00
Queue Length 95th (m)	1.6	0.7	0.1	0.0
Control Delay (s)	9.4	9.2	5.2	7.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.2	5.2	7.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1	3	1	0	5	5	191	1	3	321	73
Future Volume (vph)	16	1	3	1	0	5	5	191	1	3	321	73
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		0.981			0.887			0.999			0.975	
Flt Protected		0.961			0.992			0.999				
Satd. Flow (prot)	0	1715	0	0	1449	0	0	1881	0	0	1839	0
Flt Permitted		0.961			0.992			0.999				
Satd. Flow (perm)	0	1715	0	0	1449	0	0	1881	0	0	1839	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	17	1	3	1	0	5	5	201	1	3	338	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	6	0	0	207	0	0	418	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												
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	

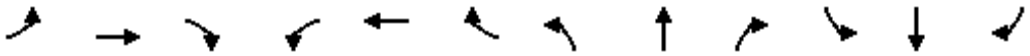
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1	3	1	0	5	5	191	1	3	321	73
Future Volume (Veh/h)	16	1	3	1	0	5	5	191	1	3	321	73
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	1	3	1	0	5	5	201	1	3	338	77
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	599	594	376	598	632	202	415			202		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	599	594	376	598	632	202	415			202		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	96	100	100	100	100	99	100			100		
cM capacity (veh/h)	406	357	674	412	397	796	1155			1205		

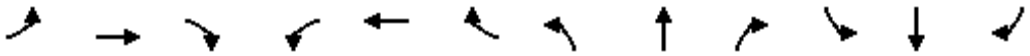
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	21	6	207	418
Volume Left	17	1	5	3
Volume Right	3	5	1	77
cSH	427	689	1155	1205
Volume to Capacity	0.05	0.01	0.00	0.00
Queue Length 95th (m)	1.2	0.2	0.1	0.1
Control Delay (s)	13.9	10.3	0.2	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	13.9	10.3	0.2	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	33.4%	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)	12	10	1	5	20	3	7	182	3	2	310	16
Future Volume (vph)	12	10	1	5	20	3	7	182	3	2	310	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
Frt		0.994			0.986			0.998			0.994	
Flt Protected		0.975			0.991			0.998				
Satd. Flow (prot)	0	1862	0	0	1877	0	0	1895	0	0	1855	0
Flt Permitted		0.975			0.991			0.998				
Satd. Flow (perm)	0	1862	0	0	1877	0	0	1895	0	0	1855	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	12	10	1	5	21	3	7	188	3	2	320	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	29	0	0	198	0	0	338	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												
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	

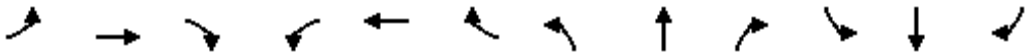
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	10	1	5	20	3	7	182	3	2	310	16
Future Volume (Veh/h)	12	10	1	5	20	3	7	182	3	2	310	16
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)	12	10	1	5	21	3	7	188	3	2	320	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	549	537	328	542	544	190	336			191		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	549	537	328	542	544	190	336			191		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	100	99	95	100	99			100		
cM capacity (veh/h)	430	450	718	444	446	857	1235			1395		

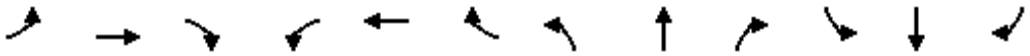
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	29	198	338
Volume Left	12	5	7	2
Volume Right	1	3	3	16
cSH	446	469	1235	1395
Volume to Capacity	0.05	0.06	0.01	0.00
Queue Length 95th (m)	1.2	1.5	0.1	0.0
Control Delay (s)	13.5	13.2	0.3	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	13.5	13.2	0.3	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	28.1%	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)	1	117	0	6	226	2	1	0	7	1	2	1
Future Volume (vph)	1	117	0	6	226	2	1	0	7	1	2	1
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					0.999			0.880			0.966	
Flt Protected					0.999			0.994			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Flt Permitted					0.999			0.994			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	136	0	7	263	2	1	0	8	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	137	0	0	272	0	0	9	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

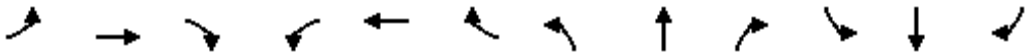
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	117	0	6	226	2	1	0	7	1	2	1
Future Volume (Veh/h)	1	117	0	6	226	2	1	0	7	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	136	0	7	263	2	1	0	8	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	265			136			418	417	136	424	416	264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265			136			418	417	136	424	416	264
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1311			1461			544	527	918	537	527	780

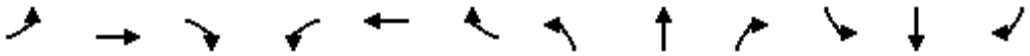
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	272	9	4
Volume Left	1	7	1	1
Volume Right	0	2	8	1
cSH	1311	1461	853	577
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.2	0.2
Control Delay (s)	0.1	0.2	9.3	11.3
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.3	11.3
Approach LOS			A	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	21	3	7	32	3	2	1	2	0	2	0
Future Volume (vph)	0	21	3	7	32	3	2	1	2	0	2	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		0.984			0.991			0.946				
Flt Protected					0.991			0.980				
Satd. Flow (prot)	0	1747	0	0	1887	0	0	1781	0	0	1921	0
Flt Permitted					0.991			0.980				
Satd. Flow (perm)	0	1747	0	0	1887	0	0	1781	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	23	3	8	35	3	2	1	2	0	2	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	46	0	0	5	0	0	2	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												
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	

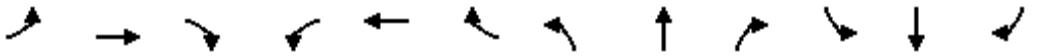
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	21	3	7	32	3	2	1	2	0	2	0
Future Volume (Veh/h)	0	21	3	7	32	3	2	1	2	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	23	3	8	35	3	2	1	2	0	2	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	28	9	2	22	8	2	2			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	28	9	2	22	8	2	2			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	99	96	100	100			100		
cM capacity (veh/h)	953	879	998	971	890	1088	1634			1632		

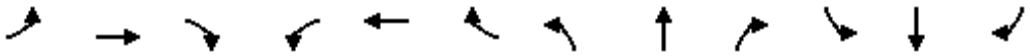
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	46	5	2
Volume Left	0	8	2	0
Volume Right	3	3	2	0
cSH	891	914	1634	1632
Volume to Capacity	0.03	0.05	0.00	0.00
Queue Length 95th (m)	0.7	1.2	0.0	0.0
Control Delay (s)	9.2	9.1	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	9.1	2.9	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.5			
Intersection Capacity Utilization	17.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	3	2	1	5	5	347	1	1	203	19
Future Volume (vph)	48	2	3	2	1	5	5	347	1	1	203	19
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		0.993			0.910						0.989	
Flt Protected		0.956			0.989			0.999				
Satd. Flow (prot)	0	1732	0	0	1556	0	0	1831	0	0	1866	0
Flt Permitted		0.956			0.989			0.999				
Satd. Flow (perm)	0	1732	0	0	1556	0	0	1831	0	0	1866	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	56	2	3	2	1	6	6	403	1	1	236	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	9	0	0	410	0	0	259	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												
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	

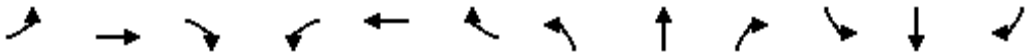
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	2	3	2	1	5	5	347	1	1	203	19
Future Volume (Veh/h)	48	2	3	2	1	5	5	347	1	1	203	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	56	2	3	2	1	6	6	403	1	1	236	22
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	671	665	247	668	676	404	258			404		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	671	665	247	668	676	404	258			404		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	85	99	100	99	100	99	99			100		
cM capacity (veh/h)	361	323	797	309	375	651	1033			1166		

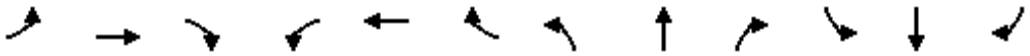
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	61	9	410	259
Volume Left	56	2	6	1
Volume Right	3	6	1	22
cSH	370	491	1033	1166
Volume to Capacity	0.16	0.02	0.01	0.00
Queue Length 95th (m)	4.4	0.4	0.1	0.0
Control Delay (s)	16.6	12.5	0.2	0.0
Lane LOS	C	B	A	A
Approach Delay (s)	16.6	12.5	0.2	0.0
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	37.1%	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)	23	12	6	3	10	5	1	327	1	4	192	7
Future Volume (vph)	23	12	6	3	10	5	1	327	1	4	192	7
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		0.980			0.959						0.995	
Flt Protected		0.973			0.993						0.999	
Satd. Flow (prot)	0	1704	0	0	1649	0	0	1848	0	0	1865	0
Flt Permitted		0.973			0.993						0.999	
Satd. Flow (perm)	0	1704	0	0	1649	0	0	1848	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	26	14	7	3	11	6	1	372	1	5	218	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	20	0	0	374	0	0	231	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												
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	

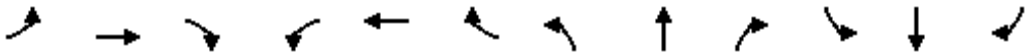
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	12	6	3	10	5	1	327	1	4	192	7
Future Volume (Veh/h)	23	12	6	3	10	5	1	327	1	4	192	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	26	14	7	3	11	6	1	372	1	5	218	8
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	618	607	222	620	610	372	226			373		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	618	607	222	620	610	372	226			373		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	93	97	99	99	97	99	100			100		
cM capacity (veh/h)	379	412	781	345	410	635	1354			1197		

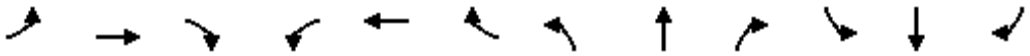
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	20	374	231
Volume Left	26	3	1	5
Volume Right	7	6	1	8
cSH	421	445	1354	1197
Volume to Capacity	0.11	0.04	0.00	0.00
Queue Length 95th (m)	2.8	1.1	0.0	0.1
Control Delay (s)	14.6	13.5	0.0	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	14.6	13.5	0.0	0.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	169	1	4	126	0	0	2	6	0	0	0
Future Volume (vph)	1	169	1	4	126	0	0	2	6	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		0.999						0.899				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1727	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1727	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	178	1	4	133	0	0	2	6	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	137	0	0	8	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)		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
Sign Control		Free			Free			Stop			Stop	

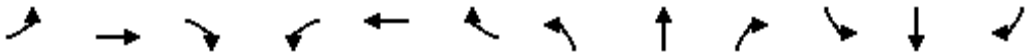
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	169	1	4	126	0	0	2	6	0	0	0
Future Volume (Veh/h)	1	169	1	4	126	0	0	2	6	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	178	1	4	133	0	0	2	6	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	133			179			322	322	178	328	322	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			179			322	322	178	328	322	133
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1464			1409			634	597	870	621	596	916

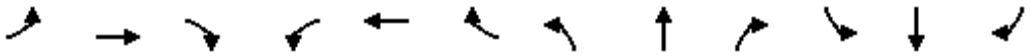
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	137	8	0
Volume Left	1	4	0	0
Volume Right	1	0	6	0
cSH	1464	1409	780	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.2	0.0
Control Delay (s)	0.0	0.2	9.7	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.2	9.7	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	42	3	2	19	0	3	1	1	1	0	0
Future Volume (vph)	0	42	3	2	19	0	3	1	1	1	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		0.991						0.977				
Flt Protected					0.995			0.968			0.950	
Satd. Flow (prot)	0	1782	0	0	1814	0	0	1256	0	0	1825	0
Flt Permitted					0.995			0.968			0.950	
Satd. Flow (perm)	0	1782	0	0	1814	0	0	1256	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	57	4	3	26	0	4	1	1	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	29	0	0	6	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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
Sign Control		Stop			Stop			Free			Free	

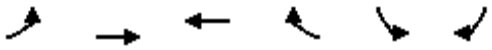
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			



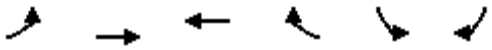
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	42	3	2	19	0	3	1	1	1	0	0
Future Volume (Veh/h)	0	42	3	2	19	0	3	1	1	1	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	57	4	3	26	0	4	1	1	1	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	24	12	0	44	12	2	0			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24	12	0	44	12	2	0			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	93	100	100	97	100	100			100		
cM capacity (veh/h)	966	873	1001	909	872	1089	1284			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	61	29	6	1
Volume Left	0	3	4	1
Volume Right	4	0	1	0
cSH	881	876	1284	1634
Volume to Capacity	0.07	0.03	0.00	0.00
Queue Length 95th (m)	1.7	0.8	0.1	0.0
Control Delay (s)	9.4	9.3	5.2	7.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.3	5.2	7.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



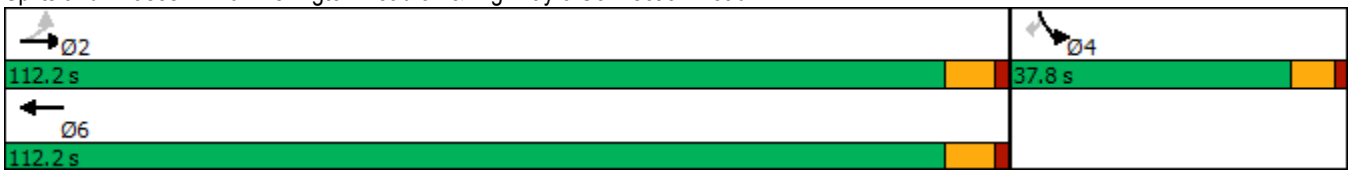
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	356	345	341	81	50	254
Future Volume (vph)	356	345	341	81	50	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1834	0	1789	1601
Flt Permitted	0.495				0.950	
Satd. Flow (perm)	932	1883	1834	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			19			276
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	375	371	88	54	276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	375	459	0	54	276
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

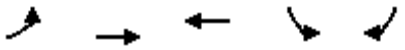


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	112.2	112.2	112.2		37.8	37.8
Total Split (%)	74.8%	74.8%	74.8%		25.2%	25.2%
Maximum Green (s)	105.0	105.0	105.0		31.3	31.3
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	105.1	105.1	105.1		9.8	9.8
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.51	0.24	0.31		0.40	0.73
Control Delay	6.8	3.4	3.6		64.7	18.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	6.8	3.4	3.6		64.7	18.4
LOS	A	A	A		E	B
Approach Delay		5.1	3.6		26.0	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 128.6			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			

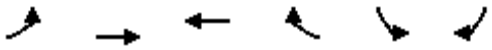
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	387	375	459	54	276
v/c Ratio	0.51	0.24	0.31	0.40	0.73
Control Delay	6.8	3.4	3.6	64.7	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	3.4	3.6	64.7	18.4
Queue Length 50th (m)	23.7	16.8	20.7	13.2	0.0
Queue Length 95th (m)	53.3	32.5	40.1	26.6	26.2
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	761	1538	1501	435	598
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	0.51	0.24	0.31	0.12	0.46

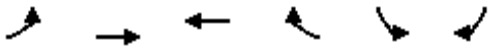
Intersection Summary



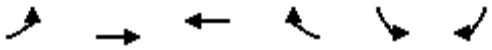
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	356	345	341	81	50	254
Future Volume (vph)	356	345	341	81	50	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1835		1789	1601
Flt Permitted	0.49	1.00	1.00		0.95	1.00
Satd. Flow (perm)	932	1883	1835		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	375	371	88	54	276
RTOR Reduction (vph)	0	0	3	0	0	255
Lane Group Flow (vph)	387	375	456	0	54	21
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	105.1	105.1	105.1		9.8	9.8
Effective Green, g (s)	105.1	105.1	105.1		9.8	9.8
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	761	1538	1499		136	122
v/s Ratio Prot		0.20	0.25		c0.03	
v/s Ratio Perm	c0.42					0.01
v/c Ratio	0.51	0.24	0.30		0.40	0.17
Uniform Delay, d1	3.7	2.7	2.9		56.6	55.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.4	0.5		1.9	0.7
Delay (s)	6.1	3.1	3.4		58.5	56.3
Level of Service	A	A	A		E	E
Approach Delay (s)		4.6	3.4		56.6	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	128.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



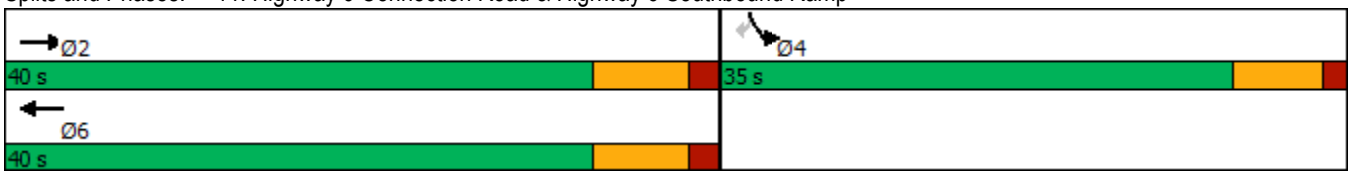
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	254	34	0	120	270
Future Volume (vph)	0	254	34	0	120	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1883	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						293
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	276	37	0	130	293
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	276	37	0	130	293
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

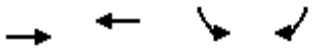


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		40.0	40.0		35.0	35.0
Total Split (%)		53.3%	53.3%		46.7%	46.7%
Maximum Green (s)		32.8	32.8		28.5	28.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		32.9	32.9		9.3	9.3
Actuated g/C Ratio		0.59	0.59		0.17	0.17
v/c Ratio		0.25	0.03		0.44	0.57
Control Delay		6.7	5.6		25.6	8.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.7	5.6		25.6	8.1
LOS		A	A		C	A
Approach Delay		6.7	5.6		13.5	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 55.9			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

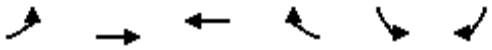
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	276	37	130	293
v/c Ratio	0.25	0.03	0.44	0.57
Control Delay	6.7	5.6	25.6	8.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.7	5.6	25.6	8.1
Queue Length 50th (m)	11.6	1.4	12.0	0.0
Queue Length 95th (m)	24.8	4.8	24.7	16.1
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1106	1106	913	961
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	0.25	0.03	0.14	0.30

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	254	34	0	120	270
Future Volume (vph)	0	254	34	0	120	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1883		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	276	37	0	130	293
RTOR Reduction (vph)	0	0	0	0	0	244
Lane Group Flow (vph)	0	276	37	0	130	49
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		32.9	32.9		9.3	9.3
Effective Green, g (s)		32.9	32.9		9.3	9.3
Actuated g/C Ratio		0.59	0.59		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1108	1108		297	266
v/s Ratio Prot		c0.15	0.02		c0.07	
v/s Ratio Perm						0.03
v/c Ratio		0.25	0.03		0.44	0.18
Uniform Delay, d1		5.5	4.8		20.9	20.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5	0.1		1.0	0.3
Delay (s)		6.1	4.9		22.0	20.4
Level of Service		A	A		C	C
Approach Delay (s)		6.1	4.9		20.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

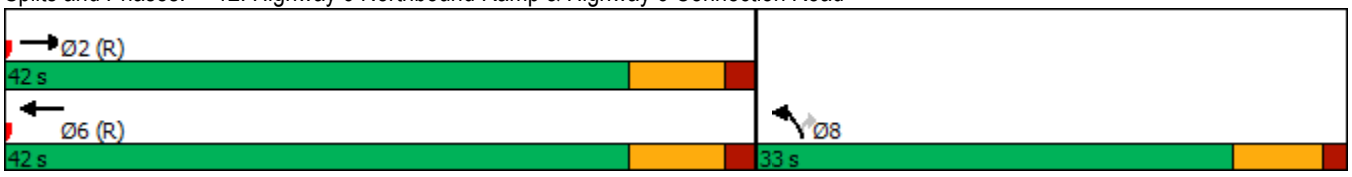
c Critical Lane Group

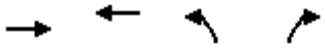
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	151	0	0	374	12	413
Future Volume (vph)	151	0	0	374	12	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						449
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	164	0	0	407	13	449
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	0	0	407	13	449
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.3			52.3	9.0	9.0
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.12			0.31	0.06	0.76
Control Delay	5.0			6.0	26.3	12.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.0	26.3	12.4
LOS	A			A	C	B
Approach Delay	5.0			6.0	12.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road





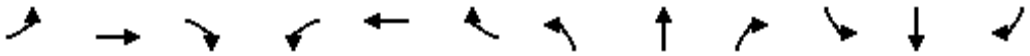
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	164	407	13	449
v/c Ratio	0.12	0.31	0.06	0.76
Control Delay	5.0	6.0	26.3	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.0	26.3	12.4
Queue Length 50th (m)	5.2	15.1	1.8	0.0
Queue Length 95th (m)	17.5	44.0	5.5	21.3
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1313	1313	632	856
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	0.12	0.31	0.02	0.52

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	151	0	0	374	12	413
Future Volume (vph)	151	0	0	374	12	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	164	0	0	407	13	449
RTOR Reduction (vph)	0	0	0	0	0	395
Lane Group Flow (vph)	164	0	0	407	13	54
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.3			52.3	9.0	9.0
Effective Green, g (s)	52.3			52.3	9.0	9.0
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1313			1313	214	192
v/s Ratio Prot	0.09			c0.22	0.01	
v/s Ratio Perm						c0.03
v/c Ratio	0.12			0.31	0.06	0.28
Uniform Delay, d1	3.8			4.4	29.3	30.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.6	0.1	0.8
Delay (s)	4.0			5.0	29.4	30.9
Level of Service	A			A	C	C
Approach Delay (s)	4.0			5.0	30.8	
Approach LOS	A			A	C	

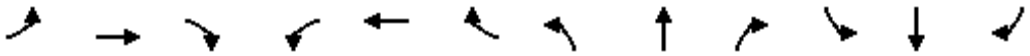
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1	3	1	0	5	5	206	1	3	347	79
Future Volume (vph)	17	1	3	1	0	5	5	206	1	3	347	79
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		0.982			0.887			0.999			0.975	
Flt Protected		0.961			0.992			0.999				
Satd. Flow (prot)	0	1718	0	0	1449	0	0	1881	0	0	1839	0
Flt Permitted		0.961			0.992			0.999				
Satd. Flow (perm)	0	1718	0	0	1449	0	0	1881	0	0	1839	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	18	1	3	1	0	5	5	217	1	3	365	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	6	0	0	223	0	0	451	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												
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	

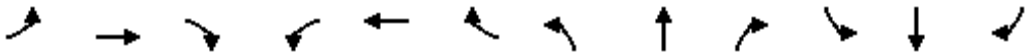
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1	3	1	0	5	5	206	1	3	347	79
Future Volume (Veh/h)	17	1	3	1	0	5	5	206	1	3	347	79
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	1	3	1	0	5	5	217	1	3	365	83
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	645	640	406	644	682	218	448			218		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	645	640	406	644	682	218	448			218		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	95	100	100	100	100	99	100			100		
cM capacity (veh/h)	378	335	649	384	372	779	1123			1188		

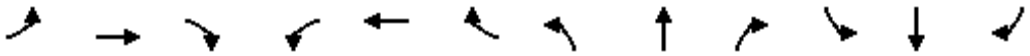
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	6	223	451
Volume Left	18	1	5	3
Volume Right	3	5	1	83
cSH	398	665	1123	1188
Volume to Capacity	0.06	0.01	0.00	0.00
Queue Length 95th (m)	1.3	0.2	0.1	0.1
Control Delay (s)	14.6	10.5	0.2	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	14.6	10.5	0.2	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	35.4%	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)	12	10	1	5	21	3	7	197	3	2	335	17
Future Volume (vph)	12	10	1	5	21	3	7	197	3	2	335	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
Frt		0.994			0.986			0.998			0.993	
Flt Protected		0.975			0.992			0.998				
Satd. Flow (prot)	0	1862	0	0	1879	0	0	1895	0	0	1853	0
Flt Permitted		0.975			0.992			0.998				
Satd. Flow (perm)	0	1862	0	0	1879	0	0	1895	0	0	1853	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	12	10	1	5	22	3	7	203	3	2	345	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	30	0	0	213	0	0	365	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												
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	

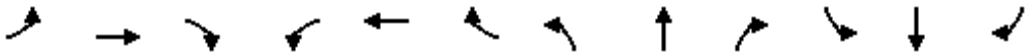
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	10	1	5	21	3	7	197	3	2	335	17
Future Volume (Veh/h)	12	10	1	5	21	3	7	197	3	2	335	17
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)	12	10	1	5	22	3	7	203	3	2	345	18
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	590	578	354	582	586	204	363			206		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	590	578	354	582	586	204	363			206		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	100	99	95	100	99			100		
cM capacity (veh/h)	401	426	694	417	422	841	1207			1377		

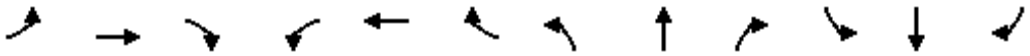
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	30	213	365
Volume Left	12	5	7	2
Volume Right	1	3	3	18
cSH	420	443	1207	1377
Volume to Capacity	0.05	0.07	0.01	0.00
Queue Length 95th (m)	1.3	1.6	0.1	0.0
Control Delay (s)	14.1	13.7	0.3	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	14.1	13.7	0.3	0.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	29.5%	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)	1	126	0	6	244	2	1	0	7	1	2	1
Future Volume (vph)	1	126	0	6	244	2	1	0	7	1	2	1
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					0.999			0.880			0.966	
Flt Protected					0.999			0.994			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Flt Permitted					0.999			0.994			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	147	0	7	284	2	1	0	8	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	0	293	0	0	9	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

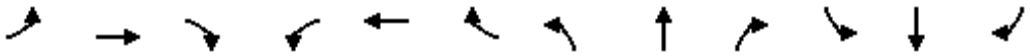
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	126	0	6	244	2	1	0	7	1	2	1
Future Volume (Veh/h)	1	126	0	6	244	2	1	0	7	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	147	0	7	284	2	1	0	8	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	286			147			450	449	147	456	448	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286			147			450	449	147	456	448	285
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1288			1447			518	505	905	511	506	759

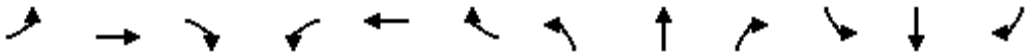
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	293	9	4
Volume Left	1	7	1	1
Volume Right	0	2	8	1
cSH	1288	1447	836	554
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.2	0.2
Control Delay (s)	0.1	0.2	9.4	11.6
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.4	11.6
Approach LOS			A	B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	26.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	22	3	7	34	3	2	1	2	0	2	0
Future Volume (vph)	0	22	3	7	34	3	2	1	2	0	2	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		0.985			0.992			0.946				
Flt Protected					0.992			0.980				
Satd. Flow (prot)	0	1750	0	0	1890	0	0	1781	0	0	1921	0
Flt Permitted					0.992			0.980				
Satd. Flow (perm)	0	1750	0	0	1890	0	0	1781	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	24	3	8	37	3	2	1	2	0	2	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	48	0	0	5	0	0	2	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												
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	

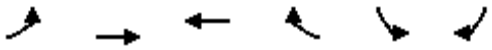
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.0%		ICU Level of Service A	
Analysis Period (min) 15			



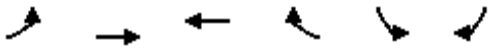
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	22	3	7	34	3	2	1	2	0	2	0
Future Volume (Veh/h)	0	22	3	7	34	3	2	1	2	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	24	3	8	37	3	2	1	2	0	2	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	30	9	2	23	8	2	2			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30	9	2	23	8	2	2			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	99	96	100	100			100		
cM capacity (veh/h)	950	879	998	969	890	1088	1634			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	48	5	2
Volume Left	0	8	2	0
Volume Right	3	3	2	0
cSH	891	913	1634	1632
Volume to Capacity	0.03	0.05	0.00	0.00
Queue Length 95th (m)	0.7	1.3	0.0	0.0
Control Delay (s)	9.2	9.2	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	9.2	2.9	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A	
Analysis Period (min)	15			



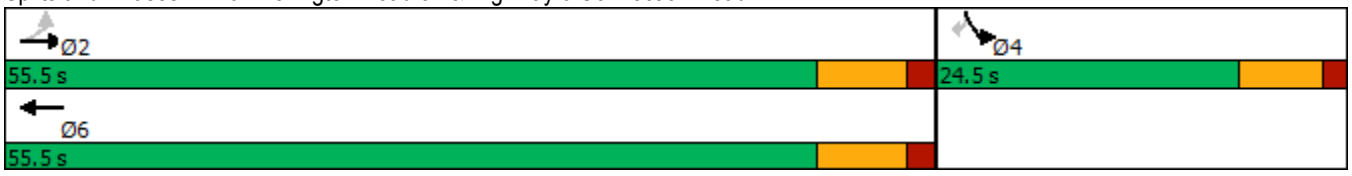
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	219	326	80	50	252
Future Volume (vph)	279	219	326	80	50	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.507				0.950	
Satd. Flow (perm)	955	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			274
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	238	354	87	54	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	238	441	0	54	274
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

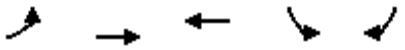


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.3	48.3	48.3		8.1	8.1
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.46	0.18	0.35		0.26	0.64
Control Delay	8.4	4.7	5.4		31.1	11.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	8.4	4.7	5.4		31.1	11.6
LOS	A	A	A		C	B
Approach Delay		6.8	5.4		14.8	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.3		Intersection LOS: A	
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			

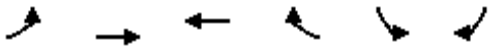
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	303	238	441	54	274
v/c Ratio	0.46	0.18	0.35	0.26	0.64
Control Delay	8.4	4.7	5.4	31.1	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	4.7	5.4	31.1	11.6
Queue Length 50th (m)	14.2	8.8	17.1	6.6	0.0
Queue Length 95th (m)	37.8	20.5	38.2	15.8	18.4
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	657	1296	1270	459	614
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	0.46	0.18	0.35	0.12	0.45

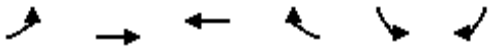
Intersection Summary



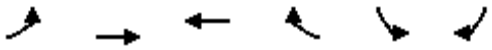
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	219	326	80	50	252
Future Volume (vph)	279	219	326	80	50	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.51	1.00	1.00		0.95	1.00
Satd. Flow (perm)	955	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	238	354	87	54	274
RTOR Reduction (vph)	0	0	9	0	0	242
Lane Group Flow (vph)	303	238	432	0	54	32
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.2	8.2
Effective Green, g (s)	48.4	48.4	48.4		8.2	8.2
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	657	1296	1261		208	186
v/s Ratio Prot		0.13	0.24		c0.03	
v/s Ratio Perm	c0.32					0.02
v/c Ratio	0.46	0.18	0.34		0.26	0.17
Uniform Delay, d1	5.0	3.9	4.5		28.3	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.3	0.7		0.7	0.4
Delay (s)	7.3	4.2	5.2		29.0	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.0	5.2		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



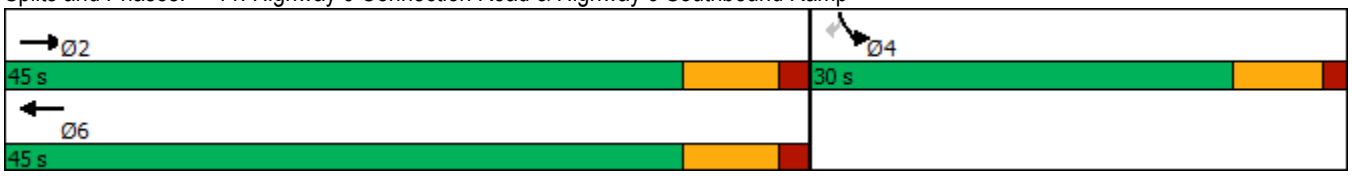
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	232	69	0	129	242
Future Volume (vph)	0	232	69	0	129	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1883	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						263
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	252	75	0	140	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	252	75	0	140	263
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

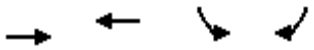


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		45.0	45.0		30.0	30.0
Total Split (%)		60.0%	60.0%		40.0%	40.0%
Maximum Green (s)		37.8	37.8		23.5	23.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		37.9	37.9		10.0	10.0
Actuated g/C Ratio		0.62	0.62		0.16	0.16
v/c Ratio		0.22	0.06		0.48	0.55
Control Delay		6.4	5.7		29.1	8.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.4	5.7		29.1	8.2
LOS		A	A		C	A
Approach Delay		6.4	5.7		15.5	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 61.6			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 40.5%		ICU Level of Service A	
Analysis Period (min) 15			

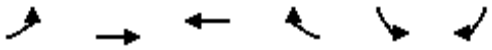
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	252	75	140	263
v/c Ratio	0.22	0.06	0.48	0.55
Control Delay	6.4	5.7	29.1	8.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.4	5.7	29.1	8.2
Queue Length 50th (m)	10.9	2.9	14.6	0.0
Queue Length 95th (m)	23.3	8.2	28.7	16.2
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1157	1157	683	774
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	0.22	0.06	0.20	0.34

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	232	69	0	129	242
Future Volume (vph)	0	232	69	0	129	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1883		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	252	75	0	140	263
RTOR Reduction (vph)	0	0	0	0	0	220
Lane Group Flow (vph)	0	252	75	0	140	43
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		37.9	37.9		10.0	10.0
Effective Green, g (s)		37.9	37.9		10.0	10.0
Actuated g/C Ratio		0.62	0.62		0.16	0.16
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1158	1158		290	259
v/s Ratio Prot		c0.13	0.04		c0.08	
v/s Ratio Perm						0.03
v/c Ratio		0.22	0.06		0.48	0.16
Uniform Delay, d1		5.3	4.7		23.4	22.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.1		1.3	0.3
Delay (s)		5.7	4.9		24.7	22.5
Level of Service		A	A		C	C
Approach Delay (s)		5.7	4.9		23.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

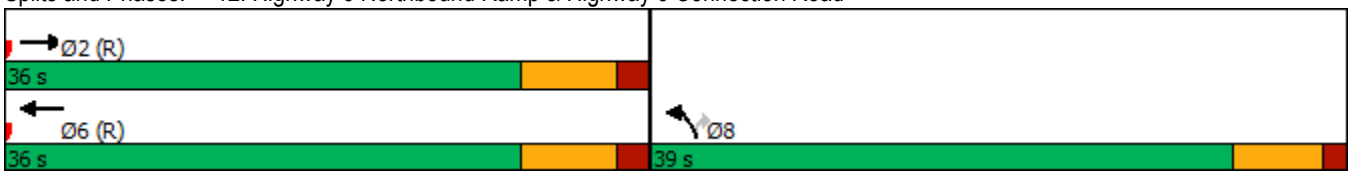
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	149	0	0	218	24	343
Future Volume (vph)	149	0	0	218	24	343
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						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						373
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	0	0	237	26	373
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	237	26	373
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.6			52.6	8.7	8.7
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.12			0.18	0.13	0.73
Control Delay	4.7			4.9	28.6	12.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.7			4.9	28.6	12.3
LOS	A			A	C	B
Approach Delay	4.7			4.9	13.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 40.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



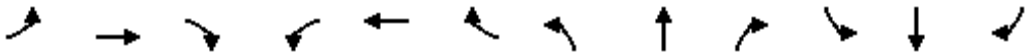
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	162	237	26	373
v/c Ratio	0.12	0.18	0.13	0.73
Control Delay	4.7	4.9	28.6	12.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	4.9	28.6	12.3
Queue Length 50th (m)	5.3	8.2	3.5	0.0
Queue Length 95th (m)	16.2	23.2	8.9	20.0
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1321	1321	775	905
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	0.12	0.18	0.03	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	149	0	0	218	24	343
Future Volume (vph)	149	0	0	218	24	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	0	0	237	26	373
RTOR Reduction (vph)	0	0	0	0	0	330
Lane Group Flow (vph)	162	0	0	237	26	43
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.6			52.6	8.7	8.7
Effective Green, g (s)	52.6			52.6	8.7	8.7
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1320			1320	207	185
v/s Ratio Prot	0.09			c0.13	0.01	
v/s Ratio Perm						c0.03
v/c Ratio	0.12			0.18	0.13	0.23
Uniform Delay, d1	3.7			3.8	29.7	30.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.3	0.3	0.7
Delay (s)	3.9			4.1	30.0	30.8
Level of Service	A			A	C	C
Approach Delay (s)	3.9			4.1	30.7	
Approach LOS	A			A	C	

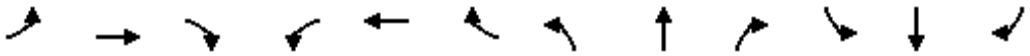
Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	25	3	2	10	38	5	423	1	100	387	19
Future Volume (vph)	48	25	3	2	10	38	5	423	1	100	387	19
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		0.995			0.898						0.995	
Flt Protected		0.969			0.998			0.999			0.990	
Satd. Flow (prot)	0	1556	0	0	1693	0	0	1834	0	0	1864	0
Flt Permitted		0.969			0.998			0.999			0.990	
Satd. Flow (perm)	0	1556	0	0	1693	0	0	1834	0	0	1864	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	56	29	3	2	12	44	6	492	1	116	450	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	58	0	0	499	0	0	588	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												
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	

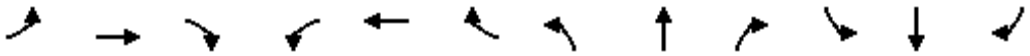
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	25	3	2	10	38	5	423	1	100	387	19
Future Volume (Veh/h)	48	25	3	2	10	38	5	423	1	100	387	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	56	29	3	2	12	44	6	492	1	116	450	22
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	1248	1198	461	1215	1208	492	472			493		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1248	1198	461	1215	1208	492	472			493		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	53	78	100	98	93	92	99			89		
cM capacity (veh/h)	119	134	605	96	164	580	845			1081		

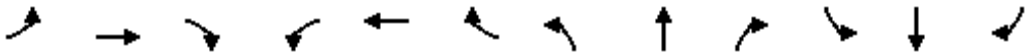
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	88	58	499	588
Volume Left	56	2	6	116
Volume Right	3	44	1	22
cSH	127	341	845	1081
Volume to Capacity	0.69	0.17	0.01	0.11
Queue Length 95th (m)	29.0	4.6	0.2	2.7
Control Delay (s)	81.2	17.7	0.2	2.8
Lane LOS	F	C	A	A
Approach Delay (s)	81.2	17.7	0.2	2.8
Approach LOS	F	C		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	70.5%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	12	6	21	10	81	1	327	48	188	192	7
Future Volume (vph)	23	12	6	21	10	81	1	327	48	188	192	7
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		0.980			0.902			0.983			0.998	
Flt Protected		0.973			0.991						0.976	
Satd. Flow (prot)	0	1704	0	0	1422	0	0	1825	0	0	1848	0
Flt Permitted		0.973			0.991						0.976	
Satd. Flow (perm)	0	1704	0	0	1422	0	0	1825	0	0	1848	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	26	14	7	24	11	92	1	372	55	214	218	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	127	0	0	428	0	0	440	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												
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	

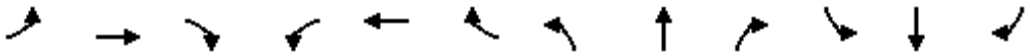
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	12	6	21	10	81	1	327	48	188	192	7
Future Volume (Veh/h)	23	12	6	21	10	81	1	327	48	188	192	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	26	14	7	24	11	92	1	372	55	214	218	8
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	1149	1079	222	1066	1056	400	226			427		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1149	1079	222	1066	1056	400	226			427		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	78	92	99	83	94	85	100			81		
cM capacity (veh/h)	118	179	781	140	185	613	1354			1143		

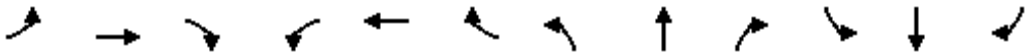
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	127	428	440
Volume Left	26	24	1	214
Volume Right	7	92	55	8
cSH	153	333	1354	1143
Volume to Capacity	0.31	0.38	0.00	0.19
Queue Length 95th (m)	9.3	13.2	0.0	5.2
Control Delay (s)	38.6	22.3	0.0	5.3
Lane LOS	E	C	A	A
Approach Delay (s)	38.6	22.3	0.0	5.3
Approach LOS	E	C		

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	57.9%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	169	1	4	126	118	0	2	6	45	0	0
Future Volume (vph)	1	169	1	4	126	118	0	2	6	45	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		0.999			0.936			0.899				
Flt Protected					0.999						0.950	
Satd. Flow (prot)	0	1919	0	0	1769	0	0	1727	0	0	1825	0
Flt Permitted					0.999						0.950	
Satd. Flow (perm)	0	1919	0	0	1769	0	0	1727	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	178	1	4	133	124	0	2	6	47	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	261	0	0	8	0	0	47	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
Sign Control		Free			Free			Stop			Stop	

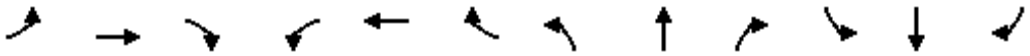
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	169	1	4	126	118	0	2	6	45	0	0
Future Volume (Veh/h)	1	169	1	4	126	118	0	2	6	45	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	178	1	4	133	124	0	2	6	47	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)					250							
pX, platoon unblocked												
vC, conflicting volume	257			179			384	446	178	390	384	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	257			179			384	446	178	390	384	195
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	92	100	100
cM capacity (veh/h)	1320			1409			577	509	870	565	551	846

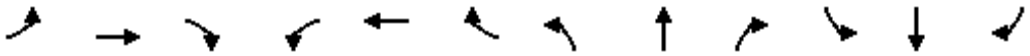
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	261	8	47
Volume Left	1	4	0	47
Volume Right	1	124	6	0
cSH	1320	1409	739	565
Volume to Capacity	0.00	0.00	0.01	0.08
Queue Length 95th (m)	0.0	0.1	0.2	2.1
Control Delay (s)	0.0	0.1	9.9	11.9
Lane LOS	A	A	A	B
Approach Delay (s)	0.0	0.1	9.9	11.9
Approach LOS			A	B

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	32.6%	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	273	3	25	114	9	3	67	53	24	21	0
Future Volume (vph)	0	273	3	25	114	9	3	67	53	24	21	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		0.999			0.992			0.942				
Flt Protected					0.992			0.999			0.974	
Satd. Flow (prot)	0	1823	0	0	1807	0	0	1779	0	0	1871	0
Flt Permitted					0.992			0.999			0.974	
Satd. Flow (perm)	0	1823	0	0	1807	0	0	1779	0	0	1871	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	369	4	34	154	12	4	91	72	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	0	0	200	0	0	167	0	0	60	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												
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 41.6%		ICU Level of Service A	
Analysis Period (min) 15			



