434 & 484 Barrick Road

Traffic Impact Study

Dunsire Properties Inc.

12 May 2026

The Power of Commitment

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Executive Summary

GHD Limited has prepared the following Traffic Impact Study (TIS) in support Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) for the proposed residential development located on lands municipally known as 434 & 484 Barrick Road in the City of Port Colborne.

This study evaluates the anticipated traffic generated by the development and its associated impacts on the surrounding transportation network, including adjacent intersections and site access points. The analysis focuses on the weekday a.m. and p.m. peak hours, consistent with standard MTO and municipal practice.

Future traffic conditions have been assessed across multiple planning horizons including 2028, 2030, 2032, 2037, and 2042 based on projected phasing and background growth. The assessment identifies potential operational impacts and informs recommendations for any required transportation improvements or mitigation strategies.

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

Existing

- Highway 58/West Side Road and Barrick Road
- Highway 58/West Side Road and Northland Avenue

Future

- Highway 58/West Side Road and the Site Access
- Barrick Road and the Site Access

A site plan prepared for the subject site consists of six 6-storey residential buildings with each building containing 62 units for a total of 372 dwelling units located within the subject lands. In addition, a 1-storey commercial building with a total of 558 m^2 of GFA is proposed in the southwest corner of the subject lands. It is proposed to develop the site in four phases, with two residential buildings constructed per phase in addition to one phase allocated to the construction of the 2-level parkade (Phase 2).

Access to the proposed development is planned through a full-movement driveway on Highway 58/West Side Road and a full-movement driveway on Barrick Road. The Highway 58/West Side Road access is proposed to be operational when in conjunction with the build-out of Phase 1 while the Barrick Road access will only be constructed with the full build-out of the subject lands in Phase 4.

Based on ITE Trip Generation rates, each phase of residential development is expected to generate a total of 44 two-way vehicle trips during the a.m. peak hour consisting of 10 inbound and 34 outbound trips. During the p.m. peak hour, it is expected to generate 48 new two-way vehicle trips consisting of 31 inbound and 17 outbound trips.

With the full build-out of the lands, including the commercial building, the subject site is expected to generate a total of 156 two-way vehicle trips during the a.m. peak hour consisting of 43 inbound and 113 outbound trips. During the p.m. peak hour, it is expected to generate 198 new two-way vehicle trips consisting of 120 inbound and 78 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future background conditions, with the addition of corridor growth, background development traffic, and signal timing improvements, all intersections are reported to operate at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2028 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2030 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2030 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movements:

Highway 58/West Side Road and Barrick Road

- The westbound approach with a v/c ratio of 0.87 LOS F during the p.m. peak hour

Under the 2032 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2032 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movements:

Highway 58/West Side Road and Barrick Road

- The westbound approach with a v/c ratio of 0.98 LOS F during the p.m. peak hour

Under the 2037 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

Highway 58/West Side Road and Barrick Road

- The westbound approach with a v/c ratio of 0.96 LOS F during the p.m. peak hour

Under the 2037 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movements:

Highway 58/West Side Road and Barrick Road

- The westbound approach with a v/c ratio of 1.14 LOS F during the p.m. peak hour

Under the 2042 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movement:

Highway 58/West Side Road and Barrick Road

- The westbound approach with a v/c ratio of 1.11 LOS F during the p.m. peak hour

Under the 2042 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of the following critical movements:

Highway 58/West Side Road and Barrick Road

- The eastbound approach with a v/c ratio of 0.97 LOS F during the p.m. peak hour
- The westbound approach with a v/c ratio of 1.34 LOS F during the p.m. peak hour

A signal warrant as per OTM Book 12 methodology was completed for existing and future conditions, which identified that traffic signals are not warranted under existing conditions however, the signal warrant falls under Case 2 – “Might Be Warranted” under all future horizon years (future background and future total conditions).

Recommendations

Based on the findings of this Traffic Impact Study, the following recommendation is provided:

- Signalize the intersection of Highway 58 / West Side Road and Barrick Road

As a signalized intersection, the intersection of Highway 58/West Side Road and Barrick Road is reported to operate at satisfactory levels with no critical movements during both peak periods.

Given that the identified improvements are driven by growth, it is anticipated that the ultimate implementation of signalization and auxiliary turn lanes would be addressed as part of the Region's capital roadway program. Accordingly, when warranted, the works would be funded through the applicable Development Charges framework.

A left-turn lane warrant was completed for the access on Barrick Road and a right-turn lane warrant was completed for the access on Highway 58/West Side Road and confirmed that neither turning lanes would be warranted under the ultimate future horizon year volumes.

As per the current Zoning By-law, the subject site is required to provide a minimum of 493 parking spaces, including 12 barrier free spaces, and 60 bicycle parking spaces. The subject site provides a total of 738 parking spaces, including 12 barrier free spaces, 60 bicycle parking spaces, and 6 loading zones, all satisfying the Zoning By-law requirements.

A sightline assessment was completed for the proposed site access along Highway 58/West Side Road, which confirmed that sufficient sightlines are available.

GHD assessed the site circulation for an emergency vehicle, a waste collection vehicle, an MSU truck, and a passenger vehicle and confirmed no issues with on-site circulation.

The traffic study confirms that, while some critical v/c ratios are observed for select movements during the p.m. peak period, the proposed development can be accommodated within the existing road network without significant adverse impacts on overall traffic operations, intersection capacity, or safety for the majority of movements and users if traffic signals are implemented at the intersection of Highway 58/West Side Road and Barrick Road to address the reported capacity constraints.

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

Sincerely,

GHD

Rafael Andrenacci, B.Eng
Transportation Planner

William Maria, 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 residential development located on lands municipally known as 434 and 484 Barrick Road in the City of Port Colborne.

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

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2026 and determine future background operating conditions for a future planning horizon consistent with phases of development in 2028, 2030, 2032, 2037, and 2042.
- Estimate the site trips generated by the proposed development for each phase and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peak periods for each future planning horizon through intersection capacity analysis.
- Review the site access and conduct a swept path review of the proposed site plan.

Figure 1 Site Location

1.2 Study Team

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

- William Maria, P. Eng., Transportation Planning Lead
- Rafael Andrenacci, B.Eng., Transportation Planner

2. Site Characteristics

2.1 Study Area

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

Existing

- Highway 58/West Side Road and Barrick Road
- Highway 58/West Side Road and Northland Avenue

Future

- Highway 58/West Side Road and the Site Access
- Barrick Road and the Site Access

2.2 Proposed Development Content

A site plan prepared by Marsh Katsios Architect Inc. for the subject site is shown in **Figure 2** and provided in **Appendix B**. The proposed development is comprised of a total 372 dwelling units located within six 62-unit residential buildings and a 1-storey commercial building with a total of 558 m^2 of GFA.

Access to the proposed development is proposed via two accesses, with one access proposed along Highway 58/West Side Road and a second access located along Barrick Road.

The development is proposed to be constructed in four phases, with two residential buildings constructed per phase in Phase 1, 3, and 4. Phase 1 includes the lands located adjacent to Highway 58 and the Highway 58 access, Phase 2 includes the 2-level parkade, Phase 3 includes the lands to the east of Phase 1 and 2, and Phase 4 includes the lands south of Barrick Road and the Barrick Road access

It is proposed to construct two buildings per phase, with the anticipated year of build-out for each residential phase as follows: Phase 1 in 2028, Phase 3 in 2030, and Phase 4/full build-out in 2032. It is also proposed to construct the 1-storey commercial building within Phase 1.