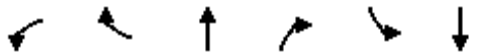
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	273	3	25	114	9	3	67	53	24	21	0
Future Volume (Veh/h)	0	273	3	25	114	9	3	67	53	24	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	369	4	34	154	12	4	91	72	32	28	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	316	263	28	416	227	127	28			163		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316	263	28	416	227	127	28			163		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	41	100	88	76	99	100			98		
cM capacity (veh/h)	507	621	965	284	648	929	1251			1428		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	373	200	167	60
Volume Left	0	34	4	32
Volume Right	4	12	72	0
cSH	623	540	1251	1428
Volume to Capacity	0.60	0.37	0.00	0.02
Queue Length 95th (m)	30.2	12.9	0.1	0.5
Control Delay (s)	19.0	15.5	0.2	4.1
Lane LOS	C	C	A	A
Approach Delay (s)	19.0	15.5	0.2	4.1
Approach LOS	C	C		

Intersection Summary				
Average Delay	13.1			
Intersection Capacity Utilization	41.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	32	10	66	99	24
Future Volume (vph)	21	32	10	66	99	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.883			
Flt Protected	0.981					0.961
Satd. Flow (prot)	1698	0	1663	0	0	1810
Flt Permitted	0.981					0.961
Satd. Flow (perm)	1698	0	1663	0	0	1810
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	35	11	72	108	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	83	0	0	134
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)	97	97		97	97	
Sign Control	Stop		Free			Free

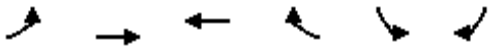
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	32	10	66	99	24
Future Volume (Veh/h)	21	32	10	66	99	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	35	11	72	108	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	289	47			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	289	47			83	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	97			93	
cM capacity (veh/h)	652	1022			1514	

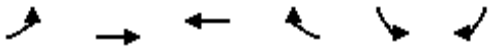
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	58	83	134
Volume Left	23	0	108
Volume Right	35	72	0
cSH	834	1700	1514
Volume to Capacity	0.07	0.05	0.07
Queue Length 95th (m)	1.7	0.0	1.7
Control Delay (s)	9.6	0.0	6.2
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	6.2
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	280	94	0	0	54
Future Volume (vph)	70	280	94	0	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	304	102	0	0	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	380	102	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

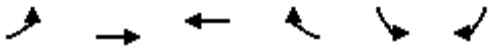
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	280	94	0	0	54
Future Volume (Veh/h)	70	280	94	0	0	54
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)	76	304	102	0	0	59
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	102				558	102
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102				558	102
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	94
cM capacity (veh/h)	1490				466	953

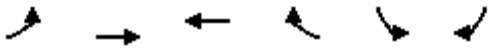
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	380	102	59
Volume Left	76	0	0
Volume Right	0	0	59
cSH	1490	1700	953
Volume to Capacity	0.05	0.06	0.06
Queue Length 95th (m)	1.2	0.0	1.5
Control Delay (s)	1.9	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	1.9	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	212	68	30	0	0	63
Future Volume (vph)	212	68	30	0	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.964				
Satd. Flow (prot)	0	1816	1883	0	1629	0
Flt Permitted		0.964				
Satd. Flow (perm)	0	1816	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		10.5	12.1		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	74	33	0	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	304	33	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

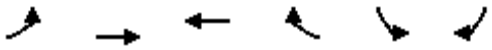
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	68	30	0	0	63
Future Volume (Veh/h)	212	68	30	0	0	63
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)	230	74	33	0	0	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	33				567	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33				567	33
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	93
cM capacity (veh/h)	1579				414	1041

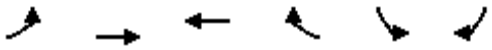
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	304	33	68
Volume Left	230	0	0
Volume Right	0	0	68
cSH	1579	1700	1041
Volume to Capacity	0.15	0.02	0.07
Queue Length 95th (m)	3.9	0.0	1.6
Control Delay (s)	6.1	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	6.1	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	44	21	0	0	9
Future Volume (vph)	23	44	21	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.983				
Satd. Flow (prot)	0	1851	1883	0	1629	0
Flt Permitted		0.983				
Satd. Flow (perm)	0	1851	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	48	23	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	73	23	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

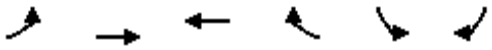
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			



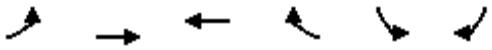
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	44	21	0	0	9
Future Volume (Veh/h)	23	44	21	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	48	23	0	0	10
Pedestrians						
Lane Width (m)						
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	23				121	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				121	23
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1592				861	1054

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	73	23	10
Volume Left	25	0	0
Volume Right	0	0	10
cSH	1592	1700	1054
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.6	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		



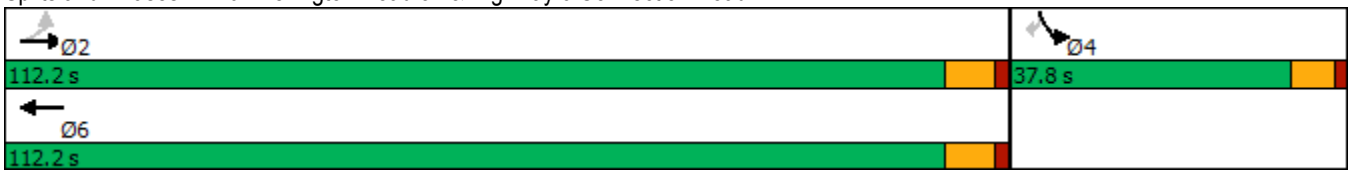
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	401	345	341	81	50	372
Future Volume (vph)	401	345	341	81	50	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1834	0	1789	1601
Flt Permitted	0.493				0.950	
Satd. Flow (perm)	929	1883	1834	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			19			404
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	375	371	88	54	404
Shared Lane Traffic (%)						
Lane Group Flow (vph)	436	375	459	0	54	404
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

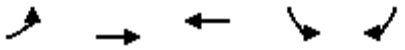


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	112.2	112.2	112.2		37.8	37.8
Total Split (%)	74.8%	74.8%	74.8%		25.2%	25.2%
Maximum Green (s)	105.0	105.0	105.0		31.3	31.3
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	105.2	105.2	105.2		10.6	10.6
Actuated g/C Ratio	0.81	0.81	0.81		0.08	0.08
v/c Ratio	0.58	0.25	0.31		0.37	0.80
Control Delay	8.8	3.7	3.9		62.7	18.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	8.8	3.7	3.9		62.7	18.2
LOS	A	A	A		E	B
Approach Delay		6.4	3.9		23.5	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 129.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

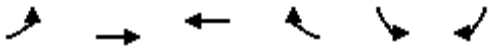
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	436	375	459	54	404
v/c Ratio	0.58	0.25	0.31	0.37	0.80
Control Delay	8.8	3.7	3.9	62.7	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	3.7	3.9	62.7	18.2
Queue Length 50th (m)	29.3	16.8	20.7	13.2	0.0
Queue Length 95th (m)	78.0	37.7	46.6	26.3	31.8
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	754	1529	1493	433	693
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	0.58	0.25	0.31	0.12	0.58

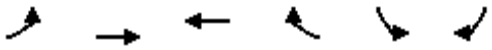
Intersection Summary



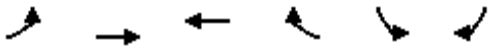
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	401	345	341	81	50	372
Future Volume (vph)	401	345	341	81	50	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1835		1789	1601
Flt Permitted	0.49	1.00	1.00		0.95	1.00
Satd. Flow (perm)	929	1883	1835		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	375	371	88	54	404
RTOR Reduction (vph)	0	0	4	0	0	371
Lane Group Flow (vph)	436	375	455	0	54	33
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	105.1	105.1	105.1		10.6	10.6
Effective Green, g (s)	105.1	105.1	105.1		10.6	10.6
Actuated g/C Ratio	0.81	0.81	0.81		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	754	1529	1490		146	131
v/s Ratio Prot		0.20	0.25		c0.03	
v/s Ratio Perm	c0.47					0.02
v/c Ratio	0.58	0.25	0.31		0.37	0.25
Uniform Delay, d1	4.3	2.8	3.0		56.2	55.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.2	0.4	0.5		1.6	1.0
Delay (s)	7.5	3.2	3.6		57.8	56.7
Level of Service	A	A	A		E	E
Approach Delay (s)		5.5	3.6		56.8	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	129.4	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



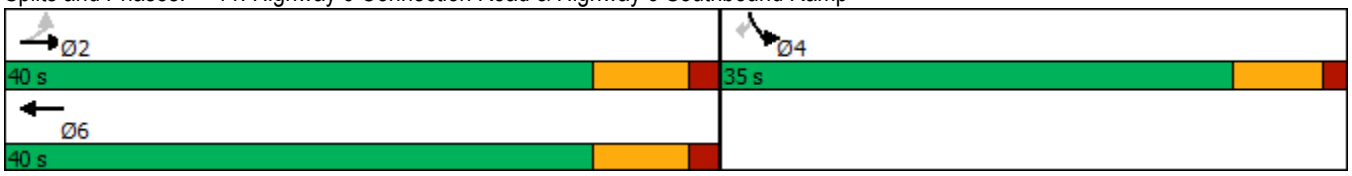
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	281	104	0	120	317
Future Volume (vph)	18	281	104	0	120	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.997			0.950	
Satd. Flow (prot)	0	1878	1883	0	1789	1601
Flt Permitted		0.982			0.950	
Satd. Flow (perm)	0	1850	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						345
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	305	113	0	130	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	325	113	0	130	345
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

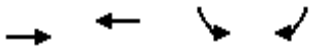


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	40.0	40.0	40.0		35.0	35.0
Total Split (%)	53.3%	53.3%	53.3%		46.7%	46.7%
Maximum Green (s)	32.8	32.8	32.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		32.9	32.9		9.5	9.5
Actuated g/C Ratio		0.59	0.59		0.17	0.17
v/c Ratio		0.30	0.10		0.43	0.62
Control Delay		7.3	6.1		25.2	8.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		7.3	6.1		25.2	8.2
LOS		A	A		C	A
Approach Delay		7.3	6.1		12.9	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 56.1			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 40.5%		ICU Level of Service A	
Analysis Period (min) 15			

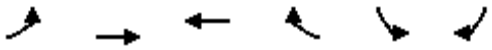
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	325	113	130	345
v/c Ratio	0.30	0.10	0.43	0.62
Control Delay	7.3	6.1	25.2	8.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.3	6.1	25.2	8.2
Queue Length 50th (m)	14.2	4.3	12.0	0.0
Queue Length 95th (m)	31.1	11.6	24.7	17.1
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1083	1102	910	983
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	0.30	0.10	0.14	0.35

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	281	104	0	120	317
Future Volume (vph)	18	281	104	0	120	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1878	1883		1789	1601
Flt Permitted		0.98	1.00		0.95	1.00
Satd. Flow (perm)		1849	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	305	113	0	130	345
RTOR Reduction (vph)	0	0	0	0	0	287
Lane Group Flow (vph)	0	325	113	0	130	58
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		32.9	32.9		9.5	9.5
Effective Green, g (s)		32.9	32.9		9.5	9.5
Actuated g/C Ratio		0.59	0.59		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1084	1104		302	271
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.18				0.04
v/c Ratio		0.30	0.10		0.43	0.22
Uniform Delay, d1		5.8	5.1		20.9	20.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.2		1.0	0.4
Delay (s)		6.5	5.3		21.9	20.5
Level of Service		A	A		C	C
Approach Delay (s)		6.5	5.3		20.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

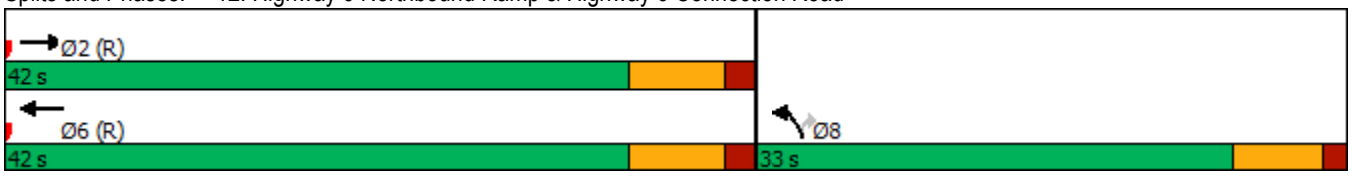
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	18	0	397	59	413
Future Volume (vph)	160	18	0	397	59	413
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					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1857	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1857	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10					449
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	20	0	432	64	449
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	0	0	432	64	449
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.5			51.5	9.8	9.8
Actuated g/C Ratio	0.69			0.69	0.13	0.13
v/c Ratio	0.15			0.33	0.27	0.75
Control Delay	5.2			6.6	30.2	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.2			6.6	30.2	11.5
LOS	A			A	C	B
Approach Delay	5.2			6.6	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



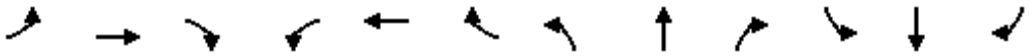
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	194	432	64	449
v/c Ratio	0.15	0.33	0.27	0.75
Control Delay	5.2	6.6	30.2	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.2	6.6	30.2	11.5
Queue Length 50th (m)	6.8	18.7	8.5	0.0
Queue Length 95th (m)	20.4	48.8	16.2	20.9
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1277	1291	632	856
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	0.15	0.33	0.10	0.52

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	18	0	397	59	413
Future Volume (vph)	160	18	0	397	59	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1857			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1857			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	20	0	432	64	449
RTOR Reduction (vph)	3	0	0	0	0	390
Lane Group Flow (vph)	191	0	0	432	64	59
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.5			51.5	9.8	9.8
Effective Green, g (s)	51.5			51.5	9.8	9.8
Actuated g/C Ratio	0.69			0.69	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1275			1292	233	209
v/s Ratio Prot	0.10			c0.23	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.15			0.33	0.27	0.28
Uniform Delay, d1	4.1			4.8	29.4	29.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.6	0.7
Delay (s)	4.4			5.5	30.0	30.2
Level of Service	A			A	C	C
Approach Delay (s)	4.4			5.5	30.1	
Approach LOS	A			A	C	

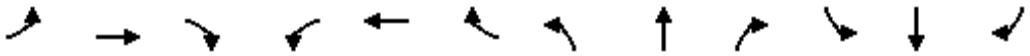
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	29	3	1	56	123	5	425	1	46	477	79
Future Volume (vph)	17	29	3	1	56	123	5	425	1	46	477	79
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		0.992			0.908						0.982	
Flt Protected		0.983						0.999			0.996	
Satd. Flow (prot)	0	1428	0	0	1535	0	0	1882	0	0	1805	0
Flt Permitted		0.983						0.999			0.996	
Satd. Flow (perm)	0	1428	0	0	1535	0	0	1882	0	0	1805	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	18	31	3	1	59	129	5	447	1	48	502	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	189	0	0	453	0	0	633	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												
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	

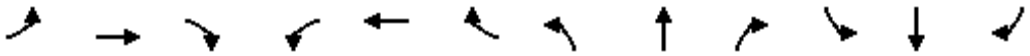
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.4%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	29	3	1	56	123	5	425	1	46	477	79
Future Volume (Veh/h)	17	29	3	1	56	123	5	425	1	46	477	79
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	31	3	1	59	129	5	447	1	48	502	83
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	1256	1098	544	1116	1138	448	585			448		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1256	1098	544	1116	1138	448	585			448		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	78	81	99	99	69	78	99			95		
cM capacity (veh/h)	83	165	543	153	192	575	1000			966		

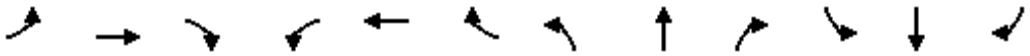
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	52	189	453	633
Volume Left	18	1	5	48
Volume Right	3	129	1	83
cSH	127	351	1000	966
Volume to Capacity	0.41	0.54	0.01	0.05
Queue Length 95th (m)	13.3	23.1	0.1	1.2
Control Delay (s)	51.6	26.6	0.2	1.3
Lane LOS	F	D	A	A
Approach Delay (s)	51.6	26.6	0.2	1.3
Approach LOS	F	D		

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	80.4%	ICU Level of Service	D	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	10	1	33	21	222	7	197	17	131	335	17
Future Volume (vph)	12	10	1	33	21	222	7	197	17	131	335	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
Frt		0.994			0.892			0.989			0.995	
Flt Protected		0.975			0.994			0.998			0.987	
Satd. Flow (prot)	0	1862	0	0	1703	0	0	1879	0	0	1847	0
Flt Permitted		0.975			0.994			0.998			0.987	
Satd. Flow (perm)	0	1862	0	0	1703	0	0	1879	0	0	1847	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	12	10	1	34	22	229	7	203	18	135	345	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	285	0	0	228	0	0	498	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												
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	

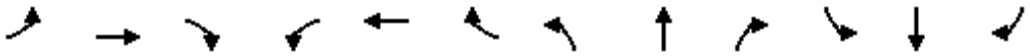
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	10	1	33	21	222	7	197	17	131	335	17
Future Volume (Veh/h)	12	10	1	33	21	222	7	197	17	131	335	17
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)	12	10	1	34	22	229	7	203	18	135	345	18
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	1090	859	354	856	859	212	363			221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1090	859	354	856	859	212	363			221		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	96	100	86	92	73	99			90		
cM capacity (veh/h)	122	265	694	250	265	833	1207			1360		

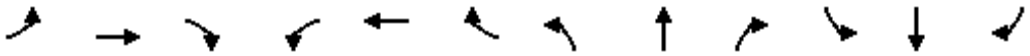
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	285	228	498
Volume Left	12	34	7	135
Volume Right	1	229	18	18
cSH	167	577	1207	1360
Volume to Capacity	0.14	0.49	0.01	0.10
Queue Length 95th (m)	3.6	20.7	0.1	2.5
Control Delay (s)	30.0	17.2	0.3	2.9
Lane LOS	D	C	A	A
Approach Delay (s)	30.0	17.2	0.3	2.9
Approach LOS	D	C		

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	64.4%	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)	1	126	0	6	244	74	1	0	7	141	2	1
Future Volume (vph)	1	126	0	6	244	74	1	0	7	141	2	1
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					0.969			0.880			0.999	
Flt Protected					0.999			0.994			0.953	
Satd. Flow (prot)	0	1780	0	0	1819	0	0	1680	0	0	1829	0
Flt Permitted					0.999			0.994			0.953	
Satd. Flow (perm)	0	1780	0	0	1819	0	0	1680	0	0	1829	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	147	0	7	284	86	1	0	8	164	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	0	377	0	0	9	0	0	167	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
Sign Control		Free			Free			Stop			Stop	

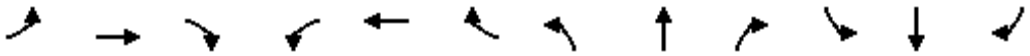
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	126	0	6	244	74	1	0	7	141	2	1
Future Volume (Veh/h)	1	126	0	6	244	74	1	0	7	141	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	147	0	7	284	86	1	0	8	164	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	370			147			492	533	147	498	490	327
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370			147			492	533	147	498	490	327
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	66	100	100
cM capacity (veh/h)	1200			1447			486	453	905	480	479	719

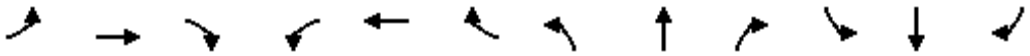
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	377	9	167
Volume Left	1	7	1	164
Volume Right	0	86	8	1
cSH	1200	1447	826	481
Volume to Capacity	0.00	0.00	0.01	0.35
Queue Length 95th (m)	0.0	0.1	0.3	11.7
Control Delay (s)	0.1	0.2	9.4	16.4
Lane LOS	A	A	A	C
Approach Delay (s)	0.1	0.2	9.4	16.4
Approach LOS			A	C

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	166	3	69	281	59	2	58	16	28	80	0
Future Volume (vph)	0	166	3	69	281	59	2	58	16	28	80	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		0.998			0.980			0.971				
Flt Protected					0.992			0.999			0.987	
Satd. Flow (prot)	0	1818	0	0	1868	0	0	1864	0	0	1896	0
Flt Permitted					0.992			0.999			0.987	
Satd. Flow (perm)	0	1818	0	0	1868	0	0	1864	0	0	1896	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	182	3	76	309	65	2	64	18	31	88	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	185	0	0	450	0	0	84	0	0	119	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												
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)	0	166	3	69	281	59	2	58	16	28	80	0
Future Volume (Veh/h)	0	166	3	69	281	59	2	58	16	28	80	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	182	3	76	309	65	2	64	18	31	88	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	446	236	88	321	227	73	88			82		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446	236	88	321	227	73	88			82		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	72	100	84	53	93	100			98		
cM capacity (veh/h)	307	645	891	488	661	995	1520			1528		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	185	450	84	119
Volume Left	0	76	2	31
Volume Right	3	65	18	0
cSH	648	654	1520	1528
Volume to Capacity	0.29	0.69	0.00	0.02
Queue Length 95th (m)	8.9	41.5	0.0	0.5
Control Delay (s)	12.8	21.8	0.2	2.0
Lane LOS	B	C	A	A
Approach Delay (s)	12.8	21.8	0.2	2.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	14.8			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

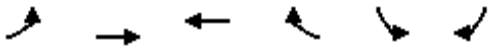
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	78	117	60	57	43	30
Future Volume (vph)	78	117	60	57	43	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.934			
Flt Protected	0.980					0.971
Satd. Flow (prot)	1696	0	1759	0	0	1829
Flt Permitted	0.980					0.971
Satd. Flow (perm)	1696	0	1759	0	0	1829
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	127	65	62	47	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	127	0	0	80
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	78	117	60	57	43	30
Future Volume (Veh/h)	78	117	60	57	43	30
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)	85	127	65	62	47	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	223	96			127	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	223	96			127	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	87			97	
cM capacity (veh/h)	741	960			1459	

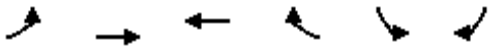
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	212	127	80
Volume Left	85	0	47
Volume Right	127	62	0
cSH	858	1700	1459
Volume to Capacity	0.25	0.07	0.03
Queue Length 95th (m)	7.4	0.0	0.8
Control Delay (s)	10.6	0.0	4.5
Lane LOS	B		A
Approach Delay (s)	10.6	0.0	4.5
Approach LOS	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	168	354	0	0	56
Future Volume (vph)	43	168	354	0	0	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	183	385	0	0	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	230	385	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

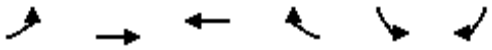
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	168	354	0	0	56
Future Volume (Veh/h)	43	168	354	0	0	56
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)	47	183	385	0	0	61
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	385				662	385
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	385				662	385
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				100	91
cM capacity (veh/h)	1173				410	663

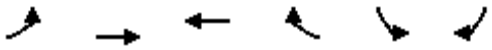
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	230	385	61
Volume Left	47	0	0
Volume Right	0	0	61
cSH	1173	1700	663
Volume to Capacity	0.04	0.23	0.09
Queue Length 95th (m)	1.0	0.0	2.3
Control Delay (s)	2.0	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	2.0	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	39	73	0	0	280
Future Volume (vph)	129	39	73	0	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.963				
Satd. Flow (prot)	0	1814	1883	0	1629	0
Flt Permitted		0.963				
Satd. Flow (perm)	0	1814	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		10.5	12.1		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	42	79	0	0	304
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	182	79	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

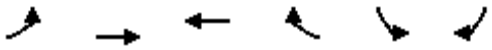
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	129	39	73	0	0	280
Future Volume (Veh/h)	129	39	73	0	0	280
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)	140	42	79	0	0	304
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	79				401	79
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				401	79
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	69
cM capacity (veh/h)	1519				549	981

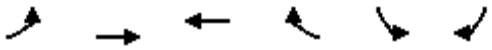
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	182	79	304
Volume Left	140	0	0
Volume Right	0	0	304
cSH	1519	1700	981
Volume to Capacity	0.09	0.05	0.31
Queue Length 95th (m)	2.3	0.0	10.1
Control Delay (s)	6.0	0.0	10.3
Lane LOS	A		B
Approach Delay (s)	6.0	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	24	45	0	0	28
Future Volume (vph)	14	24	45	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.982				
Satd. Flow (prot)	0	1850	1883	0	1629	0
Flt Permitted		0.982				
Satd. Flow (perm)	0	1850	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	26	49	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	41	49	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

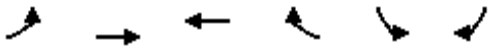
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			



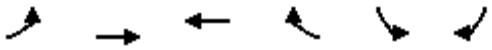
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	24	45	0	0	28
Future Volume (Veh/h)	14	24	45	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	26	49	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	49				105	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	49				105	49
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				100	97
cM capacity (veh/h)	1558				884	1020

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	41	49	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1558	1700	1020
Volume to Capacity	0.01	0.03	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.7	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	2.7	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		



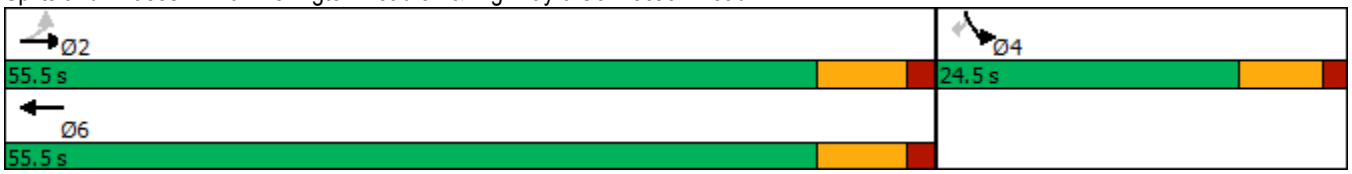
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	419	219	326	80	50	324
Future Volume (vph)	419	219	326	80	50	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.507				0.950	
Satd. Flow (perm)	955	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			352
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	455	238	354	87	54	352
Shared Lane Traffic (%)						
Lane Group Flow (vph)	455	238	441	0	54	352
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

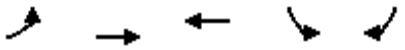


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.6	8.6
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
v/c Ratio	0.70	0.18	0.35		0.25	0.70
Control Delay	15.4	5.0	5.7		30.4	11.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	15.4	5.0	5.7		30.4	11.7
LOS	B	A	A		C	B
Approach Delay		11.8	5.7		14.2	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.7			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road

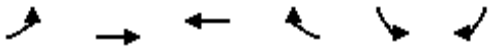




Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	455	238	441	54	352
v/c Ratio	0.70	0.18	0.35	0.25	0.70
Control Delay	15.4	5.0	5.7	30.4	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	5.0	5.7	30.4	11.7
Queue Length 50th (m)	27.9	8.8	17.1	6.6	0.0
Queue Length 95th (m)	#100.7	22.1	41.3	15.6	20.4
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	653	1289	1263	456	670
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	0.70	0.18	0.35	0.12	0.53

Intersection Summary

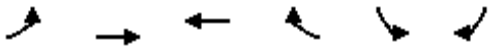
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



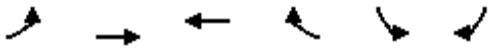
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	419	219	326	80	50	324
Future Volume (vph)	419	219	326	80	50	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.51	1.00	1.00		0.95	1.00
Satd. Flow (perm)	954	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	455	238	354	87	54	352
RTOR Reduction (vph)	0	0	9	0	0	309
Lane Group Flow (vph)	455	238	432	0	54	43
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.6	8.6
Effective Green, g (s)	48.4	48.4	48.4		8.6	8.6
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	653	1289	1254		217	194
v/s Ratio Prot		0.13	0.24		c0.03	
v/s Ratio Perm	c0.48					0.03
v/c Ratio	0.70	0.18	0.34		0.25	0.22
Uniform Delay, d1	6.7	4.0	4.6		28.1	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.1	0.3	0.8		0.6	0.6
Delay (s)	12.8	4.3	5.4		28.7	28.6
Level of Service	B	A	A		C	C
Approach Delay (s)		9.9	5.4		28.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



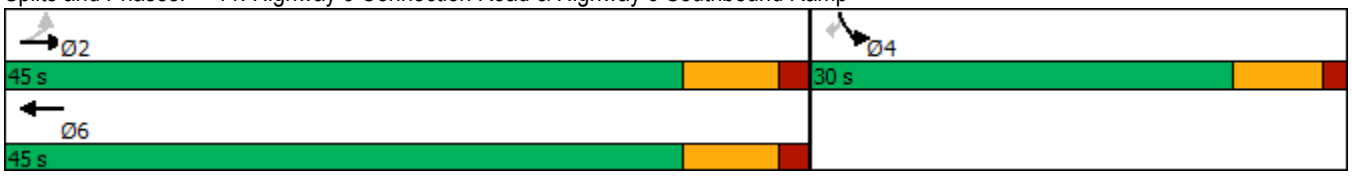
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	316	112	0	129	270
Future Volume (vph)	56	316	112	0	129	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	1870	1883	0	1789	1601
Flt Permitted		0.939			0.950	
Satd. Flow (perm)	0	1769	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						293
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	343	122	0	140	293
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	404	122	0	140	293
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

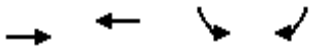


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	45.0	45.0	45.0		30.0	30.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	37.8	37.8	37.8		23.5	23.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		37.9	37.9		10.0	10.0
Actuated g/C Ratio		0.62	0.62		0.16	0.16
v/c Ratio		0.37	0.11		0.48	0.58
Control Delay		7.7	5.8		29.1	8.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		7.7	5.8		29.1	8.4
LOS		A	A		C	A
Approach Delay		7.7	5.8		15.1	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 61.6			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			

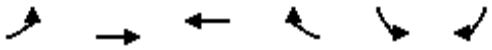
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	404	122	140	293
v/c Ratio	0.37	0.11	0.48	0.58
Control Delay	7.7	5.8	29.1	8.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.7	5.8	29.1	8.4
Queue Length 50th (m)	19.7	4.9	14.6	0.0
Queue Length 95th (m)	40.0	12.1	28.7	17.0
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1086	1157	683	792
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	0.37	0.11	0.20	0.37

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	316	112	0	129	270
Future Volume (vph)	56	316	112	0	129	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1869	1883		1789	1601
Flt Permitted		0.94	1.00		0.95	1.00
Satd. Flow (perm)		1768	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	343	122	0	140	293
RTOR Reduction (vph)	0	0	0	0	0	245
Lane Group Flow (vph)	0	404	122	0	140	48
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		37.9	37.9		10.0	10.0
Effective Green, g (s)		37.9	37.9		10.0	10.0
Actuated g/C Ratio		0.62	0.62		0.16	0.16
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1087	1158		290	259
v/s Ratio Prot			0.06		c0.08	
v/s Ratio Perm		c0.23				0.03
v/c Ratio		0.37	0.11		0.48	0.18
Uniform Delay, d1		5.9	4.9		23.4	22.3
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.2		1.3	0.3
Delay (s)		6.9	5.1		24.7	22.6
Level of Service		A	A		C	C
Approach Delay (s)		6.9	5.1		23.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

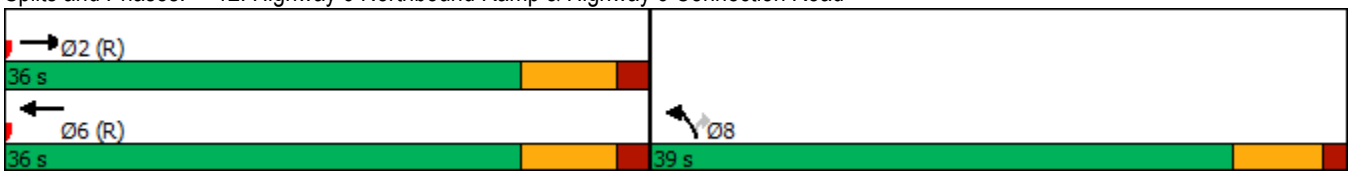
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	177	56	0	232	52	343
Future Volume (vph)	177	56	0	232	52	343
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	0.967					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1821	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1821	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					373
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	61	0	252	57	373
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	0	0	252	57	373
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.2			52.2	9.1	9.1
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.20			0.19	0.26	0.71
Control Delay	4.7			5.1	31.1	11.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.7			5.1	31.1	11.8
LOS	A			A	C	B
Approach Delay	4.7			5.1	14.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 9.2		Intersection LOS: A	
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



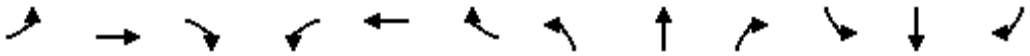
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	253	252	57	373
v/c Ratio	0.20	0.19	0.26	0.71
Control Delay	4.7	5.1	31.1	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	5.1	31.1	11.8
Queue Length 50th (m)	8.6	9.6	7.6	0.0
Queue Length 95th (m)	23.0	24.7	15.5	20.0
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1274	1310	775	905
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	0.20	0.19	0.07	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	177	56	0	232	52	343
Future Volume (vph)	177	56	0	232	52	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	61	0	252	57	373
RTOR Reduction (vph)	8	0	0	0	0	328
Lane Group Flow (vph)	245	0	0	252	57	45
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.2			52.2	9.1	9.1
Effective Green, g (s)	52.2			52.2	9.1	9.1
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1268			1310	217	194
v/s Ratio Prot	c0.13			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.19			0.19	0.26	0.23
Uniform Delay, d1	4.0			4.0	29.9	29.8
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.6	0.6
Delay (s)	4.3			4.3	30.6	30.4
Level of Service	A			A	C	C
Approach Delay (s)	4.3			4.3	30.4	
Approach LOS	A			A	C	

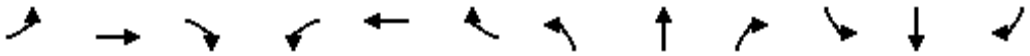
Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	2	3	2	1	5	5	383	1	1	224	21
Future Volume (vph)	53	2	3	2	1	5	5	383	1	1	224	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
Frt		0.994			0.910						0.989	
Flt Protected		0.956			0.989			0.999				
Satd. Flow (prot)	0	1735	0	0	1556	0	0	1832	0	0	1866	0
Flt Permitted		0.956			0.989			0.999				
Satd. Flow (perm)	0	1735	0	0	1556	0	0	1832	0	0	1866	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	62	2	3	2	1	6	6	445	1	1	260	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	9	0	0	452	0	0	285	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												
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	

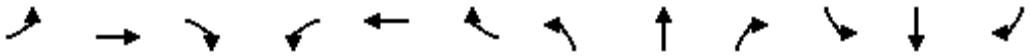
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	2	3	2	1	5	5	383	1	1	224	21
Future Volume (Veh/h)	53	2	3	2	1	5	5	383	1	1	224	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	62	2	3	2	1	6	6	445	1	1	260	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	738	732	272	736	744	446	284			446		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	738	732	272	736	744	446	284			446		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	81	99	100	99	100	99	99			100		
cM capacity (veh/h)	326	294	772	277	343	617	1008			1125		

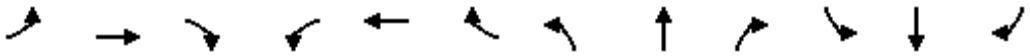
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	67	9	452	285
Volume Left	62	2	6	1
Volume Right	3	6	1	24
cSH	333	453	1008	1125
Volume to Capacity	0.20	0.02	0.01	0.00
Queue Length 95th (m)	5.6	0.5	0.1	0.0
Control Delay (s)	18.5	13.1	0.2	0.0
Lane LOS	C	B	A	A
Approach Delay (s)	18.5	13.1	0.2	0.0
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	39.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	7	3	11	5	1	362	1	4	212	8
Future Volume (vph)	26	14	7	3	11	5	1	362	1	4	212	8
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		0.980			0.963						0.995	
Flt Protected		0.973			0.993						0.999	
Satd. Flow (prot)	0	1704	0	0	1671	0	0	1848	0	0	1865	0
Flt Permitted		0.973			0.993						0.999	
Satd. Flow (perm)	0	1704	0	0	1671	0	0	1848	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	30	16	8	3	13	6	1	411	1	5	241	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	22	0	0	413	0	0	255	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												
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	

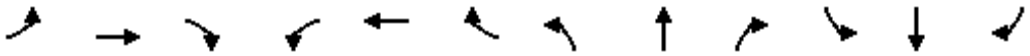
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	14	7	3	11	5	1	362	1	4	212	8
Future Volume (Veh/h)	26	14	7	3	11	5	1	362	1	4	212	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	16	8	3	12	6	1	411	1	5	241	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	681	670	246	685	674	412	250			412		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681	670	246	685	674	412	250			412		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	91	96	99	99	97	99	100			100		
cM capacity (veh/h)	342	379	758	309	377	603	1327			1158		

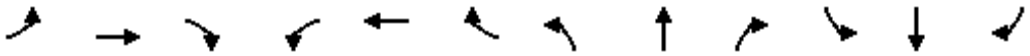
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	21	413	255
Volume Left	30	3	1	5
Volume Right	8	6	1	9
cSH	384	408	1327	1158
Volume to Capacity	0.14	0.05	0.00	0.00
Queue Length 95th (m)	3.7	1.2	0.0	0.1
Control Delay (s)	15.9	14.3	0.0	0.2
Lane LOS	C	B	A	A
Approach Delay (s)	15.9	14.3	0.0	0.2
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	187	1	4	139	0	0	2	7	0	0	0
Future Volume (vph)	1	187	1	4	139	0	0	2	7	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		0.999						0.895				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	197	1	4	146	0	0	2	7	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	199	0	0	150	0	0	9	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)		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
Sign Control		Free			Free			Stop			Stop	

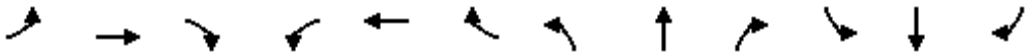
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	187	1	4	139	0	0	2	7	0	0	0
Future Volume (Veh/h)	1	187	1	4	139	0	0	2	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	197	1	4	146	0	0	2	7	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	146			198			354	354	198	362	354	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			198			354	354	198	362	354	146
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1448			1387			604	573	849	590	572	901

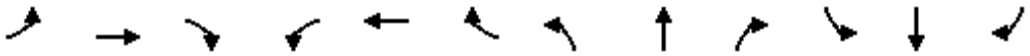
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	199	150	9	0
Volume Left	1	4	0	0
Volume Right	1	0	7	0
cSH	1448	1387	767	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.3	0.0
Control Delay (s)	0.0	0.2	9.8	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.2	9.8	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	46	3	2	21	0	3	1	1	1	0	0
Future Volume (vph)	0	46	3	2	21	0	3	1	1	1	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		0.992						0.977				
Flt Protected					0.995			0.968			0.950	
Satd. Flow (prot)	0	1786	0	0	1813	0	0	1256	0	0	1825	0
Flt Permitted					0.995			0.968			0.950	
Satd. Flow (perm)	0	1786	0	0	1813	0	0	1256	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	62	4	3	28	0	4	1	1	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	31	0	0	6	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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
Sign Control		Stop			Stop			Free			Free	

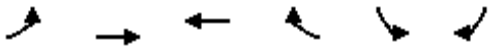
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			



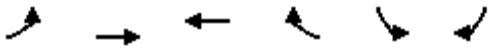
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	46	3	2	21	0	3	1	1	1	0	0
Future Volume (Veh/h)	0	46	3	2	21	0	3	1	1	1	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	62	4	3	28	0	4	1	1	1	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	26	12	0	46	12	2	0			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26	12	0	46	12	2	0			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	93	100	100	97	100	100			100		
cM capacity (veh/h)	963	873	1001	902	872	1089	1284			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	66	31	6	1
Volume Left	0	3	4	1
Volume Right	4	0	1	0
cSH	880	875	1284	1634
Volume to Capacity	0.07	0.04	0.00	0.00
Queue Length 95th (m)	1.8	0.8	0.1	0.0
Control Delay (s)	9.4	9.3	5.2	7.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.3	5.2	7.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



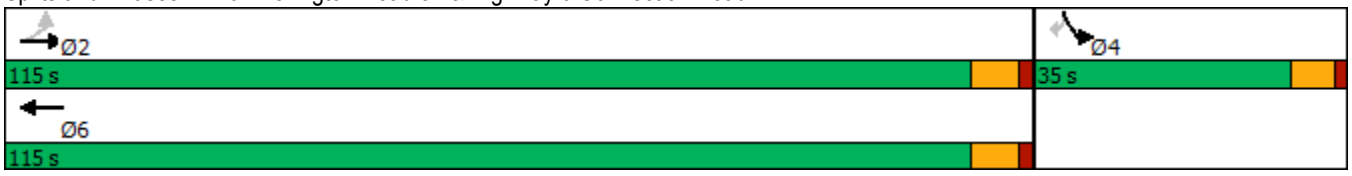
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.472				0.950	
Satd. Flow (perm)	889	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			286
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	415	498	0	65	286
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

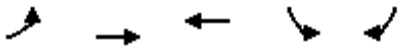


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.54	0.27	0.33		0.46	0.73
Control Delay	7.7	3.6	3.8		68.0	18.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	7.7	3.6	3.8		68.0	18.0
LOS	A	A	A		E	B
Approach Delay		5.6	3.8		27.2	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

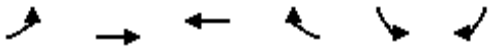
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	392	415	498	65	286
v/c Ratio	0.54	0.27	0.33	0.46	0.73
Control Delay	7.7	3.6	3.8	68.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	3.6	3.8	68.0	18.0
Queue Length 50th (m)	26.4	20.0	24.4	16.5	0.0
Queue Length 95th (m)	58.5	37.1	45.2	31.4	27.0
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	725	1537	1500	386	569
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.27	0.33	0.17	0.50

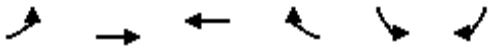
Intersection Summary



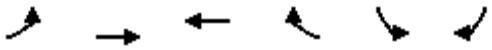
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	889	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
RTOR Reduction (vph)	0	0	4	0	0	263
Lane Group Flow (vph)	392	415	494	0	65	23
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		10.5	10.5
Effective Green, g (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	726	1538	1497		142	127
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.44					0.01
v/c Ratio	0.54	0.27	0.33		0.46	0.18
Uniform Delay, d1	4.0	2.8	3.0		58.1	56.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.4	0.6		2.3	0.7
Delay (s)	6.8	3.3	3.6		60.4	57.5
Level of Service	A	A	A		E	E
Approach Delay (s)		5.0	3.6		58.0	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	132.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



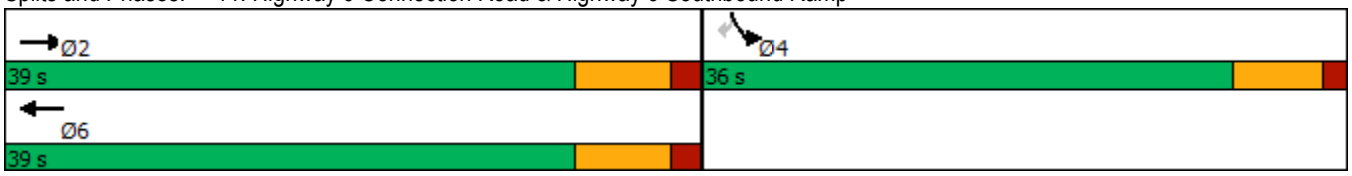
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	241	36	0	115	287
Future Volume (vph)	0	241	36	0	115	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1883	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						312
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	262	39	0	125	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	262	39	0	125	312
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

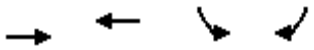


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		39.0	39.0		36.0	36.0
Total Split (%)		52.0%	52.0%		48.0%	48.0%
Maximum Green (s)		31.8	31.8		29.5	29.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.1	9.1
Actuated g/C Ratio		0.58	0.58		0.17	0.17
v/c Ratio		0.24	0.04		0.42	0.59
Control Delay		6.7	5.6		24.8	8.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.7	5.6		24.8	8.2
LOS		A	A		C	A
Approach Delay		6.7	5.6		13.0	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 54.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

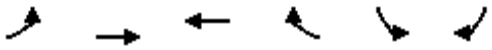
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	262	39	125	312
v/c Ratio	0.24	0.04	0.42	0.59
Control Delay	6.7	5.6	24.8	8.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.7	5.6	24.8	8.2
Queue Length 50th (m)	10.8	1.4	11.2	0.0
Queue Length 95th (m)	23.2	4.9	23.5	16.4
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1097	1097	967	1008
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	0.24	0.04	0.13	0.31

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	241	36	0	115	287
Future Volume (vph)	0	241	36	0	115	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1883		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	262	39	0	125	312
RTOR Reduction (vph)	0	0	0	0	0	260
Lane Group Flow (vph)	0	262	39	0	125	52
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		31.8	31.8		9.1	9.1
Effective Green, g (s)		31.8	31.8		9.1	9.1
Actuated g/C Ratio		0.58	0.58		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1096	1096		298	266
v/s Ratio Prot		c0.14	0.02		c0.07	
v/s Ratio Perm						0.03
v/c Ratio		0.24	0.04		0.42	0.20
Uniform Delay, d1		5.5	4.9		20.4	19.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5	0.1		1.0	0.4
Delay (s)		6.0	4.9		21.3	20.0
Level of Service		A	A		C	B
Approach Delay (s)		6.0	4.9		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

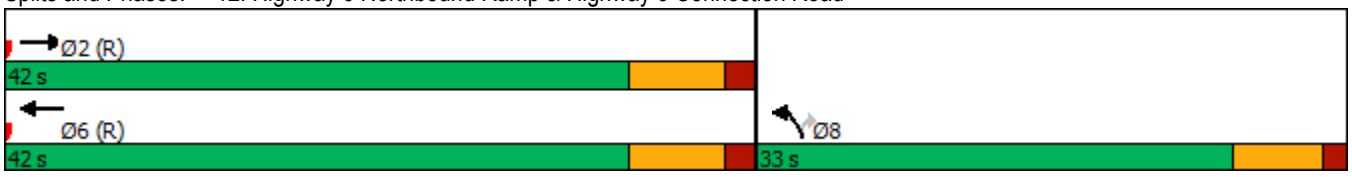
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	105	0	0	384	15	438
Future Volume (vph)	105	0	0	384	15	438
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						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	0	0	417	16	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	0	417	16	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.1			52.1	9.2	9.2
Actuated g/C Ratio	0.69			0.69	0.12	0.12
v/c Ratio	0.09			0.32	0.07	0.78
Control Delay	5.0			6.2	26.3	12.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.2	26.3	12.4
LOS	A			A	C	B
Approach Delay	5.0			6.2	12.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



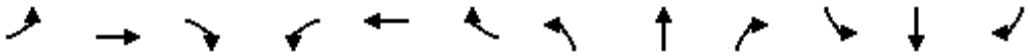
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	114	417	16	476
v/c Ratio	0.09	0.32	0.07	0.78
Control Delay	5.0	6.2	26.3	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.2	26.3	12.4
Queue Length 50th (m)	3.5	15.6	2.2	0.0
Queue Length 95th (m)	13.1	46.4	6.2	22.0
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1308	1308	632	873
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	0.09	0.32	0.03	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	105	0	0	384	15	438
Future Volume (vph)	105	0	0	384	15	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	0	0	417	16	476
RTOR Reduction (vph)	0	0	0	0	0	418
Lane Group Flow (vph)	114	0	0	417	16	58
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.1			52.1	9.2	9.2
Effective Green, g (s)	52.1			52.1	9.2	9.2
Actuated g/C Ratio	0.69			0.69	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1308			1308	219	196
v/s Ratio Prot	0.06			c0.22	0.01	
v/s Ratio Perm						c0.04
v/c Ratio	0.09			0.32	0.07	0.30
Uniform Delay, d1	3.7			4.5	29.1	30.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.6	0.1	0.9
Delay (s)	3.9			5.1	29.3	30.8
Level of Service	A			A	C	C
Approach Delay (s)	3.9			5.1	30.8	
Approach LOS	A			A	C	

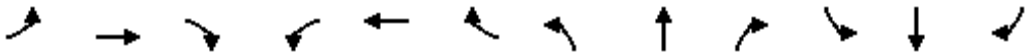
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1	3	1	0	5	5	228	1	3	383	87
Future Volume (vph)	19	1	3	1	0	5	5	228	1	3	383	87
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		0.983			0.887			0.999			0.975	
Flt Protected		0.960			0.992			0.999				
Satd. Flow (prot)	0	1720	0	0	1449	0	0	1881	0	0	1840	0
Flt Permitted		0.960			0.992			0.999				
Satd. Flow (perm)	0	1720	0	0	1449	0	0	1881	0	0	1840	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	20	1	3	1	0	5	5	240	1	3	403	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	6	0	0	246	0	0	498	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												
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	

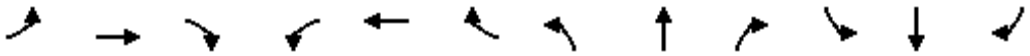
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1	3	1	0	5	5	228	1	3	383	87
Future Volume (Veh/h)	19	1	3	1	0	5	5	228	1	3	383	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	1	3	1	0	5	5	240	1	3	403	92
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	710	706	449	709	752	240	495			241		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	710	706	449	709	752	240	495			241		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	94	100	100	100	100	99	100			100		
cM capacity (veh/h)	341	305	614	347	339	756	1079			1164		

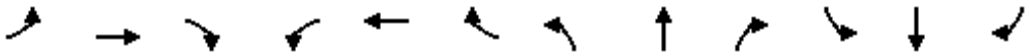
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	6	246	498
Volume Left	20	1	5	3
Volume Right	3	5	1	92
cSH	360	632	1079	1164
Volume to Capacity	0.07	0.01	0.00	0.00
Queue Length 95th (m)	1.6	0.2	0.1	0.1
Control Delay (s)	15.7	10.8	0.2	0.1
Lane LOS	C	B	A	A
Approach Delay (s)	15.7	10.8	0.2	0.1
Approach LOS	C	B		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	11	1	5	23	3	8	217	3	2	370	19
Future Volume (vph)	14	11	1	5	23	3	8	217	3	2	370	19
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		0.995			0.987			0.998			0.993	
Flt Protected		0.974			0.992			0.998				
Satd. Flow (prot)	0	1862	0	0	1881	0	0	1895	0	0	1853	0
Flt Permitted		0.974			0.992			0.998				
Satd. Flow (perm)	0	1862	0	0	1881	0	0	1895	0	0	1853	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	14	11	1	5	24	3	8	224	3	2	381	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	32	0	0	235	0	0	403	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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
Sign Control		Stop			Stop			Free			Free	

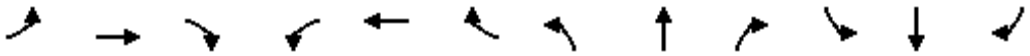
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	11	1	5	23	3	8	217	3	2	370	19
Future Volume (Veh/h)	14	11	1	5	23	3	8	217	3	2	370	19
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)	14	11	1	5	24	3	8	224	3	2	381	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	652	638	391	643	646	226	401			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	638	391	643	646	226	401			227		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	97	100	99	94	100	99			100		
cM capacity (veh/h)	362	394	662	378	389	819	1169			1353		

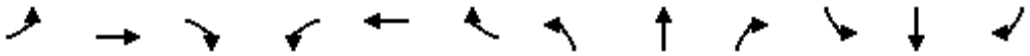
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	32	235	403
Volume Left	14	5	8	2
Volume Right	1	3	3	20
cSH	382	407	1169	1353
Volume to Capacity	0.07	0.08	0.01	0.00
Queue Length 95th (m)	1.7	1.9	0.2	0.0
Control Delay (s)	15.1	14.6	0.3	0.1
Lane LOS	C	B	A	A
Approach Delay (s)	15.1	14.6	0.3	0.1
Approach LOS	C	B		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	31.8%	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)	1	139	0	7	270	2	1	0	8	1	2	1
Future Volume (vph)	1	139	0	7	270	2	1	0	8	1	2	1
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					0.999			0.878			0.966	
Flt Protected					0.999			0.995			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1678	0	0	1834	0
Flt Permitted					0.999			0.995			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1678	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	162	0	8	314	2	1	0	9	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	324	0	0	10	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

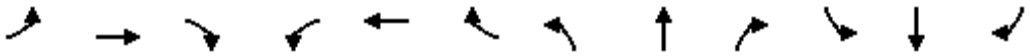
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	139	0	7	270	2	1	0	8	1	2	1
Future Volume (Veh/h)	1	139	0	7	270	2	1	0	8	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	162	0	8	314	2	1	0	9	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	316			162			497	496	162	504	495	315
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316			162			497	496	162	504	495	315
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1256			1429			482	475	888	474	476	730

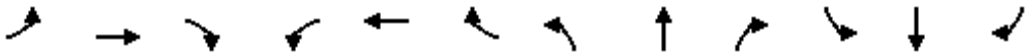
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	163	324	10	4
Volume Left	1	8	1	1
Volume Right	0	2	9	1
cSH	1256	1429	819	521
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.3	0.2
Control Delay (s)	0.1	0.2	9.4	12.0
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.4	12.0
Approach LOS			A	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	29.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	25	3	8	38	3	2	1	2	0	2	0
Future Volume (vph)	0	25	3	8	38	3	2	1	2	0	2	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		0.986			0.992			0.946				
Flt Protected					0.992			0.980				
Satd. Flow (prot)	0	1757	0	0	1890	0	0	1781	0	0	1921	0
Flt Permitted					0.992			0.980				
Satd. Flow (perm)	0	1757	0	0	1890	0	0	1781	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	27	3	9	42	3	2	1	2	0	2	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	54	0	0	5	0	0	2	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												
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	

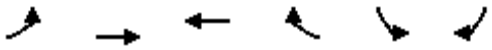
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.1%		ICU Level of Service A	
Analysis Period (min) 15			



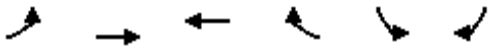
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	25	3	8	38	3	2	1	2	0	2	0
Future Volume (Veh/h)	0	25	3	8	38	3	2	1	2	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	27	3	9	42	3	2	1	2	0	2	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	32	9	2	24	8	2	2			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	32	9	2	24	8	2	2			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	99	95	100	100			100		
cM capacity (veh/h)	942	879	998	965	890	1088	1634			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	54	5	2
Volume Left	0	9	2	0
Volume Right	3	3	2	0
cSH	890	911	1634	1632
Volume to Capacity	0.03	0.06	0.00	0.00
Queue Length 95th (m)	0.8	1.4	0.0	0.0
Control Delay (s)	9.2	9.2	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	9.2	2.9	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A	
Analysis Period (min)	15			



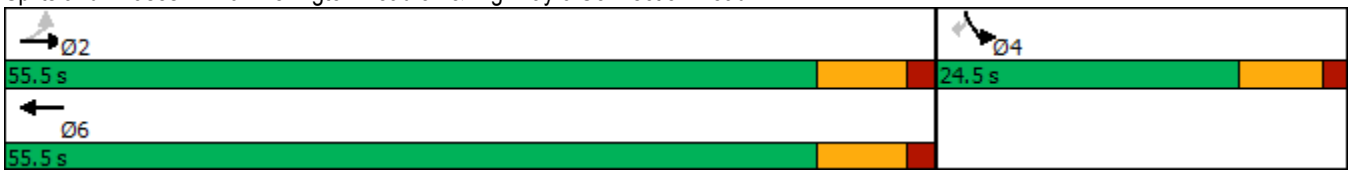
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.476				0.950	
Satd. Flow (perm)	897	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			283
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	259	487	0	65	283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

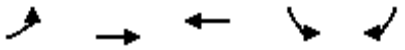


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.51	0.20	0.39		0.31	0.64
Control Delay	9.7	4.9	5.9		31.8	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	9.7	4.9	5.9		31.8	11.4
LOS	A	A	A		C	B
Approach Delay		7.5	5.9		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

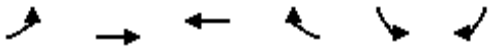
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	315	259	487	65	283
v/c Ratio	0.51	0.20	0.39	0.31	0.64
Control Delay	9.7	4.9	5.9	31.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	4.9	5.9	31.8	11.4
Queue Length 50th (m)	16.0	9.9	20.1	8.0	0.0
Queue Length 95th (m)	43.2	22.5	43.8	18.1	18.7
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	615	1291	1263	457	619
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	0.51	0.20	0.39	0.14	0.46

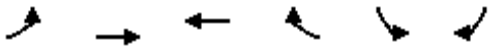
Intersection Summary



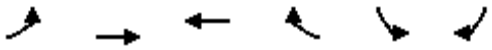
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.48	1.00	1.00		0.95	1.00
Satd. Flow (perm)	896	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
RTOR Reduction (vph)	0	0	9	0	0	249
Lane Group Flow (vph)	315	259	478	0	65	34
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.4	8.4
Effective Green, g (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	615	1292	1256		213	190
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.35					0.02
v/c Ratio	0.51	0.20	0.38		0.31	0.18
Uniform Delay, d1	5.3	4.0	4.7		28.4	27.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.3	0.9		0.8	0.4
Delay (s)	8.4	4.4	5.6		29.2	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.6	5.6		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



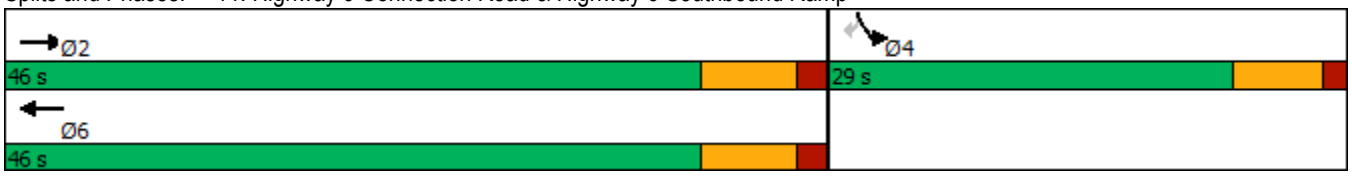
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	240	55	208	134	265
Future Volume (vph)	0	240	55	208	134	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.893			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1682	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1682	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			226			288
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	261	60	226	146	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	261	286	0	146	288
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

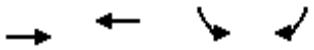


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		46.0	46.0		29.0	29.0
Total Split (%)		61.3%	61.3%		38.7%	38.7%
Maximum Green (s)		38.8	38.8		22.5	22.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.22	0.25		0.50	0.57
Control Delay		6.5	2.3		29.8	8.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.5	2.3		29.8	8.3
LOS		A	A		C	A
Approach Delay		6.5	2.3		15.6	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 43.5%		ICU Level of Service A	
Analysis Period (min) 15			

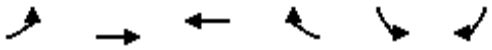
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	261	286	146	288
v/c Ratio	0.22	0.25	0.50	0.57
Control Delay	6.5	2.3	29.8	8.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.5	2.3	29.8	8.3
Queue Length 50th (m)	11.6	2.4	15.6	0.0
Queue Length 95th (m)	24.6	11.6	30.3	17.0
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1162	1124	640	758
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	0.22	0.25	0.23	0.38

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	240	55	208	134	265
Future Volume (vph)	0	240	55	208	134	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.89		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1683		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1683		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	261	60	226	146	288
RTOR Reduction (vph)	0	0	86	0	0	240
Lane Group Flow (vph)	0	261	200	0	146	48
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		38.9	38.9		10.4	10.4
Effective Green, g (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1162	1039		295	264
v/s Ratio Prot		c0.14	0.12		c0.08	
v/s Ratio Perm						0.03
v/c Ratio		0.22	0.19		0.49	0.18
Uniform Delay, d1		5.4	5.2		23.9	22.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.4		1.3	0.3
Delay (s)		5.8	5.6		25.2	23.0
Level of Service		A	A		C	C
Approach Delay (s)		5.8	5.6		23.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

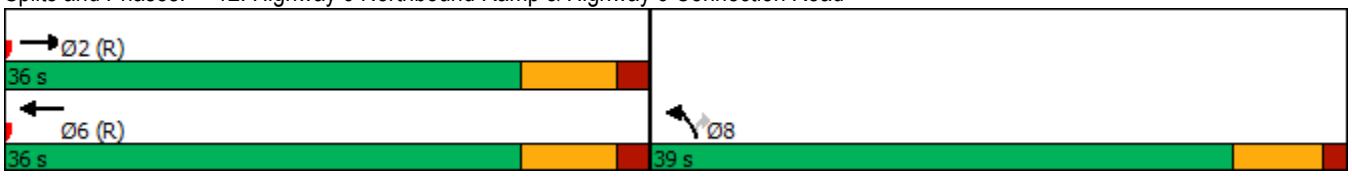
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	0	0	219	27	371
Future Volume (vph)	150	0	0	219	27	371
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						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	0	238	29	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	0	238	29	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.4			52.4	8.9	8.9
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.12			0.18	0.14	0.74
Control Delay	4.8			5.1	28.5	12.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.8			5.1	28.5	12.2
LOS	A			A	C	B
Approach Delay	4.8			5.1	13.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



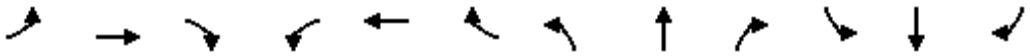
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	163	238	29	403
v/c Ratio	0.12	0.18	0.14	0.74
Control Delay	4.8	5.1	28.5	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.8	5.1	28.5	12.2
Queue Length 50th (m)	5.4	8.3	3.9	0.0
Queue Length 95th (m)	16.8	24.0	9.4	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1315	1315	775	922
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	0.12	0.18	0.04	0.44

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	0	0	219	27	371
Future Volume (vph)	150	0	0	219	27	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	0	238	29	403
RTOR Reduction (vph)	0	0	0	0	0	355
Lane Group Flow (vph)	163	0	0	238	29	48
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.4			52.4	8.9	8.9
Effective Green, g (s)	52.4			52.4	8.9	8.9
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1315			1315	212	189
v/s Ratio Prot	0.09			c0.13	0.02	
v/s Ratio Perm						c0.03
v/c Ratio	0.12			0.18	0.14	0.25
Uniform Delay, d1	3.7			3.9	29.6	30.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.3	0.3	0.7
Delay (s)	3.9			4.2	29.9	30.7
Level of Service	A			A	C	C
Approach Delay (s)	3.9			4.2	30.7	
Approach LOS	A			A	C	

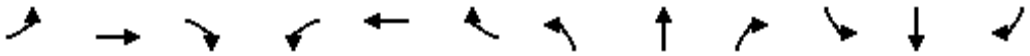
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	26	3	2	10	38	5	460	1	100	409	21
Future Volume (vph)	53	26	3	2	10	38	5	460	1	100	409	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
Frt		0.996			0.898						0.995	
Flt Protected		0.968			0.998			0.999			0.991	
Satd. Flow (prot)	0	1564	0	0	1693	0	0	1835	0	0	1865	0
Flt Permitted		0.968			0.998			0.999			0.991	
Satd. Flow (perm)	0	1564	0	0	1693	0	0	1835	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	62	30	3	2	12	44	6	535	1	116	476	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	58	0	0	542	0	0	616	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												
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	

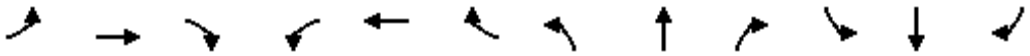
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	26	3	2	10	38	5	460	1	100	409	21
Future Volume (Veh/h)	53	26	3	2	10	38	5	460	1	100	409	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	62	30	3	2	12	44	6	535	1	116	476	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1318	1268	488	1286	1280	536	500			536		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1318	1268	488	1286	1280	536	500			536		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	41	75	99	98	92	92	99			89		
cM capacity (veh/h)	105	120	584	83	148	549	822			1042		

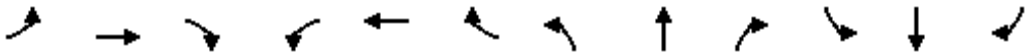
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	95	58	542	616
Volume Left	62	2	6	116
Volume Right	3	44	1	24
cSH	112	312	822	1042
Volume to Capacity	0.85	0.19	0.01	0.11
Queue Length 95th (m)	38.0	5.1	0.2	2.8
Control Delay (s)	118.8	19.1	0.2	2.8
Lane LOS	F	C	A	A
Approach Delay (s)	118.8	19.1	0.2	2.8
Approach LOS	F	C		

Intersection Summary				
Average Delay	10.9			
Intersection Capacity Utilization	74.0%	ICU Level of Service	D	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	7	21	11	82	1	362	48	189	212	8
Future Volume (vph)	26	14	7	21	11	82	1	362	48	189	212	8
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		0.980			0.903			0.984			0.997	
Flt Protected		0.973			0.991						0.977	
Satd. Flow (prot)	0	1704	0	0	1428	0	0	1826	0	0	1847	0
Flt Permitted		0.973			0.991						0.977	
Satd. Flow (perm)	0	1704	0	0	1428	0	0	1826	0	0	1847	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	30	16	8	24	13	93	1	411	55	215	241	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	130	0	0	467	0	0	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)		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
Sign Control		Stop			Stop			Free			Free	

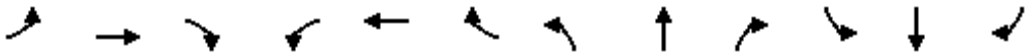
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	14	7	21	11	82	1	362	48	189	212	8
Future Volume (Veh/h)	26	14	7	21	11	82	1	362	48	189	212	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	16	8	24	12	93	1	411	55	215	241	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1215	1144	246	1132	1120	438	250			466		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1215	1144	246	1132	1120	438	250			466		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	71	90	99	80	93	84	100			81		
cM capacity (veh/h)	104	162	758	122	168	582	1327			1106		

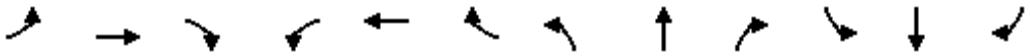
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	129	467	465
Volume Left	30	24	1	215
Volume Right	8	93	55	9
cSH	135	302	1327	1106
Volume to Capacity	0.40	0.43	0.00	0.19
Queue Length 95th (m)	13.0	15.5	0.0	5.5
Control Delay (s)	48.2	25.5	0.0	5.3
Lane LOS	E	D	A	A
Approach Delay (s)	48.2	25.5	0.0	5.3
Approach LOS	E	D		

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	61.0%	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)	1	187	1	4	139	118	0	2	7	45	0	0
Future Volume (vph)	1	187	1	4	139	118	0	2	7	45	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		0.999			0.939			0.895				
Flt Protected					0.999						0.950	
Satd. Flow (prot)	0	1919	0	0	1774	0	0	1719	0	0	1825	0
Flt Permitted					0.999						0.950	
Satd. Flow (perm)	0	1919	0	0	1774	0	0	1719	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	197	1	4	146	124	0	2	7	47	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	199	0	0	274	0	0	9	0	0	47	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
Sign Control		Free			Free			Stop			Stop	

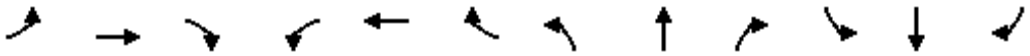
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	187	1	4	139	118	0	2	7	45	0	0
Future Volume (Veh/h)	1	187	1	4	139	118	0	2	7	45	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	197	1	4	146	124	0	2	7	47	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)					250							
pX, platoon unblocked												
vC, conflicting volume	270			198			416	478	198	424	416	208
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	270			198			416	478	198	424	416	208
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	91	100	100
cM capacity (veh/h)	1305			1387			549	488	849	537	528	832

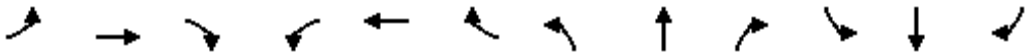
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	199	274	9	47
Volume Left	1	4	0	47
Volume Right	1	124	7	0
cSH	1305	1387	729	537
Volume to Capacity	0.00	0.00	0.01	0.09
Queue Length 95th (m)	0.0	0.1	0.3	2.2
Control Delay (s)	0.0	0.1	10.0	12.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.0	0.1	10.0	12.4
Approach LOS			B	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	278	3	26	116	9	3	67	53	24	21	0
Future Volume (vph)	0	278	3	26	116	9	3	67	53	24	21	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		0.999			0.992			0.942				
Flt Protected					0.991			0.999			0.974	
Satd. Flow (prot)	0	1823	0	0	1805	0	0	1779	0	0	1871	0
Flt Permitted					0.991			0.999			0.974	
Satd. Flow (perm)	0	1823	0	0	1805	0	0	1779	0	0	1871	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	376	4	35	157	12	4	91	72	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	380	0	0	204	0	0	167	0	0	60	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												
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 42.0%		ICU Level of Service A	
Analysis Period (min) 15			



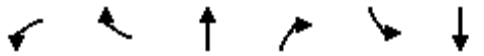
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	278	3	26	116	9	3	67	53	24	21	0
Future Volume (Veh/h)	0	278	3	26	116	9	3	67	53	24	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	376	4	35	157	12	4	91	72	32	28	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	318	263	28	419	227	127	28			163		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	318	263	28	419	227	127	28			163		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	39	100	87	76	99	100			98		
cM capacity (veh/h)	504	621	965	277	648	929	1251			1428		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	380	204	167	60
Volume Left	0	35	4	32
Volume Right	4	12	72	0
cSH	623	535	1251	1428
Volume to Capacity	0.61	0.38	0.00	0.02
Queue Length 95th (m)	31.4	13.5	0.1	0.5
Control Delay (s)	19.4	15.8	0.2	4.1
Lane LOS	C	C	A	A
Approach Delay (s)	19.4	15.8	0.2	4.1
Approach LOS	C	C		

Intersection Summary				
Average Delay	13.4			
Intersection Capacity Utilization	42.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	32	10	66	99	24
Future Volume (vph)	21	32	10	66	99	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.883			
Flt Protected	0.981					0.961
Satd. Flow (prot)	1698	0	1663	0	0	1810
Flt Permitted	0.981					0.961
Satd. Flow (perm)	1698	0	1663	0	0	1810
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	35	11	72	108	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	83	0	0	134
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)	97	97		97	97	
Sign Control	Stop		Free			Free

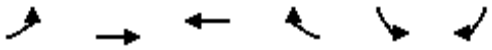
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	32	10	66	99	24
Future Volume (Veh/h)	21	32	10	66	99	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	35	11	72	108	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	289	47			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	289	47			83	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	97			93	
cM capacity (veh/h)	652	1022			1514	

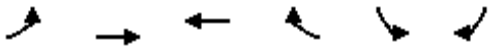
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	58	83	134
Volume Left	23	0	108
Volume Right	35	72	0
cSH	834	1700	1514
Volume to Capacity	0.07	0.05	0.07
Queue Length 95th (m)	1.7	0.0	1.7
Control Delay (s)	9.6	0.0	6.2
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	6.2
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	285	96	0	0	54
Future Volume (vph)	70	285	96	0	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	310	104	0	0	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	386	104	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

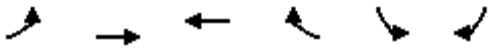
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	285	96	0	0	54
Future Volume (Veh/h)	70	285	96	0	0	54
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)	76	310	104	0	0	59
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	104				566	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	104				566	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 %	95				100	94
cM capacity (veh/h)	1488				461	951

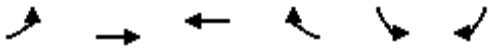
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	386	104	59
Volume Left	76	0	0
Volume Right	0	0	59
cSH	1488	1700	951
Volume to Capacity	0.05	0.06	0.06
Queue Length 95th (m)	1.2	0.0	1.5
Control Delay (s)	1.9	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	1.9	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	212	72	33	0	0	63
Future Volume (vph)	212	72	33	0	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.964				
Satd. Flow (prot)	0	1816	1883	0	1629	0
Flt Permitted		0.964				
Satd. Flow (perm)	0	1816	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		10.5	12.1		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	78	36	0	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	308	36	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

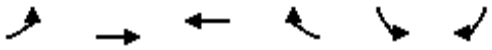
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	72	33	0	0	63
Future Volume (Veh/h)	212	72	33	0	0	63
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)	230	78	36	0	0	68
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	36				574	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	36				574	36
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	93
cM capacity (veh/h)	1575				410	1037

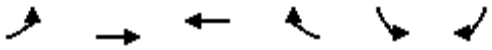
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	308	36	68
Volume Left	230	0	0
Volume Right	0	0	68
cSH	1575	1700	1037
Volume to Capacity	0.15	0.02	0.07
Queue Length 95th (m)	3.9	0.0	1.6
Control Delay (s)	6.0	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	6.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	48	23	0	0	9
Future Volume (vph)	23	48	23	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.984				
Satd. Flow (prot)	0	1853	1883	0	1629	0
Flt Permitted		0.984				
Satd. Flow (perm)	0	1853	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	52	25	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	77	25	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

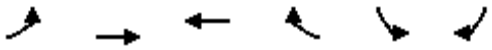
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			



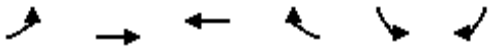
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	48	23	0	0	9
Future Volume (Veh/h)	23	48	23	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	52	25	0	0	10
Pedestrians						
Lane Width (m)						
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	25				127	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				127	25
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1589				854	1051

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	77	25	10
Volume Left	25	0	0
Volume Right	0	0	10
cSH	1589	1700	1051
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.5	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		



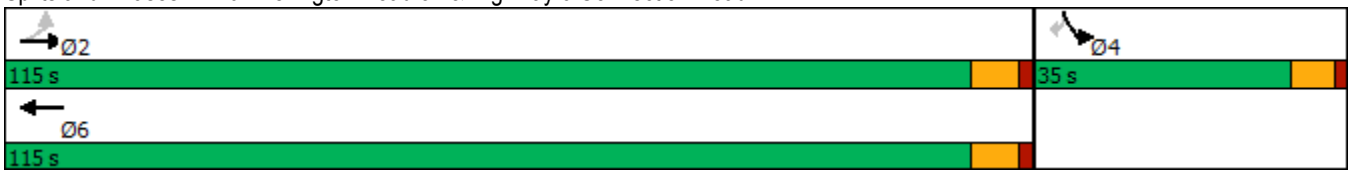
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	406	382	368	90	60	381
Future Volume (vph)	406	382	368	90	60	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.471				0.950	
Satd. Flow (perm)	887	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			414
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	415	400	98	65	414
Shared Lane Traffic (%)						
Lane Group Flow (vph)	441	415	498	0	65	414
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

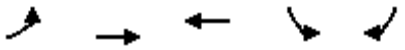


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		11.3	11.3
Actuated g/C Ratio	0.81	0.81	0.81		0.09	0.09
v/c Ratio	0.61	0.27	0.33		0.43	0.81
Control Delay	10.0	3.9	4.1		65.9	17.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	10.0	3.9	4.1		65.9	17.9
LOS	A	A	A		E	B
Approach Delay		7.0	4.1		24.4	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

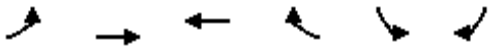
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	441	415	498	65	414
v/c Ratio	0.61	0.27	0.33	0.43	0.81
Control Delay	10.0	3.9	4.1	65.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	3.9	4.1	65.9	17.9
Queue Length 50th (m)	33.0	20.0	24.4	16.5	0.0
Queue Length 95th (m)	87.7	43.4	52.7	31.1	32.5
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	719	1528	1492	383	668
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	0.27	0.33	0.17	0.62

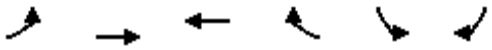
Intersection Summary



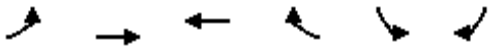
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	406	382	368	90	60	381
Future Volume (vph)	406	382	368	90	60	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	886	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	415	400	98	65	414
RTOR Reduction (vph)	0	0	4	0	0	379
Lane Group Flow (vph)	441	415	494	0	65	35
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		11.3	11.3
Effective Green, g (s)	107.9	107.9	107.9		11.3	11.3
Actuated g/C Ratio	0.81	0.81	0.81		0.09	0.09
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	719	1528	1488		152	136
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.50					0.02
v/c Ratio	0.61	0.27	0.33		0.43	0.26
Uniform Delay, d1	4.7	3.0	3.2		57.7	56.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.4	0.6		1.9	1.0
Delay (s)	8.6	3.5	3.8		59.7	57.9
Level of Service	A	A	A		E	E
Approach Delay (s)		6.1	3.8		58.1	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	132.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



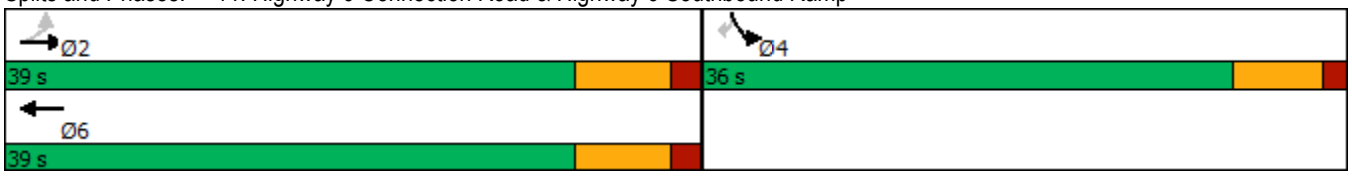
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	18	268	106	0	115	334
Future Volume (vph)	18	268	106	0	115	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.997			0.950	
Satd. Flow (prot)	0	1878	1883	0	1789	1601
Flt Permitted		0.981			0.950	
Satd. Flow (perm)	0	1848	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						363
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	291	115	0	125	363
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	311	115	0	125	363
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

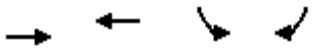


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	39.0	39.0	39.0		36.0	36.0
Total Split (%)	52.0%	52.0%	52.0%		48.0%	48.0%
Maximum Green (s)	31.8	31.8	31.8		29.5	29.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.4	9.4
Actuated g/C Ratio		0.58	0.58		0.17	0.17
v/c Ratio		0.29	0.11		0.41	0.63
Control Delay		7.3	6.2		24.3	8.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		7.3	6.2		24.3	8.3
LOS		A	A		C	A
Approach Delay		7.3	6.2		12.4	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 55			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

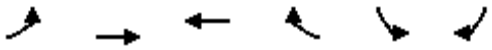
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	311	115	125	363
v/c Ratio	0.29	0.11	0.41	0.63
Control Delay	7.3	6.2	24.3	8.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.3	6.2	24.3	8.3
Queue Length 50th (m)	13.3	4.3	11.2	0.0
Queue Length 95th (m)	30.0	11.8	23.2	17.3
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1070	1091	961	1028
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	0.29	0.11	0.13	0.35

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	18	268	106	0	115	334
Future Volume (vph)	18	268	106	0	115	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1877	1883		1789	1601
Flt Permitted		0.98	1.00		0.95	1.00
Satd. Flow (perm)		1847	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	291	115	0	125	363
RTOR Reduction (vph)	0	0	0	0	0	301
Lane Group Flow (vph)	0	311	115	0	125	62
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		31.9	31.9		9.4	9.4
Effective Green, g (s)		31.9	31.9		9.4	9.4
Actuated g/C Ratio		0.58	0.58		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1071	1092		305	273
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.17				0.04
v/c Ratio		0.29	0.11		0.41	0.23
Uniform Delay, d1		5.8	5.2		20.3	19.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.2		0.9	0.4
Delay (s)		6.5	5.4		21.2	20.1
Level of Service		A	A		C	C
Approach Delay (s)		6.5	5.4		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

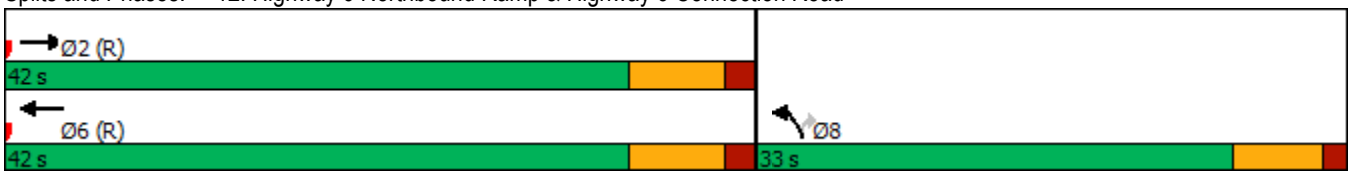
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	407	62	438
Future Volume (vph)	114	18	0	407	62	438
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	0.981					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1848	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1848	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14					476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	442	67	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	442	67	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
v/c Ratio	0.11			0.34	0.28	0.76
Control Delay	5.0			6.8	30.0	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.8	30.0	11.5
LOS	A			A	C	B
Approach Delay	5.0			6.8	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



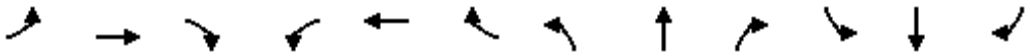
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	144	442	67	476
v/c Ratio	0.11	0.34	0.28	0.76
Control Delay	5.0	6.8	30.0	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.8	30.0	11.5
Queue Length 50th (m)	4.7	19.5	8.9	0.0
Queue Length 95th (m)	15.5	51.4	16.6	21.6
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1267	1286	632	873
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	0.11	0.34	0.11	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	407	62	438
Future Volume (vph)	114	18	0	407	62	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1848			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1848			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	442	67	476
RTOR Reduction (vph)	4	0	0	0	0	413
Lane Group Flow (vph)	140	0	0	442	67	63
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.3			51.3	10.0	10.0
Effective Green, g (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1264			1287	238	213
v/s Ratio Prot	0.08			c0.23	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.11			0.34	0.28	0.30
Uniform Delay, d1	4.1			4.9	29.3	29.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.7	0.8
Delay (s)	4.2			5.6	29.9	30.1
Level of Service	A			A	C	C
Approach Delay (s)	4.2			5.6	30.1	
Approach LOS	A			A	C	

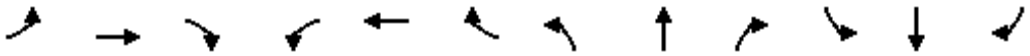
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	29	3	1	56	123	5	447	1	46	513	87
Future Volume (vph)	19	29	3	1	56	123	5	447	1	46	513	87
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		0.992			0.908						0.982	
Flt Protected		0.982						0.999			0.996	
Satd. Flow (prot)	0	1438	0	0	1535	0	0	1882	0	0	1808	0
Flt Permitted		0.982						0.999			0.996	
Satd. Flow (perm)	0	1438	0	0	1535	0	0	1882	0	0	1808	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	20	31	3	1	59	129	5	471	1	48	540	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	189	0	0	477	0	0	680	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												
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	

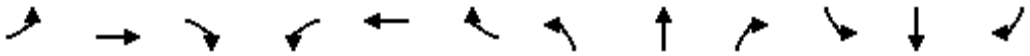
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 85.4%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	29	3	1	56	123	5	447	1	46	513	87
Future Volume (Veh/h)	19	29	3	1	56	123	5	447	1	46	513	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	31	3	1	59	129	5	471	1	48	540	92
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	1322	1164	586	1182	1210	472	632			472		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1322	1164	586	1182	1210	472	632			472		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	72	79	99	99	66	77	99			95		
cM capacity (veh/h)	72	150	514	135	174	557	960			946		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	189	477	680
Volume Left	20	1	5	48
Volume Right	3	129	1	92
cSH	110	327	960	946
Volume to Capacity	0.49	0.58	0.01	0.05
Queue Length 95th (m)	16.7	26.1	0.1	1.2
Control Delay (s)	65.9	30.1	0.2	1.3
Lane LOS	F	D	A	A
Approach Delay (s)	65.9	30.1	0.2	1.3
Approach LOS	F	D		

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	85.4%	ICU Level of Service	E	
Analysis Period (min)	15			



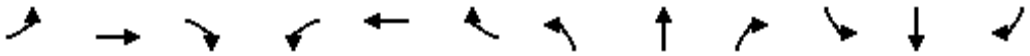
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	11	1	34	23	222	8	217	17	131	370	19
Future Volume (vph)	14	11	1	34	23	222	8	217	17	131	370	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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		0.995			0.893			0.990			0.995	
Flt Protected		0.974			0.994			0.998			0.988	
Satd. Flow (prot)	0	1862	0	0	1705	0	0	1881	0	0	1848	0
Flt Permitted		0.974			0.994			0.998			0.988	
Satd. Flow (perm)	0	1862	0	0	1705	0	0	1881	0	0	1848	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	14	11	1	35	24	229	8	224	18	135	381	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	288	0	0	250	0	0	536	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												
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 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	11	1	34	23	222	8	217	17	131	370	19
Future Volume (Veh/h)	14	11	1	34	23	222	8	217	17	131	370	19
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)	14	11	1	35	24	229	8	224	18	135	381	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1151	919	391	916	920	233	401			242		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1151	919	391	916	920	233	401			242		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	95	100	84	90	72	99			90		
cM capacity (veh/h)	108	244	662	226	244	811	1169			1336		

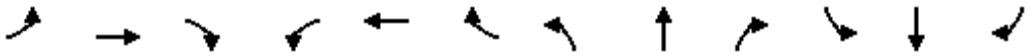
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	288	250	536
Volume Left	14	35	8	135
Volume Right	1	229	18	20
cSH	147	537	1169	1336
Volume to Capacity	0.18	0.54	0.01	0.10
Queue Length 95th (m)	4.7	23.9	0.2	2.6
Control Delay (s)	34.6	19.2	0.3	2.8
Lane LOS	D	C	A	A
Approach Delay (s)	34.6	19.2	0.3	2.8
Approach LOS	D	C		

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	139	0	7	270	74	1	0	8	141	2	1
Future Volume (vph)	1	139	0	7	270	74	1	0	8	141	2	1
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					0.972			0.878			0.999	
Flt Protected					0.999			0.995			0.953	
Satd. Flow (prot)	0	1780	0	0	1823	0	0	1678	0	0	1829	0
Flt Permitted					0.999			0.995			0.953	
Satd. Flow (perm)	0	1780	0	0	1823	0	0	1678	0	0	1829	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	162	0	8	314	86	1	0	9	164	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	408	0	0	10	0	0	167	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
Sign Control		Free			Free			Stop			Stop	