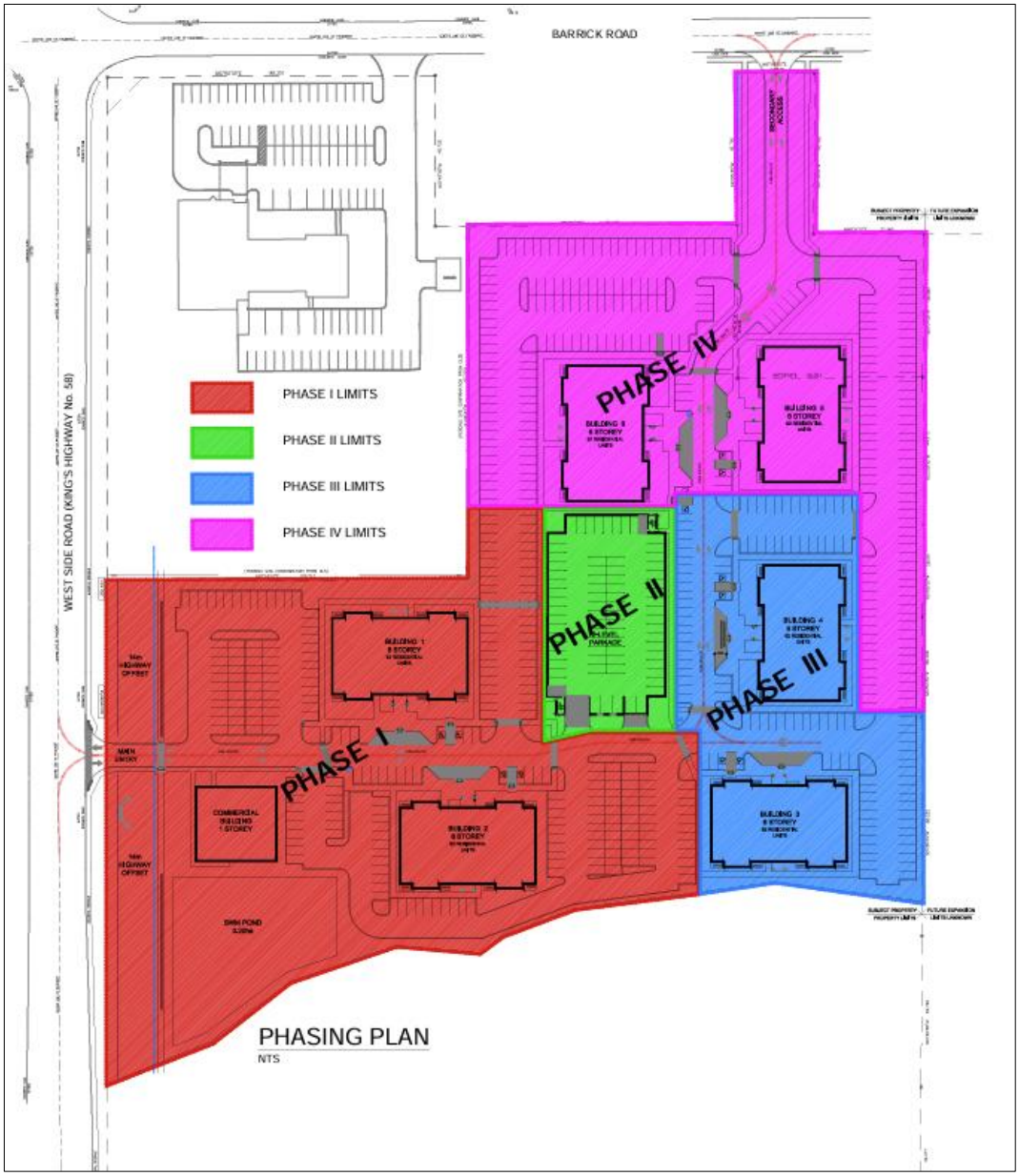

Figure 2 Proposed Site Plan

3. Existing Conditions

3.1 Existing Road Network

Highway 58/West Side Road is a north-south Class 2B arterial road under the jurisdiction of the Ministry of Transportation (MTO). Within the study area, it has a five-lane cross-section (including a two-way left-turn lane in the centre lane). Its intersection with Northland Avenue is signalized with an auxiliary left-turn lane provided in the northbound and southbound directions. Its intersection with Barrick Road is unsignalized with the stop-control only provided along the minor approach on Barrick Road with an auxiliary left-turn lane in the southbound direction and the two-way left-turn lane serving the northbound approach. The speed limit along Highway 58/West Side Road is 70 km/h and increased to 80 km/h north of the study area.

Barrick Road is an east-west collector road under the jurisdiction of the City of Port Colborne. Within the study area, it has a two-lane cross-section. Its intersection with Highway 58/West Side Road is unsignalized with the stop-control only provided along the minor approach on Barrick Road. The speed limit along Barrick Road is 50 km/h.

Northland Avenue is an east-west local road under the jurisdiction of the City of Port Colborne. Within the study area, it has a two-lane cross-section. Its intersection with Highway 58/West Side Road is signalized with no exclusive turning lanes provided in either the eastbound or westbound approaches. The assumed speed limit along Northland Avenue is 50 km/h.

The existing lane configurations and intersection control are shown in the figure below.

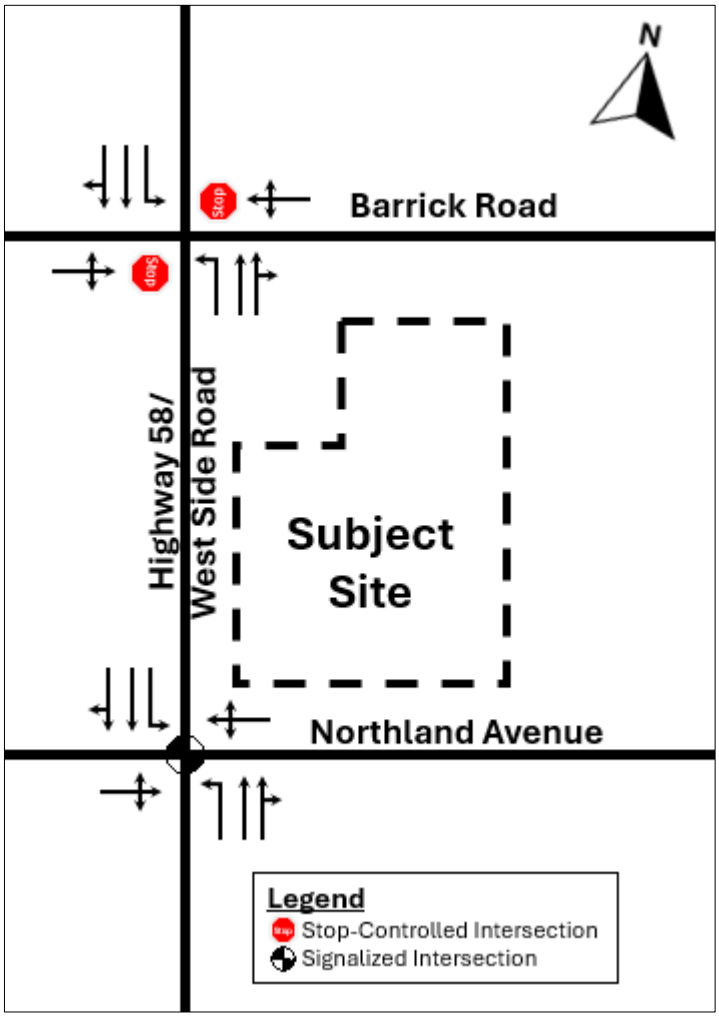

Figure 3 Existing Lane Configuration and Traffic Controls

3.2 Pedestrian and Bicycle Facilities

There are currently no sidewalks nor cycling facilities provided within the study area.