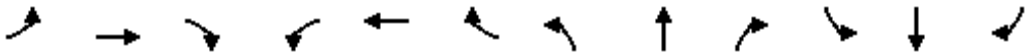
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	139	0	7	270	74	1	0	8	141	2	1
Future Volume (Veh/h)	1	139	0	7	270	74	1	0	8	141	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	162	0	8	314	86	1	0	9	164	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	400			162			539	580	162	546	537	357
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			162			539	580	162	546	537	357
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	63	100	100
cM capacity (veh/h)	1170			1429			452	426	888	445	450	692

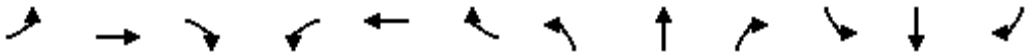
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	163	408	10	167
Volume Left	1	8	1	164
Volume Right	0	86	9	1
cSH	1170	1429	810	446
Volume to Capacity	0.00	0.01	0.01	0.37
Queue Length 95th (m)	0.0	0.1	0.3	13.0
Control Delay (s)	0.1	0.2	9.5	17.8
Lane LOS	A	A	A	C
Approach Delay (s)	0.1	0.2	9.5	17.8
Approach LOS			A	C

Intersection Summary				
Average Delay	4.2			
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)	0	169	3	70	285	59	2	58	16	28	80	0
Future Volume (vph)	0	169	3	70	285	59	2	58	16	28	80	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		0.998			0.981			0.971				
Flt Protected					0.992			0.999			0.987	
Satd. Flow (prot)	0	1818	0	0	1870	0	0	1864	0	0	1896	0
Flt Permitted					0.992			0.999			0.987	
Satd. Flow (perm)	0	1818	0	0	1870	0	0	1864	0	0	1896	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	186	3	77	313	65	2	64	18	31	88	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	189	0	0	455	0	0	84	0	0	119	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												
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 54.0%		ICU Level of Service A	
Analysis Period (min) 15			



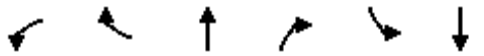
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	169	3	70	285	59	2	58	16	28	80	0
Future Volume (Veh/h)	0	169	3	70	285	59	2	58	16	28	80	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	186	3	77	313	65	2	64	18	31	88	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	448	236	88	323	227	73	88			82		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	448	236	88	323	227	73	88			82		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	71	100	84	53	93	100			98		
cM capacity (veh/h)	303	645	891	483	661	995	1520			1528		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	189	455	84	119
Volume Left	0	77	2	31
Volume Right	3	65	18	0
cSH	648	652	1520	1528
Volume to Capacity	0.29	0.70	0.00	0.02
Queue Length 95th (m)	9.2	42.9	0.0	0.5
Control Delay (s)	12.8	22.3	0.2	2.0
Lane LOS	B	C	A	A
Approach Delay (s)	12.8	22.3	0.2	2.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	15.1			
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	78	117	60	57	43	31
Future Volume (vph)	78	117	60	57	43	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	0.919		0.934			
Flt Protected	0.980					0.972
Satd. Flow (prot)	1696	0	1759	0	0	1831
Flt Permitted	0.980					0.972
Satd. Flow (perm)	1696	0	1759	0	0	1831
Link Speed (k/h)	48		48			60
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	127	65	62	47	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	127	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

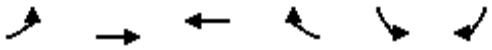
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	78	117	60	57	43	31
Future Volume (Veh/h)	78	117	60	57	43	31
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)	85	127	65	62	47	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	224	96			127	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	224	96			127	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	87			97	
cM capacity (veh/h)	740	960			1459	

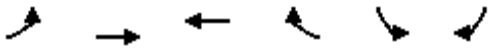
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	212	127	81
Volume Left	85	0	47
Volume Right	127	62	0
cSH	858	1700	1459
Volume to Capacity	0.25	0.07	0.03
Queue Length 95th (m)	7.4	0.0	0.8
Control Delay (s)	10.6	0.0	4.5
Lane LOS	B		A
Approach Delay (s)	10.6	0.0	4.5
Approach LOS	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	171	358	0	0	56
Future Volume (vph)	43	171	358	0	0	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	186	389	0	0	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	233	389	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

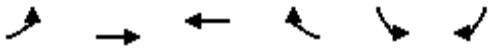
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	171	358	0	0	56
Future Volume (Veh/h)	43	171	358	0	0	56
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)	47	186	389	0	0	61
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	389				669	389
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389				669	389
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				100	91
cM capacity (veh/h)	1170				406	659

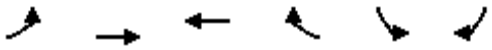
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	233	389	61
Volume Left	47	0	0
Volume Right	0	0	61
cSH	1170	1700	659
Volume to Capacity	0.04	0.23	0.09
Queue Length 95th (m)	1.0	0.0	2.3
Control Delay (s)	2.0	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	2.0	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	41	78	0	0	280
Future Volume (vph)	129	41	78	0	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.964				
Satd. Flow (prot)	0	1816	1883	0	1629	0
Flt Permitted		0.964				
Satd. Flow (perm)	0	1816	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		10.5	12.1		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	45	85	0	0	304
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	185	85	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

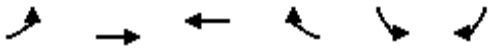
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	129	41	78	0	0	280
Future Volume (Veh/h)	129	41	78	0	0	280
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)	140	45	85	0	0	304
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	85				410	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85				410	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	69
cM capacity (veh/h)	1512				542	974

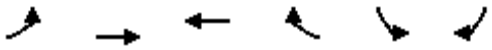
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	185	85	304
Volume Left	140	0	0
Volume Right	0	0	304
cSH	1512	1700	974
Volume to Capacity	0.09	0.05	0.31
Queue Length 95th (m)	2.3	0.0	10.2
Control Delay (s)	5.9	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	5.9	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	27	50	0	0	28
Future Volume (vph)	14	27	50	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.983				
Satd. Flow (prot)	0	1851	1883	0	1629	0
Flt Permitted		0.983				
Satd. Flow (perm)	0	1851	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	29	54	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	44	54	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

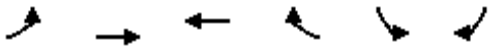
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			



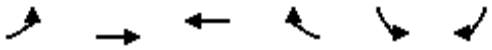
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	27	50	0	0	28
Future Volume (Veh/h)	14	27	50	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	29	54	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	54				113	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54				113	54
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				100	97
cM capacity (veh/h)	1551				875	1013

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	44	54	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1551	1700	1013
Volume to Capacity	0.01	0.03	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.6	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		2.9	
Intersection Capacity Utilization		18.9%	ICU Level of Service A
Analysis Period (min)		15	



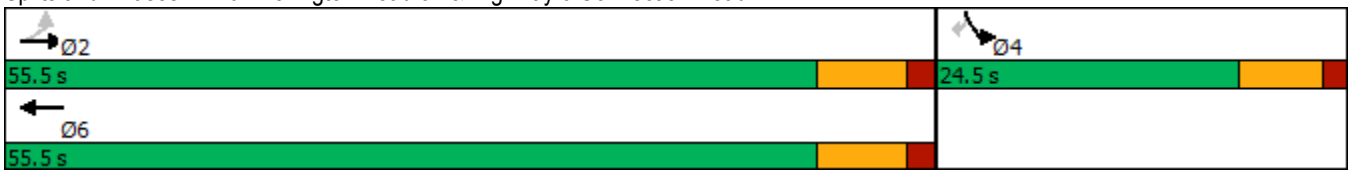
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	430	238	353	95	60	332
Future Volume (vph)	430	238	353	95	60	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.474				0.950	
Satd. Flow (perm)	893	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			361
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	259	384	103	65	361
Shared Lane Traffic (%)						
Lane Group Flow (vph)	467	259	487	0	65	361
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

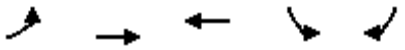


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.8	8.8
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
v/c Ratio	0.77	0.20	0.39		0.29	0.70
Control Delay	19.9	5.1	6.1		31.2	11.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	19.9	5.1	6.1		31.2	11.6
LOS	B	A	A		C	B
Approach Delay		14.6	6.1		14.6	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road

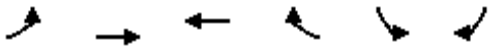




Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	467	259	487	65	361
v/c Ratio	0.77	0.20	0.39	0.29	0.70
Control Delay	19.9	5.1	6.1	31.2	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	5.1	6.1	31.2	11.6
Queue Length 50th (m)	32.3	9.9	20.1	8.0	0.0
Queue Length 95th (m)	#111.2	24.2	47.3	18.0	20.6
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	609	1285	1258	455	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	0.77	0.20	0.39	0.14	0.53

Intersection Summary

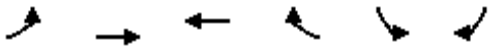
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



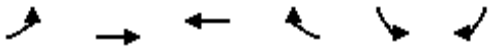
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	430	238	353	95	60	332
Future Volume (vph)	430	238	353	95	60	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	894	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	259	384	103	65	361
RTOR Reduction (vph)	0	0	10	0	0	316
Lane Group Flow (vph)	467	259	477	0	65	45
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.8	8.8
Effective Green, g (s)	48.4	48.4	48.4		8.8	8.8
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	610	1285	1249		222	198
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.52					0.03
v/c Ratio	0.77	0.20	0.38		0.29	0.23
Uniform Delay, d1	7.5	4.1	4.8		28.2	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.9	0.4	0.9		0.7	0.6
Delay (s)	16.4	4.5	5.7		29.0	28.6
Level of Service	B	A	A		C	C
Approach Delay (s)		12.1	5.7		28.6	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



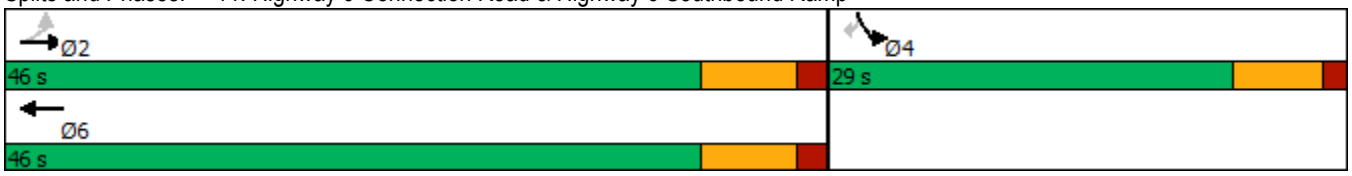
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	324	98	208	134	293
Future Volume (vph)	56	324	98	208	134	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.908			0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	1870	1710	0	1789	1601
Flt Permitted		0.905			0.950	
Satd. Flow (perm)	0	1705	1710	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			210			318
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	352	107	226	146	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	413	333	0	146	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

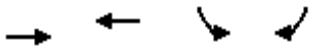


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	46.0	46.0	46.0		29.0	29.0
Total Split (%)	61.3%	61.3%	61.3%		38.7%	38.7%
Maximum Green (s)	38.8	38.8	38.8		22.5	22.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.39	0.29		0.50	0.60
Control Delay		8.0	3.2		29.8	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.0	3.2		29.8	8.5
LOS		A	A		C	A
Approach Delay		8.0	3.2		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

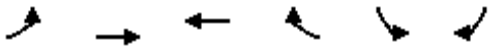
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	413	333	146	318
v/c Ratio	0.39	0.29	0.50	0.60
Control Delay	8.0	3.2	29.8	8.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	3.2	29.8	8.5
Queue Length 50th (m)	20.7	5.1	15.6	0.0
Queue Length 95th (m)	42.4	16.3	30.3	17.7
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1052	1136	640	777
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	0.39	0.29	0.23	0.41

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↱
Traffic Volume (vph)	56	324	98	208	134	293
Future Volume (vph)	56	324	98	208	134	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.91		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1870	1711		1789	1601
Flt Permitted		0.90	1.00		0.95	1.00
Satd. Flow (perm)		1704	1711		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	352	107	226	146	318
RTOR Reduction (vph)	0	0	80	0	0	266
Lane Group Flow (vph)	0	413	253	0	146	52
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.9	38.9		10.4	10.4
Effective Green, g (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1052	1056		295	264
v/s Ratio Prot			0.15		c0.08	
v/s Ratio Perm		c0.24				0.03
v/c Ratio		0.39	0.24		0.49	0.20
Uniform Delay, d1		6.1	5.4		23.9	22.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.1	0.5		1.3	0.4
Delay (s)		7.2	5.9		25.2	23.1
Level of Service		A	A		C	C
Approach Delay (s)		7.2	5.9		23.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

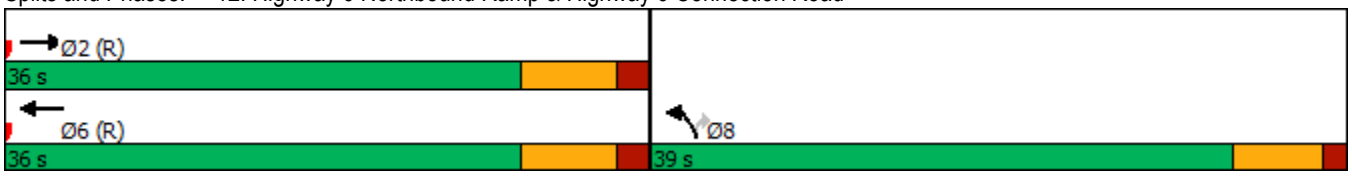
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	55	371
Future Volume (vph)	178	56	0	233	55	371
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	0.968					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1823	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1823	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	60	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	0	0	253	60	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.0			52.0	9.3	9.3
Actuated g/C Ratio	0.69			0.69	0.12	0.12
v/c Ratio	0.20			0.19	0.27	0.73
Control Delay	4.8			5.3	30.9	11.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.8			5.3	30.9	11.7
LOS	A			A	C	B
Approach Delay	4.8			5.3	14.2	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



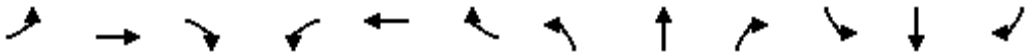
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	254	253	60	403
v/c Ratio	0.20	0.19	0.27	0.73
Control Delay	4.8	5.3	30.9	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.8	5.3	30.9	11.7
Queue Length 50th (m)	8.6	9.6	8.0	0.0
Queue Length 95th (m)	23.7	25.4	15.9	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1270	1304	775	922
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	0.20	0.19	0.08	0.44

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	55	371
Future Volume (vph)	178	56	0	233	55	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	60	403
RTOR Reduction (vph)	8	0	0	0	0	353
Lane Group Flow (vph)	246	0	0	253	60	50
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.0			52.0	9.3	9.3
Effective Green, g (s)	52.0			52.0	9.3	9.3
Actuated g/C Ratio	0.69			0.69	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1263			1305	221	198
v/s Ratio Prot	c0.14			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.20			0.19	0.27	0.25
Uniform Delay, d1	4.1			4.1	29.8	29.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.7	0.7
Delay (s)	4.4			4.4	30.4	30.4
Level of Service	A			A	C	C
Approach Delay (s)	4.4			4.4	30.4	
Approach LOS	A			A	C	

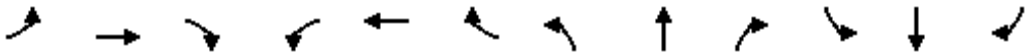
Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	2	3	2	1	6	6	423	1	1	248	23
Future Volume (vph)	59	2	3	2	1	6	6	423	1	1	248	23
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		0.995			0.905						0.988	
Flt Protected		0.955			0.990			0.999				
Satd. Flow (prot)	0	1737	0	0	1565	0	0	1832	0	0	1864	0
Flt Permitted		0.955			0.990			0.999				
Satd. Flow (perm)	0	1737	0	0	1565	0	0	1832	0	0	1864	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	69	2	3	2	1	7	7	492	1	1	288	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	10	0	0	500	0	0	316	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												
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	

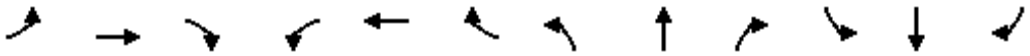
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	2	3	2	1	6	6	423	1	1	248	23
Future Volume (Veh/h)	59	2	3	2	1	6	6	423	1	1	248	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	69	2	3	2	1	7	7	492	1	1	288	27
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	818	810	302	814	824	492	315			493		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818	810	302	814	824	492	315			493		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	76	99	100	99	100	99	99			100		
cM capacity (veh/h)	287	263	743	243	308	580	979			1081		

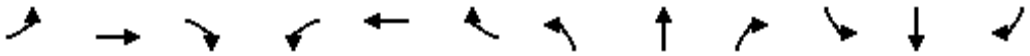
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	10	500	316
Volume Left	69	2	7	1
Volume Right	3	7	1	27
cSH	293	425	979	1081
Volume to Capacity	0.25	0.02	0.01	0.00
Queue Length 95th (m)	7.4	0.5	0.2	0.0
Control Delay (s)	21.4	13.7	0.2	0.0
Lane LOS	C	B	A	A
Approach Delay (s)	21.4	13.7	0.2	0.0
Approach LOS	C	B		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	43.5%	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)	29	15	7	3	13	6	1	399	1	5	234	9
Future Volume (vph)	29	15	7	3	13	6	1	399	1	5	234	9
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		0.981			0.962						0.995	
Flt Protected		0.972			0.994						0.999	
Satd. Flow (prot)	0	1705	0	0	1677	0	0	1848	0	0	1865	0
Flt Permitted		0.972			0.994						0.999	
Satd. Flow (perm)	0	1705	0	0	1677	0	0	1848	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	33	17	8	3	15	7	1	453	1	6	266	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	25	0	0	455	0	0	282	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												
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	

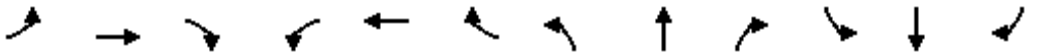
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	15	7	3	13	6	1	399	1	5	234	9
Future Volume (Veh/h)	29	15	7	3	13	6	1	399	1	5	234	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	33	17	8	3	15	7	1	453	1	6	266	10
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	753	739	271	755	744	454	276			454		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	753	739	271	755	744	454	276			454		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	89	95	99	99	96	99	100			99		
cM capacity (veh/h)	302	345	733	274	343	571	1299			1117		

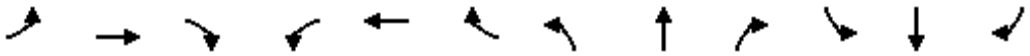
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	25	455	282
Volume Left	33	3	1	6
Volume Right	8	7	1	10
cSH	342	374	1299	1117
Volume to Capacity	0.17	0.07	0.00	0.01
Queue Length 95th (m)	4.6	1.6	0.0	0.1
Control Delay (s)	17.7	15.3	0.0	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.7	15.3	0.0	0.2
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	207	1	5	154	0	0	2	7	0	0	0
Future Volume (vph)	1	207	1	5	154	0	0	2	7	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		0.999						0.895				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	218	1	5	162	0	0	2	7	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	0	0	167	0	0	9	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)		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
Sign Control		Free			Free			Stop			Stop	

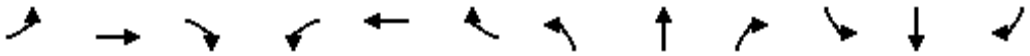
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	207	1	5	154	0	0	2	7	0	0	0
Future Volume (Veh/h)	1	207	1	5	154	0	0	2	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	218	1	5	162	0	0	2	7	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	162			219			392	392	218	400	393	162
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			219			392	392	218	400	393	162
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1429			1362			569	544	826	555	544	883

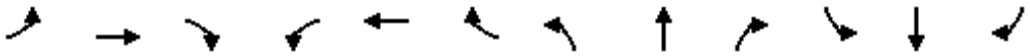
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	220	167	9	0
Volume Left	1	5	0	0
Volume Right	1	0	7	0
cSH	1429	1362	741	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.3	0.0
Control Delay (s)	0.0	0.3	9.9	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.3	9.9	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	21.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	51	3	2	23	0	3	1	1	1	0	0
Future Volume (vph)	0	51	3	2	23	0	3	1	1	1	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		0.993						0.977				
Flt Protected					0.996			0.968			0.950	
Satd. Flow (prot)	0	1791	0	0	1814	0	0	1256	0	0	1825	0
Flt Permitted					0.996			0.968			0.950	
Satd. Flow (perm)	0	1791	0	0	1814	0	0	1256	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	69	4	3	31	0	4	1	1	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	34	0	0	6	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		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
Sign Control		Stop			Stop			Free			Free	

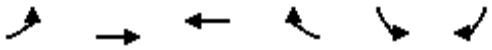
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			



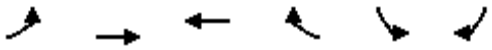
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	51	3	2	23	0	3	1	1	1	0	0
Future Volume (Veh/h)	0	51	3	2	23	0	3	1	1	1	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	69	4	3	31	0	4	1	1	1	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	27	12	0	50	12	2	0			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27	12	0	50	12	2	0			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	92	100	100	96	100	100			100		
cM capacity (veh/h)	959	873	1001	891	872	1089	1284			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	73	34	6	1
Volume Left	0	3	4	1
Volume Right	4	0	1	0
cSH	880	874	1284	1634
Volume to Capacity	0.08	0.04	0.00	0.00
Queue Length 95th (m)	2.1	0.9	0.1	0.0
Control Delay (s)	9.5	9.3	5.2	7.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.3	5.2	7.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



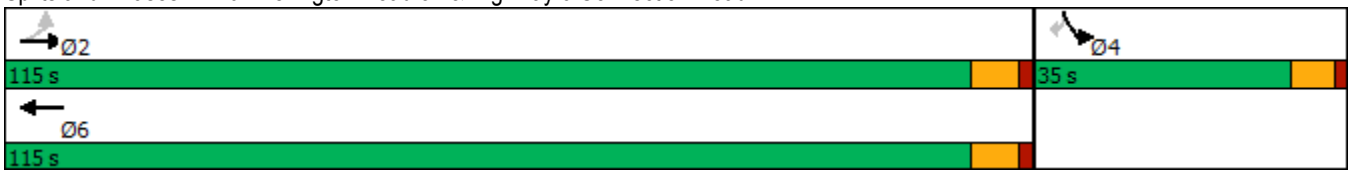
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.472				0.950	
Satd. Flow (perm)	889	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			286
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	415	498	0	65	286
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

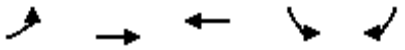


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.54	0.27	0.33		0.46	0.73
Control Delay	7.7	3.6	3.8		68.0	18.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	7.7	3.6	3.8		68.0	18.0
LOS	A	A	A		E	B
Approach Delay		5.6	3.8		27.2	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

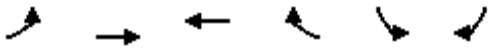
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	392	415	498	65	286
v/c Ratio	0.54	0.27	0.33	0.46	0.73
Control Delay	7.7	3.6	3.8	68.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	3.6	3.8	68.0	18.0
Queue Length 50th (m)	26.4	20.0	24.4	16.5	0.0
Queue Length 95th (m)	58.5	37.1	45.2	31.4	27.0
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	725	1537	1500	386	569
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.27	0.33	0.17	0.50

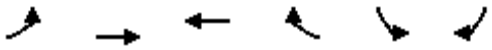
Intersection Summary



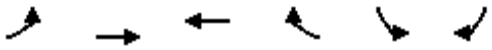
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	889	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
RTOR Reduction (vph)	0	0	4	0	0	263
Lane Group Flow (vph)	392	415	494	0	65	23
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		10.5	10.5
Effective Green, g (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	726	1538	1497		142	127
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.44					0.01
v/c Ratio	0.54	0.27	0.33		0.46	0.18
Uniform Delay, d1	4.0	2.8	3.0		58.1	56.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.4	0.6		2.3	0.7
Delay (s)	6.8	3.3	3.6		60.4	57.5
Level of Service	A	A	A		E	E
Approach Delay (s)		5.0	3.6		58.0	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	132.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



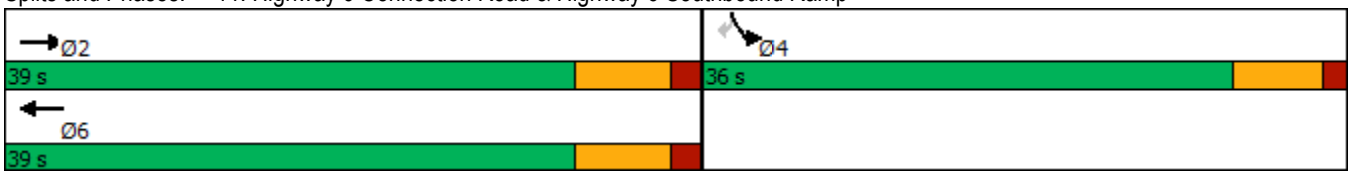
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	241	36	0	115	287
Future Volume (vph)	0	241	36	0	115	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1883	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						312
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	262	39	0	125	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	262	39	0	125	312
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

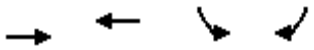


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		39.0	39.0		36.0	36.0
Total Split (%)		52.0%	52.0%		48.0%	48.0%
Maximum Green (s)		31.8	31.8		29.5	29.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.1	9.1
Actuated g/C Ratio		0.58	0.58		0.17	0.17
v/c Ratio		0.24	0.04		0.42	0.59
Control Delay		6.7	5.6		24.8	8.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.7	5.6		24.8	8.2
LOS		A	A		C	A
Approach Delay		6.7	5.6		13.0	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 54.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

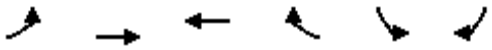
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	262	39	125	312
v/c Ratio	0.24	0.04	0.42	0.59
Control Delay	6.7	5.6	24.8	8.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.7	5.6	24.8	8.2
Queue Length 50th (m)	10.8	1.4	11.2	0.0
Queue Length 95th (m)	23.2	4.9	23.5	16.4
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1097	1097	967	1008
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	0.24	0.04	0.13	0.31

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	241	36	0	115	287
Future Volume (vph)	0	241	36	0	115	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1883		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	262	39	0	125	312
RTOR Reduction (vph)	0	0	0	0	0	260
Lane Group Flow (vph)	0	262	39	0	125	52
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		31.8	31.8		9.1	9.1
Effective Green, g (s)		31.8	31.8		9.1	9.1
Actuated g/C Ratio		0.58	0.58		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1096	1096		298	266
v/s Ratio Prot		c0.14	0.02		c0.07	
v/s Ratio Perm						0.03
v/c Ratio		0.24	0.04		0.42	0.20
Uniform Delay, d1		5.5	4.9		20.4	19.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5	0.1		1.0	0.4
Delay (s)		6.0	4.9		21.3	20.0
Level of Service		A	A		C	B
Approach Delay (s)		6.0	4.9		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

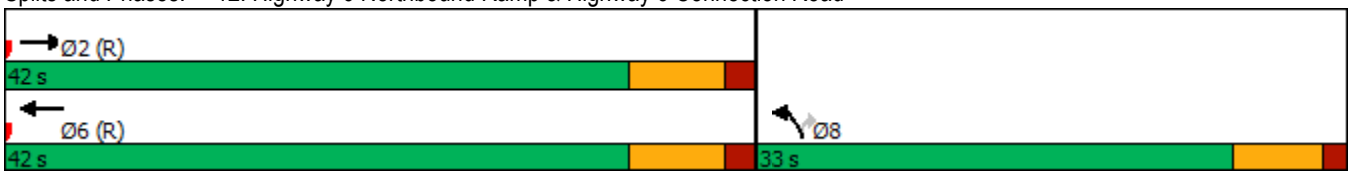
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	105	0	0	384	15	438
Future Volume (vph)	105	0	0	384	15	438
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						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	0	0	417	16	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	0	417	16	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.1			52.1	9.2	9.2
Actuated g/C Ratio	0.69			0.69	0.12	0.12
v/c Ratio	0.09			0.32	0.07	0.78
Control Delay	5.0			6.2	26.3	12.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.2	26.3	12.4
LOS	A			A	C	B
Approach Delay	5.0			6.2	12.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



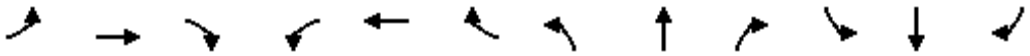
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	114	417	16	476
v/c Ratio	0.09	0.32	0.07	0.78
Control Delay	5.0	6.2	26.3	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.2	26.3	12.4
Queue Length 50th (m)	3.5	15.6	2.2	0.0
Queue Length 95th (m)	13.1	46.4	6.2	22.0
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1308	1308	632	873
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	0.09	0.32	0.03	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	105	0	0	384	15	438
Future Volume (vph)	105	0	0	384	15	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	0	0	417	16	476
RTOR Reduction (vph)	0	0	0	0	0	418
Lane Group Flow (vph)	114	0	0	417	16	58
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.1			52.1	9.2	9.2
Effective Green, g (s)	52.1			52.1	9.2	9.2
Actuated g/C Ratio	0.69			0.69	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1308			1308	219	196
v/s Ratio Prot	0.06			c0.22	0.01	
v/s Ratio Perm						c0.04
v/c Ratio	0.09			0.32	0.07	0.30
Uniform Delay, d1	3.7			4.5	29.1	30.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.6	0.1	0.9
Delay (s)	3.9			5.1	29.3	30.8
Level of Service	A			A	C	C
Approach Delay (s)	3.9			5.1	30.8	
Approach LOS	A			A	C	

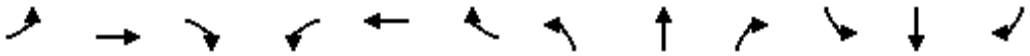
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	1	3	1	0	6	6	252	1	3	423	96
Future Volume (vph)	21	1	3	1	0	6	6	252	1	3	423	96
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		0.984			0.884						0.975	
Flt Protected		0.959			0.993			0.999				
Satd. Flow (prot)	0	1721	0	0	1440	0	0	1883	0	0	1840	0
Flt Permitted		0.959			0.993			0.999				
Satd. Flow (perm)	0	1721	0	0	1440	0	0	1883	0	0	1840	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	22	1	3	1	0	6	6	265	1	3	445	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	7	0	0	272	0	0	549	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												
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	

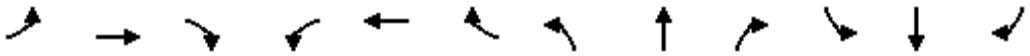
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1	3	1	0	6	6	252	1	3	423	96
Future Volume (Veh/h)	21	1	3	1	0	6	6	252	1	3	423	96
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	22	1	3	1	0	6	6	265	1	3	445	101
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	785	780	496	782	830	266	546			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	785	780	496	782	830	266	546			266		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	93	100	99	100	100	99	99			100		
cM capacity (veh/h)	303	275	578	309	305	732	1033			1138		

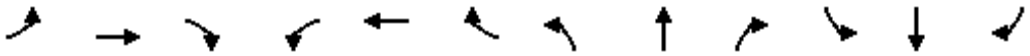
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	7	272	549
Volume Left	22	1	6	3
Volume Right	3	6	1	101
cSH	320	612	1033	1138
Volume to Capacity	0.08	0.01	0.01	0.00
Queue Length 95th (m)	2.0	0.3	0.1	0.1
Control Delay (s)	17.3	10.9	0.2	0.1
Lane LOS	C	B	A	A
Approach Delay (s)	17.3	10.9	0.2	0.1
Approach LOS	C	B		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	42.0%	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)	15	13	1	6	26	3	9	240	3	2	409	21
Future Volume (vph)	15	13	1	6	26	3	9	240	3	2	409	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
Frt		0.995			0.989			0.998			0.993	
Flt Protected		0.975			0.992			0.998				
Satd. Flow (prot)	0	1864	0	0	1885	0	0	1895	0	0	1853	0
Flt Permitted		0.975			0.992			0.998				
Satd. Flow (perm)	0	1864	0	0	1885	0	0	1895	0	0	1853	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	15	13	1	6	27	3	9	247	3	2	422	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	36	0	0	259	0	0	446	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												
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	

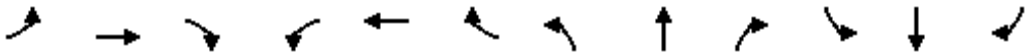
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	13	1	6	26	3	9	240	3	2	409	21
Future Volume (Veh/h)	15	13	1	6	26	3	9	240	3	2	409	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)	15	13	1	6	27	3	9	247	3	2	422	22
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	720	705	433	711	714	248	444			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	720	705	433	711	714	248	444			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	96	100	98	92	100	99			100		
cM capacity (veh/h)	322	360	627	338	356	795	1127			1327		

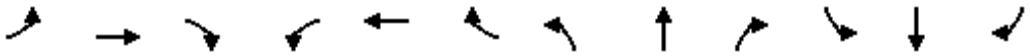
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	36	259	446
Volume Left	15	6	9	2
Volume Right	1	3	3	22
cSH	344	369	1127	1327
Volume to Capacity	0.08	0.10	0.01	0.00
Queue Length 95th (m)	2.1	2.4	0.2	0.0
Control Delay (s)	16.4	15.8	0.4	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	16.4	15.8	0.4	0.1
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	34.1%	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)	1	154	0	7	298	2	1	0	9	1	2	1
Future Volume (vph)	1	154	0	7	298	2	1	0	9	1	2	1
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					0.999			0.877			0.966	
Flt Protected					0.999			0.995			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1676	0	0	1834	0
Flt Permitted					0.999			0.995			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1676	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	179	0	8	347	2	1	0	10	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	357	0	0	11	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

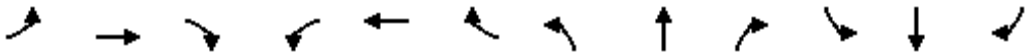
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	154	0	7	298	2	1	0	9	1	2	1
Future Volume (Veh/h)	1	154	0	7	298	2	1	0	9	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	179	0	8	347	2	1	0	10	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	349			179			547	546	179	555	545	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	349			179			547	546	179	555	545	348
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1221			1409			447	445	869	438	446	700

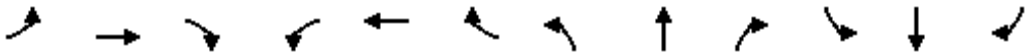
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	357	11	4
Volume Left	1	8	1	1
Volume Right	0	2	10	1
cSH	1221	1409	800	488
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.3	0.2
Control Delay (s)	0.1	0.2	9.6	12.4
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.6	12.4
Approach LOS			A	B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	30.5%	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	27	3	9	42	3	2	1	2	0	2	0
Future Volume (vph)	0	27	3	9	42	3	2	1	2	0	2	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		0.988			0.993			0.946				
Flt Protected					0.992			0.980				
Satd. Flow (prot)	0	1765	0	0	1892	0	0	1781	0	0	1921	0
Flt Permitted					0.992			0.980				
Satd. Flow (perm)	0	1765	0	0	1892	0	0	1781	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	30	3	10	46	3	2	1	2	0	2	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	59	0	0	5	0	0	2	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												
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	

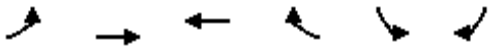
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.6%		ICU Level of Service A	
Analysis Period (min) 15			



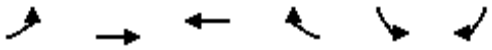
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	27	3	9	42	3	2	1	2	0	2	0
Future Volume (Veh/h)	0	27	3	9	42	3	2	1	2	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	30	3	10	46	3	2	1	2	0	2	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	34	9	2	26	8	2	2			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	34	9	2	26	8	2	2			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	99	95	100	100			100		
cM capacity (veh/h)	936	879	998	960	890	1088	1634			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	33	59	5	2
Volume Left	0	10	2	0
Volume Right	3	3	2	0
cSH	889	910	1634	1632
Volume to Capacity	0.04	0.06	0.00	0.00
Queue Length 95th (m)	0.9	1.6	0.0	0.0
Control Delay (s)	9.2	9.2	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	9.2	2.9	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.7			
Intersection Capacity Utilization	19.6%	ICU Level of Service	A	
Analysis Period (min)	15			



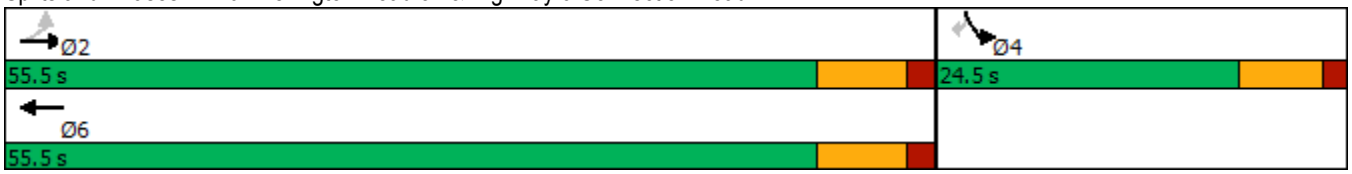
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.476				0.950	
Satd. Flow (perm)	897	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			283
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	259	487	0	65	283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

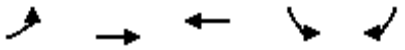


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.51	0.20	0.39		0.31	0.64
Control Delay	9.7	4.9	5.9		31.8	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	9.7	4.9	5.9		31.8	11.4
LOS	A	A	A		C	B
Approach Delay		7.5	5.9		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

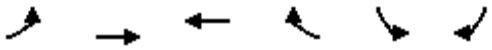
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	315	259	487	65	283
v/c Ratio	0.51	0.20	0.39	0.31	0.64
Control Delay	9.7	4.9	5.9	31.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	4.9	5.9	31.8	11.4
Queue Length 50th (m)	16.0	9.9	20.1	8.0	0.0
Queue Length 95th (m)	43.2	22.5	43.8	18.1	18.7
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	615	1291	1263	457	619
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	0.51	0.20	0.39	0.14	0.46

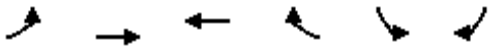
Intersection Summary



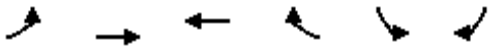
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.48	1.00	1.00		0.95	1.00
Satd. Flow (perm)	896	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
RTOR Reduction (vph)	0	0	9	0	0	249
Lane Group Flow (vph)	315	259	478	0	65	34
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.4	8.4
Effective Green, g (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	615	1292	1256		213	190
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.35					0.02
v/c Ratio	0.51	0.20	0.38		0.31	0.18
Uniform Delay, d1	5.3	4.0	4.7		28.4	27.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.3	0.9		0.8	0.4
Delay (s)	8.4	4.4	5.6		29.2	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.6	5.6		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



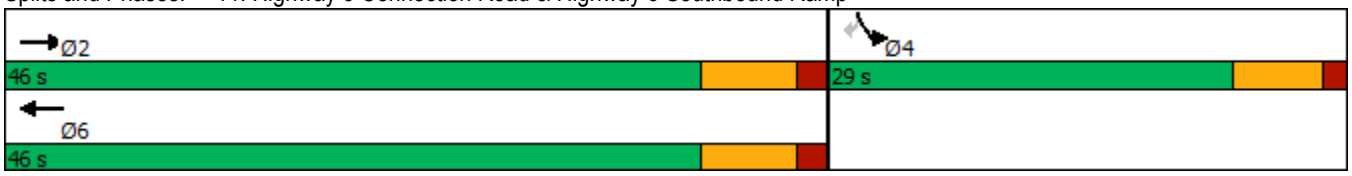
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	240	55	208	134	265
Future Volume (vph)	0	240	55	208	134	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.893			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1883	1682	0	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	0	1883	1682	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			226			288
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	261	60	226	146	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	261	286	0	146	288
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
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)		1.8	1.8		6.1	6.1
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		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		5.0	5.0		5.0	5.0

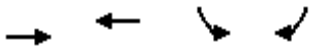


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)		24.4	24.4		24.4	24.4
Total Split (s)		46.0	46.0		29.0	29.0
Total Split (%)		61.3%	61.3%		38.7%	38.7%
Maximum Green (s)		38.8	38.8		22.5	22.5
Yellow Time (s)		5.4	5.4		5.0	5.0
All-Red Time (s)		1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.22	0.25		0.50	0.57
Control Delay		6.5	2.3		29.8	8.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.5	2.3		29.8	8.3
LOS		A	A		C	A
Approach Delay		6.5	2.3		15.6	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 43.5%		ICU Level of Service A	
Analysis Period (min) 15			

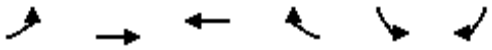
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	261	286	146	288
v/c Ratio	0.22	0.25	0.50	0.57
Control Delay	6.5	2.3	29.8	8.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.5	2.3	29.8	8.3
Queue Length 50th (m)	11.6	2.4	15.6	0.0
Queue Length 95th (m)	24.6	11.6	30.3	17.0
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1162	1124	640	758
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	0.22	0.25	0.23	0.38

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	0	240	55	208	134	265
Future Volume (vph)	0	240	55	208	134	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.89		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1883	1683		1789	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1883	1683		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	261	60	226	146	288
RTOR Reduction (vph)	0	0	86	0	0	240
Lane Group Flow (vph)	0	261	200	0	146	48
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		38.9	38.9		10.4	10.4
Effective Green, g (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1162	1039		295	264
v/s Ratio Prot		c0.14	0.12		c0.08	
v/s Ratio Perm						0.03
v/c Ratio		0.22	0.19		0.49	0.18
Uniform Delay, d1		5.4	5.2		23.9	22.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.4		1.3	0.3
Delay (s)		5.8	5.6		25.2	23.0
Level of Service		A	A		C	C
Approach Delay (s)		5.8	5.6		23.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

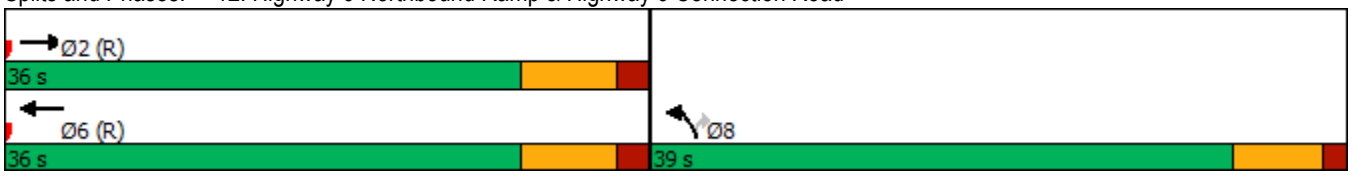
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	0	0	219	27	371
Future Volume (vph)	150	0	0	219	27	371
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						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1883	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1883	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	0	238	29	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	0	238	29	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.4			52.4	8.9	8.9
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.12			0.18	0.14	0.74
Control Delay	4.8			5.1	28.5	12.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.8			5.1	28.5	12.2
LOS	A			A	C	B
Approach Delay	4.8			5.1	13.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



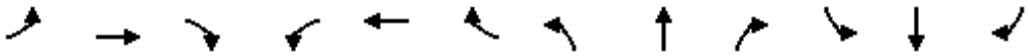
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	163	238	29	403
v/c Ratio	0.12	0.18	0.14	0.74
Control Delay	4.8	5.1	28.5	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.8	5.1	28.5	12.2
Queue Length 50th (m)	5.4	8.3	3.9	0.0
Queue Length 95th (m)	16.8	24.0	9.4	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1315	1315	775	922
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	0.12	0.18	0.04	0.44

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	150	0	0	219	27	371
Future Volume (vph)	150	0	0	219	27	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1883			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1883			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	0	238	29	403
RTOR Reduction (vph)	0	0	0	0	0	355
Lane Group Flow (vph)	163	0	0	238	29	48
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.4			52.4	8.9	8.9
Effective Green, g (s)	52.4			52.4	8.9	8.9
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1315			1315	212	189
v/s Ratio Prot	0.09			c0.13	0.02	
v/s Ratio Perm						c0.03
v/c Ratio	0.12			0.18	0.14	0.25
Uniform Delay, d1	3.7			3.9	29.6	30.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.3	0.3	0.7
Delay (s)	3.9			4.2	29.9	30.7
Level of Service	A			A	C	C
Approach Delay (s)	3.9			4.2	30.7	
Approach LOS	A			A	C	

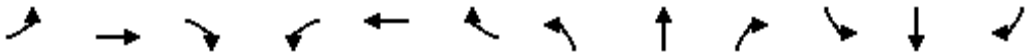
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	26	3	2	10	39	6	499	1	72	460	23
Future Volume (vph)	59	26	3	2	10	39	6	499	1	72	460	23
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		0.996			0.897						0.994	
Flt Protected		0.967			0.998			0.999			0.994	
Satd. Flow (prot)	0	1576	0	0	1691	0	0	1834	0	0	1867	0
Flt Permitted		0.967			0.998			0.999			0.994	
Satd. Flow (perm)	0	1576	0	0	1691	0	0	1834	0	0	1867	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	69	30	3	2	12	45	7	580	1	84	535	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	59	0	0	588	0	0	646	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												
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	

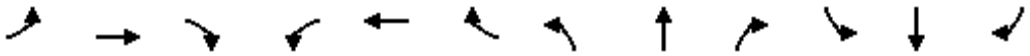
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	26	3	2	10	39	6	499	1	72	460	23
Future Volume (Veh/h)	59	26	3	2	10	39	6	499	1	72	460	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	69	30	3	2	12	45	7	580	1	84	535	27
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	1362	1312	548	1329	1324	580	562			581		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1362	1312	548	1329	1324	580	562			581		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	30	74	99	97	92	91	99			92		
cM capacity (veh/h)	99	116	540	78	143	518	775			1003		

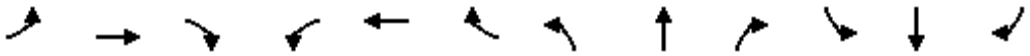
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	102	59	588	646
Volume Left	69	2	7	84
Volume Right	3	45	1	27
cSH	106	300	775	1003
Volume to Capacity	0.96	0.20	0.01	0.08
Queue Length 95th (m)	45.3	5.5	0.2	2.1
Control Delay (s)	152.9	19.9	0.2	2.1
Lane LOS	F	C	A	A
Approach Delay (s)	152.9	19.9	0.2	2.1
Approach LOS	F	C		

Intersection Summary				
Average Delay	13.1			
Intersection Capacity Utilization	77.7%	ICU Level of Service	D	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	15	7	22	13	83	1	399	48	218	234	9
Future Volume (vph)	29	15	7	22	13	83	1	399	48	218	234	9
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		0.981			0.905			0.985			0.997	
Flt Protected		0.972			0.991						0.977	
Satd. Flow (prot)	0	1705	0	0	1434	0	0	1827	0	0	1848	0
Flt Permitted		0.972			0.991						0.977	
Satd. Flow (perm)	0	1705	0	0	1434	0	0	1827	0	0	1848	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	33	17	8	25	15	94	1	453	55	248	266	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	134	0	0	509	0	0	524	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												
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	

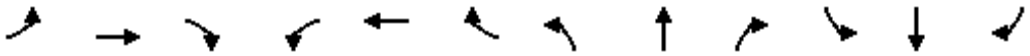
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	15	7	22	13	83	1	399	48	218	234	9
Future Volume (Veh/h)	29	15	7	22	13	83	1	399	48	218	234	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	33	17	8	25	15	94	1	453	55	248	266	10
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	1351	1277	271	1266	1254	480	276			508		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1351	1277	271	1266	1254	480	276			508		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	57	87	99	73	89	83	100			77		
cM capacity (veh/h)	77	129	733	92	133	550	1299			1067		

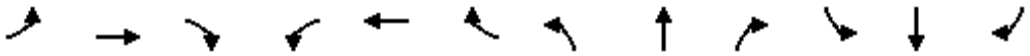
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	134	509	524
Volume Left	33	25	1	248
Volume Right	8	94	55	10
cSH	101	242	1299	1067
Volume to Capacity	0.57	0.55	0.00	0.23
Queue Length 95th (m)	20.4	23.1	0.0	6.8
Control Delay (s)	80.1	37.0	0.0	5.8
Lane LOS	F	E	A	A
Approach Delay (s)	80.1	37.0	0.0	5.8
Approach LOS	F	E		

Intersection Summary				
Average Delay	10.3			
Intersection Capacity Utilization	66.0%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	207	1	5	154	118	0	2	7	45	0	0
Future Volume (vph)	1	207	1	5	154	118	0	2	7	45	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		0.999			0.942			0.895				
Flt Protected					0.999						0.950	
Satd. Flow (prot)	0	1919	0	0	1778	0	0	1719	0	0	1825	0
Flt Permitted					0.999						0.950	
Satd. Flow (perm)	0	1919	0	0	1778	0	0	1719	0	0	1825	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	218	1	5	162	124	0	2	7	47	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	0	0	291	0	0	9	0	0	47	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
Sign Control		Free			Free			Stop			Stop	

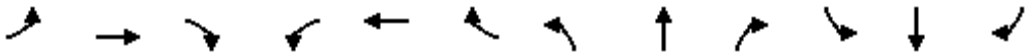
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	207	1	5	154	118	0	2	7	45	0	0
Future Volume (Veh/h)	1	207	1	5	154	118	0	2	7	45	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	218	1	5	162	124	0	2	7	47	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)					250							
pX, platoon unblocked												
vC, conflicting volume	286			219			454	516	218	462	455	224
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286			219			454	516	218	462	455	224
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	91	100	100
cM capacity (veh/h)	1288			1362			517	463	826	505	502	815

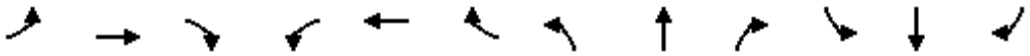
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	220	291	9	47
Volume Left	1	5	0	47
Volume Right	1	124	7	0
cSH	1288	1362	704	505
Volume to Capacity	0.00	0.00	0.01	0.09
Queue Length 95th (m)	0.0	0.1	0.3	2.3
Control Delay (s)	0.0	0.2	10.2	12.9
Lane LOS	A	A	B	B
Approach Delay (s)	0.0	0.2	10.2	12.9
Approach LOS			B	B

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	34.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	311	3	26	118	9	3	95	24	24	21	0
Future Volume (vph)	0	311	3	26	118	9	3	95	24	24	21	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		0.999			0.992			0.974				
Flt Protected					0.992			0.999			0.974	
Satd. Flow (prot)	0	1823	0	0	1807	0	0	1839	0	0	1871	0
Flt Permitted					0.992			0.999			0.974	
Satd. Flow (perm)	0	1823	0	0	1807	0	0	1839	0	0	1871	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	420	4	35	159	12	4	128	32	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	424	0	0	206	0	0	164	0	0	60	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												
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 43.8%		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)	0	311	3	26	118	9	3	95	24	24	21	0
Future Volume (Veh/h)	0	311	3	26	118	9	3	95	24	24	21	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	420	4	35	159	12	4	128	32	32	28	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	336	260	28	458	244	144	28			160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	336	260	28	458	244	144	28			160		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	33	100	85	75	99	100			98		
cM capacity (veh/h)	486	623	965	231	634	909	1251			1432		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	424	206	164	60
Volume Left	0	35	4	32
Volume Right	4	12	32	0
cSH	625	496	1251	1432
Volume to Capacity	0.68	0.42	0.00	0.02
Queue Length 95th (m)	39.8	15.3	0.1	0.5
Control Delay (s)	22.0	17.3	0.2	4.1
Lane LOS	C	C	A	A
Approach Delay (s)	22.0	17.3	0.2	4.1
Approach LOS	C	C		

Intersection Summary				
Average Delay	15.4			
Intersection Capacity Utilization	43.8%	ICU Level of Service	A	
Analysis Period (min)	15			

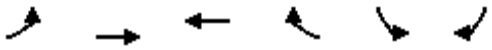
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	32	10	94	70	24
Future Volume (vph)	21	32	10	94	70	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.878			
Flt Protected	0.981					0.964
Satd. Flow (prot)	1698	0	1654	0	0	1816
Flt Permitted	0.981					0.964
Satd. Flow (perm)	1698	0	1654	0	0	1816
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	35	11	102	76	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	113	0	0	102
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	32	10	94	70	24
Future Volume (Veh/h)	21	32	10	94	70	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	35	11	102	76	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	240	62			113	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	240	62			113	
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	97			95	
cM capacity (veh/h)	710	1003			1476	

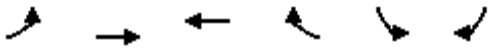
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	58	113	102
Volume Left	23	0	76
Volume Right	35	102	0
cSH	862	1700	1476
Volume to Capacity	0.07	0.07	0.05
Queue Length 95th (m)	1.6	0.0	1.2
Control Delay (s)	9.5	0.0	5.7
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	5.7
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	290	99	0	0	54
Future Volume (vph)	70	290	99	0	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		60	60		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		7.3	8.4		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	315	108	0	0	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	391	108	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

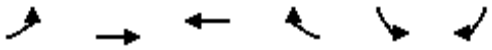
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	290	99	0	0	54
Future Volume (Veh/h)	70	290	99	0	0	54
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)	76	315	108	0	0	59
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	108				575	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108				575	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	94
cM capacity (veh/h)	1483				455	946

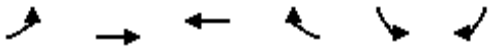
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	391	108	59
Volume Left	76	0	0
Volume Right	0	0	59
cSH	1483	1700	946
Volume to Capacity	0.05	0.06	0.06
Queue Length 95th (m)	1.2	0.0	1.5
Control Delay (s)	1.9	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	1.9	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	212	77	35	0	0	63
Future Volume (vph)	212	77	35	0	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.965				
Satd. Flow (prot)	0	1818	1883	0	1629	0
Flt Permitted		0.965				
Satd. Flow (perm)	0	1818	1883	0	1629	0
Link Speed (k/h)		60	60		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		8.4	9.7		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	84	38	0	0	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	314	38	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

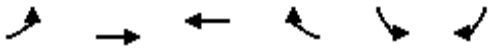
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	77	35	0	0	63
Future Volume (Veh/h)	212	77	35	0	0	63
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)	230	84	38	0	0	68
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	38				582	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38				582	38
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	93
cM capacity (veh/h)	1572				406	1034

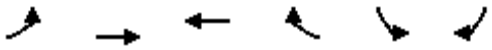
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	314	38	68
Volume Left	230	0	0
Volume Right	0	0	68
cSH	1572	1700	1034
Volume to Capacity	0.15	0.02	0.07
Queue Length 95th (m)	3.9	0.0	1.6
Control Delay (s)	5.9	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	5.9	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	54	26	0	0	9
Future Volume (vph)	23	54	26	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	59	28	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	84	28	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

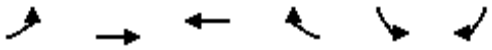
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			



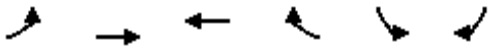
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	54	26	0	0	9
Future Volume (Veh/h)	23	54	26	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	59	28	0	0	10
Pedestrians						
Lane Width (m)						
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	28				137	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				137	28
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1585				843	1047

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	84	28	10
Volume Left	25	0	0
Volume Right	0	0	10
cSH	1585	1700	1047
Volume to Capacity	0.02	0.02	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.3	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	2.3	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		20.8%	ICU Level of Service
Analysis Period (min)		15	



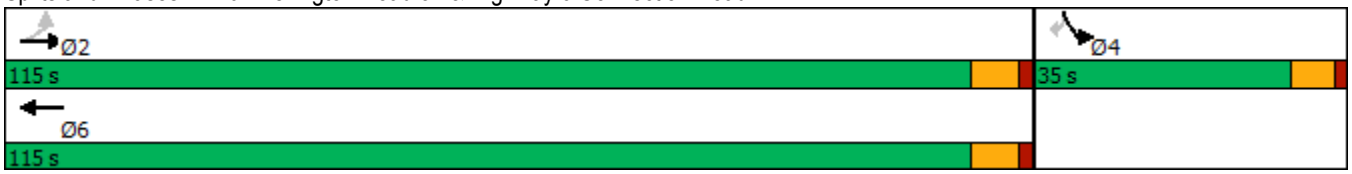
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	406	382	368	90	60	381
Future Volume (vph)	406	382	368	90	60	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.471				0.950	
Satd. Flow (perm)	887	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			414
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	415	400	98	65	414
Shared Lane Traffic (%)						
Lane Group Flow (vph)	441	415	498	0	65	414
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

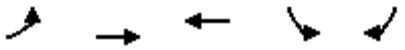


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		11.3	11.3
Actuated g/C Ratio	0.81	0.81	0.81		0.09	0.09
v/c Ratio	0.61	0.27	0.33		0.43	0.81
Control Delay	10.0	3.9	4.1		65.9	17.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	10.0	3.9	4.1		65.9	17.9
LOS	A	A	A		E	B
Approach Delay		7.0	4.1		24.4	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.9			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 10.8		Intersection LOS: B	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

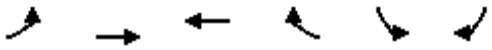
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	441	415	498	65	414
v/c Ratio	0.61	0.27	0.33	0.43	0.81
Control Delay	10.0	3.9	4.1	65.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	3.9	4.1	65.9	17.9
Queue Length 50th (m)	33.0	20.0	24.4	16.5	0.0
Queue Length 95th (m)	87.7	43.4	52.7	31.1	32.5
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	719	1528	1492	383	668
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	0.27	0.33	0.17	0.62

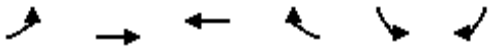
Intersection Summary



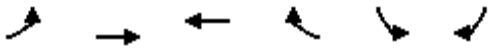
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	406	382	368	90	60	381
Future Volume (vph)	406	382	368	90	60	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	886	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	415	400	98	65	414
RTOR Reduction (vph)	0	0	4	0	0	379
Lane Group Flow (vph)	441	415	494	0	65	35
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		11.3	11.3
Effective Green, g (s)	107.9	107.9	107.9		11.3	11.3
Actuated g/C Ratio	0.81	0.81	0.81		0.09	0.09
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	719	1528	1488		152	136
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.50					0.02
v/c Ratio	0.61	0.27	0.33		0.43	0.26
Uniform Delay, d1	4.7	3.0	3.2		57.7	56.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.4	0.6		1.9	1.0
Delay (s)	8.6	3.5	3.8		59.7	57.9
Level of Service	A	A	A		E	E
Approach Delay (s)		6.1	3.8		58.1	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	132.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



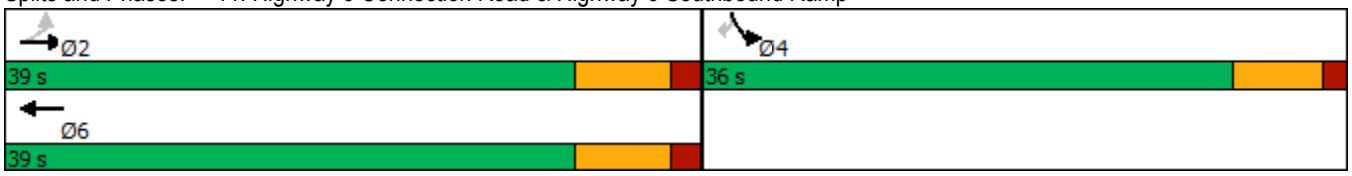
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	268	106	0	115	334
Future Volume (vph)	18	268	106	0	115	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.997			0.950	
Satd. Flow (prot)	0	1878	1883	0	1789	1601
Flt Permitted		0.981			0.950	
Satd. Flow (perm)	0	1848	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						363
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	291	115	0	125	363
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	311	115	0	125	363
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

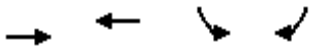


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	39.0	39.0	39.0		36.0	36.0
Total Split (%)	52.0%	52.0%	52.0%		48.0%	48.0%
Maximum Green (s)	31.8	31.8	31.8		29.5	29.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.4	9.4
Actuated g/C Ratio		0.58	0.58		0.17	0.17
v/c Ratio		0.29	0.11		0.41	0.63
Control Delay		7.3	6.2		24.3	8.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		7.3	6.2		24.3	8.3
LOS		A	A		C	A
Approach Delay		7.3	6.2		12.4	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 55			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

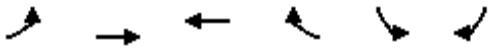
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	311	115	125	363
v/c Ratio	0.29	0.11	0.41	0.63
Control Delay	7.3	6.2	24.3	8.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.3	6.2	24.3	8.3
Queue Length 50th (m)	13.3	4.3	11.2	0.0
Queue Length 95th (m)	30.0	11.8	23.2	17.3
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1070	1091	961	1028
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	0.29	0.11	0.13	0.35

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	18	268	106	0	115	334
Future Volume (vph)	18	268	106	0	115	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1877	1883		1789	1601
Flt Permitted		0.98	1.00		0.95	1.00
Satd. Flow (perm)		1847	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	291	115	0	125	363
RTOR Reduction (vph)	0	0	0	0	0	301
Lane Group Flow (vph)	0	311	115	0	125	62
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		31.9	31.9		9.4	9.4
Effective Green, g (s)		31.9	31.9		9.4	9.4
Actuated g/C Ratio		0.58	0.58		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1071	1092		305	273
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.17				0.04
v/c Ratio		0.29	0.11		0.41	0.23
Uniform Delay, d1		5.8	5.2		20.3	19.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.2		0.9	0.4
Delay (s)		6.5	5.4		21.2	20.1
Level of Service		A	A		C	C
Approach Delay (s)		6.5	5.4		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

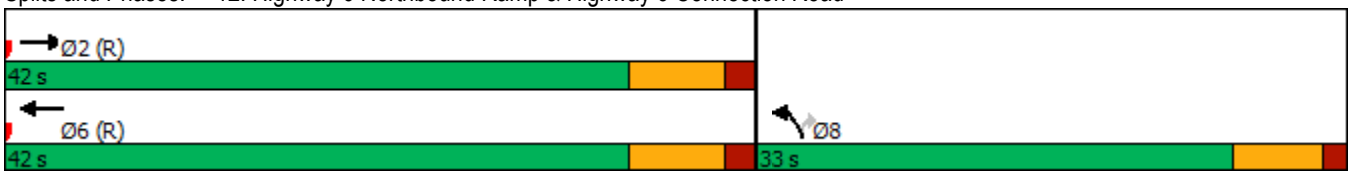
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	407	62	438
Future Volume (vph)	114	18	0	407	62	438
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	0.981					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1848	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1848	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14					476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	442	67	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	442	67	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
v/c Ratio	0.11			0.34	0.28	0.76
Control Delay	5.0			6.8	30.0	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.8	30.0	11.5
LOS	A			A	C	B
Approach Delay	5.0			6.8	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



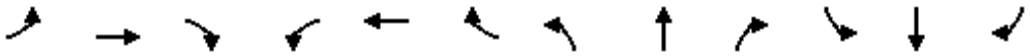
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	144	442	67	476
v/c Ratio	0.11	0.34	0.28	0.76
Control Delay	5.0	6.8	30.0	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.8	30.0	11.5
Queue Length 50th (m)	4.7	19.5	8.9	0.0
Queue Length 95th (m)	15.5	51.4	16.6	21.6
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1267	1286	632	873
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	0.11	0.34	0.11	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	407	62	438
Future Volume (vph)	114	18	0	407	62	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1848			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1848			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	442	67	476
RTOR Reduction (vph)	4	0	0	0	0	413
Lane Group Flow (vph)	140	0	0	442	67	63
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.3			51.3	10.0	10.0
Effective Green, g (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1264			1287	238	213
v/s Ratio Prot	0.08			c0.23	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.11			0.34	0.28	0.30
Uniform Delay, d1	4.1			4.9	29.3	29.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.7	0.8
Delay (s)	4.2			5.6	29.9	30.1
Level of Service	A			A	C	C
Approach Delay (s)	4.2			5.6	30.1	
Approach LOS	A			A	C	

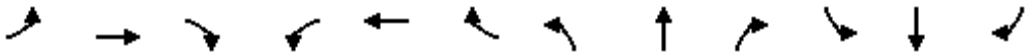
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	30	3	1	56	124	6	470	1	47	553	96
Future Volume (vph)	21	30	3	1	56	124	6	470	1	47	553	96
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		0.993			0.907						0.981	
Flt Protected		0.981						0.999			0.997	
Satd. Flow (prot)	0	1444	0	0	1532	0	0	1882	0	0	1810	0
Flt Permitted		0.981						0.999			0.997	
Satd. Flow (perm)	0	1444	0	0	1532	0	0	1882	0	0	1810	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	22	32	3	1	59	131	6	495	1	49	582	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	191	0	0	502	0	0	732	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												
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	

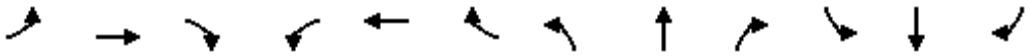
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	30	3	1	56	124	6	470	1	47	553	96
Future Volume (Veh/h)	21	30	3	1	56	124	6	470	1	47	553	96
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	22	32	3	1	59	131	6	495	1	49	582	101
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	1398	1238	632	1257	1288	496	683			496		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1398	1238	632	1257	1288	496	683			496		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	63	76	99	99	62	76	99			95		
cM capacity (veh/h)	60	134	484	116	156	540	919			925		

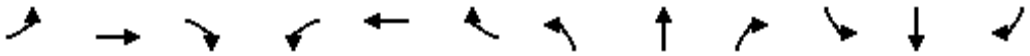
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	191	502	732
Volume Left	22	1	6	49
Volume Right	3	131	1	101
cSH	93	303	919	925
Volume to Capacity	0.61	0.63	0.01	0.05
Queue Length 95th (m)	22.0	30.3	0.1	1.3
Control Delay (s)	91.9	35.2	0.2	1.4
Lane LOS	F	E	A	A
Approach Delay (s)	91.9	35.2	0.2	1.4
Approach LOS	F	E		

Intersection Summary				
Average Delay	8.8			
Intersection Capacity Utilization	88.0%	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)	15	13	1	34	26	222	9	240	18	132	409	21
Future Volume (vph)	15	13	1	34	26	222	9	240	18	132	409	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
Frt		0.995			0.894			0.991			0.995	
Flt Protected		0.975			0.994			0.998			0.988	
Satd. Flow (prot)	0	1864	0	0	1707	0	0	1883	0	0	1847	0
Flt Permitted		0.975			0.994			0.998			0.988	
Satd. Flow (perm)	0	1864	0	0	1707	0	0	1883	0	0	1847	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	15	13	1	35	27	229	9	247	19	136	422	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	291	0	0	275	0	0	580	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												
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	

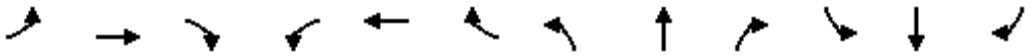
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	13	1	34	26	222	9	240	18	132	409	21
Future Volume (Veh/h)	15	13	1	34	26	222	9	240	18	132	409	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)	15	13	1	35	27	229	9	247	19	136	422	22
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	1222	989	433	987	990	256	444			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1222	989	433	987	990	256	444			266		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	94	100	82	88	71	99			90		
cM capacity (veh/h)	93	221	627	199	221	787	1127			1310		

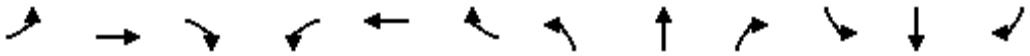
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	291	275	580
Volume Left	15	35	9	136
Volume Right	1	229	19	22
cSH	131	494	1127	1310
Volume to Capacity	0.22	0.59	0.01	0.10
Queue Length 95th (m)	6.1	28.5	0.2	2.6
Control Delay (s)	40.2	22.2	0.3	2.8
Lane LOS	E	C	A	A
Approach Delay (s)	40.2	22.2	0.3	2.8
Approach LOS	E	C		

Intersection Summary				
Average Delay	7.9			
Intersection Capacity Utilization	71.4%	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)	1	154	0	7	298	74	1	0	9	141	2	1
Future Volume (vph)	1	154	0	7	298	74	1	0	9	141	2	1
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					0.974			0.877			0.999	
Flt Protected					0.999			0.995			0.953	
Satd. Flow (prot)	0	1780	0	0	1826	0	0	1676	0	0	1829	0
Flt Permitted					0.999			0.995			0.953	
Satd. Flow (perm)	0	1780	0	0	1826	0	0	1676	0	0	1829	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	179	0	8	347	86	1	0	10	164	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	441	0	0	11	0	0	167	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
Sign Control		Free			Free			Stop			Stop	

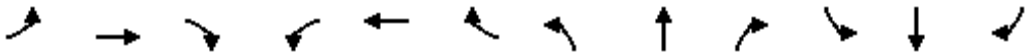
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	154	0	7	298	74	1	0	9	141	2	1
Future Volume (Veh/h)	1	154	0	7	298	74	1	0	9	141	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	179	0	8	347	86	1	0	10	164	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	433			179			589	630	179	597	587	390
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433			179			589	630	179	597	587	390
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	60	100	100
cM capacity (veh/h)	1137			1409			419	399	869	411	422	663

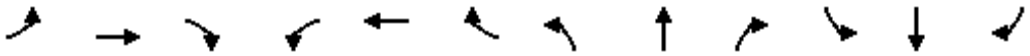
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	441	11	167
Volume Left	1	8	1	164
Volume Right	0	86	10	1
cSH	1137	1409	792	412
Volume to Capacity	0.00	0.01	0.01	0.41
Queue Length 95th (m)	0.0	0.1	0.3	14.6
Control Delay (s)	0.1	0.2	9.6	19.6
Lane LOS	A	A	A	C
Approach Delay (s)	0.1	0.2	9.6	19.6
Approach LOS			A	C

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	46.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	171	3	70	289	60	2	58	17	28	81	0
Future Volume (vph)	0	171	3	70	289	60	2	58	17	28	81	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		0.998			0.981			0.970				
Flt Protected					0.992			0.999			0.987	
Satd. Flow (prot)	0	1818	0	0	1870	0	0	1862	0	0	1896	0
Flt Permitted					0.992			0.999			0.987	
Satd. Flow (perm)	0	1818	0	0	1870	0	0	1862	0	0	1896	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	188	3	77	318	66	2	64	19	31	89	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	461	0	0	85	0	0	120	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												
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 54.4%		ICU Level of Service A	
Analysis Period (min) 15			



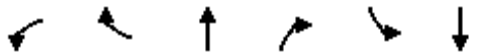
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	171	3	70	289	60	2	58	17	28	81	0
Future Volume (Veh/h)	0	171	3	70	289	60	2	58	17	28	81	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	188	3	77	318	66	2	64	19	31	89	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	454	238	89	326	228	74	89			83		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454	238	89	326	228	74	89			83		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	71	100	84	52	93	100			98		
cM capacity (veh/h)	297	644	890	480	660	994	1519			1527		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	191	461	85	120
Volume Left	0	77	2	31
Volume Right	3	66	19	0
cSH	646	650	1519	1527
Volume to Capacity	0.30	0.71	0.00	0.02
Queue Length 95th (m)	9.4	44.5	0.0	0.5
Control Delay (s)	12.9	22.8	0.2	2.0
Lane LOS	B	C	A	A
Approach Delay (s)	12.9	22.8	0.2	2.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	15.5			
Intersection Capacity Utilization	54.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	78	117	61	57	43	31
Future Volume (vph)	78	117	61	57	43	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	0.919		0.935			
Flt Protected	0.980					0.972
Satd. Flow (prot)	1696	0	1761	0	0	1831
Flt Permitted	0.980					0.972
Satd. Flow (perm)	1696	0	1761	0	0	1831
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	127	66	62	47	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	128	0	0	81
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)	97	97		97	97	
Sign Control	Stop		Free			Free

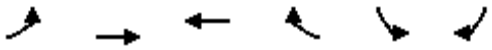
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	78	117	61	57	43	31
Future Volume (Veh/h)	78	117	61	57	43	31
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)	85	127	66	62	47	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	225	97			128	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	225	97			128	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	87			97	
cM capacity (veh/h)	739	959			1458	

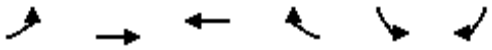
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	212	128	81
Volume Left	85	0	47
Volume Right	127	62	0
cSH	857	1700	1458
Volume to Capacity	0.25	0.08	0.03
Queue Length 95th (m)	7.4	0.0	0.8
Control Delay (s)	10.6	0.0	4.5
Lane LOS	B		A
Approach Delay (s)	10.6	0.0	4.5
Approach LOS	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	174	363	0	0	56
Future Volume (vph)	43	174	363	0	0	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.990				
Satd. Flow (prot)	0	1865	1883	0	1629	0
Flt Permitted		0.990				
Satd. Flow (perm)	0	1865	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	189	395	0	0	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	236	395	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

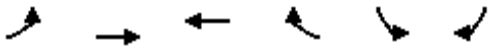
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	174	363	0	0	56
Future Volume (Veh/h)	43	174	363	0	0	56
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)	47	189	395	0	0	61
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	395				678	395
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	395				678	395
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				100	91
cM capacity (veh/h)	1164				401	654

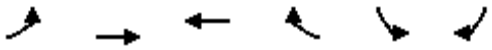
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	236	395	61
Volume Left	47	0	0
Volume Right	0	0	61
cSH	1164	1700	654
Volume to Capacity	0.04	0.23	0.09
Queue Length 95th (m)	1.0	0.0	2.3
Control Delay (s)	1.9	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	1.9	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	44	83	0	0	280
Future Volume (vph)	129	44	83	0	0	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.964				
Satd. Flow (prot)	0	1816	1883	0	1629	0
Flt Permitted		0.964				
Satd. Flow (perm)	0	1816	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		139.5	161.2		153.2	
Travel Time (s)		10.5	12.1		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	48	90	0	0	304
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	90	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

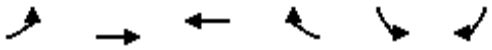
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	129	44	83	0	0	280
Future Volume (Veh/h)	129	44	83	0	0	280
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)	140	48	90	0	0	304
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	90				418	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	90				418	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 %	91				100	69
cM capacity (veh/h)	1505				536	968

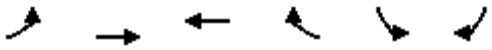
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	188	90	304
Volume Left	140	0	0
Volume Right	0	0	304
cSH	1505	1700	968
Volume to Capacity	0.09	0.05	0.31
Queue Length 95th (m)	2.3	0.0	10.3
Control Delay (s)	5.9	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	5.9	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	55	0	0	28
Future Volume (vph)	14	30	55	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	60	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	48	60	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

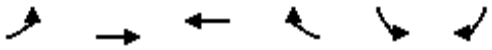
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			



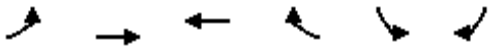
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	30	55	0	0	28
Future Volume (Veh/h)	14	30	55	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	33	60	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	60				123	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	60				123	60
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				100	97
cM capacity (veh/h)	1544				864	1005

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	48	60	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1544	1700	1005
Volume to Capacity	0.01	0.04	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		



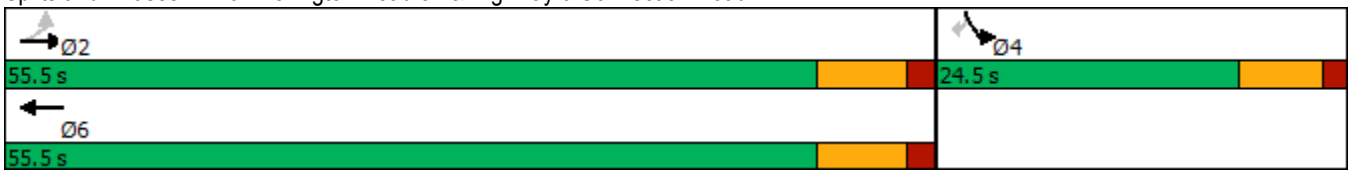
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	430	238	353	95	60	332
Future Volume (vph)	430	238	353	95	60	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.474				0.950	
Satd. Flow (perm)	893	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			361
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		481.2	
Travel Time (s)		15.0	35.7		28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	259	384	103	65	361
Shared Lane Traffic (%)						
Lane Group Flow (vph)	467	259	487	0	65	361
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

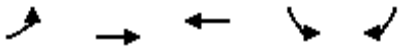


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.8	8.8
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
v/c Ratio	0.77	0.20	0.39		0.29	0.70
Control Delay	19.9	5.1	6.1		31.2	11.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	19.9	5.1	6.1		31.2	11.6
LOS	B	A	A		C	B
Approach Delay		14.6	6.1		14.6	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road

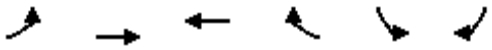




Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	467	259	487	65	361
v/c Ratio	0.77	0.20	0.39	0.29	0.70
Control Delay	19.9	5.1	6.1	31.2	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	5.1	6.1	31.2	11.6
Queue Length 50th (m)	32.3	9.9	20.1	8.0	0.0
Queue Length 95th (m)	#111.2	24.2	47.3	18.0	20.6
Internal Link Dist (m)		226.1	570.3	457.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	609	1285	1258	455	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	0.77	0.20	0.39	0.14	0.53

Intersection Summary

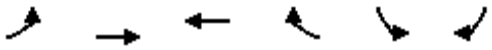
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



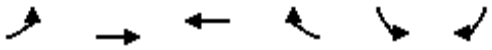
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	430	238	353	95	60	332
Future Volume (vph)	430	238	353	95	60	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	894	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	259	384	103	65	361
RTOR Reduction (vph)	0	0	10	0	0	316
Lane Group Flow (vph)	467	259	477	0	65	45
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.8	8.8
Effective Green, g (s)	48.4	48.4	48.4		8.8	8.8
Actuated g/C Ratio	0.68	0.68	0.68		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	610	1285	1249		222	198
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.52					0.03
v/c Ratio	0.77	0.20	0.38		0.29	0.23
Uniform Delay, d1	7.5	4.1	4.8		28.2	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.9	0.4	0.9		0.7	0.6
Delay (s)	16.4	4.5	5.7		29.0	28.6
Level of Service	B	A	A		C	C
Approach Delay (s)		12.1	5.7		28.6	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	13.7
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



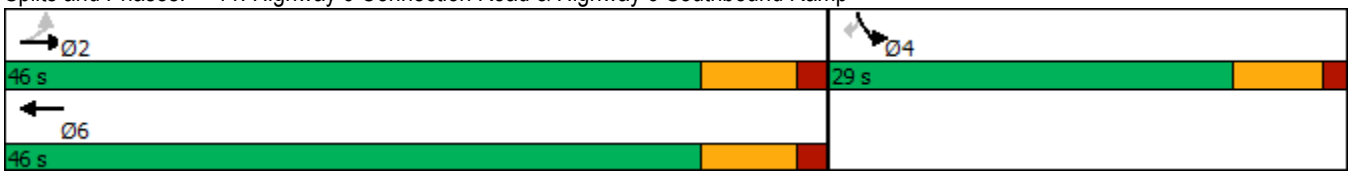
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	56	324	98	208	134	293
Future Volume (vph)	56	324	98	208	134	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.908			0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	1870	1710	0	1789	1601
Flt Permitted		0.905			0.950	
Satd. Flow (perm)	0	1705	1710	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			210			318
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	352	107	226	146	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	413	333	0	146	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

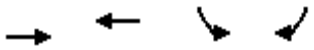


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	46.0	46.0	46.0		29.0	29.0
Total Split (%)	61.3%	61.3%	61.3%		38.7%	38.7%
Maximum Green (s)	38.8	38.8	38.8		22.5	22.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.39	0.29		0.50	0.60
Control Delay		8.0	3.2		29.8	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.0	3.2		29.8	8.5
LOS		A	A		C	A
Approach Delay		8.0	3.2		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

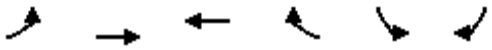
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	413	333	146	318
v/c Ratio	0.39	0.29	0.50	0.60
Control Delay	8.0	3.2	29.8	8.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	3.2	29.8	8.5
Queue Length 50th (m)	20.7	5.1	15.6	0.0
Queue Length 95th (m)	42.4	16.3	30.3	17.7
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1052	1136	640	777
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	0.39	0.29	0.23	0.41

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↱
Traffic Volume (vph)	56	324	98	208	134	293
Future Volume (vph)	56	324	98	208	134	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.91		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1870	1711		1789	1601
Flt Permitted		0.90	1.00		0.95	1.00
Satd. Flow (perm)		1704	1711		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	352	107	226	146	318
RTOR Reduction (vph)	0	0	80	0	0	266
Lane Group Flow (vph)	0	413	253	0	146	52
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.9	38.9		10.4	10.4
Effective Green, g (s)		38.9	38.9		10.4	10.4
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1052	1056		295	264
v/s Ratio Prot			0.15		c0.08	
v/s Ratio Perm		c0.24				0.03
v/c Ratio		0.39	0.24		0.49	0.20
Uniform Delay, d1		6.1	5.4		23.9	22.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.1	0.5		1.3	0.4
Delay (s)		7.2	5.9		25.2	23.1
Level of Service		A	A		C	C
Approach Delay (s)		7.2	5.9		23.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

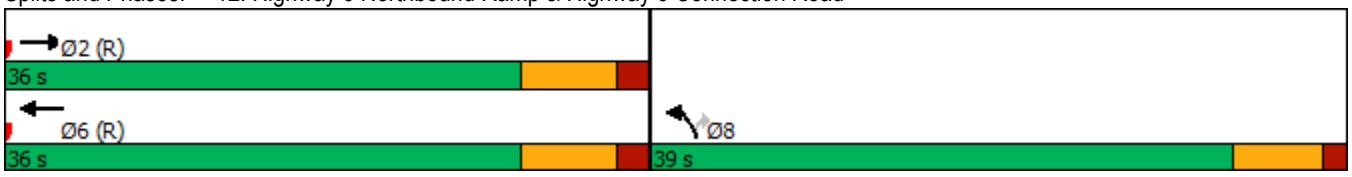
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	55	371
Future Volume (vph)	178	56	0	233	55	371
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	0.968					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1823	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1823	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	60	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	0	0	253	60	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.0			52.0	9.3	9.3
Actuated g/C Ratio	0.69			0.69	0.12	0.12
v/c Ratio	0.20			0.19	0.27	0.73
Control Delay	4.8			5.3	30.9	11.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.8			5.3	30.9	11.7
LOS	A			A	C	B
Approach Delay	4.8			5.3	14.2	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	254	253	60	403
v/c Ratio	0.20	0.19	0.27	0.73
Control Delay	4.8	5.3	30.9	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.8	5.3	30.9	11.7
Queue Length 50th (m)	8.6	9.6	8.0	0.0
Queue Length 95th (m)	23.7	25.4	15.9	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1270	1304	775	922
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	0.20	0.19	0.08	0.44

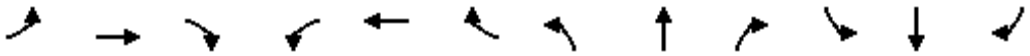
Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	55	371
Future Volume (vph)	178	56	0	233	55	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	60	403
RTOR Reduction (vph)	8	0	0	0	0	353
Lane Group Flow (vph)	246	0	0	253	60	50
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.0			52.0	9.3	9.3
Effective Green, g (s)	52.0			52.0	9.3	9.3
Actuated g/C Ratio	0.69			0.69	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1263			1305	221	198
v/s Ratio Prot	c0.14			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.20			0.19	0.27	0.25
Uniform Delay, d1	4.1			4.1	29.8	29.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.7	0.7
Delay (s)	4.4			4.4	30.4	30.4
Level of Service	A			A	C	C
Approach Delay (s)	4.4			4.4	30.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

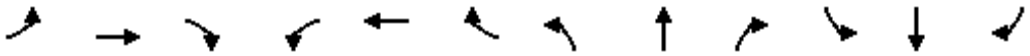
c Critical Lane Group

Synchro Outputs - With Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	26	3	2	10	27	5	398	1	72	321	19
Future Volume (vph)	48	26	3	2	10	27	5	398	1	72	321	19
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		0.995			0.907						0.994	
Flt Protected		0.969			0.998			0.999			0.991	
Satd. Flow (prot)	0	1552	0	0	1701	0	0	1833	0	0	1863	0
Flt Permitted		0.969			0.998			0.999			0.991	
Satd. Flow (perm)	0	1552	0	0	1701	0	0	1833	0	0	1863	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	56	30	3	2	12	31	6	463	1	84	373	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	45	0	0	470	0	0	479	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												
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	

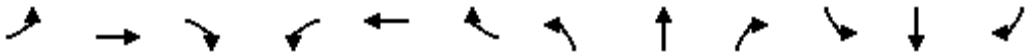
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	26	3	2	10	27	5	398	1	72	321	19
Future Volume (Veh/h)	48	26	3	2	10	27	5	398	1	72	321	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	56	30	3	2	12	31	6	463	1	84	373	22
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	1064	1028	384	1046	1038	464	395			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1064	1028	384	1046	1038	464	395			464		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	67	83	100	99	94	95	99			92		
cM capacity (veh/h)	169	178	668	137	214	603	908			1108		

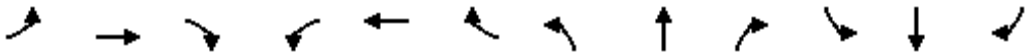
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	89	45	470	479
Volume Left	56	2	6	84
Volume Right	3	31	1	22
cSH	177	368	908	1108
Volume to Capacity	0.50	0.12	0.01	0.08
Queue Length 95th (m)	18.9	3.1	0.2	1.9
Control Delay (s)	44.5	16.1	0.2	2.2
Lane LOS	E	C	A	A
Approach Delay (s)	44.5	16.1	0.2	2.2
Approach LOS	E	C		