3.3 Transit Services

Niagara Transit operates Route 25, the **Port Colborne Link**, within the study area. The route operates between the Cities of Port Colborne and Welland. Adjacent to the subject site, the route operates flag stops on Highway 58/West Side Road at the Port Colborne Mall access, Northland Avenue and Steeles Street, and Barrick Road and Apollo Drive. As flag stops, passengers must signal to approaching buses that they want to be picked up.

Niagara Transit also operates the Microtransit shared ride service, which is used in areas that are not served by typical bus routes and does not follow a fixed route or schedule. Users can book a ride ahead of time through the Niagara Transit Plus app.

The transit routes and stops are summarized in the figure below.

Figure 4 Existing Transit Routes and Transit Stops

3.4 Existing Traffic Data

GHD contracted Ontario Traffic Inc. to conduct updated turning movement counts at all existing study intersections in April 2026. The baseline 2026 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.**

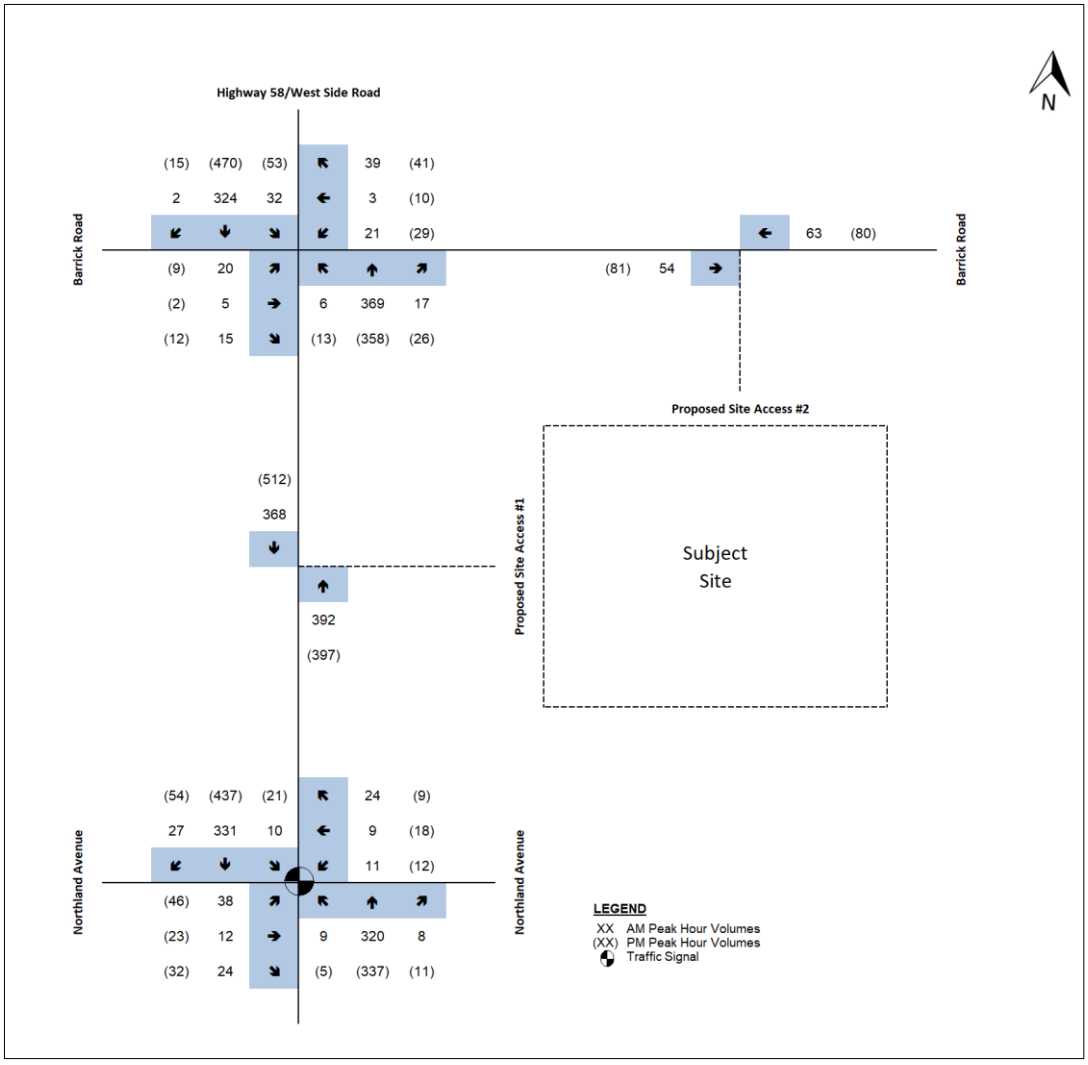

Figure 5 Baseline 2026 Traffic Volumes

4. Future Conditions

4.1 Study Horizon Year

Future horizon years of 2028, 2030, 2032, 2037, and 2042 were selected to assess long-term traffic conditions, representing the anticipated year of build-out of residential buildings in Phase 1, Phase 3, and Phase 4 (full build-out), as well as a period of 5 and 10 years post build-out.

These horizon years are consistent with the MTO's Guidelines for Traffic Impact Studies and were confirmed through the Terms of Reference.

4.2 Corridor Growth

As confirmed through the Terms of Reference, a linear growth rate of 2.0% was used to project future traffic volumes for the study area roadways.

4.3 Background Development Traffic

A review of the City's development application portal was completed to identify background developments located in proximity to the subject site that would generate additional traffic along the study area roadways. In addition to the background developments that were identified, MTO and City staff requested additional background developments to be included. The following background developments have been included in the study:

- Rosedale Estates Subdivision (100 Oxford Road)
- Stonebridge Subdivision located at the NW corner of Barrick Road and West Side Road
- Unaddressed Parcel at the NE Quad of Hwy 58 (aka West Side Rd) & Barrick Road
- Northland Estates Subdivision located at the NW corner of Northland Avenue and West Side Road
- Millar's Crossing Subdivision
- 250 West Side Road
- 242-246 West Side Road
- 45-53 West Side Road

In addition, the following background developments were requested by the MTO, however City staff confirmed that no Traffic Impact Studies were available for the developments.

- 268 West Side Road,
- 135 Coronation Drive

The locations of the background developments are shown in **Figure 6** below.