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	64.2%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	12	6	21	10	56	1	327	48	122	192	7
Future Volume (vph)	23	12	6	21	10	56	1	327	48	122	192	7
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		0.980			0.913			0.983			0.997	
Flt Protected		0.973			0.988						0.981	
Satd. Flow (prot)	0	1704	0	0	1433	0	0	1825	0	0	1851	0
Flt Permitted		0.973			0.988						0.981	
Satd. Flow (perm)	0	1704	0	0	1433	0	0	1825	0	0	1851	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	26	14	7	24	11	64	1	372	55	139	218	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	99	0	0	428	0	0	365	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												
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	

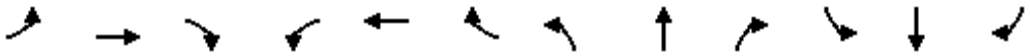
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	12	6	21	10	56	1	327	48	122	192	7
Future Volume (Veh/h)	23	12	6	21	10	56	1	327	48	122	192	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	26	14	7	24	11	64	1	372	55	139	218	8
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	971	929	222	916	906	400	226			427		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	971	929	222	916	906	400	226			427		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	85	94	99	87	95	90	100			88		
cM capacity (veh/h)	177	237	781	192	244	613	1354			1143		

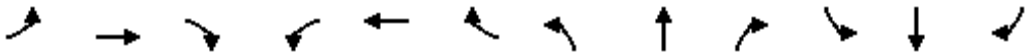
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	99	428	365
Volume Left	26	24	1	139
Volume Right	7	64	55	8
cSH	218	361	1354	1143
Volume to Capacity	0.22	0.27	0.00	0.12
Queue Length 95th (m)	6.0	8.3	0.0	3.1
Control Delay (s)	25.9	18.7	0.0	4.0
Lane LOS	D	C	A	A
Approach Delay (s)	25.9	18.7	0.0	4.0
Approach LOS	D	C		

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	52.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	169	1	4	126	0	0	2	6	0	0	0
Future Volume (vph)	1	169	1	4	126	0	0	2	6	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		0.999						0.899				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1727	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1727	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	178	1	4	133	0	0	2	6	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	137	0	0	8	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)		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
Sign Control		Free			Free			Stop			Stop	

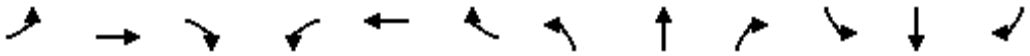
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	169	1	4	126	0	0	2	6	0	0	0
Future Volume (Veh/h)	1	169	1	4	126	0	0	2	6	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	178	1	4	133	0	0	2	6	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	133			179			322	322	178	328	322	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			179			322	322	178	328	322	133
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1464			1409			634	597	870	621	596	916

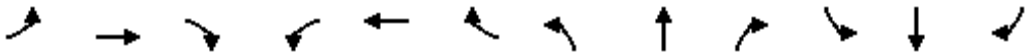
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	137	8	0
Volume Left	1	4	0	0
Volume Right	1	0	6	0
cSH	1464	1409	780	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.2	0.0
Control Delay (s)	0.0	0.2	9.7	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.2	9.7	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	208	3	2	79	9	3	1	1	25	0	9
Future Volume (vph)	0	208	3	2	79	9	3	1	1	25	0	9
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		0.998			0.987			0.977			0.965	
Flt Protected					0.999			0.968			0.964	
Satd. Flow (prot)	0	1819	0	0	1800	0	0	1256	0	0	1787	0
Flt Permitted					0.999			0.968			0.964	
Satd. Flow (perm)	0	1819	0	0	1800	0	0	1256	0	0	1787	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	281	4	3	107	12	4	1	1	34	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	285	0	0	122	0	0	6	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.1%		ICU Level of Service A	
Analysis Period (min) 15			



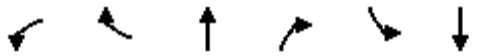
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	208	3	2	79	9	3	1	1	25	0	9
Future Volume (Veh/h)	0	208	3	2	79	9	3	1	1	25	0	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	281	4	3	107	12	4	1	1	34	0	12
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	149	84	6	228	90	2	12			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	149	84	6	228	90	2	12			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	64	100	99	86	99	100			98		
cM capacity (veh/h)	715	781	993	516	774	1089	1270			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	285	122	6	46
Volume Left	0	3	4	34
Volume Right	4	12	1	12
cSH	784	787	1270	1634
Volume to Capacity	0.36	0.16	0.00	0.02
Queue Length 95th (m)	12.7	4.2	0.1	0.5
Control Delay (s)	12.2	10.4	5.2	5.4
Lane LOS	B	B	A	A
Approach Delay (s)	12.2	10.4	5.2	5.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	10.9			
Intersection Capacity Utilization	21.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	22	10	0	71	25
Future Volume (vph)	9	22	10	0	71	25
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	0.905					
Flt Protected	0.986					0.964
Satd. Flow (prot)	1681	0	1883	0	0	1816
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1681	0	1883	0	0	1816
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	24	11	0	77	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	0	11	0	0	104
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free

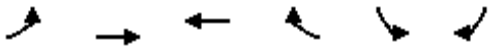
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	22	10	0	71	25
Future Volume (Veh/h)	9	22	10	0	71	25
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)	10	24	11	0	77	27
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	192	11			11	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	11			11	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			95	
cM capacity (veh/h)	759	1070			1608	

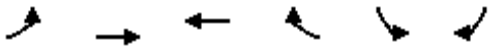
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	34	11	104
Volume Left	10	0	77
Volume Right	24	0	0
cSH	955	1700	1608
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (m)	0.8	0.0	1.1
Control Delay (s)	8.9	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	71	162	45	0	0	46
Future Volume (vph)	71	162	45	0	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	176	49	0	0	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	49	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

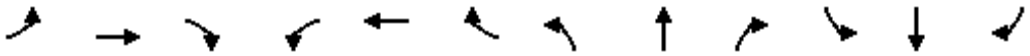
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	71	162	45	0	0	46
Future Volume (Veh/h)	71	162	45	0	0	46
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)	77	176	49	0	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	49				379	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	49				379	49
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	95
cM capacity (veh/h)	1558				592	1020

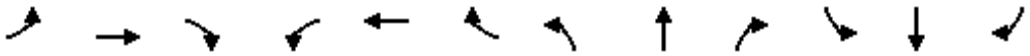
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	253	49	50
Volume Left	77	0	0
Volume Right	0	0	50
cSH	1558	1700	1020
Volume to Capacity	0.05	0.03	0.05
Queue Length 95th (m)	1.2	0.0	1.2
Control Delay (s)	2.5	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	29.1%	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)	95	68	0	0	30	0	0	213	0	0	82	15
Future Volume (vph)	95	68	0	0	30	0	0	213	0	0	82	15
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											0.979	
Flt Protected		0.972										
Satd. Flow (prot)	0	1831	0	0	1883	0	0	1883	0	0	1844	0
Flt Permitted		0.972										
Satd. Flow (perm)	0	1831	0	0	1883	0	0	1883	0	0	1844	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		10.5			12.1			128.6			11.5	
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)	103	74	0	0	33	0	0	232	0	0	89	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	177	0	0	33	0	0	232	0	0	105	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												
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)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

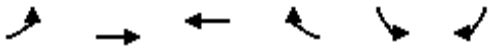
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	68	0	0	30	0	0	213	0	0	82	15
Future Volume (Veh/h)	95	68	0	0	30	0	0	213	0	0	82	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	74	0	0	33	0	0	232	0	0	89	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	33			74			374	313	74	429	313	33
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	33			74			374	313	74	429	313	33
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			100	59	100	100	84	98
cM capacity (veh/h)	1579			1526			480	563	988	347	563	1041

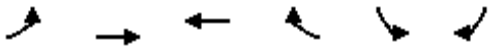
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	177	33	232	105
Volume Left	103	0	0	0
Volume Right	0	0	0	16
cSH	1579	1526	563	605
Volume to Capacity	0.07	0.00	0.41	0.17
Queue Length 95th (m)	1.6	0.0	15.2	4.7
Control Delay (s)	4.5	0.0	15.8	12.2
Lane LOS	A		C	B
Approach Delay (s)	4.5	0.0	15.8	12.2
Approach LOS			C	B

Intersection Summary			
Average Delay	10.5		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	44	21	0	0	9
Future Volume (vph)	24	44	21	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.983				
Satd. Flow (prot)	0	1851	1883	0	1629	0
Flt Permitted		0.983				
Satd. Flow (perm)	0	1851	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	48	23	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	74	23	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

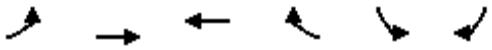
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			



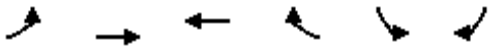
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	44	21	0	0	9
Future Volume (Veh/h)	24	44	21	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	48	23	0	0	10
Pedestrians						
Lane Width (m)						
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	23				123	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				123	23
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1592				858	1054

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	74	23	10
Volume Left	26	0	0
Volume Right	0	0	10
cSH	1592	1700	1054
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.6	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	8.4
Approach LOS			A

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		



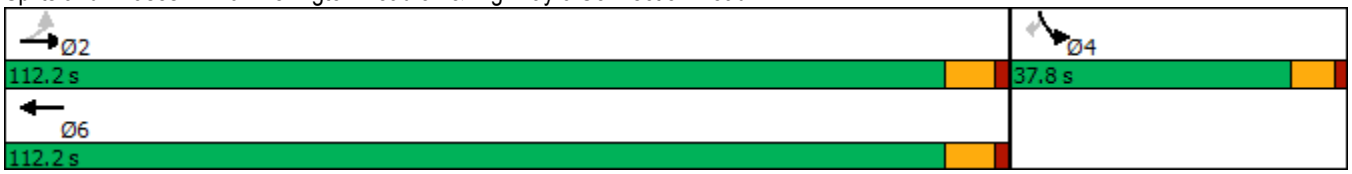
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	356	345	341	81	50	254
Future Volume (vph)	356	345	341	81	50	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1834	0	1789	1601
Flt Permitted	0.495				0.950	
Satd. Flow (perm)	932	1883	1834	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			19			276
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	375	371	88	54	276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	375	459	0	54	276
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

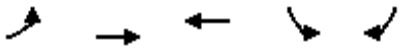


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	112.2	112.2	112.2		37.8	37.8
Total Split (%)	74.8%	74.8%	74.8%		25.2%	25.2%
Maximum Green (s)	105.0	105.0	105.0		31.3	31.3
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	105.1	105.1	105.1		9.8	9.8
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.51	0.24	0.31		0.40	0.73
Control Delay	6.8	3.4	3.6		64.7	18.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	6.8	3.4	3.6		64.7	18.4
LOS	A	A	A		E	B
Approach Delay		5.1	3.6		26.0	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 128.6			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			

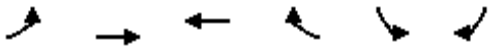
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	387	375	459	54	276
v/c Ratio	0.51	0.24	0.31	0.40	0.73
Control Delay	6.8	3.4	3.6	64.7	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	3.4	3.6	64.7	18.4
Queue Length 50th (m)	23.7	16.8	20.7	13.2	0.0
Queue Length 95th (m)	53.3	32.5	40.1	26.6	26.2
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	761	1538	1501	435	598
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	0.51	0.24	0.31	0.12	0.46

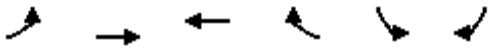
Intersection Summary



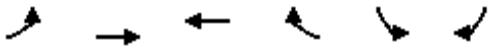
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	356	345	341	81	50	254
Future Volume (vph)	356	345	341	81	50	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1835		1789	1601
Flt Permitted	0.49	1.00	1.00		0.95	1.00
Satd. Flow (perm)	932	1883	1835		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	387	375	371	88	54	276
RTOR Reduction (vph)	0	0	3	0	0	255
Lane Group Flow (vph)	387	375	456	0	54	21
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	105.1	105.1	105.1		9.8	9.8
Effective Green, g (s)	105.1	105.1	105.1		9.8	9.8
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	761	1538	1499		136	122
v/s Ratio Prot		0.20	0.25		c0.03	
v/s Ratio Perm	c0.42					0.01
v/c Ratio	0.51	0.24	0.30		0.40	0.17
Uniform Delay, d1	3.7	2.7	2.9		56.6	55.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.4	0.5		1.9	0.7
Delay (s)	6.1	3.1	3.4		58.5	56.3
Level of Service	A	A	A		E	E
Approach Delay (s)		4.6	3.4		56.6	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	128.6	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



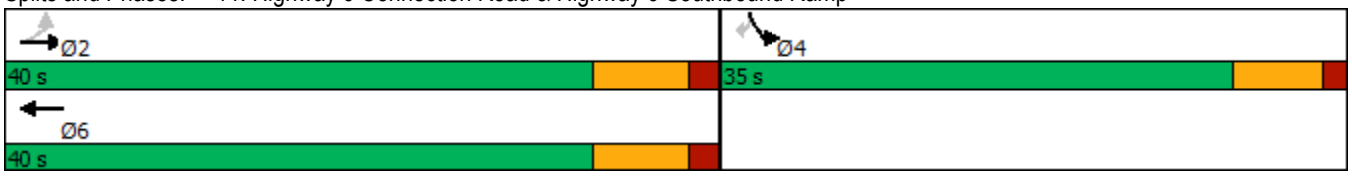
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	281	105	0	120	412
Future Volume (vph)	55	281	105	0	120	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	1868	1883	0	1789	1601
Flt Permitted		0.935			0.950	
Satd. Flow (perm)	0	1761	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						448
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	305	114	0	130	448
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	365	114	0	130	448
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

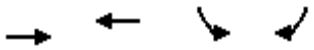


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	40.0	40.0	40.0		35.0	35.0
Total Split (%)	53.3%	53.3%	53.3%		46.7%	46.7%
Maximum Green (s)	32.8	32.8	32.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		32.9	32.9		9.9	9.9
Actuated g/C Ratio		0.58	0.58		0.18	0.18
v/c Ratio		0.36	0.10		0.42	0.69
Control Delay		8.2	6.5		24.6	8.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.2	6.5		24.6	8.7
LOS		A	A		C	A
Approach Delay		8.2	6.5		12.3	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 56.5			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 42.6%		ICU Level of Service A	
Analysis Period (min) 15			

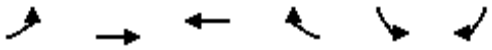
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	365	114	130	448
v/c Ratio	0.36	0.10	0.42	0.69
Control Delay	8.2	6.5	24.6	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	6.5	24.6	8.7
Queue Length 50th (m)	16.5	4.4	12.0	0.0
Queue Length 95th (m)	39.3	12.6	24.3	18.8
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1024	1095	904	1030
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	0.36	0.10	0.14	0.43

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	281	105	0	120	412
Future Volume (vph)	55	281	105	0	120	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1868	1883		1789	1601
Flt Permitted		0.93	1.00		0.95	1.00
Satd. Flow (perm)		1761	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	305	114	0	130	448
RTOR Reduction (vph)	0	0	0	0	0	370
Lane Group Flow (vph)	0	365	114	0	130	78
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		32.9	32.9		9.9	9.9
Effective Green, g (s)		32.9	32.9		9.9	9.9
Actuated g/C Ratio		0.58	0.58		0.18	0.18
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1025	1096		313	280
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.21				0.05
v/c Ratio		0.36	0.10		0.42	0.28
Uniform Delay, d1		6.2	5.2		20.7	20.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.2		0.9	0.6
Delay (s)		7.2	5.4		21.6	20.8
Level of Service		A	A		C	C
Approach Delay (s)		7.2	5.4		21.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

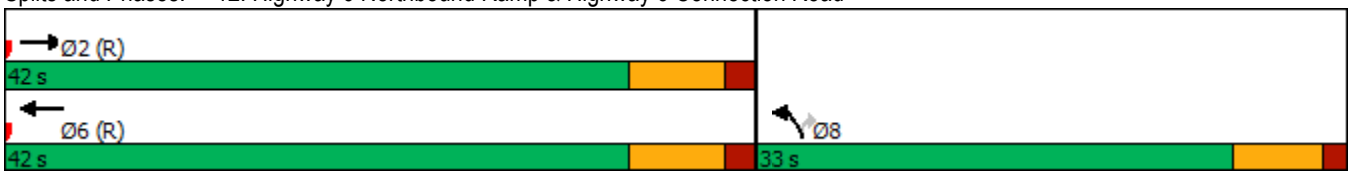
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	18	0	398	59	413
Future Volume (vph)	160	18	0	398	59	413
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					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1857	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1857	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10					449
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	20	0	433	64	449
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	0	0	433	64	449
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.5			51.5	9.8	9.8
Actuated g/C Ratio	0.69			0.69	0.13	0.13
v/c Ratio	0.15			0.34	0.27	0.75
Control Delay	5.2			6.6	30.2	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.2			6.6	30.2	11.5
LOS	A			A	C	B
Approach Delay	5.2			6.6	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



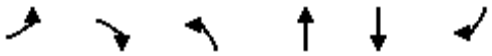
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	194	433	64	449
v/c Ratio	0.15	0.34	0.27	0.75
Control Delay	5.2	6.6	30.2	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.2	6.6	30.2	11.5
Queue Length 50th (m)	6.8	18.8	8.5	0.0
Queue Length 95th (m)	20.4	49.0	16.2	20.9
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1277	1291	632	856
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	0.15	0.34	0.10	0.52

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	160	18	0	398	59	413
Future Volume (vph)	160	18	0	398	59	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1857			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1857			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	20	0	433	64	449
RTOR Reduction (vph)	3	0	0	0	0	390
Lane Group Flow (vph)	191	0	0	433	64	59
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.5			51.5	9.8	9.8
Effective Green, g (s)	51.5			51.5	9.8	9.8
Actuated g/C Ratio	0.69			0.69	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1275			1292	233	209
v/s Ratio Prot	0.10			c0.23	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.15			0.34	0.27	0.28
Uniform Delay, d1	4.1			4.8	29.4	29.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.6	0.7
Delay (s)	4.4			5.5	30.0	30.2
Level of Service	A			A	C	C
Approach Delay (s)	4.4			5.5	30.1	
Approach LOS	A			A	C	

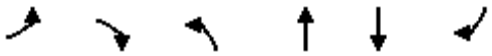
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	0	0	437	304	213
Future Volume (vph)	82	0	0	437	304	213
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					0.944	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1778	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1778	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	11.2			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	0	0	475	330	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	475	562	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)	97	97	97			97
Sign Control	Stop			Free	Free	

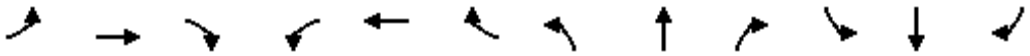
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	0	0	437	304	213
Future Volume (Veh/h)	82	0	0	437	304	213
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)	89	0	0	475	330	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	921	446	562			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	921	446	562			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	100	100			
cM capacity (veh/h)	300	612	1009			

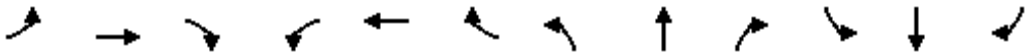
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	475	562
Volume Left	89	0	0
Volume Right	0	0	232
cSH	300	1009	1700
Volume to Capacity	0.30	0.00	0.33
Queue Length 95th (m)	9.2	0.0	0.0
Control Delay (s)	22.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	22.0	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	40.2%	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)	17	30	3	1	56	84	5	352	1	46	419	79
Future Volume (vph)	17	30	3	1	56	84	5	352	1	46	419	79
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		0.992			0.920						0.980	
Flt Protected		0.983						0.999			0.996	
Satd. Flow (prot)	0	1424	0	0	1580	0	0	1882	0	0	1798	0
Flt Permitted		0.983						0.999			0.996	
Satd. Flow (perm)	0	1424	0	0	1580	0	0	1882	0	0	1798	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	18	32	3	1	59	88	5	371	1	48	441	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	148	0	0	377	0	0	572	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												
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	

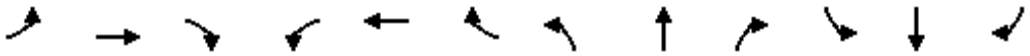
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	30	3	1	56	84	5	352	1	46	419	79
Future Volume (Veh/h)	17	30	3	1	56	84	5	352	1	46	419	79
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	32	3	1	59	88	5	371	1	48	441	83
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	1078	960	482	979	1002	372	524			372		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1078	960	482	979	1002	372	524			372		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	86	84	99	99	75	86	100			95		
cM capacity (veh/h)	130	203	588	195	232	636	1053			1035		

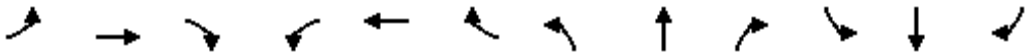
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	148	377	572
Volume Left	18	1	5	48
Volume Right	3	88	1	83
cSH	176	372	1053	1035
Volume to Capacity	0.30	0.40	0.00	0.05
Queue Length 95th (m)	9.1	14.1	0.1	1.1
Control Delay (s)	34.1	20.9	0.2	1.3
Lane LOS	D	C	A	A
Approach Delay (s)	34.1	20.9	0.2	1.3
Approach LOS	D	C		

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	73.1%	ICU Level of Service	D	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	10	1	33	21	149	7	197	17	74	335	17
Future Volume (vph)	12	10	1	33	21	149	7	197	17	74	335	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
Frt		0.994			0.901			0.989			0.994	
Flt Protected		0.975			0.992			0.998			0.991	
Satd. Flow (prot)	0	1862	0	0	1717	0	0	1879	0	0	1847	0
Flt Permitted		0.975			0.992			0.998			0.991	
Satd. Flow (perm)	0	1862	0	0	1717	0	0	1879	0	0	1847	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	12	10	1	34	22	154	7	203	18	76	345	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	210	0	0	228	0	0	439	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												
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	

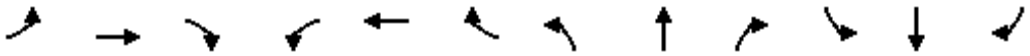
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	10	1	33	21	149	7	197	17	74	335	17
Future Volume (Veh/h)	12	10	1	33	21	149	7	197	17	74	335	17
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)	12	10	1	34	22	154	7	203	18	76	345	18
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	897	741	354	738	741	212	363			221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	897	741	354	738	741	212	363			221		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	97	100	89	93	82	99			94		
cM capacity (veh/h)	194	325	694	313	325	833	1207			1360		

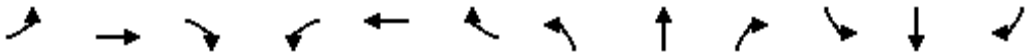
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	210	228	439
Volume Left	12	34	7	76
Volume Right	1	154	18	18
cSH	244	581	1207	1360
Volume to Capacity	0.09	0.36	0.01	0.06
Queue Length 95th (m)	2.3	12.5	0.1	1.3
Control Delay (s)	21.3	14.7	0.3	1.8
Lane LOS	C	B	A	A
Approach Delay (s)	21.3	14.7	0.3	1.8
Approach LOS	C	B		

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	126	0	6	244	2	1	0	7	1	2	1
Future Volume (vph)	1	126	0	6	244	2	1	0	7	1	2	1
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					0.999			0.880			0.966	
Flt Protected					0.999			0.994			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Flt Permitted					0.999			0.994			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1680	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	147	0	7	284	2	1	0	8	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	0	0	293	0	0	9	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

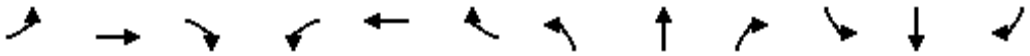
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	126	0	6	244	2	1	0	7	1	2	1
Future Volume (Veh/h)	1	126	0	6	244	2	1	0	7	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	147	0	7	284	2	1	0	8	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	286			147			450	449	147	456	448	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286			147			450	449	147	456	448	285
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1288			1447			518	505	905	511	506	759

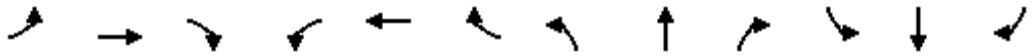
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	148	293	9	4
Volume Left	1	7	1	1
Volume Right	0	2	8	1
cSH	1288	1447	836	554
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.2	0.2
Control Delay (s)	0.1	0.2	9.4	11.6
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.4	11.6
Approach LOS			A	B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	26.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	108	3	7	180	59	2	1	2	29	2	28
Future Volume (vph)	0	108	3	7	180	59	2	1	2	29	2	28
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		0.997			0.968			0.946			0.936	
Flt Protected					0.999			0.980			0.976	
Satd. Flow (prot)	0	1812	0	0	1858	0	0	1781	0	0	1755	0
Flt Permitted					0.999			0.980			0.976	
Satd. Flow (perm)	0	1812	0	0	1858	0	0	1781	0	0	1755	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	119	3	8	198	65	2	1	2	32	2	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	271	0	0	5	0	0	65	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												
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 30.4%		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)	0	108	3	7	180	59	2	1	2	29	2	28
Future Volume (Veh/h)	0	108	3	7	180	59	2	1	2	29	2	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	119	3	8	198	65	2	1	2	32	2	31
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	252	88	18	150	103	2	33			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	252	88	18	150	103	2	33			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	85	100	99	74	94	100			98		
cM capacity (veh/h)	525	779	978	713	774	1088	1592			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	271	5	65
Volume Left	0	8	2	32
Volume Right	3	65	2	31
cSH	783	830	1592	1632
Volume to Capacity	0.16	0.33	0.00	0.02
Queue Length 95th (m)	4.2	10.8	0.0	0.5
Control Delay (s)	10.4	11.4	2.9	3.6
Lane LOS	B	B	A	A
Approach Delay (s)	10.4	11.4	2.9	3.6
Approach LOS	B	B		

Intersection Summary				
Average Delay	10.0			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A	
Analysis Period (min)	15			

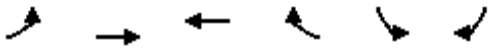
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	79	60	0	43	31
Future Volume (vph)	28	79	60	0	43	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.900					
Flt Protected	0.987					0.972
Satd. Flow (prot)	1673	0	1883	0	0	1831
Flt Permitted	0.987					0.972
Satd. Flow (perm)	1673	0	1883	0	0	1831
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	86	65	0	47	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	65	0	0	81
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	79	60	0	43	31
Future Volume (Veh/h)	28	79	60	0	43	31
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)	30	86	65	0	47	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	193	65			65	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	65			65	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			97	
cM capacity (veh/h)	772	999			1537	

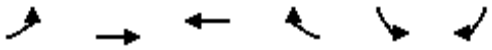
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	116	65	81
Volume Left	30	0	47
Volume Right	86	0	0
cSH	928	1700	1537
Volume to Capacity	0.12	0.04	0.03
Queue Length 95th (m)	3.2	0.0	0.7
Control Delay (s)	9.4	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	4.4
Approach LOS	A		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	96	73	0	0	140
Future Volume (vph)	43	96	73	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	104	79	0	0	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	151	79	0	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

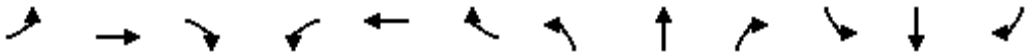
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	96	73	0	0	140
Future Volume (Veh/h)	43	96	73	0	0	140
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)	47	104	79	0	0	152
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	79				277	79
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				277	79
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	85
cM capacity (veh/h)	1519				691	981

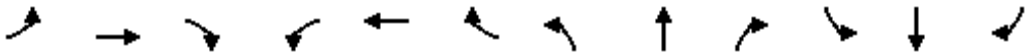
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	151	79	152
Volume Left	47	0	0
Volume Right	0	0	152
cSH	1519	1700	981
Volume to Capacity	0.03	0.05	0.15
Queue Length 95th (m)	0.7	0.0	4.2
Control Delay (s)	2.5	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	29.4%	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)	58	38	0	0	73	0	0	130	0	0	252	0
Future Volume (vph)	58	38	0	0	73	0	0	130	0	0	252	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												
Flt Protected		0.971										
Satd. Flow (prot)	0	1829	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted		0.971										
Satd. Flow (perm)	0	1829	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		10.5			12.1			128.6			11.5	
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)	63	41	0	0	79	0	0	141	0	0	274	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	79	0	0	141	0	0	274	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												
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)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

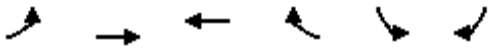
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	38	0	0	73	0	0	130	0	0	252	0
Future Volume (Veh/h)	58	38	0	0	73	0	0	130	0	0	252	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	41	0	0	79	0	0	141	0	0	274	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	79			41			383	246	41	316	246	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	79			41			383	246	41	316	246	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			100	78	100	100	56	100
cM capacity (veh/h)	1519			1568			368	629	1030	510	629	981

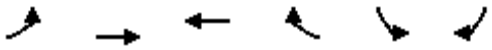
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	104	79	141	274
Volume Left	63	0	0	0
Volume Right	0	0	0	0
cSH	1519	1568	629	629
Volume to Capacity	0.04	0.00	0.22	0.44
Queue Length 95th (m)	1.0	0.0	6.5	16.8
Control Delay (s)	4.7	0.0	12.4	15.1
Lane LOS	A		B	C
Approach Delay (s)	4.7	0.0	12.4	15.1
Approach LOS			B	C

Intersection Summary				
Average Delay	10.6			
Intersection Capacity Utilization	31.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	24	45	0	0	28
Future Volume (vph)	14	24	45	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.982				
Satd. Flow (prot)	0	1850	1883	0	1629	0
Flt Permitted		0.982				
Satd. Flow (perm)	0	1850	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	26	49	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	41	49	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

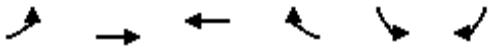
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			



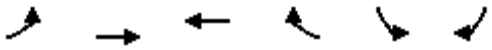
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	24	45	0	0	28
Future Volume (Veh/h)	14	24	45	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	26	49	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	49				105	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	49				105	49
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				100	97
cM capacity (veh/h)	1558				884	1020

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	41	49	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1558	1700	1020
Volume to Capacity	0.01	0.03	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.7	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	2.7	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		



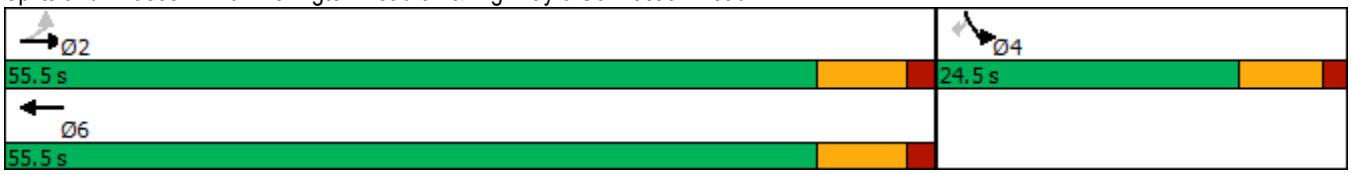
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	219	326	80	50	252
Future Volume (vph)	279	219	326	80	50	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.507				0.950	
Satd. Flow (perm)	955	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28			274
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	238	354	87	54	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	238	441	0	54	274
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

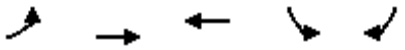


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.3	48.3	48.3		8.1	8.1
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.46	0.18	0.35		0.26	0.64
Control Delay	8.4	4.7	5.4		31.1	11.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	8.4	4.7	5.4		31.1	11.6
LOS	A	A	A		C	B
Approach Delay		6.8	5.4		14.8	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.3		Intersection LOS: A	
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			

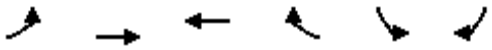
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	303	238	441	54	274
v/c Ratio	0.46	0.18	0.35	0.26	0.64
Control Delay	8.4	4.7	5.4	31.1	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	4.7	5.4	31.1	11.6
Queue Length 50th (m)	14.2	8.8	17.1	6.6	0.0
Queue Length 95th (m)	37.8	20.5	38.2	15.8	18.4
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	657	1296	1270	459	614
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	0.46	0.18	0.35	0.12	0.45

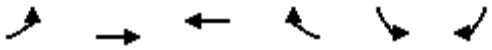
Intersection Summary



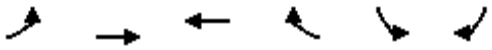
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	219	326	80	50	252
Future Volume (vph)	279	219	326	80	50	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.51	1.00	1.00		0.95	1.00
Satd. Flow (perm)	955	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	238	354	87	54	274
RTOR Reduction (vph)	0	0	9	0	0	242
Lane Group Flow (vph)	303	238	432	0	54	32
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.2	8.2
Effective Green, g (s)	48.4	48.4	48.4		8.2	8.2
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	657	1296	1261		208	186
v/s Ratio Prot		0.13	0.24		c0.03	
v/s Ratio Perm	c0.32					0.02
v/c Ratio	0.46	0.18	0.34		0.26	0.17
Uniform Delay, d1	5.0	3.9	4.5		28.3	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.3	0.7		0.7	0.4
Delay (s)	7.3	4.2	5.2		29.0	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.0	5.2		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	13.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



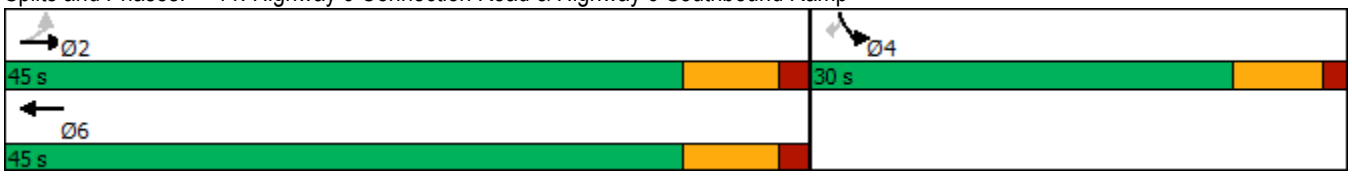
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	168	316	112	0	129	328
Future Volume (vph)	168	316	112	0	129	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.983			0.950	
Satd. Flow (prot)	0	1851	1883	0	1789	1601
Flt Permitted		0.836			0.950	
Satd. Flow (perm)	0	1575	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						357
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	343	122	0	140	357
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	526	122	0	140	357
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

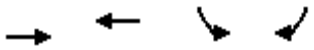


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	45.0	45.0	45.0		30.0	30.0
Total Split (%)	60.0%	60.0%	60.0%		40.0%	40.0%
Maximum Green (s)	37.8	37.8	37.8		23.5	23.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		37.9	37.9		10.2	10.2
Actuated g/C Ratio		0.61	0.61		0.17	0.17
v/c Ratio		0.55	0.11		0.47	0.64
Control Delay		10.3	6.0		28.7	8.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		10.3	6.0		28.7	8.7
LOS		B	A		C	A
Approach Delay		10.3	6.0		14.3	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 61.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

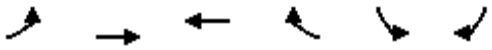
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	526	122	140	357
v/c Ratio	0.55	0.11	0.47	0.64
Control Delay	10.3	6.0	28.7	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.3	6.0	28.7	8.7
Queue Length 50th (m)	29.5	4.9	14.6	0.0
Queue Length 95th (m)	64.4	12.6	28.6	18.3
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	965	1154	681	831
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	0.55	0.11	0.21	0.43

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	168	316	112	0	129	328
Future Volume (vph)	168	316	112	0	129	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		0.98	1.00		0.95	1.00
Satd. Flow (prot)		1851	1883		1789	1601
Flt Permitted		0.84	1.00		0.95	1.00
Satd. Flow (perm)		1574	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	343	122	0	140	357
RTOR Reduction (vph)	0	0	0	0	0	298
Lane Group Flow (vph)	0	526	122	0	140	59
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		37.9	37.9		10.2	10.2
Effective Green, g (s)		37.9	37.9		10.2	10.2
Actuated g/C Ratio		0.61	0.61		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		965	1154		295	264
v/s Ratio Prot			0.06		c0.08	
v/s Ratio Perm		c0.33				0.04
v/c Ratio		0.55	0.11		0.47	0.22
Uniform Delay, d1		6.9	4.9		23.4	22.4
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.2	0.2		1.2	0.4
Delay (s)		9.2	5.1		24.6	22.8
Level of Service		A	A		C	C
Approach Delay (s)		9.2	5.1		23.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	13.7
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

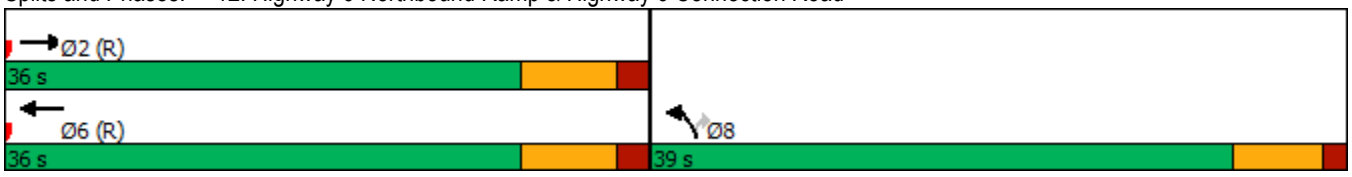
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	177	56	0	232	53	343
Future Volume (vph)	177	56	0	232	53	343
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	0.967					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1821	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1821	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					373
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	61	0	252	58	373
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	0	0	252	58	373
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	52.2			52.2	9.1	9.1
Actuated g/C Ratio	0.70			0.70	0.12	0.12
v/c Ratio	0.20			0.19	0.27	0.71
Control Delay	4.7			5.1	31.2	11.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.7			5.1	31.2	11.8
LOS	A			A	C	B
Approach Delay	4.7			5.1	14.4	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



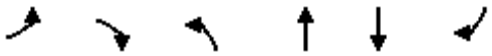
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	253	252	58	373
v/c Ratio	0.20	0.19	0.27	0.71
Control Delay	4.7	5.1	31.2	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	5.1	31.2	11.8
Queue Length 50th (m)	8.6	9.6	7.8	0.0
Queue Length 95th (m)	23.0	24.7	15.8	20.0
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1274	1310	775	905
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	0.20	0.19	0.07	0.41

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	177	56	0	232	53	343
Future Volume (vph)	177	56	0	232	53	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	61	0	252	58	373
RTOR Reduction (vph)	8	0	0	0	0	328
Lane Group Flow (vph)	245	0	0	252	58	45
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	52.2			52.2	9.1	9.1
Effective Green, g (s)	52.2			52.2	9.1	9.1
Actuated g/C Ratio	0.70			0.70	0.12	0.12
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1268			1310	217	194
v/s Ratio Prot	c0.13			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.19			0.19	0.27	0.23
Uniform Delay, d1	4.0			4.0	29.9	29.8
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.7	0.6
Delay (s)	4.3			4.3	30.6	30.4
Level of Service	A			A	C	C
Approach Delay (s)	4.3			4.3	30.4	
Approach LOS	A			A	C	

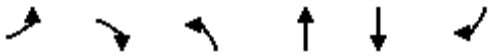
Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	252	0	0	359	302	130
Future Volume (vph)	252	0	0	359	302	130
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					0.959	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1806	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1806	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	11.2			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	0	0	390	328	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	390	469	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)	97	97	97			97
Sign Control	Stop			Free	Free	

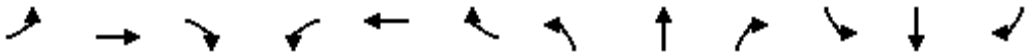
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	252	0	0	359	302	130
Future Volume (Veh/h)	252	0	0	359	302	130
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)	274	0	0	390	328	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	788	398	469			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	788	398	469			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	24	100	100			
cM capacity (veh/h)	360	651	1093			

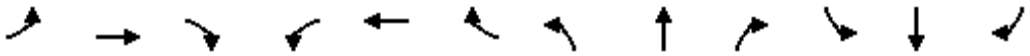
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	274	390	469
Volume Left	274	0	0
Volume Right	0	0	141
cSH	360	1093	1700
Volume to Capacity	0.76	0.00	0.28
Queue Length 95th (m)	46.4	0.0	0.0
Control Delay (s)	40.8	0.0	0.0
Lane LOS	E		
Approach Delay (s)	40.8	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	44.4%	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)	53	26	3	2	10	27	5	434	1	72	342	21
Future Volume (vph)	53	26	3	2	10	27	5	434	1	72	342	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
Frt		0.996			0.907						0.994	
Flt Protected		0.968			0.998			0.999			0.992	
Satd. Flow (prot)	0	1564	0	0	1701	0	0	1834	0	0	1865	0
Flt Permitted		0.968			0.998			0.999			0.992	
Satd. Flow (perm)	0	1564	0	0	1701	0	0	1834	0	0	1865	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	62	30	3	2	12	31	6	505	1	84	398	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	45	0	0	512	0	0	506	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												
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	

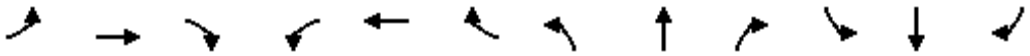
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	26	3	2	10	27	5	434	1	72	342	21
Future Volume (Veh/h)	53	26	3	2	10	27	5	434	1	72	342	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	62	30	3	2	12	31	6	505	1	84	398	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1132	1096	410	1114	1108	506	422			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1132	1096	410	1114	1108	506	422			506		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	59	81	100	98	94	95	99			92		
cM capacity (veh/h)	151	160	646	120	194	571	885			1069		

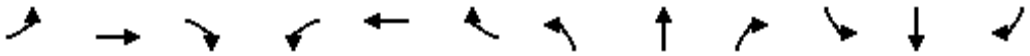
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	95	45	512	506
Volume Left	62	2	6	84
Volume Right	3	31	1	24
cSH	157	339	885	1069
Volume to Capacity	0.60	0.13	0.01	0.08
Queue Length 95th (m)	24.5	3.5	0.2	1.9
Control Delay (s)	57.7	17.3	0.2	2.2
Lane LOS	F	C	A	A
Approach Delay (s)	57.7	17.3	0.2	2.2
Approach LOS	F	C		

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	7	21	11	56	1	362	48	122	212	8
Future Volume (vph)	26	14	7	21	11	56	1	362	48	122	212	8
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		0.980			0.914			0.984			0.997	
Flt Protected		0.973			0.988						0.982	
Satd. Flow (prot)	0	1704	0	0	1440	0	0	1826	0	0	1852	0
Flt Permitted		0.973			0.988						0.982	
Satd. Flow (perm)	0	1704	0	0	1440	0	0	1826	0	0	1852	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	30	16	8	24	13	64	1	411	55	139	241	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	101	0	0	467	0	0	389	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												
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	

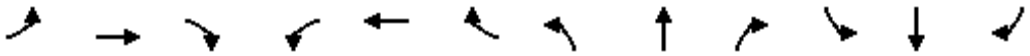
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	14	7	21	11	56	1	362	48	122	212	8
Future Volume (Veh/h)	26	14	7	21	11	56	1	362	48	122	212	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	16	8	24	12	64	1	411	55	139	241	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1034	992	246	980	968	438	250			466		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1034	992	246	980	968	438	250			466		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	81	93	99	86	95	89	100			87		
cM capacity (veh/h)	157	217	758	170	223	582	1327			1106		

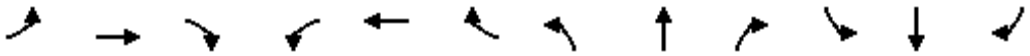
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	100	467	389
Volume Left	30	24	1	139
Volume Right	8	64	55	9
cSH	196	328	1327	1106
Volume to Capacity	0.27	0.30	0.00	0.13
Queue Length 95th (m)	8.2	9.6	0.0	3.3
Control Delay (s)	30.1	20.7	0.0	3.9
Lane LOS	D	C	A	A
Approach Delay (s)	30.1	20.7	0.0	3.9
Approach LOS	D	C		

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	55.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	187	1	4	139	0	0	2	7	0	0	0
Future Volume (vph)	1	187	1	4	139	0	0	2	7	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		0.999						0.895				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	197	1	4	146	0	0	2	7	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	199	0	0	150	0	0	9	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)		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
Sign Control		Free			Free			Stop			Stop	

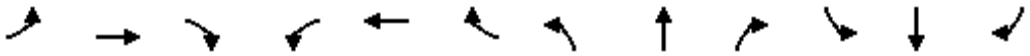
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	187	1	4	139	0	0	2	7	0	0	0
Future Volume (Veh/h)	1	187	1	4	139	0	0	2	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	197	1	4	146	0	0	2	7	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	146			198			354	354	198	362	354	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			198			354	354	198	362	354	146
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1448			1387			604	573	849	590	572	901

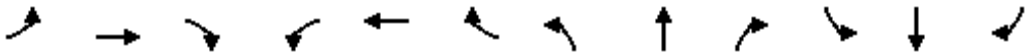
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	199	150	9	0
Volume Left	1	4	0	0
Volume Right	1	0	7	0
cSH	1448	1387	767	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.3	0.0
Control Delay (s)	0.0	0.2	9.8	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.2	9.8	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	20.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	212	3	2	81	9	3	1	1	25	0	9
Future Volume (vph)	0	212	3	2	81	9	3	1	1	25	0	9
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		0.998			0.987			0.977			0.965	
Flt Protected					0.999			0.968			0.964	
Satd. Flow (prot)	0	1819	0	0	1799	0	0	1256	0	0	1787	0
Flt Permitted					0.999			0.968			0.964	
Satd. Flow (perm)	0	1819	0	0	1799	0	0	1256	0	0	1787	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	286	4	3	109	12	4	1	1	34	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	124	0	0	6	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.3%		ICU Level of Service A	
Analysis Period (min) 15			



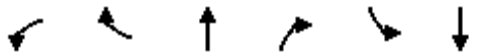
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	212	3	2	81	9	3	1	1	25	0	9
Future Volume (Veh/h)	0	212	3	2	81	9	3	1	1	25	0	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	286	4	3	109	12	4	1	1	34	0	12
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	150	84	6	230	90	2	12			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	150	84	6	230	90	2	12			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	63	100	99	86	99	100			98		
cM capacity (veh/h)	713	781	993	510	774	1089	1270			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	290	124	6	46
Volume Left	0	3	4	34
Volume Right	4	12	1	12
cSH	784	786	1270	1634
Volume to Capacity	0.37	0.16	0.00	0.02
Queue Length 95th (m)	13.0	4.2	0.1	0.5
Control Delay (s)	12.3	10.4	5.2	5.4
Lane LOS	B	B	A	A
Approach Delay (s)	12.3	10.4	5.2	5.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	11.0			
Intersection Capacity Utilization	21.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	22	10	0	71	25
Future Volume (vph)	9	22	10	0	71	25
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	0.905					
Flt Protected	0.986					0.964
Satd. Flow (prot)	1681	0	1883	0	0	1816
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1681	0	1883	0	0	1816
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	24	11	0	77	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	0	11	0	0	104
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free

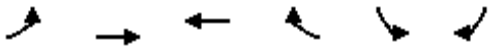
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	22	10	0	71	25
Future Volume (Veh/h)	9	22	10	0	71	25
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)	10	24	11	0	77	27
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	192	11			11	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	11			11	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			95	
cM capacity (veh/h)	759	1070			1608	

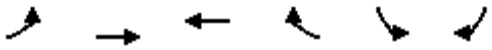
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	34	11	104
Volume Left	10	0	77
Volume Right	24	0	0
cSH	955	1700	1608
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (m)	0.8	0.0	1.1
Control Delay (s)	8.9	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	71	166	47	0	0	46
Future Volume (vph)	71	166	47	0	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	180	51	0	0	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	257	51	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

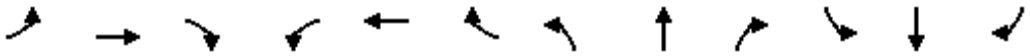
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	71	166	47	0	0	46
Future Volume (Veh/h)	71	166	47	0	0	46
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)	77	180	51	0	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	51				385	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	51				385	51
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	95
cM capacity (veh/h)	1555				587	1017

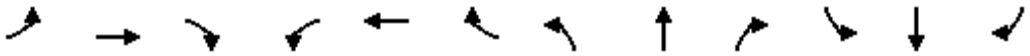
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	257	51	50
Volume Left	77	0	0
Volume Right	0	0	50
cSH	1555	1700	1017
Volume to Capacity	0.05	0.03	0.05
Queue Length 95th (m)	1.2	0.0	1.2
Control Delay (s)	2.5	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	72	0	0	32	0	0	213	0	0	82	15
Future Volume (vph)	95	72	0	0	32	0	0	213	0	0	82	15
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											0.979	
Flt Protected		0.972										
Satd. Flow (prot)	0	1831	0	0	1883	0	0	1883	0	0	1844	0
Flt Permitted		0.972										
Satd. Flow (perm)	0	1831	0	0	1883	0	0	1883	0	0	1844	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		10.5			12.1			128.6			11.5	
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)	103	78	0	0	35	0	0	232	0	0	89	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	181	0	0	35	0	0	232	0	0	105	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												
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)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

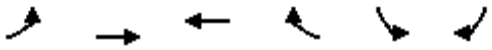
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	72	0	0	32	0	0	213	0	0	82	15
Future Volume (Veh/h)	95	72	0	0	32	0	0	213	0	0	82	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	78	0	0	35	0	0	232	0	0	89	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	35			78			380	319	78	435	319	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			78			380	319	78	435	319	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			100	58	100	100	84	98
cM capacity (veh/h)	1576			1520			475	559	983	343	559	1038

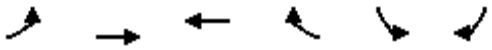
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	181	35	232	105
Volume Left	103	0	0	0
Volume Right	0	0	0	16
cSH	1576	1520	559	601
Volume to Capacity	0.07	0.00	0.42	0.17
Queue Length 95th (m)	1.6	0.0	15.4	4.8
Control Delay (s)	4.5	0.0	15.9	12.3
Lane LOS	A		C	B
Approach Delay (s)	4.5	0.0	15.9	12.3
Approach LOS			C	B

Intersection Summary				
Average Delay	10.5			
Intersection Capacity Utilization	33.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	48	23	0	0	9
Future Volume (vph)	24	48	23	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.984				
Satd. Flow (prot)	0	1853	1883	0	1629	0
Flt Permitted		0.984				
Satd. Flow (perm)	0	1853	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	52	25	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	78	25	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

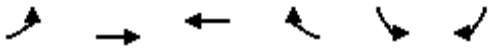
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			



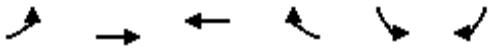
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	48	23	0	0	9
Future Volume (Veh/h)	24	48	23	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	52	25	0	0	10
Pedestrians						
Lane Width (m)						
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	25				129	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	25				129	25
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1589				851	1051

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	78	25	10
Volume Left	26	0	0
Volume Right	0	0	10
cSH	1589	1700	1051
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.5	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		



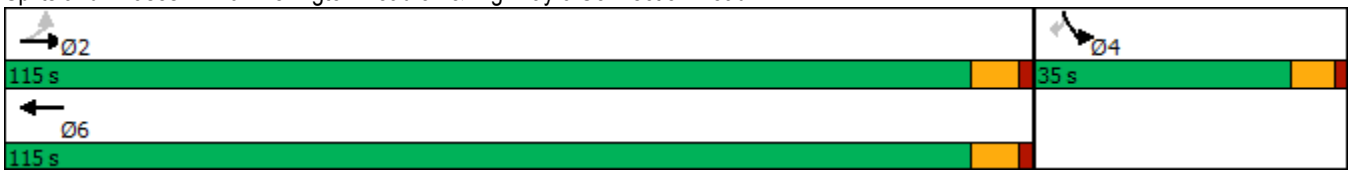
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.472				0.950	
Satd. Flow (perm)	889	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			286
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	415	498	0	65	286
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

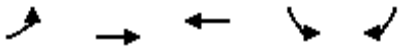


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.54	0.27	0.33		0.46	0.73
Control Delay	7.7	3.6	3.8		68.0	18.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	7.7	3.6	3.8		68.0	18.0
LOS	A	A	A		E	B
Approach Delay		5.6	3.8		27.2	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

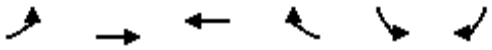
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	392	415	498	65	286
v/c Ratio	0.54	0.27	0.33	0.46	0.73
Control Delay	7.7	3.6	3.8	68.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	3.6	3.8	68.0	18.0
Queue Length 50th (m)	26.4	20.0	24.4	16.5	0.0
Queue Length 95th (m)	58.5	37.1	45.2	31.4	27.0
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	725	1537	1500	386	569
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.27	0.33	0.17	0.50

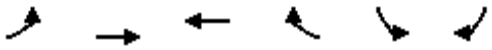
Intersection Summary



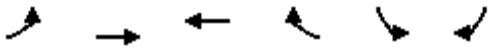
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	889	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
RTOR Reduction (vph)	0	0	4	0	0	263
Lane Group Flow (vph)	392	415	494	0	65	23
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		10.5	10.5
Effective Green, g (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	726	1538	1497		142	127
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.44					0.01
v/c Ratio	0.54	0.27	0.33		0.46	0.18
Uniform Delay, d1	4.0	2.8	3.0		58.1	56.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.4	0.6		2.3	0.7
Delay (s)	6.8	3.3	3.6		60.4	57.5
Level of Service	A	A	A		E	E
Approach Delay (s)		5.0	3.6		58.0	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	132.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



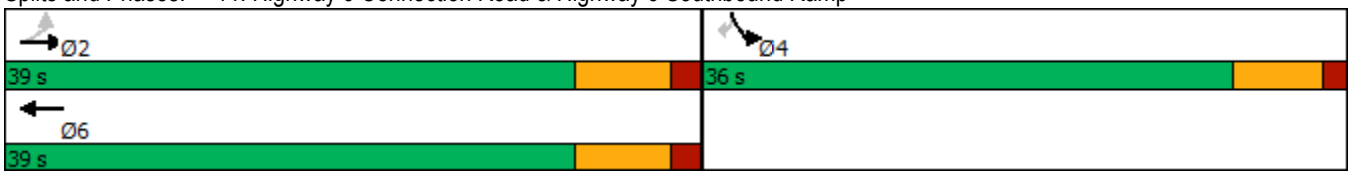
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	268	107	0	115	429
Future Volume (vph)	55	268	107	0	115	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	1868	1883	0	1789	1601
Flt Permitted		0.932			0.950	
Satd. Flow (perm)	0	1755	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						466
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	291	116	0	125	466
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	116	0	125	466
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

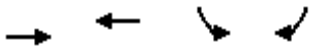


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	39.0	39.0	39.0		36.0	36.0
Total Split (%)	52.0%	52.0%	52.0%		48.0%	48.0%
Maximum Green (s)	31.8	31.8	31.8		29.5	29.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.8	9.8
Actuated g/C Ratio		0.58	0.58		0.18	0.18
v/c Ratio		0.35	0.11		0.40	0.70
Control Delay		8.2	6.6		23.7	8.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.2	6.6		23.7	8.7
LOS		A	A		C	A
Approach Delay		8.2	6.6		11.9	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 55.4			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

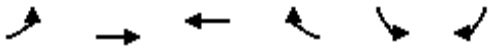
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	351	116	125	466
v/c Ratio	0.35	0.11	0.40	0.70
Control Delay	8.2	6.6	23.7	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	6.6	23.7	8.7
Queue Length 50th (m)	15.5	4.4	11.2	0.0
Queue Length 95th (m)	38.0	13.0	23.0	18.7
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1010	1084	955	1072
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	0.35	0.11	0.13	0.43

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	55	268	107	0	115	429
Future Volume (vph)	55	268	107	0	115	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1867	1883		1789	1601
Flt Permitted		0.93	1.00		0.95	1.00
Satd. Flow (perm)		1755	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	291	116	0	125	466
RTOR Reduction (vph)	0	0	0	0	0	384
Lane Group Flow (vph)	0	351	116	0	125	82
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		31.9	31.9		9.8	9.8
Effective Green, g (s)		31.9	31.9		9.8	9.8
Actuated g/C Ratio		0.58	0.58		0.18	0.18
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1010	1084		316	283
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.20				0.05
v/c Ratio		0.35	0.11		0.40	0.29
Uniform Delay, d1		6.2	5.3		20.2	19.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.2		0.8	0.6
Delay (s)		7.2	5.5		21.0	20.4
Level of Service		A	A		C	C
Approach Delay (s)		7.2	5.5		20.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	13.7
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

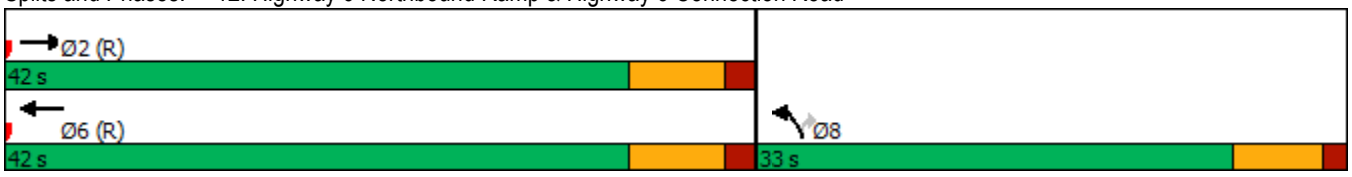
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	408	62	438
Future Volume (vph)	114	18	0	408	62	438
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	0.981					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1848	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1848	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14					476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	443	67	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	443	67	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
v/c Ratio	0.11			0.34	0.28	0.76
Control Delay	5.0			6.8	30.0	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.8	30.0	11.5
LOS	A			A	C	B
Approach Delay	5.0			6.8	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



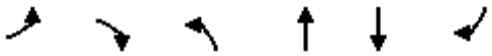
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	144	443	67	476
v/c Ratio	0.11	0.34	0.28	0.76
Control Delay	5.0	6.8	30.0	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.8	30.0	11.5
Queue Length 50th (m)	4.7	19.5	8.9	0.0
Queue Length 95th (m)	15.5	51.5	16.6	21.6
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1267	1286	632	873
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	0.11	0.34	0.11	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	408	62	438
Future Volume (vph)	114	18	0	408	62	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1848			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1848			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	443	67	476
RTOR Reduction (vph)	4	0	0	0	0	413
Lane Group Flow (vph)	140	0	0	443	67	63
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.3			51.3	10.0	10.0
Effective Green, g (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1264			1287	238	213
v/s Ratio Prot	0.08			c0.24	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.11			0.34	0.28	0.30
Uniform Delay, d1	4.1			4.9	29.3	29.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.7	0.8
Delay (s)	4.2			5.6	29.9	30.1
Level of Service	A			A	C	C
Approach Delay (s)	4.2			5.6	30.1	
Approach LOS	A			A	C	

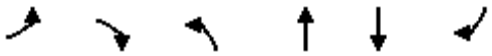
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	0	0	451	323	213
Future Volume (vph)	82	0	0	451	323	213
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					0.946	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1782	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1782	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	11.2			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	0	0	490	351	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	490	583	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)	97	97	97			97
Sign Control	Stop			Free	Free	

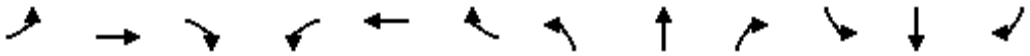
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	0	0	451	323	213
Future Volume (Veh/h)	82	0	0	451	323	213
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)	89	0	0	490	351	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	957	467	583			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	957	467	583			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	100	100			
cM capacity (veh/h)	286	596	991			

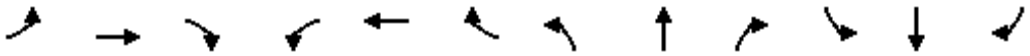
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	490	583
Volume Left	89	0	0
Volume Right	0	0	232
cSH	286	991	1700
Volume to Capacity	0.31	0.00	0.34
Queue Length 95th (m)	9.8	0.0	0.0
Control Delay (s)	23.2	0.0	0.0
Lane LOS	C		
Approach Delay (s)	23.2	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	41.2%	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)	19	30	3	1	56	84	5	374	1	46	455	87
Future Volume (vph)	19	30	3	1	56	84	5	374	1	46	455	87
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		0.993			0.920						0.980	
Flt Protected		0.982						0.999			0.996	
Satd. Flow (prot)	0	1435	0	0	1580	0	0	1882	0	0	1801	0
Flt Permitted		0.982						0.999			0.996	
Satd. Flow (perm)	0	1435	0	0	1580	0	0	1882	0	0	1801	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	20	32	3	1	59	88	5	394	1	48	479	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	148	0	0	400	0	0	619	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												
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	

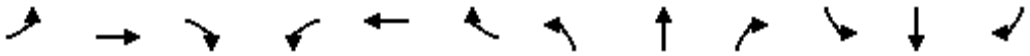
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	30	3	1	56	84	5	374	1	46	455	87
Future Volume (Veh/h)	19	30	3	1	56	84	5	374	1	46	455	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	32	3	1	59	88	5	394	1	48	479	92
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	1143	1026	525	1044	1072	394	571			395		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1143	1026	525	1044	1072	394	571			395		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	82	83	99	99	72	86	100			95		
cM capacity (veh/h)	114	184	556	173	211	617	1012			1014		

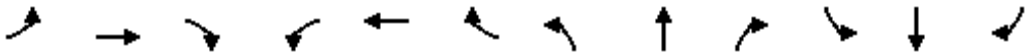
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	148	400	619
Volume Left	20	1	5	48
Volume Right	3	88	1	92
cSH	155	346	1012	1014
Volume to Capacity	0.36	0.43	0.00	0.05
Queue Length 95th (m)	11.2	15.8	0.1	1.1
Control Delay (s)	40.6	23.0	0.2	1.3
Lane LOS	E	C	A	A
Approach Delay (s)	40.6	23.0	0.2	1.3
Approach LOS	E	C		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	11	1	33	23	149	8	217	17	74	370	19
Future Volume (vph)	14	11	1	33	23	149	8	217	17	74	370	19
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		0.995			0.902			0.990			0.994	
Flt Protected		0.974			0.992			0.998			0.992	
Satd. Flow (prot)	0	1862	0	0	1719	0	0	1881	0	0	1848	0
Flt Permitted		0.974			0.992			0.998			0.992	
Satd. Flow (perm)	0	1862	0	0	1719	0	0	1881	0	0	1848	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	14	11	1	34	24	154	8	224	18	76	381	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	212	0	0	250	0	0	477	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												
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	

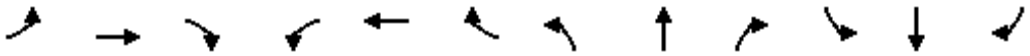
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	11	1	33	23	149	8	217	17	74	370	19
Future Volume (Veh/h)	14	11	1	33	23	149	8	217	17	74	370	19
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)	14	11	1	34	24	154	8	224	18	76	381	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	958	801	391	798	802	233	401			242		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	958	801	391	798	802	233	401			242		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	96	100	88	92	81	99			94		
cM capacity (veh/h)	173	300	662	283	299	811	1169			1336		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	212	250	477
Volume Left	14	34	8	76
Volume Right	1	154	18	20
cSH	218	543	1169	1336
Volume to Capacity	0.12	0.39	0.01	0.06
Queue Length 95th (m)	3.0	14.0	0.2	1.4
Control Delay (s)	23.7	15.8	0.3	1.7
Lane LOS	C	C	A	A
Approach Delay (s)	23.7	15.8	0.3	1.7
Approach LOS	C	C		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B	
Analysis Period (min)	15			



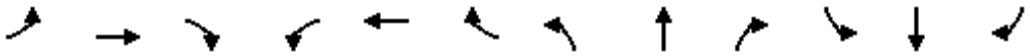
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	139	0	7	270	2	1	0	8	1	2	1
Future Volume (vph)	1	139	0	7	270	2	1	0	8	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999			0.878			0.966	
Flt Protected					0.999			0.995			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1678	0	0	1834	0
Flt Permitted					0.999			0.995			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1678	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	162	0	8	314	2	1	0	9	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	324	0	0	10	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	139	0	7	270	2	1	0	8	1	2	1
Future Volume (Veh/h)	1	139	0	7	270	2	1	0	8	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	162	0	8	314	2	1	0	9	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	316			162			497	496	162	504	495	315
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316			162			497	496	162	504	495	315
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1256			1429			482	475	888	474	476	730

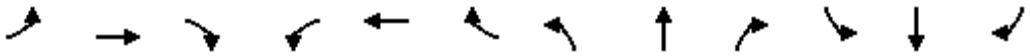
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	163	324	10	4
Volume Left	1	8	1	1
Volume Right	0	2	9	1
cSH	1256	1429	819	521
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.3	0.2
Control Delay (s)	0.1	0.2	9.4	12.0
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.4	12.0
Approach LOS			A	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	29.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	111	3	8	184	59	2	1	2	29	2	28
Future Volume (vph)	0	111	3	8	184	59	2	1	2	29	2	28
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		0.997			0.968			0.946			0.936	
Flt Protected					0.998			0.980			0.976	
Satd. Flow (prot)	0	1813	0	0	1856	0	0	1781	0	0	1755	0
Flt Permitted					0.998			0.980			0.976	
Satd. Flow (perm)	0	1813	0	0	1856	0	0	1781	0	0	1755	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	122	3	9	202	65	2	1	2	32	2	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	276	0	0	5	0	0	65	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												
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 31.4%		ICU Level of Service A	
Analysis Period (min) 15			



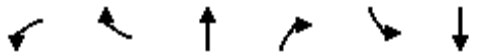
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	111	3	8	184	59	2	1	2	29	2	28
Future Volume (Veh/h)	0	111	3	8	184	59	2	1	2	29	2	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	122	3	9	202	65	2	1	2	32	2	31
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	254	88	18	152	103	2	33			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	254	88	18	152	103	2	33			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	84	100	99	74	94	100			98		
cM capacity (veh/h)	521	779	978	709	774	1088	1592			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	125	276	5	65
Volume Left	0	9	2	32
Volume Right	3	65	2	31
cSH	783	828	1592	1632
Volume to Capacity	0.16	0.33	0.00	0.02
Queue Length 95th (m)	4.3	11.2	0.0	0.5
Control Delay (s)	10.5	11.5	2.9	3.6
Lane LOS	B	B	A	A
Approach Delay (s)	10.5	11.5	2.9	3.6
Approach LOS	B	B		

Intersection Summary				
Average Delay	10.1			
Intersection Capacity Utilization	31.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	79	60	0	43	31
Future Volume (vph)	28	79	60	0	43	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	0.900					
Flt Protected	0.987					0.972
Satd. Flow (prot)	1673	0	1883	0	0	1831
Flt Permitted	0.987					0.972
Satd. Flow (perm)	1673	0	1883	0	0	1831
Link Speed (k/h)	48		48			60
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	86	65	0	47	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	65	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

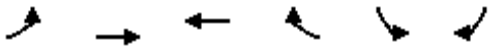
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	79	60	0	43	31
Future Volume (Veh/h)	28	79	60	0	43	31
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)	30	86	65	0	47	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	193	65			65	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	65			65	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			97	
cM capacity (veh/h)	772	999			1537	

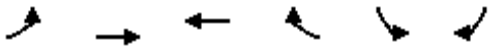
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	116	65	81
Volume Left	30	0	47
Volume Right	86	0	0
cSH	928	1700	1537
Volume to Capacity	0.12	0.04	0.03
Queue Length 95th (m)	3.2	0.0	0.7
Control Delay (s)	9.4	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	4.4
Approach LOS	A		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	99	78	0	0	140
Future Volume (vph)	43	99	78	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	108	85	0	0	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	85	0	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

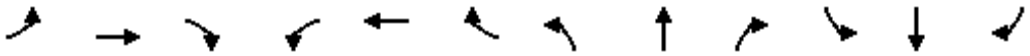
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	99	78	0	0	140
Future Volume (Veh/h)	43	99	78	0	0	140
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)	47	108	85	0	0	152
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	85				287	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85				287	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	84
cM capacity (veh/h)	1512				682	974

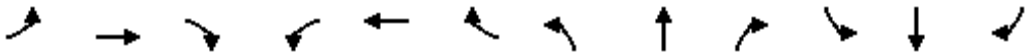
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	155	85	152
Volume Left	47	0	0
Volume Right	0	0	152
cSH	1512	1700	974
Volume to Capacity	0.03	0.05	0.16
Queue Length 95th (m)	0.7	0.0	4.2
Control Delay (s)	2.4	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	2.4	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	29.6%	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)	58	41	0	0	78	0	0	130	0	0	252	0
Future Volume (vph)	58	41	0	0	78	0	0	130	0	0	252	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												
Flt Protected		0.972										
Satd. Flow (prot)	0	1831	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted		0.972										
Satd. Flow (perm)	0	1831	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		10.5			12.1			128.6			11.5	
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)	63	45	0	0	85	0	0	141	0	0	274	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	85	0	0	141	0	0	274	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												
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)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

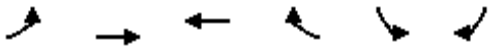
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	41	0	0	78	0	0	130	0	0	252	0
Future Volume (Veh/h)	58	41	0	0	78	0	0	130	0	0	252	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	45	0	0	85	0	0	141	0	0	274	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	85			45			393	256	45	326	256	85
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	85			45			393	256	45	326	256	85
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			100	77	100	100	56	100
cM capacity (veh/h)	1512			1563			360	621	1025	501	621	974

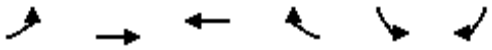
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	108	85	141	274
Volume Left	63	0	0	0
Volume Right	0	0	0	0
cSH	1512	1563	621	621
Volume to Capacity	0.04	0.00	0.23	0.44
Queue Length 95th (m)	1.0	0.0	6.6	17.1
Control Delay (s)	4.5	0.0	12.5	15.3
Lane LOS	A		B	C
Approach Delay (s)	4.5	0.0	12.5	15.3
Approach LOS			B	C

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	27	50	0	0	28
Future Volume (vph)	14	27	50	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.983				
Satd. Flow (prot)	0	1851	1883	0	1629	0
Flt Permitted		0.983				
Satd. Flow (perm)	0	1851	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	29	54	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	44	54	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

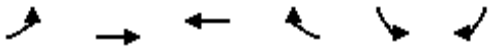
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			



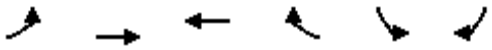
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	27	50	0	0	28
Future Volume (Veh/h)	14	27	50	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	29	54	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	54				113	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54				113	54
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				100	97
cM capacity (veh/h)	1551				875	1013

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	44	54	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1551	1700	1013
Volume to Capacity	0.01	0.03	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.6	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		2.9	
Intersection Capacity Utilization		18.9%	ICU Level of Service A
Analysis Period (min)		15	



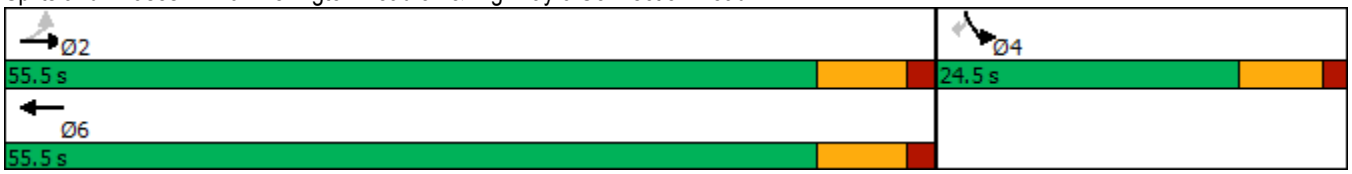
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.476				0.950	
Satd. Flow (perm)	897	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			283
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	259	487	0	65	283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

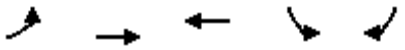


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.51	0.20	0.39		0.31	0.64
Control Delay	9.7	4.9	5.9		31.8	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	9.7	4.9	5.9		31.8	11.4
LOS	A	A	A		C	B
Approach Delay		7.5	5.9		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

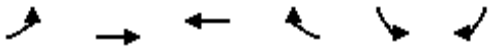
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	315	259	487	65	283
v/c Ratio	0.51	0.20	0.39	0.31	0.64
Control Delay	9.7	4.9	5.9	31.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	4.9	5.9	31.8	11.4
Queue Length 50th (m)	16.0	9.9	20.1	8.0	0.0
Queue Length 95th (m)	43.2	22.5	43.8	18.1	18.7
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	615	1291	1263	457	619
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	0.51	0.20	0.39	0.14	0.46

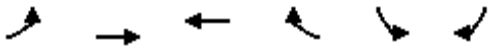
Intersection Summary



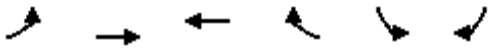
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.48	1.00	1.00		0.95	1.00
Satd. Flow (perm)	896	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
RTOR Reduction (vph)	0	0	9	0	0	249
Lane Group Flow (vph)	315	259	478	0	65	34
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.4	8.4
Effective Green, g (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	615	1292	1256		213	190
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.35					0.02
v/c Ratio	0.51	0.20	0.38		0.31	0.18
Uniform Delay, d1	5.3	4.0	4.7		28.4	27.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.3	0.9		0.8	0.4
Delay (s)	8.4	4.4	5.6		29.2	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.6	5.6		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



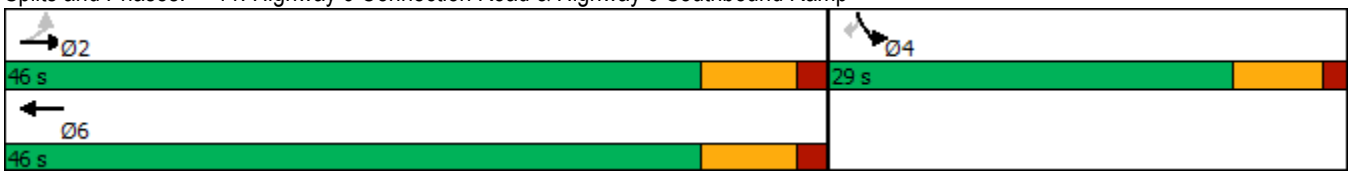
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	168	324	98	208	134	351
Future Volume (vph)	168	324	98	208	134	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.908			0.850
Flt Protected		0.983			0.950	
Satd. Flow (prot)	0	1851	1710	0	1789	1601
Flt Permitted		0.756			0.950	
Satd. Flow (perm)	0	1424	1710	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			210			382
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	352	107	226	146	382
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	535	333	0	146	382
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

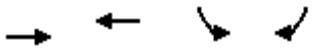


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	46.0	46.0	46.0		29.0	29.0
Total Split (%)	61.3%	61.3%	61.3%		38.7%	38.7%
Maximum Green (s)	38.8	38.8	38.8		22.5	22.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.6	10.6
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.61	0.29		0.49	0.65
Control Delay		12.1	3.2		29.4	8.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.1	3.2		29.4	8.8
LOS		B	A		C	A
Approach Delay		12.1	3.2		14.5	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

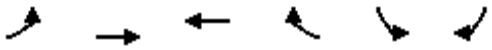
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	535	333	146	382
v/c Ratio	0.61	0.29	0.49	0.65
Control Delay	12.1	3.2	29.4	8.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.1	3.2	29.4	8.8
Queue Length 50th (m)	32.6	5.1	15.6	0.0
Queue Length 95th (m)	74.2	17.0	30.2	18.9
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	876	1133	638	817
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	0.61	0.29	0.23	0.47

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	168	324	98	208	134	351
Future Volume (vph)	168	324	98	208	134	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.91		1.00	0.85
Flt Protected		0.98	1.00		0.95	1.00
Satd. Flow (prot)		1852	1711		1789	1601
Flt Permitted		0.76	1.00		0.95	1.00
Satd. Flow (perm)		1423	1711		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	352	107	226	146	382
RTOR Reduction (vph)	0	0	81	0	0	318
Lane Group Flow (vph)	0	535	252	0	146	64
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.9	38.9		10.6	10.6
Effective Green, g (s)		38.9	38.9		10.6	10.6
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		875	1053		300	268
v/s Ratio Prot			0.15		c0.08	
v/s Ratio Perm		c0.38				0.04
v/c Ratio		0.61	0.24		0.49	0.24
Uniform Delay, d1		7.5	5.5		23.8	22.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.2	0.5		1.2	0.5
Delay (s)		10.7	6.0		25.1	23.3
Level of Service		B	A		C	C
Approach Delay (s)		10.7	6.0		23.8	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

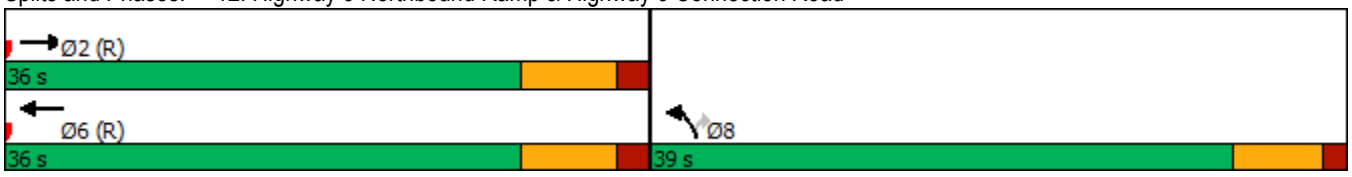
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	56	371
Future Volume (vph)	178	56	0	233	56	371
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	0.968					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1823	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1823	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	61	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	0	0	253	61	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.9			51.9	9.4	9.4
Actuated g/C Ratio	0.69			0.69	0.13	0.13
v/c Ratio	0.20			0.19	0.27	0.73
Control Delay	4.9			5.3	31.0	11.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.9			5.3	31.0	11.7
LOS	A			A	C	B
Approach Delay	4.9			5.3	14.2	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



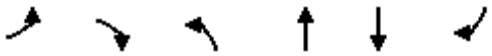
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	254	253	61	403
v/c Ratio	0.20	0.19	0.27	0.73
Control Delay	4.9	5.3	31.0	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	5.3	31.0	11.7
Queue Length 50th (m)	8.6	9.6	8.2	0.0
Queue Length 95th (m)	23.7	25.4	16.1	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1270	1303	775	922
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	0.20	0.19	0.08	0.44

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	56	371
Future Volume (vph)	178	56	0	233	56	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	61	403
RTOR Reduction (vph)	8	0	0	0	0	352
Lane Group Flow (vph)	246	0	0	253	61	51
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.9			51.9	9.4	9.4
Effective Green, g (s)	51.9			51.9	9.4	9.4
Actuated g/C Ratio	0.69			0.69	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1260			1303	224	200
v/s Ratio Prot	c0.14			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.20			0.19	0.27	0.25
Uniform Delay, d1	4.1			4.1	29.7	29.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.7	0.7
Delay (s)	4.5			4.4	30.4	30.3
Level of Service	A			A	C	C
Approach Delay (s)	4.5			4.4	30.3	
Approach LOS	A			A	C	

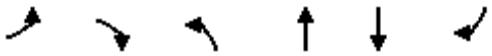
Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	252	0	0	385	320	130
Future Volume (vph)	252	0	0	385	320	130
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					0.961	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1810	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1810	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	11.2			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	0	0	418	348	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	418	489	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)	97	97	97			97
Sign Control	Stop			Free	Free	

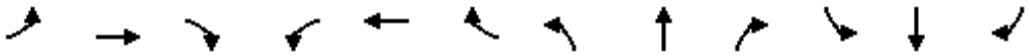
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	252	0	0	385	320	130
Future Volume (Veh/h)	252	0	0	385	320	130
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)	274	0	0	418	348	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	836	418	489			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	836	418	489			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	19	100	100			
cM capacity (veh/h)	337	635	1074			

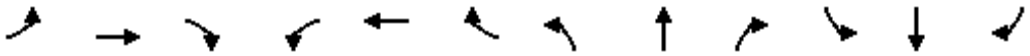
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	274	418	489
Volume Left	274	0	0
Volume Right	0	0	141
cSH	337	1074	1700
Volume to Capacity	0.81	0.00	0.29
Queue Length 95th (m)	52.7	0.0	0.0
Control Delay (s)	49.0	0.0	0.0
Lane LOS	E		
Approach Delay (s)	49.0	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	45.4%	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)	59	26	3	2	10	28	6	474	1	72	366	23
Future Volume (vph)	59	26	3	2	10	28	6	474	1	72	366	23
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		0.996			0.905						0.993	
Flt Protected		0.967			0.998			0.999			0.992	
Satd. Flow (prot)	0	1576	0	0	1699	0	0	1833	0	0	1863	0
Flt Permitted		0.967			0.998			0.999			0.992	
Satd. Flow (perm)	0	1576	0	0	1699	0	0	1833	0	0	1863	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	4%	50%	0%	50%	0%	0%	60%	4%	0%	0%	2%	0%
Adj. Flow (vph)	69	30	3	2	12	33	7	551	1	84	426	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	47	0	0	559	0	0	537	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												
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	

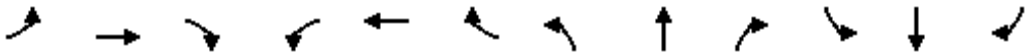
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	26	3	2	10	28	6	474	1	72	366	23
Future Volume (Veh/h)	59	26	3	2	10	28	6	474	1	72	366	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	69	30	3	2	12	33	7	551	1	84	426	27
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	1212	1174	440	1191	1186	552	453			552		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1212	1174	440	1191	1186	552	453			552		
tC, single (s)	7.1	7.0	6.2	7.6	6.5	6.2	4.7			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	4.0	4.0	3.3	2.7			2.2		
p0 queue free %	47	79	100	98	93	94	99			92		
cM capacity (veh/h)	130	143	622	103	173	538	860			1028		

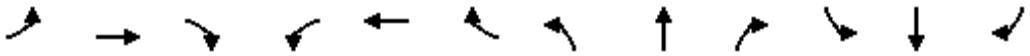
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	102	47	559	537
Volume Left	69	2	7	84
Volume Right	3	33	1	27
cSH	137	313	860	1028
Volume to Capacity	0.74	0.15	0.01	0.08
Queue Length 95th (m)	33.2	4.0	0.2	2.0
Control Delay (s)	83.7	18.5	0.2	2.2
Lane LOS	F	C	A	A
Approach Delay (s)	83.7	18.5	0.2	2.2
Approach LOS	F	C		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	71.5%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	15	7	21	13	57	1	399	48	123	234	9
Future Volume (vph)	29	15	7	21	13	57	1	399	48	123	234	9
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		0.981			0.916			0.985			0.997	
Flt Protected		0.972			0.989						0.983	
Satd. Flow (prot)	0	1705	0	0	1449	0	0	1827	0	0	1853	0
Flt Permitted		0.972			0.989						0.983	
Satd. Flow (perm)	0	1705	0	0	1449	0	0	1827	0	0	1853	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	9%	0%	17%	33%	0%	20%	0%	4%	0%	0%	2%	14%
Adj. Flow (vph)	33	17	8	24	15	65	1	453	55	140	266	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	104	0	0	509	0	0	416	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												
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	

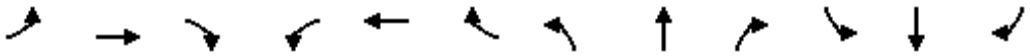
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.7%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	15	7	21	13	57	1	399	48	123	234	9
Future Volume (Veh/h)	29	15	7	21	13	57	1	399	48	123	234	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	33	17	8	24	15	65	1	453	55	140	266	10
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	1106	1061	271	1050	1038	480	276			508		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1106	1061	271	1050	1038	480	276			508		
tC, single (s)	7.2	6.5	6.4	7.4	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.8	4.0	3.5	2.2			2.2		
p0 queue free %	76	91	99	84	93	88	100			87		
cM capacity (veh/h)	136	196	733	149	202	550	1299			1067		

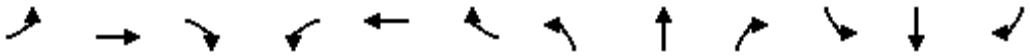
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	104	509	416
Volume Left	33	24	1	140
Volume Right	8	65	55	10
cSH	171	295	1299	1067
Volume to Capacity	0.34	0.35	0.00	0.13
Queue Length 95th (m)	10.7	11.7	0.0	3.4
Control Delay (s)	36.6	23.8	0.0	3.9
Lane LOS	E	C	A	A
Approach Delay (s)	36.6	23.8	0.0	3.9
Approach LOS	E	C		

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	59.7%	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)	1	207	1	5	154	0	0	2	7	0	0	0
Future Volume (vph)	1	207	1	5	154	0	0	2	7	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		0.999						0.895				
Flt Protected					0.999							
Satd. Flow (prot)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Flt Permitted					0.999							
Satd. Flow (perm)	0	1919	0	0	1865	0	0	1719	0	0	1921	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	1	218	1	5	162	0	0	2	7	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	0	0	167	0	0	9	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)		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
Sign Control		Free			Free			Stop			Stop	

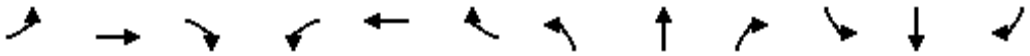
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	207	1	5	154	0	0	2	7	0	0	0
Future Volume (Veh/h)	1	207	1	5	154	0	0	2	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	218	1	5	162	0	0	2	7	0	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)					250							
pX, platoon unblocked												
vC, conflicting volume	162			219			392	392	218	400	393	162
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			219			392	392	218	400	393	162
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1429			1362			569	544	826	555	544	883