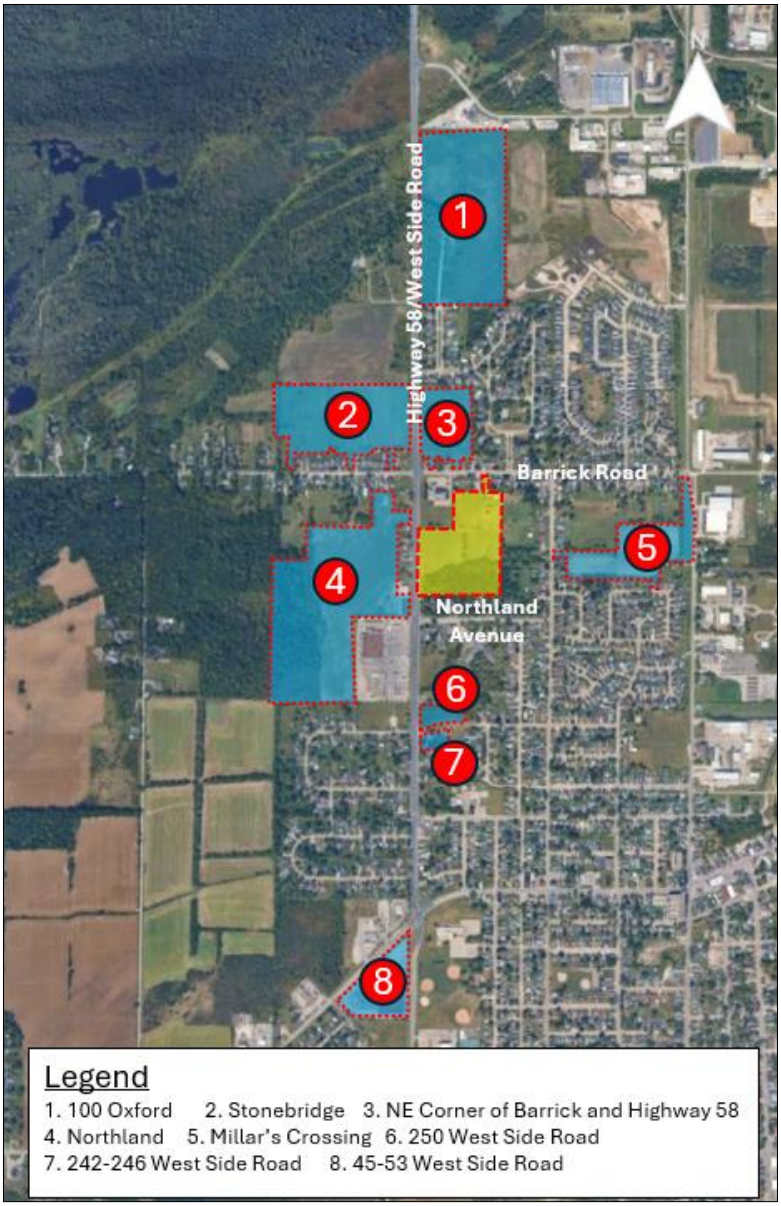

Figure 6 Location of Background Developments

The estimated site trips generated by the proposed background developments were extracted from their respective Traffic Impact Studies and are summarized in **Table 1** below with detailed excerpts from the background studies attached in **Appendix D**. It has been assumed that all background developments are built-out and fully occupied prior to the 2028 horizon year, unless otherwise noted in the table below.

Table 1 Background Development Traffic

Background Development	Parameter	Peak Hour Trips					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
Rosedale Estates Subdivision (100 Oxford Road)	131 single-family detached units and 118 townhouse units	37	114	151	119	76	195
Stonebridge Subdivision located at the NW corner of Barrick Road and West Side Road	15 single family homes, 178 townhouses, 182 mid-rise units	47	150	197	133	87	220
Unaddressed Parcel at the NE Corner of Highway 58 & Barrick Road	79 townhouse and 100 mid-rise units	18	61	79	59	35	94
Northland Estates Subdivision located at the NW corner of Northland Avenue and West Side Road	44 single-family detached units, 4 semi-detached unit, 189 townhouse units, and 50-unit mid-rise apartment block with ground floor commercial.	58	121	179	163	126	289
Millar's Crossing Subdivision	20 single family units, 6 semi-detached unit, 32 duplex units, 66 triplex units, 37 townhouse units, and 200 mid-rise units	48	130	178	131	93	224
250 West Side Road	71 stacked townhouse units	11	34	45	32	19	61
242-246 West Side Road	112 mid-rise units	9	29	38	17	17	44
45-53 West Side Road	5,800 ft^2 fast food restaurant with Drive-thru	66	61	127	45	37	82

It is assumed that all background developments are constructed under the first horizon year in 2028 with the total background development volumes illustrated in **Figure 7**.

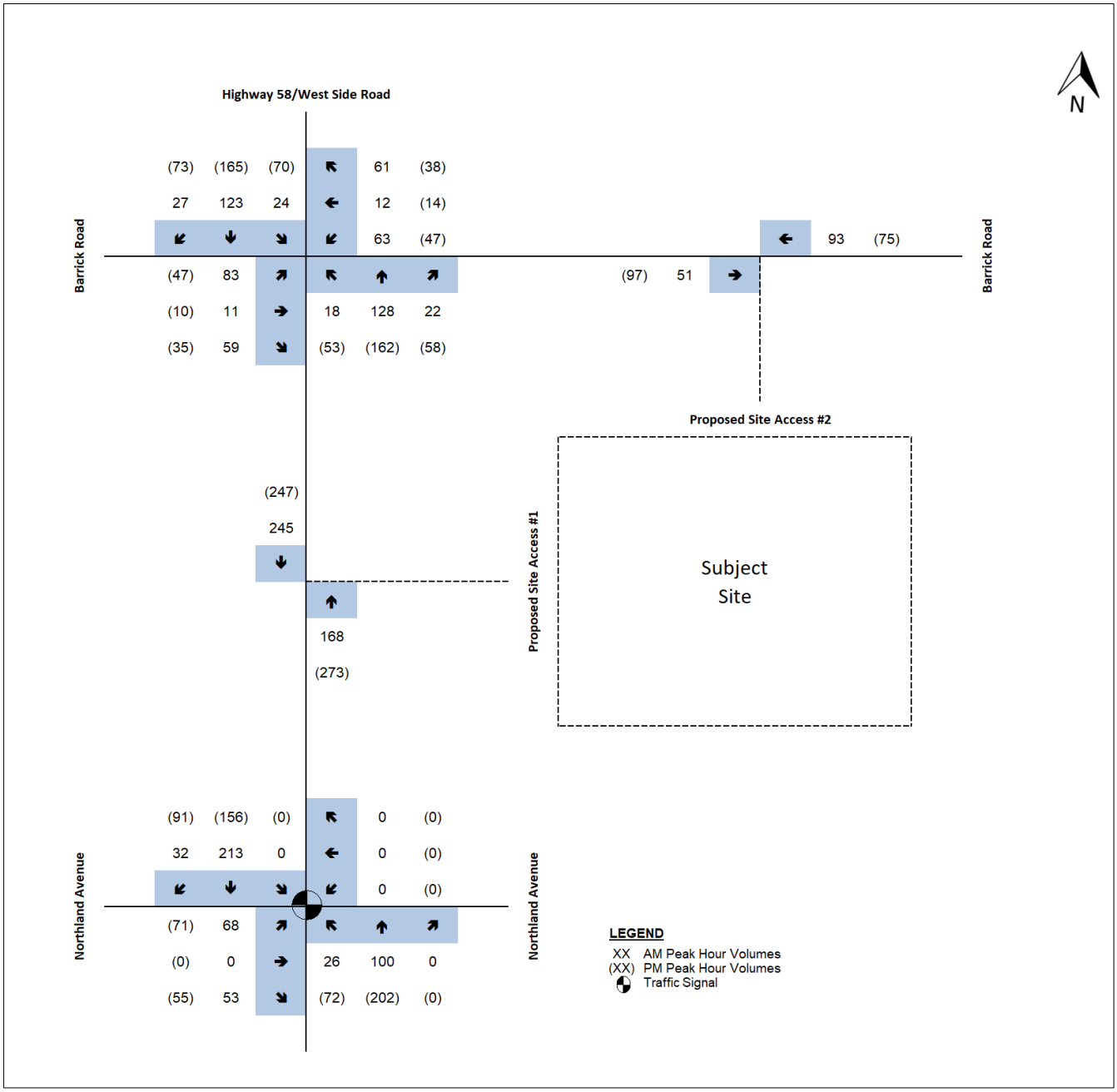

Figure 7 Total Background Development Traffic

4.4 Future Background Traffic Volumes

The background traffic volumes for the 2028, 2030, 2032, 2037, and 2042 horizon year were derived by applying the 2% per annum growth rates to the study area roads and the corresponding total background development traffic. The resulting 2028, 2030, 2032, 2037, and 2042 future background traffic volumes are summarized in **Figure 8**, **Figure 9,** **Figure 10**, **Figure 11**, and **Figure 12**, respectively.