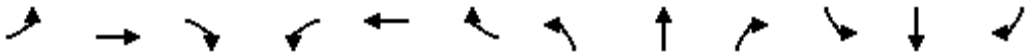
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	220	167	9	0
Volume Left	1	5	0	0
Volume Right	1	0	7	0
cSH	1429	1362	741	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.3	0.0
Control Delay (s)	0.0	0.3	9.9	0.0
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	0.3	9.9	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	21.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	217	3	2	83	9	3	1	1	25	0	9
Future Volume (vph)	0	217	3	2	83	9	3	1	1	25	0	9
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		0.998			0.987			0.977			0.965	
Flt Protected					0.999			0.968			0.964	
Satd. Flow (prot)	0	1819	0	0	1799	0	0	1256	0	0	1787	0
Flt Permitted					0.999			0.968			0.964	
Satd. Flow (perm)	0	1819	0	0	1799	0	0	1256	0	0	1787	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	33%	0%	6%	0%	67%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	293	4	3	112	12	4	1	1	34	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	0	0	127	0	0	6	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.6%		ICU Level of Service A	
Analysis Period (min) 15			



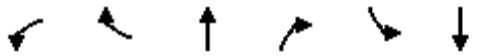
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	217	3	2	83	9	3	1	1	25	0	9
Future Volume (Veh/h)	0	217	3	2	83	9	3	1	1	25	0	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	293	4	3	112	12	4	1	1	34	0	12
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	152	84	6	234	90	2	12			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	84	6	234	90	2	12			2		
tC, single (s)	7.1	6.5	6.5	7.1	6.6	6.2	4.8			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.1	3.3	2.8			2.2		
p0 queue free %	100	63	100	99	86	99	100			98		
cM capacity (veh/h)	709	781	993	503	774	1089	1270			1634		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	297	127	6	46
Volume Left	0	3	4	34
Volume Right	4	12	1	12
cSH	784	786	1270	1634
Volume to Capacity	0.38	0.16	0.00	0.02
Queue Length 95th (m)	13.5	4.4	0.1	0.5
Control Delay (s)	12.4	10.5	5.2	5.4
Lane LOS	B	B	A	A
Approach Delay (s)	12.4	10.5	5.2	5.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	11.1			
Intersection Capacity Utilization	21.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	22	10	0	71	25
Future Volume (vph)	9	22	10	0	71	25
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	0.905					
Flt Protected	0.986					0.964
Satd. Flow (prot)	1681	0	1883	0	0	1816
Flt Permitted	0.986					0.964
Satd. Flow (perm)	1681	0	1883	0	0	1816
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	24	11	0	77	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	0	11	0	0	104
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free

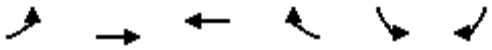
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	22	10	0	71	25
Future Volume (Veh/h)	9	22	10	0	71	25
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)	10	24	11	0	77	27
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	192	11			11	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	11			11	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			95	
cM capacity (veh/h)	759	1070			1608	

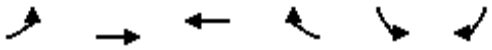
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	34	11	104
Volume Left	10	0	77
Volume Right	24	0	0
cSH	955	1700	1608
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (m)	0.8	0.0	1.1
Control Delay (s)	8.9	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	71	172	50	0	0	46
Future Volume (vph)	71	172	50	0	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.986				
Satd. Flow (prot)	0	1857	1883	0	1629	0
Flt Permitted		0.986				
Satd. Flow (perm)	0	1857	1883	0	1629	0
Link Speed (k/h)		60	60		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		7.3	8.4		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	187	54	0	0	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	264	54	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

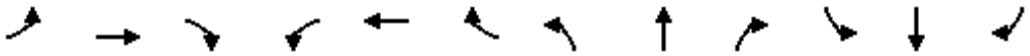
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	71	172	50	0	0	46
Future Volume (Veh/h)	71	172	50	0	0	46
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)	77	187	54	0	0	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	54				395	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54				395	54
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	95
cM capacity (veh/h)	1551				580	1013

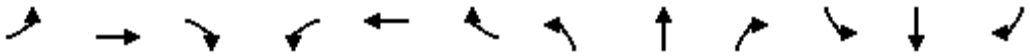
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	264	54	50
Volume Left	77	0	0
Volume Right	0	0	50
cSH	1551	1700	1013
Volume to Capacity	0.05	0.03	0.05
Queue Length 95th (m)	1.2	0.0	1.2
Control Delay (s)	2.5	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.5	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	29.6%	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)	95	78	0	0	35	0	0	213	0	0	82	15
Future Volume (vph)	95	78	0	0	35	0	0	213	0	0	82	15
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											0.979	
Flt Protected		0.973										
Satd. Flow (prot)	0	1833	0	0	1883	0	0	1883	0	0	1844	0
Flt Permitted		0.973										
Satd. Flow (perm)	0	1833	0	0	1883	0	0	1883	0	0	1844	0
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		8.4			9.7			128.6			11.5	
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)	103	85	0	0	38	0	0	232	0	0	89	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	38	0	0	232	0	0	105	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												
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		97	97		14	97		97	24		14
Sign Control		Free			Free			Stop			Stop	

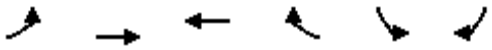
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	78	0	0	35	0	0	213	0	0	82	15
Future Volume (Veh/h)	95	78	0	0	35	0	0	213	0	0	82	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	85	0	0	38	0	0	232	0	0	89	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	38			85			390	329	85	445	329	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			85			390	329	85	445	329	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			100	58	100	100	84	98
cM capacity (veh/h)	1572			1512			467	551	974	335	551	1034

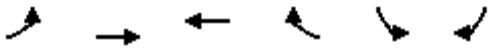
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	188	38	232	105
Volume Left	103	0	0	0
Volume Right	0	0	0	16
cSH	1572	1512	551	594
Volume to Capacity	0.07	0.00	0.42	0.18
Queue Length 95th (m)	1.6	0.0	15.7	4.8
Control Delay (s)	4.3	0.0	16.2	12.4
Lane LOS	A		C	B
Approach Delay (s)	4.3	0.0	16.2	12.4
Approach LOS			C	B

Intersection Summary				
Average Delay	10.4			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	54	26	0	0	9
Future Volume (vph)	24	54	26	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	59	28	0	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	85	28	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

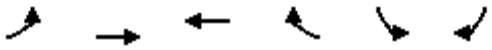
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			



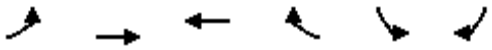
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	54	26	0	0	9
Future Volume (Veh/h)	24	54	26	0	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	59	28	0	0	10
Pedestrians						
Lane Width (m)						
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	28				139	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	28				139	28
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1585				840	1047

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	85	28	10
Volume Left	26	0	0
Volume Right	0	0	10
cSH	1585	1700	1047
Volume to Capacity	0.02	0.02	0.01
Queue Length 95th (m)	0.4	0.0	0.2
Control Delay (s)	2.3	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	2.3	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		



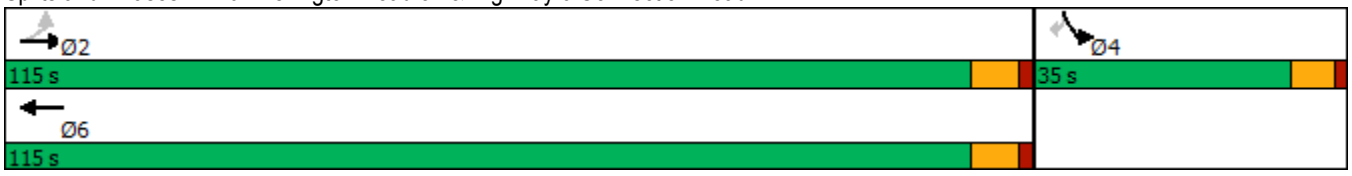
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1833	0	1789	1601
Flt Permitted	0.472				0.950	
Satd. Flow (perm)	889	1883	1833	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			21			286
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	415	498	0	65	286
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

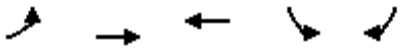


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	115.0	115.0	115.0		35.0	35.0
Total Split (%)	76.7%	76.7%	76.7%		23.3%	23.3%
Maximum Green (s)	107.8	107.8	107.8		28.5	28.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
v/c Ratio	0.54	0.27	0.33		0.46	0.73
Control Delay	7.7	3.6	3.8		68.0	18.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	7.7	3.6	3.8		68.0	18.0
LOS	A	A	A		E	B
Approach Delay		5.6	3.8		27.2	
Approach LOS		A	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 132.1			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

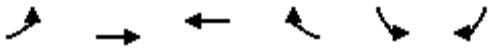
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	392	415	498	65	286
v/c Ratio	0.54	0.27	0.33	0.46	0.73
Control Delay	7.7	3.6	3.8	68.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	3.6	3.8	68.0	18.0
Queue Length 50th (m)	26.4	20.0	24.4	16.5	0.0
Queue Length 95th (m)	58.5	37.1	45.2	31.4	27.0
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	725	1537	1500	386	569
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.27	0.33	0.17	0.50

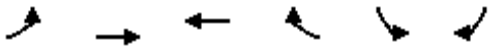
Intersection Summary



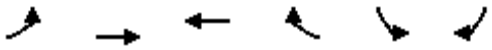
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	361	382	368	90	60	263
Future Volume (vph)	361	382	368	90	60	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1833		1789	1601
Flt Permitted	0.47	1.00	1.00		0.95	1.00
Satd. Flow (perm)	889	1883	1833		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	415	400	98	65	286
RTOR Reduction (vph)	0	0	4	0	0	263
Lane Group Flow (vph)	392	415	494	0	65	23
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	107.9	107.9	107.9		10.5	10.5
Effective Green, g (s)	107.9	107.9	107.9		10.5	10.5
Actuated g/C Ratio	0.82	0.82	0.82		0.08	0.08
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	726	1538	1497		142	127
v/s Ratio Prot		0.22	0.27		c0.04	
v/s Ratio Perm	c0.44					0.01
v/c Ratio	0.54	0.27	0.33		0.46	0.18
Uniform Delay, d1	4.0	2.8	3.0		58.1	56.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.4	0.6		2.3	0.7
Delay (s)	6.8	3.3	3.6		60.4	57.5
Level of Service	A	A	A		E	E
Approach Delay (s)		5.0	3.6		58.0	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	132.1	Sum of lost time (s)	13.7
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



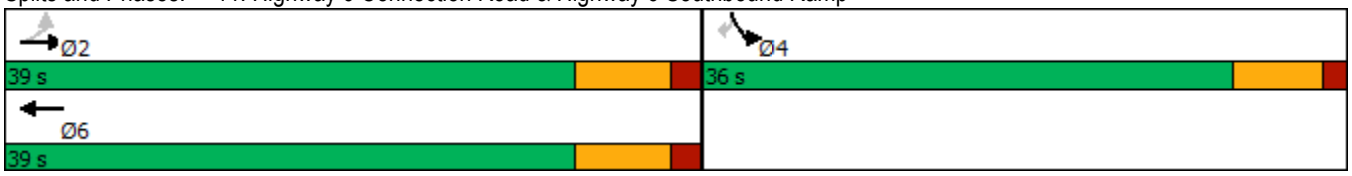
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	268	107	0	115	429
Future Volume (vph)	55	268	107	0	115	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	1868	1883	0	1789	1601
Flt Permitted		0.932			0.950	
Satd. Flow (perm)	0	1755	1883	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						466
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	291	116	0	125	466
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	116	0	125	466
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

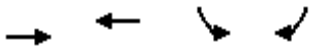


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	39.0	39.0	39.0		36.0	36.0
Total Split (%)	52.0%	52.0%	52.0%		48.0%	48.0%
Maximum Green (s)	31.8	31.8	31.8		29.5	29.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		31.9	31.9		9.8	9.8
Actuated g/C Ratio		0.58	0.58		0.18	0.18
v/c Ratio		0.35	0.11		0.40	0.70
Control Delay		8.2	6.6		23.7	8.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		8.2	6.6		23.7	8.7
LOS		A	A		C	A
Approach Delay		8.2	6.6		11.9	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 55.4			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

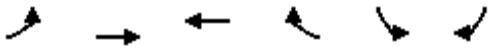
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	351	116	125	466
v/c Ratio	0.35	0.11	0.40	0.70
Control Delay	8.2	6.6	23.7	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	6.6	23.7	8.7
Queue Length 50th (m)	15.5	4.4	11.2	0.0
Queue Length 95th (m)	38.0	13.0	23.0	18.7
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	1010	1084	955	1072
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	0.35	0.11	0.13	0.43

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (vph)	55	268	107	0	115	429
Future Volume (vph)	55	268	107	0	115	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		1867	1883		1789	1601
Flt Permitted		0.93	1.00		0.95	1.00
Satd. Flow (perm)		1755	1883		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	291	116	0	125	466
RTOR Reduction (vph)	0	0	0	0	0	384
Lane Group Flow (vph)	0	351	116	0	125	82
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		31.9	31.9		9.8	9.8
Effective Green, g (s)		31.9	31.9		9.8	9.8
Actuated g/C Ratio		0.58	0.58		0.18	0.18
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1010	1084		316	283
v/s Ratio Prot			0.06		c0.07	
v/s Ratio Perm		c0.20				0.05
v/c Ratio		0.35	0.11		0.40	0.29
Uniform Delay, d1		6.2	5.3		20.2	19.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9	0.2		0.8	0.6
Delay (s)		7.2	5.5		21.0	20.4
Level of Service		A	A		C	C
Approach Delay (s)		7.2	5.5		20.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	13.7
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

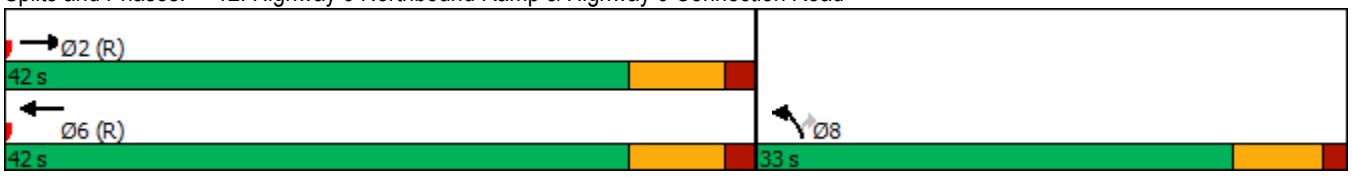
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	408	62	438
Future Volume (vph)	114	18	0	408	62	438
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	0.981					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1848	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1848	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14					476
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	443	67	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	0	443	67	476
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	42.0			42.0	33.0	33.0
Total Split (%)	56.0%			56.0%	44.0%	44.0%
Maximum Green (s)	34.8			34.8	26.5	26.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
v/c Ratio	0.11			0.34	0.28	0.76
Control Delay	5.0			6.8	30.0	11.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			6.8	30.0	11.5
LOS	A			A	C	B
Approach Delay	5.0			6.8	13.8	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



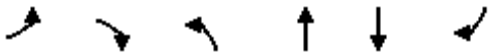
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	144	443	67	476
v/c Ratio	0.11	0.34	0.28	0.76
Control Delay	5.0	6.8	30.0	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.0	6.8	30.0	11.5
Queue Length 50th (m)	4.7	19.5	8.9	0.0
Queue Length 95th (m)	15.5	51.5	16.6	21.6
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1267	1286	632	873
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	0.11	0.34	0.11	0.55

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	18	0	408	62	438
Future Volume (vph)	114	18	0	408	62	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1848			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1848			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	20	0	443	67	476
RTOR Reduction (vph)	4	0	0	0	0	413
Lane Group Flow (vph)	140	0	0	443	67	63
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.3			51.3	10.0	10.0
Effective Green, g (s)	51.3			51.3	10.0	10.0
Actuated g/C Ratio	0.68			0.68	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1264			1287	238	213
v/s Ratio Prot	0.08			c0.24	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.11			0.34	0.28	0.30
Uniform Delay, d1	4.1			4.9	29.3	29.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.2			0.7	0.7	0.8
Delay (s)	4.2			5.6	29.9	30.1
Level of Service	A			A	C	C
Approach Delay (s)	4.2			5.6	30.1	
Approach LOS	A			A	C	

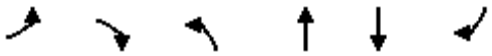
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	0	0	451	323	213
Future Volume (vph)	82	0	0	451	323	213
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					0.946	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1782	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1782	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	11.2			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	0	0	490	351	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	0	490	583	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)	97	97	97			97
Sign Control	Stop			Free	Free	

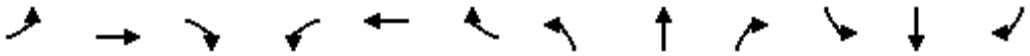
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	0	0	451	323	213
Future Volume (Veh/h)	82	0	0	451	323	213
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)	89	0	0	490	351	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	957	467	583			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	957	467	583			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	100	100			
cM capacity (veh/h)	286	596	991			

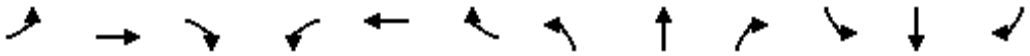
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	490	583
Volume Left	89	0	0
Volume Right	0	0	232
cSH	286	991	1700
Volume to Capacity	0.31	0.00	0.34
Queue Length 95th (m)	9.8	0.0	0.0
Control Delay (s)	23.2	0.0	0.0
Lane LOS	C		
Approach Delay (s)	23.2	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	41.2%	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)	21	30	3	1	56	85	6	398	1	46	495	96
Future Volume (vph)	21	30	3	1	56	85	6	398	1	46	495	96
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		0.993			0.919						0.980	
Flt Protected		0.981						0.999			0.996	
Satd. Flow (prot)	0	1444	0	0	1577	0	0	1882	0	0	1804	0
Flt Permitted		0.981						0.999			0.996	
Satd. Flow (perm)	0	1444	0	0	1577	0	0	1882	0	0	1804	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1253.6			1251.1			1028.0			1057.2	
Travel Time (s)		75.2			75.1			61.7			63.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	50%	0%	0%	0%	20%	0%	2%	0%	33%	2%	0%
Adj. Flow (vph)	22	32	3	1	59	89	6	419	1	48	521	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	149	0	0	426	0	0	670	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												
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	

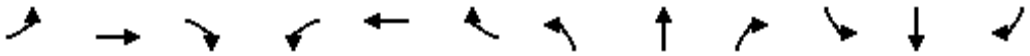
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	30	3	1	56	85	6	398	1	46	495	96
Future Volume (Veh/h)	21	30	3	1	56	85	6	398	1	46	495	96
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	22	32	3	1	59	89	6	419	1	48	521	101
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	1218	1100	572	1118	1150	420	622			420		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1218	1100	572	1118	1150	420	622			420		
tC, single (s)	7.1	7.0	6.2	7.1	6.5	6.4	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.5	3.3	3.5	4.0	3.5	2.2			2.5		
p0 queue free %	77	81	99	99	69	85	99			95		
cM capacity (veh/h)	97	165	524	151	189	597	969			991		

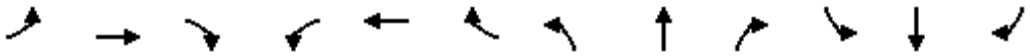
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	149	426	670
Volume Left	22	1	6	48
Volume Right	3	89	1	101
cSH	133	319	969	991
Volume to Capacity	0.43	0.47	0.01	0.05
Queue Length 95th (m)	14.2	18.0	0.1	1.2
Control Delay (s)	50.7	25.8	0.2	1.3
Lane LOS	F	D	A	A
Approach Delay (s)	50.7	25.8	0.2	1.3
Approach LOS	F	D		

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	80.6%	ICU Level of Service	D	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	13	1	34	26	149	9	240	17	74	409	21
Future Volume (vph)	15	13	1	34	26	149	9	240	17	74	409	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
Frt		0.995			0.904			0.991			0.994	
Flt Protected		0.975			0.992			0.998			0.993	
Satd. Flow (prot)	0	1864	0	0	1723	0	0	1883	0	0	1850	0
Flt Permitted		0.975			0.992			0.998			0.993	
Satd. Flow (perm)	0	1864	0	0	1723	0	0	1883	0	0	1850	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1275.1			2049.0			2784.9			1028.0	
Travel Time (s)		76.5			122.9			167.1			61.7	
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%	0%	0%	0%	0%	0%	1%	0%	0%	3%	2%
Adj. Flow (vph)	15	13	1	35	27	154	9	247	18	76	422	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	216	0	0	274	0	0	520	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												
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	

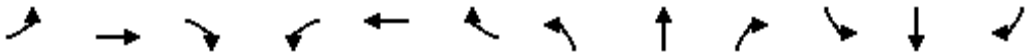
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	13	1	34	26	149	9	240	17	74	409	21
Future Volume (Veh/h)	15	13	1	34	26	149	9	240	17	74	409	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)	15	13	1	35	27	154	9	247	18	76	422	22
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	1026	868	433	866	870	256	444			265		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1026	868	433	866	870	256	444			265		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	95	100	86	90	80	99			94		
cM capacity (veh/h)	152	273	627	252	273	788	1127			1311		

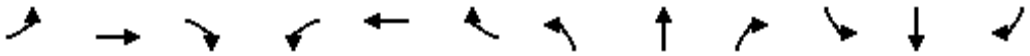
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	216	274	520
Volume Left	15	35	9	76
Volume Right	1	154	18	22
cSH	196	498	1127	1311
Volume to Capacity	0.15	0.43	0.01	0.06
Queue Length 95th (m)	3.9	16.4	0.2	1.4
Control Delay (s)	26.5	17.6	0.3	1.7
Lane LOS	D	C	A	A
Approach Delay (s)	26.5	17.6	0.3	1.7
Approach LOS	D	C		

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	63.7%	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)	1	154	0	7	298	2	1	0	9	1	2	1
Future Volume (vph)	1	154	0	7	298	2	1	0	9	1	2	1
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					0.999			0.877			0.966	
Flt Protected					0.999			0.995			0.988	
Satd. Flow (prot)	0	1780	0	0	1863	0	0	1676	0	0	1834	0
Flt Permitted					0.999			0.995			0.988	
Satd. Flow (perm)	0	1780	0	0	1863	0	0	1676	0	0	1834	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1524.4			250.1			884.6			2075.4	
Travel Time (s)		91.5			15.0			53.1			124.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	179	0	8	347	2	1	0	10	1	2	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	357	0	0	11	0	0	4	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
Sign Control		Free			Free			Stop			Stop	

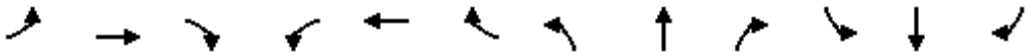
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	154	0	7	298	2	1	0	9	1	2	1
Future Volume (Veh/h)	1	154	0	7	298	2	1	0	9	1	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	179	0	8	347	2	1	0	10	1	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					250							
pX, platoon unblocked												
vC, conflicting volume	349			179			547	546	179	555	545	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	349			179			547	546	179	555	545	348
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1221			1409			447	445	869	438	446	700

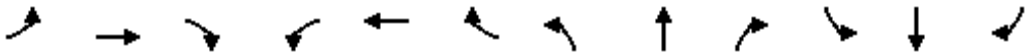
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	180	357	11	4
Volume Left	1	8	1	1
Volume Right	0	2	10	1
cSH	1221	1409	800	488
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (m)	0.0	0.1	0.3	0.2
Control Delay (s)	0.1	0.2	9.6	12.4
Lane LOS	A	A	A	B
Approach Delay (s)	0.1	0.2	9.6	12.4
Approach LOS			A	B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	30.5%	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	113	3	9	188	59	2	1	2	29	2	28
Future Volume (vph)	0	113	3	9	188	59	2	1	2	29	2	28
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		0.997			0.969			0.946			0.936	
Flt Protected					0.998			0.980			0.976	
Satd. Flow (prot)	0	1813	0	0	1858	0	0	1781	0	0	1755	0
Flt Permitted					0.998			0.980			0.976	
Satd. Flow (perm)	0	1813	0	0	1858	0	0	1781	0	0	1755	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		2049.0			121.0			2075.4			673.0	
Travel Time (s)		122.9			7.3			124.5			40.4	
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%	5%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	124	3	10	207	65	2	1	2	32	2	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	282	0	0	5	0	0	65	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												
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 32.1%		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	113	3	9	188	59	2	1	2	29	2	28
Future Volume (Veh/h)	0	113	3	9	188	59	2	1	2	29	2	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	124	3	10	207	65	2	1	2	32	2	31
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	256	88	18	152	103	2	33			3		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256	88	18	152	103	2	33			3		
tC, single (s)	7.1	6.5	6.5	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.6	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	84	100	99	73	94	100			98		
cM capacity (veh/h)	515	779	978	706	774	1088	1592			1632		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	282	5	65
Volume Left	0	10	2	32
Volume Right	3	65	2	31
cSH	783	826	1592	1632
Volume to Capacity	0.16	0.34	0.00	0.02
Queue Length 95th (m)	4.4	11.6	0.0	0.5
Control Delay (s)	10.5	11.6	2.9	3.6
Lane LOS	B	B	A	A
Approach Delay (s)	10.5	11.6	2.9	3.6
Approach LOS	B	B		

Intersection Summary				
Average Delay	10.1			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			

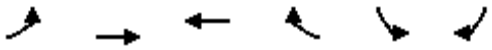
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	79	61	0	43	31
Future Volume (vph)	28	79	61	0	43	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.900					
Flt Protected	0.987					0.972
Satd. Flow (prot)	1673	0	1883	0	0	1831
Flt Permitted	0.987					0.972
Satd. Flow (perm)	1673	0	1883	0	0	1831
Link Speed (k/h)	48		48			48
Link Distance (m)	96.9		673.0			257.7
Travel Time (s)	7.3		50.5			19.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	86	66	0	47	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	66	0	0	81
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	79	61	0	43	31
Future Volume (Veh/h)	28	79	61	0	43	31
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)	30	86	66	0	47	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	194	66			66	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194	66			66	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			97	
cM capacity (veh/h)	771	998			1536	

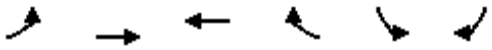
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	116	66	81
Volume Left	30	0	47
Volume Right	86	0	0
cSH	927	1700	1536
Volume to Capacity	0.13	0.04	0.03
Queue Length 95th (m)	3.2	0.0	0.7
Control Delay (s)	9.4	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	4.4
Approach LOS	A		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	102	83	0	0	140
Future Volume (vph)	43	102	83	0	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		48	48		48	
Link Distance (m)		121.0	139.5		157.1	
Travel Time (s)		9.1	10.5		11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	111	90	0	0	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	158	90	0	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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)	97			97	97	97
Sign Control		Free	Free		Stop	

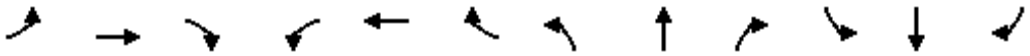
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	102	83	0	0	140
Future Volume (Veh/h)	43	102	83	0	0	140
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)	47	111	90	0	0	152
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	90				295	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	90				295	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 %	97				100	84
cM capacity (veh/h)	1505				674	968

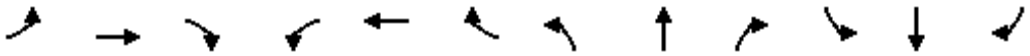
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	158	90	152
Volume Left	47	0	0
Volume Right	0	0	152
cSH	1505	1700	968
Volume to Capacity	0.03	0.05	0.16
Queue Length 95th (m)	0.7	0.0	4.2
Control Delay (s)	2.4	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	2.4	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	44	0	0	83	0	0	130	0	0	252	0
Future Volume (vph)	58	44	0	0	83	0	0	130	0	0	252	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												
Flt Protected		0.972										
Satd. Flow (prot)	0	1831	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted		0.972										
Satd. Flow (perm)	0	1831	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		48			48			50			48	
Link Distance (m)		139.5			161.2			1714.8			153.2	
Travel Time (s)		10.5			12.1			123.5			11.5	
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)	63	48	0	0	90	0	0	141	0	0	274	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	90	0	0	141	0	0	274	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												
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)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

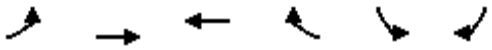
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	44	0	0	83	0	0	130	0	0	252	0
Future Volume (Veh/h)	58	44	0	0	83	0	0	130	0	0	252	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	48	0	0	90	0	0	141	0	0	274	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	90			48			401	264	48	334	264	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	90			48			401	264	48	334	264	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			100	77	100	100	55	100
cM capacity (veh/h)	1505			1559			354	614	1021	494	614	968

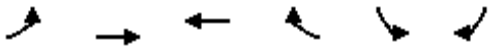
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	111	90	141	274
Volume Left	63	0	0	0
Volume Right	0	0	0	0
cSH	1505	1559	614	614
Volume to Capacity	0.04	0.00	0.23	0.45
Queue Length 95th (m)	1.0	0.0	6.7	17.4
Control Delay (s)	4.4	0.0	12.6	15.5
Lane LOS	A		B	C
Approach Delay (s)	4.4	0.0	12.6	15.5
Approach LOS			B	C

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	55	0	0	28
Future Volume (vph)	14	30	55	0	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.985				
Satd. Flow (prot)	0	1855	1883	0	1629	0
Flt Permitted		0.985				
Satd. Flow (perm)	0	1855	1883	0	1629	0
Link Speed (k/h)		60	60		60	
Link Distance (m)		161.2	147.0		91.0	
Travel Time (s)		9.7	8.8		5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	60	0	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	48	60	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Sign Control		Free	Free		Stop	

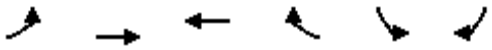
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			



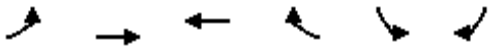
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	30	55	0	0	28
Future Volume (Veh/h)	14	30	55	0	0	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	33	60	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	60				123	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	60				123	60
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				100	97
cM capacity (veh/h)	1544				864	1005

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	48	60	30
Volume Left	15	0	0
Volume Right	0	0	30
cSH	1544	1700	1005
Volume to Capacity	0.01	0.04	0.03
Queue Length 95th (m)	0.2	0.0	0.7
Control Delay (s)	2.3	0.0	8.7
Lane LOS	A		A
Approach Delay (s)	2.3	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		



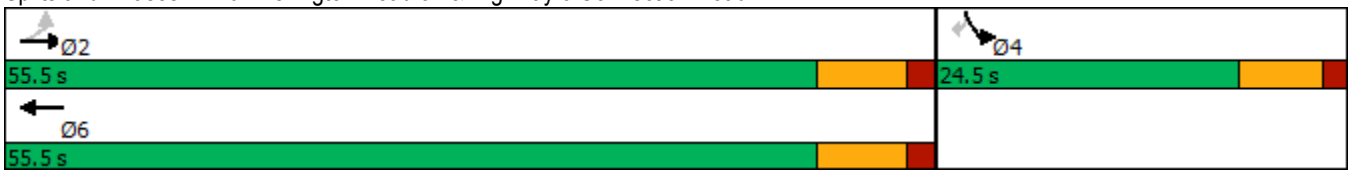
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	25.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1883	1829	0	1789	1601
Flt Permitted	0.476				0.950	
Satd. Flow (perm)	897	1883	1829	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			283
Link Speed (k/h)		60	60		60	
Link Distance (m)		250.1	594.3		357.2	
Travel Time (s)		15.0	35.7		21.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	259	487	0	65	283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4

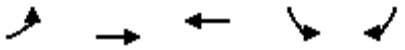


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	25.2	25.2	25.2		24.5	24.5
Total Split (s)	55.5	55.5	55.5		24.5	24.5
Total Split (%)	69.4%	69.4%	69.4%		30.6%	30.6%
Maximum Green (s)	48.3	48.3	48.3		18.0	18.0
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.2	7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
v/c Ratio	0.51	0.20	0.39		0.31	0.64
Control Delay	9.7	4.9	5.9		31.8	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	9.7	4.9	5.9		31.8	11.4
LOS	A	A	A		C	B
Approach Delay		7.5	5.9		15.2	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 70.5			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

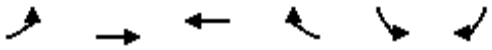
Splits and Phases: 10: Wellington Road 34 & Highway 6 Connection Road





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	315	259	487	65	283
v/c Ratio	0.51	0.20	0.39	0.31	0.64
Control Delay	9.7	4.9	5.9	31.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	4.9	5.9	31.8	11.4
Queue Length 50th (m)	16.0	9.9	20.1	8.0	0.0
Queue Length 95th (m)	43.2	22.5	43.8	18.1	18.7
Internal Link Dist (m)		226.1	570.3	333.2	
Turn Bay Length (m)	50.0				25.0
Base Capacity (vph)	615	1291	1263	457	619
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	0.51	0.20	0.39	0.14	0.46

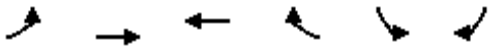
Intersection Summary



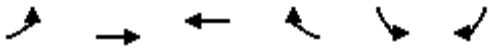
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	238	353	95	60	260
Future Volume (vph)	290	238	353	95	60	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2	7.2	7.2		6.5	6.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1789	1883	1830		1789	1601
Flt Permitted	0.48	1.00	1.00		0.95	1.00
Satd. Flow (perm)	896	1883	1830		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	259	384	103	65	283
RTOR Reduction (vph)	0	0	9	0	0	249
Lane Group Flow (vph)	315	259	478	0	65	34
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)	48.4	48.4	48.4		8.4	8.4
Effective Green, g (s)	48.4	48.4	48.4		8.4	8.4
Actuated g/C Ratio	0.69	0.69	0.69		0.12	0.12
Clearance Time (s)	7.2	7.2	7.2		6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	615	1292	1256		213	190
v/s Ratio Prot		0.14	0.26		c0.04	
v/s Ratio Perm	c0.35					0.02
v/c Ratio	0.51	0.20	0.38		0.31	0.18
Uniform Delay, d1	5.3	4.0	4.7		28.4	27.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.0	0.3	0.9		0.8	0.4
Delay (s)	8.4	4.4	5.6		29.2	28.4
Level of Service	A	A	A		C	C
Approach Delay (s)		6.6	5.6		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



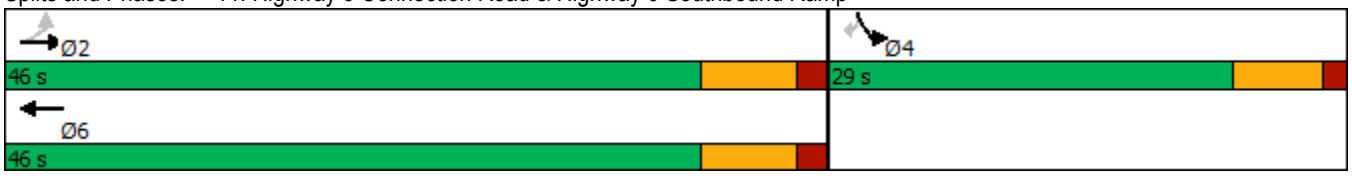
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	168	324	98	208	134	351
Future Volume (vph)	168	324	98	208	134	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.908			0.850
Flt Protected		0.983			0.950	
Satd. Flow (prot)	0	1851	1710	0	1789	1601
Flt Permitted		0.756			0.950	
Satd. Flow (perm)	0	1424	1710	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			210			382
Link Speed (k/h)		60	60		60	
Link Distance (m)		450.0	341.4		268.5	
Travel Time (s)		27.0	20.5		16.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	352	107	226	146	382
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	535	333	0	146	382
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
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	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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	1.8	1.8		6.1	6.1
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			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0

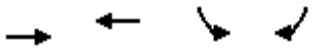


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	24.4	24.4	24.4		24.4	24.4
Total Split (s)	46.0	46.0	46.0		29.0	29.0
Total Split (%)	61.3%	61.3%	61.3%		38.7%	38.7%
Maximum Green (s)	38.8	38.8	38.8		22.5	22.5
Yellow Time (s)	5.4	5.4	5.4		5.0	5.0
All-Red Time (s)	1.8	1.8	1.8		1.5	1.5
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.2	7.2		6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Max	Max	Max		None	None
Act Effct Green (s)		38.9	38.9		10.6	10.6
Actuated g/C Ratio		0.62	0.62		0.17	0.17
v/c Ratio		0.61	0.29		0.49	0.65
Control Delay		12.1	3.2		29.4	8.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.1	3.2		29.4	8.8
LOS		B	A		C	A
Approach Delay		12.1	3.2		14.5	
Approach LOS		B	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 63.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			

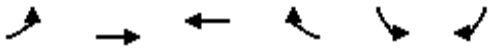
Splits and Phases: 11: Highway 6 Connection Road & Highway 6 Southbound Ramp





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	535	333	146	382
v/c Ratio	0.61	0.29	0.49	0.65
Control Delay	12.1	3.2	29.4	8.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.1	3.2	29.4	8.8
Queue Length 50th (m)	32.6	5.1	15.6	0.0
Queue Length 95th (m)	74.2	17.0	30.2	18.9
Internal Link Dist (m)	426.0	317.4	244.5	
Turn Bay Length (m)				
Base Capacity (vph)	876	1133	638	817
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	0.61	0.29	0.23	0.47

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↱
Traffic Volume (vph)	168	324	98	208	134	351
Future Volume (vph)	168	324	98	208	134	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.2	7.2		6.5	6.5
Lane Util. Factor		1.00	1.00		1.00	1.00
Frt		1.00	0.91		1.00	0.85
Flt Protected		0.98	1.00		0.95	1.00
Satd. Flow (prot)		1852	1711		1789	1601
Flt Permitted		0.76	1.00		0.95	1.00
Satd. Flow (perm)		1423	1711		1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	352	107	226	146	382
RTOR Reduction (vph)	0	0	81	0	0	318
Lane Group Flow (vph)	0	535	252	0	146	64
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.9	38.9		10.6	10.6
Effective Green, g (s)		38.9	38.9		10.6	10.6
Actuated g/C Ratio		0.62	0.62		0.17	0.17
Clearance Time (s)		7.2	7.2		6.5	6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		875	1053		300	268
v/s Ratio Prot			0.15		c0.08	
v/s Ratio Perm		c0.38				0.04
v/c Ratio		0.61	0.24		0.49	0.24
Uniform Delay, d1		7.5	5.5		23.8	22.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.2	0.5		1.2	0.5
Delay (s)		10.7	6.0		25.1	23.3
Level of Service		B	A		C	C
Approach Delay (s)		10.7	6.0		23.8	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	13.7
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

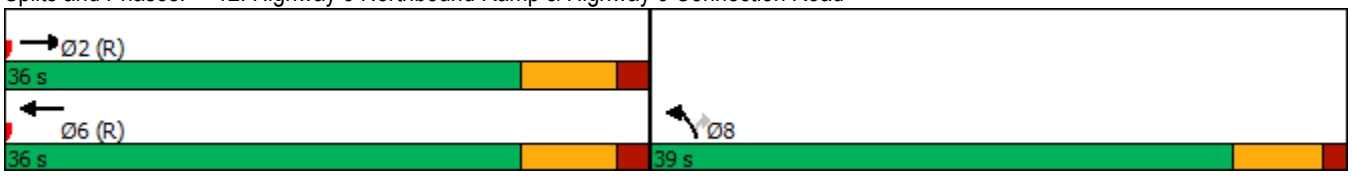
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	56	371
Future Volume (vph)	178	56	0	233	56	371
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	0.968					0.850
Flt Protected					0.950	
Satd. Flow (prot)	1823	0	0	1883	1789	1601
Flt Permitted					0.950	
Satd. Flow (perm)	1823	0	0	1883	1789	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					403
Link Speed (k/h)	60			60	60	
Link Distance (m)	341.4			479.4	305.4	
Travel Time (s)	20.5			28.8	18.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	61	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	0	0	253	61	403
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
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
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)	1.8			1.8	6.1	6.1
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	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Split (s)	25.2			25.2	24.5	24.5
Total Split (s)	36.0			36.0	39.0	39.0
Total Split (%)	48.0%			48.0%	52.0%	52.0%
Maximum Green (s)	28.8			28.8	32.5	32.5
Yellow Time (s)	5.4			5.4	5.0	5.0
All-Red Time (s)	1.8			1.8	1.5	1.5
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.2			7.2	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	C-Max			C-Max	None	None
Act Effct Green (s)	51.9			51.9	9.4	9.4
Actuated g/C Ratio	0.69			0.69	0.13	0.13
v/c Ratio	0.20			0.19	0.27	0.73
Control Delay	4.9			5.3	31.0	11.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.9			5.3	31.0	11.7
LOS	A			A	C	B
Approach Delay	4.9			5.3	14.2	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 22.5 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.4		Intersection LOS: A	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 12: Highway 6 Northbound Ramp & Highway 6 Connection Road



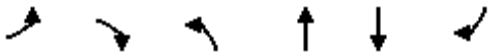
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	254	253	61	403
v/c Ratio	0.20	0.19	0.27	0.73
Control Delay	4.9	5.3	31.0	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	5.3	31.0	11.7
Queue Length 50th (m)	8.6	9.6	8.2	0.0
Queue Length 95th (m)	23.7	25.4	16.1	20.5
Internal Link Dist (m)	317.4	455.4	281.4	
Turn Bay Length (m)				
Base Capacity (vph)	1270	1303	775	922
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	0.20	0.19	0.08	0.44

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	178	56	0	233	56	371
Future Volume (vph)	178	56	0	233	56	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.2			7.2	6.5	6.5
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	1822			1883	1789	1601
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	1822			1883	1789	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	61	0	253	61	403
RTOR Reduction (vph)	8	0	0	0	0	352
Lane Group Flow (vph)	246	0	0	253	61	51
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	51.9			51.9	9.4	9.4
Effective Green, g (s)	51.9			51.9	9.4	9.4
Actuated g/C Ratio	0.69			0.69	0.13	0.13
Clearance Time (s)	7.2			7.2	6.5	6.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1260			1303	224	200
v/s Ratio Prot	c0.14			0.13	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.20			0.19	0.27	0.25
Uniform Delay, d1	4.1			4.1	29.7	29.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.7	0.7
Delay (s)	4.5			4.4	30.4	30.3
Level of Service	A			A	C	C
Approach Delay (s)	4.5			4.4	30.3	
Approach LOS	A			A	C	

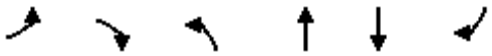
Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	252	0	0	385	320	130
Future Volume (vph)	252	0	0	385	320	130
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					0.961	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1810	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1810	0
Link Speed (k/h)	50			48	48	
Link Distance (m)	148.9			357.2	124.0	
Travel Time (s)	10.7			26.8	9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	0	0	418	348	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	418	489	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)	97	97	97			97
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	252	0	0	385	320	130
Future Volume (Veh/h)	252	0	0	385	320	130
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)	274	0	0	418	348	141
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				357		
pX, platoon unblocked						
vC, conflicting volume	836	418	489			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	836	418	489			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	19	100	100			
cM capacity (veh/h)	337	635	1074			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	274	418	489
Volume Left	274	0	0
Volume Right	0	0	141
cSH	337	1074	1700
Volume to Capacity	0.81	0.00	0.29
Queue Length 95th (m)	52.7	0.0	0.0
Control Delay (s)	49.0	0.0	0.0
Lane LOS	E		
Approach Delay (s)	49.0	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

GHD