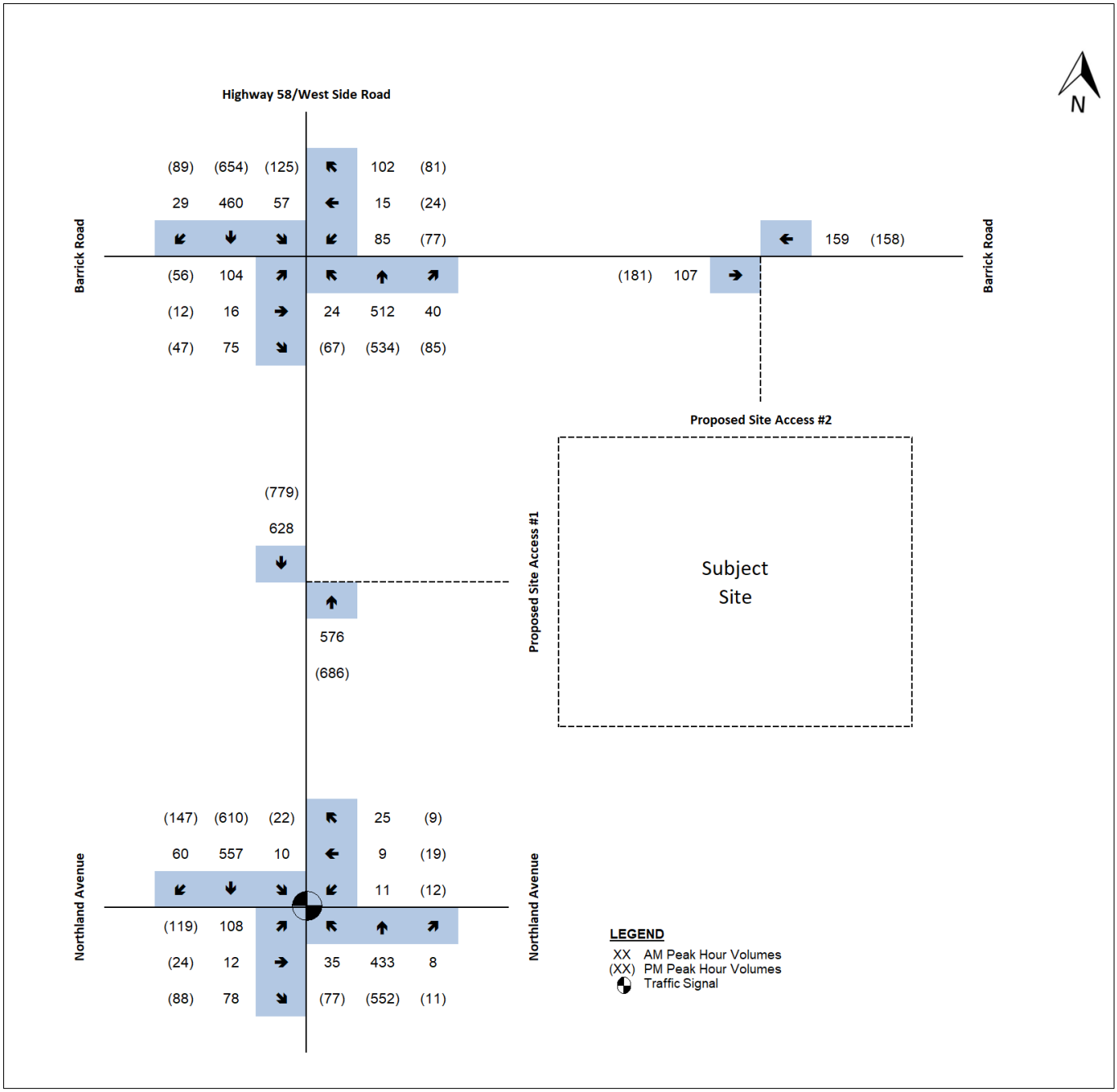

Figure 8 2028 Future Background Traffic Volumes

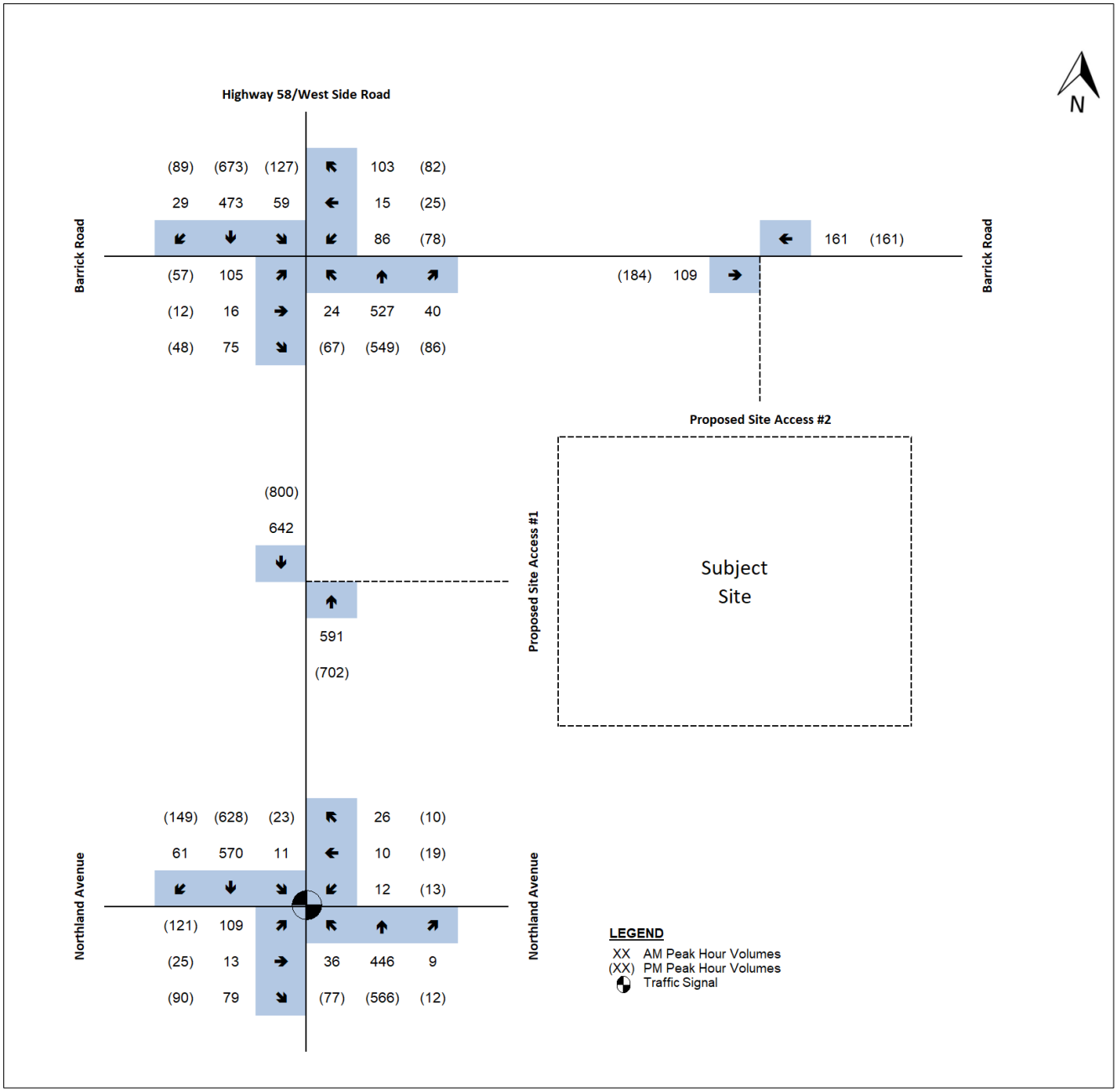

Figure 9 2030 Future Background Traffic Volumes

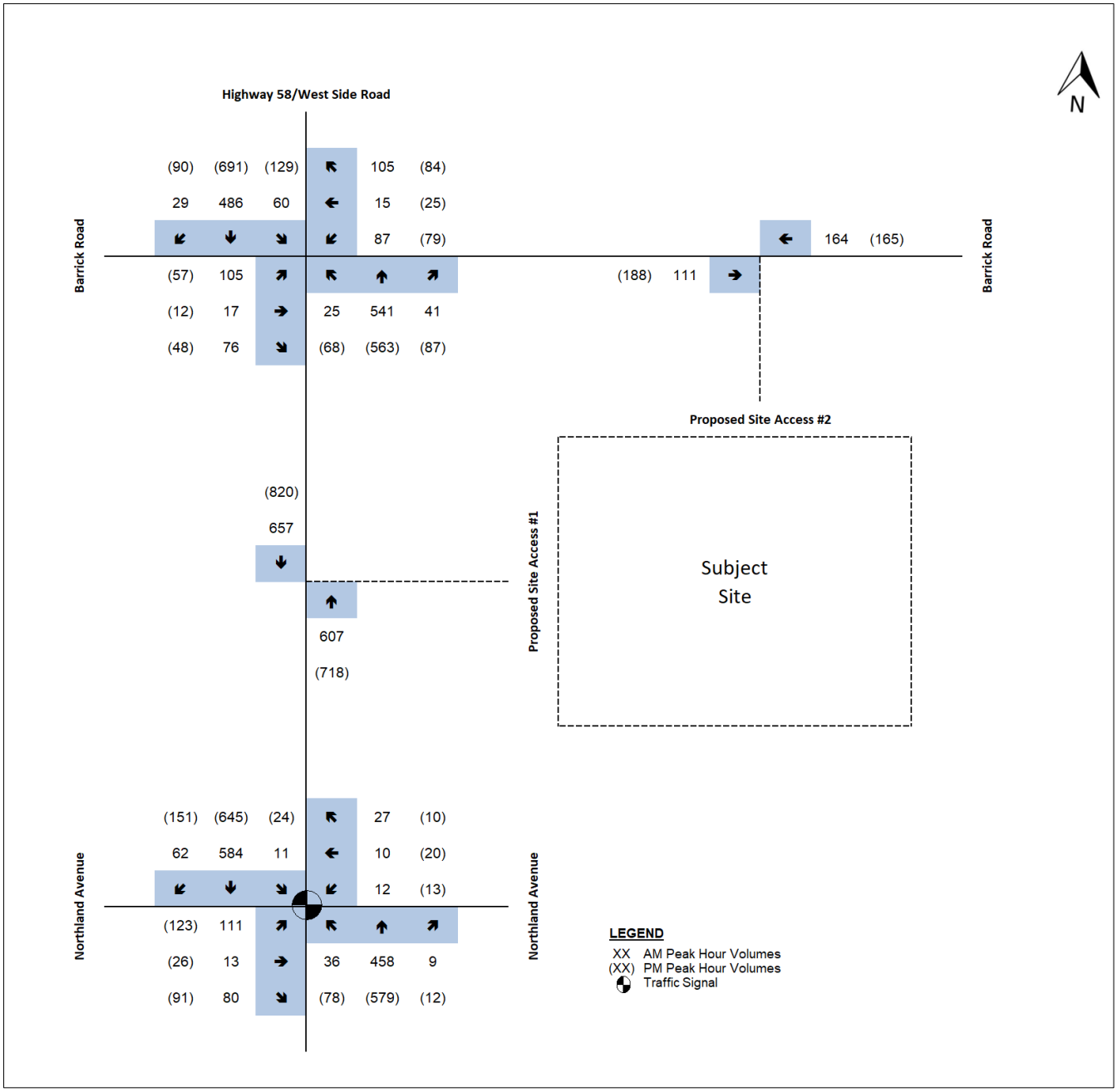

Figure 10 2032 Future Background Traffic Volumes

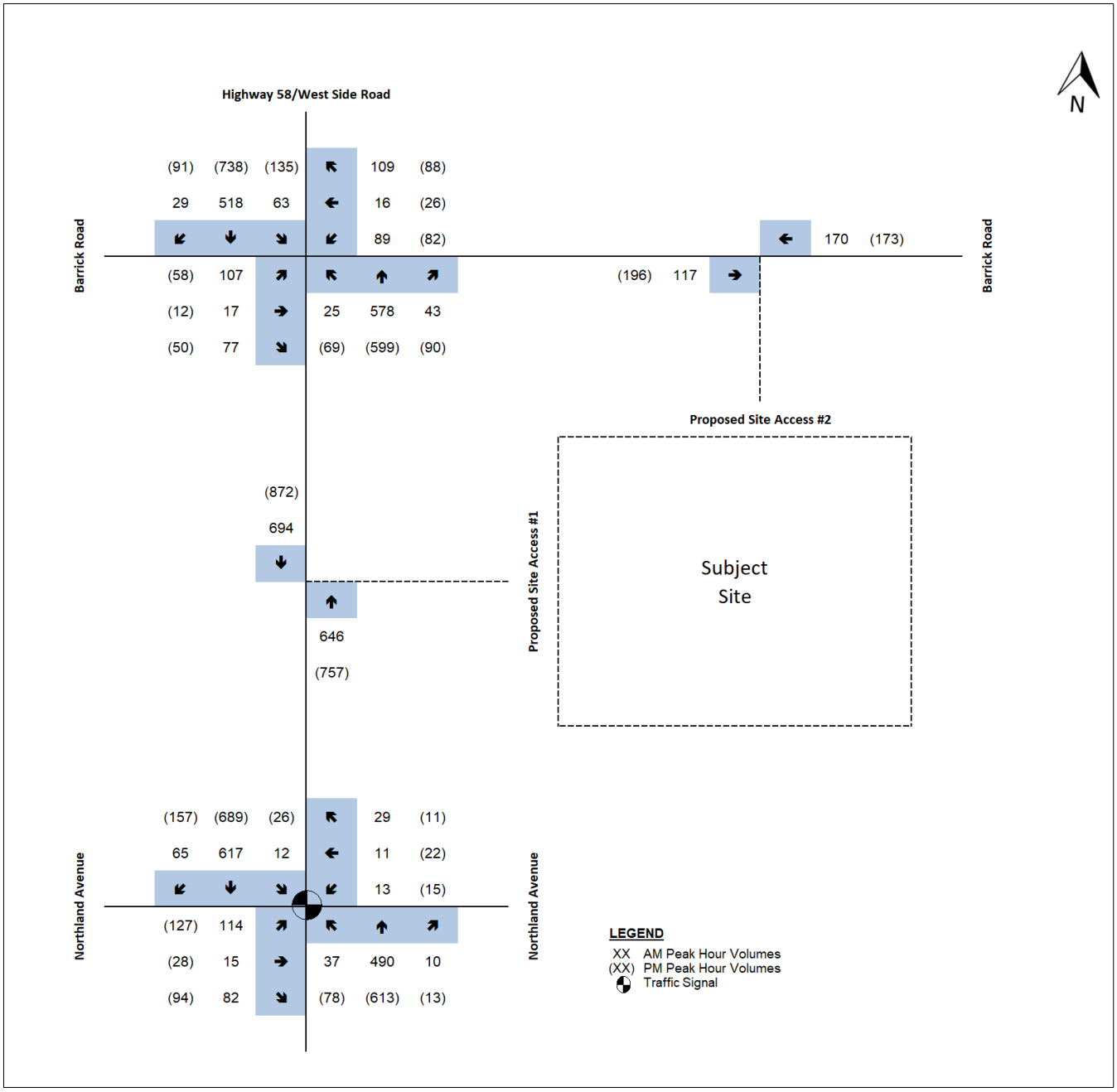

Figure 11 2037 Future Background Traffic Volumes

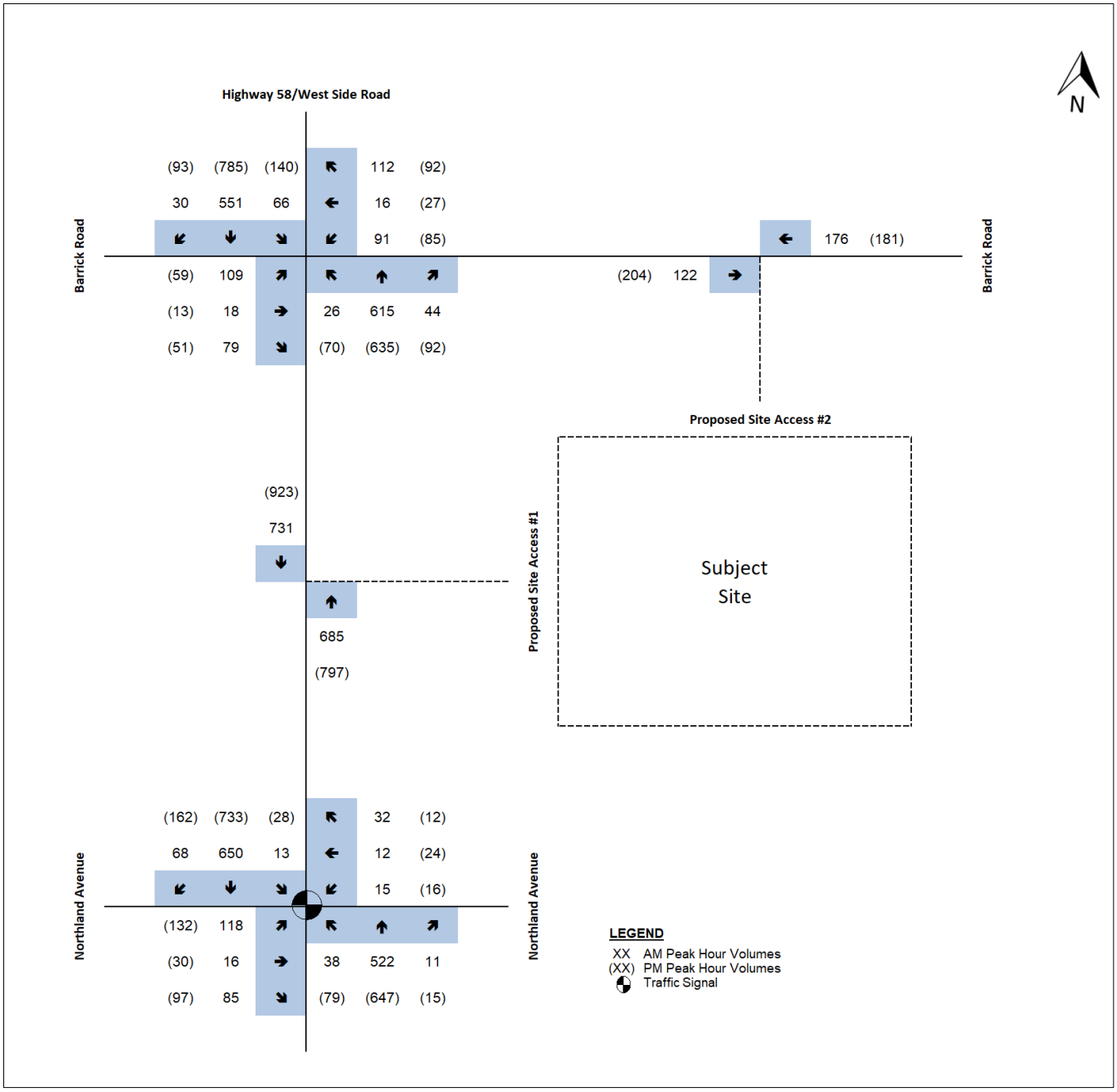

Figure 12 2042 Future Background Traffic Volumes

5. Site Generated Traffic

5.1 Site Trip Generation

The proposed development consists of a total of 372 dwelling units located within six buildings each containing 62 residential units and a 1-storey commercial building with a total of 558 m^2 of GFA.

Trip generation estimates for the weekday a.m. and p.m. peak hours were developed using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition, and associated Trip Generation Handbook, 3rd Edition. Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) was selected for the residential trip generation

due to the 6-storey buildings being within ITE's threshold of 4 to 10 storeys to be considered a mid-rise development. LUC 822 – Strip Retail Plaza was selected for the commercial trip generation as it is proposed as a retail building with less than 40,000 ft^2 of GFA.

GHD reviewed the methodology for selecting between fitted curve equations and average trip rates in accordance with Section 4.4 of the Trip Generation Handbook (3rd Edition). The trip generation for each phase was calculated using the fitted curve equation associated with LUC 221, as the unit count for each phase falls within the data extremes and the data set contains 20 or more valid data points for both the a.m. and p.m. peak hours. The trip generation for the commercial use used the average during the a.m. peak hour while the data set contained 20 or more valid data points during the p.m. peak hour resulting in the fitted curve equation being used.

No transit mode share adjustments were applied to the ITE Trip Generation rates, as transit service within the surrounding area is limited. The subject site is currently served by a single local transit route operating with an approximate 60-minute headway, offering limited frequency and coverage for typical commuter, visitor, or discretionary trips.

Table 2 summarizes the estimated trip generation for the subject site and has been completed for each phase. Phase 2 consists of the 2-storey parkade and is not anticipated to generate any additional traffic.

Table 2 Total Site Trip Generation

Land Use (LUC)	Units/GFA	Parameters	Peak Hour Trip Generation					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
LUC 221 – Multifamily Housing – Mid-Rise	Phase 1 - 124 units	Trip Ratio	0.081	0.274	0.355	0.250	0.137	0.387
		Gross Trips	10	34	44	31	17	48
	Phase 3 - 124 units	Trip Ratio	0.081	0.274	0.355	0.250	0.137	0.387
		Gross Trips	10	34	44	31	17	48
	Phase 4 - 124 units	Trip Ratio	0.081	0.274	0.355	0.250	0.137	0.387
		Gross Trips	10	34	44	31	17	48
LUC 822 – Strip Retail Plaza	6,006 ft^2 (558 m^2)	Trip Ratio	2.164	1.832	3.996	4.495	4.496	8.991
		Gross Trips	13	11	24	27	27	54
Total Site Trips – 2028			**23**	**45**	**68**	**58**	**44**	**102**
Total Site Trips – 2030			**33**	**79**	**112**	**89**	**61**	**150**
Total Site Trips – 2032, Full Build-Out			**43**	**113**	**156**	**120**	**78**	**198**

Based on the assumed ITE trip generation rates, full build-out of the proposed development is expected to generate a total of 156 two-way vehicle trips during the a.m. peak hour consisting of 43 inbound and 113 outbound trips. During the p.m. peak hour, it is expected to generate 198 new two-way vehicle trips consisting of 120 inbound and 78 outbound trips.

5.2 Site Traffic Distribution and Assignment

The site-generated traffic was distributed based on a review of existing travel patterns, the 2022 Transportation Tomorrow Survey (TTS) data, as well as the trip distribution established through the background developments. The residential trip distribution is provided in **Table 3** and is predominantly split in the north-south direction along Highway 58/West Side Road with some traffic assigned to/from the east. No traffic was assigned to/from the west as it only provides a connection towards the west through local roads and are instead assumed to be completed via Highway 58 and Highway 3/Main Street West instead.

The trip generation for the retail use is provided in **Table 4** and is based on the existing travel patterns.

Table 3 Site Traffic Distribution - Residential

Peak Period	Direction	North (Highway 58)	South (Highway 58)	East (Barrick)
AM	Inbound	50%	45%	5%
	Outbound	50%	45%	5%
PM	Inbound	55%	40%	5%
	Outbound	45%	50%	5%

Table 4 Site Traffic Distribution - Retail

Peak Period	Direction	North (Highway 58)	South (Highway 58)	East (Barrick)
AM	Inbound	45%	40%	15%
	Outbound	50%	40%	10%
PM	Inbound	55%	35%	10%
	Outbound	40%	45%	15%

The site generated traffic assignment to the study area road network under each horizon year is provided in **Figure 13**, **Figure 14**, and **Figure 15** for Phases 1, 3, and 4 of the development, respectively.

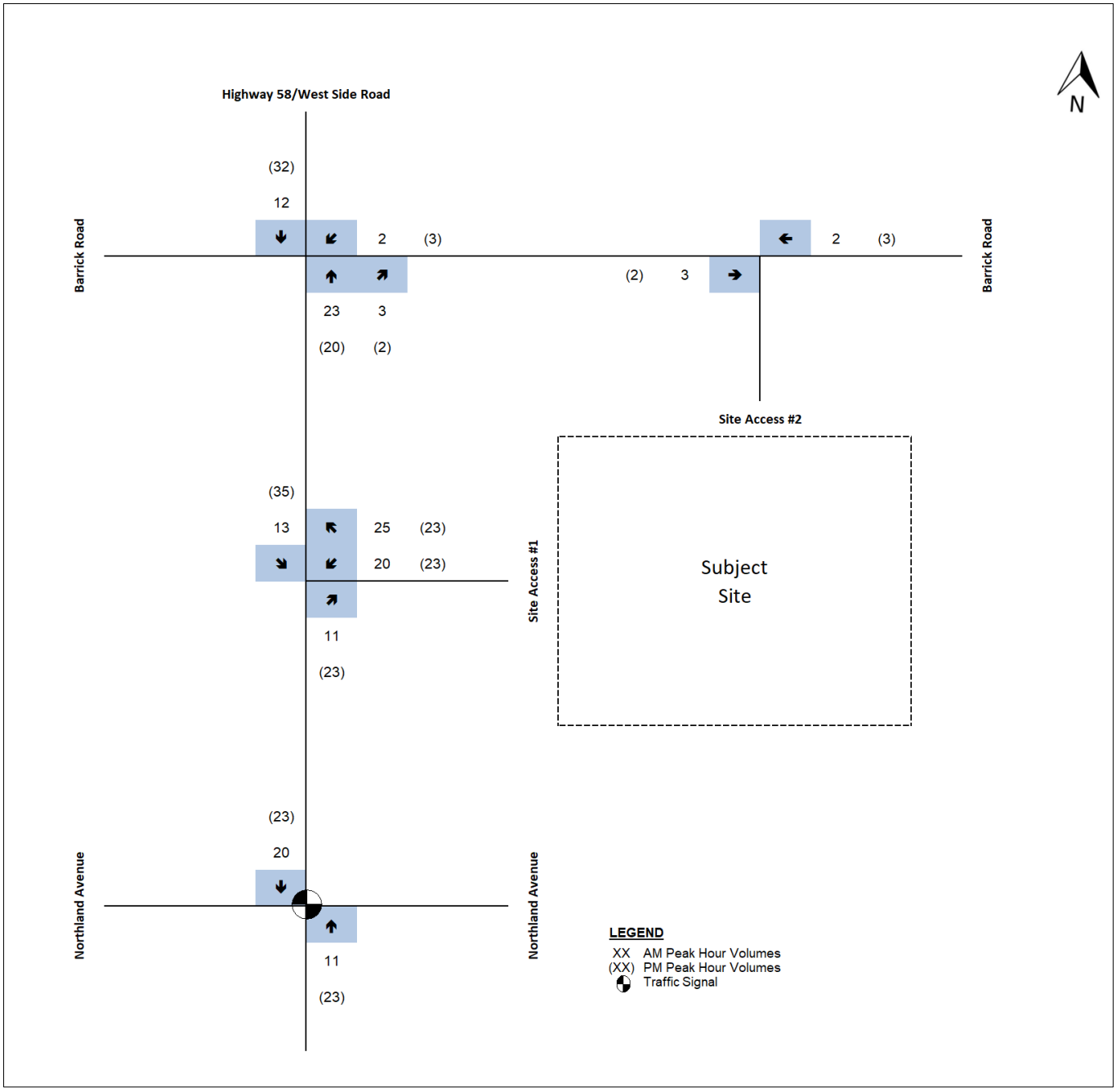

Figure 13 Site Trips – Phase 1

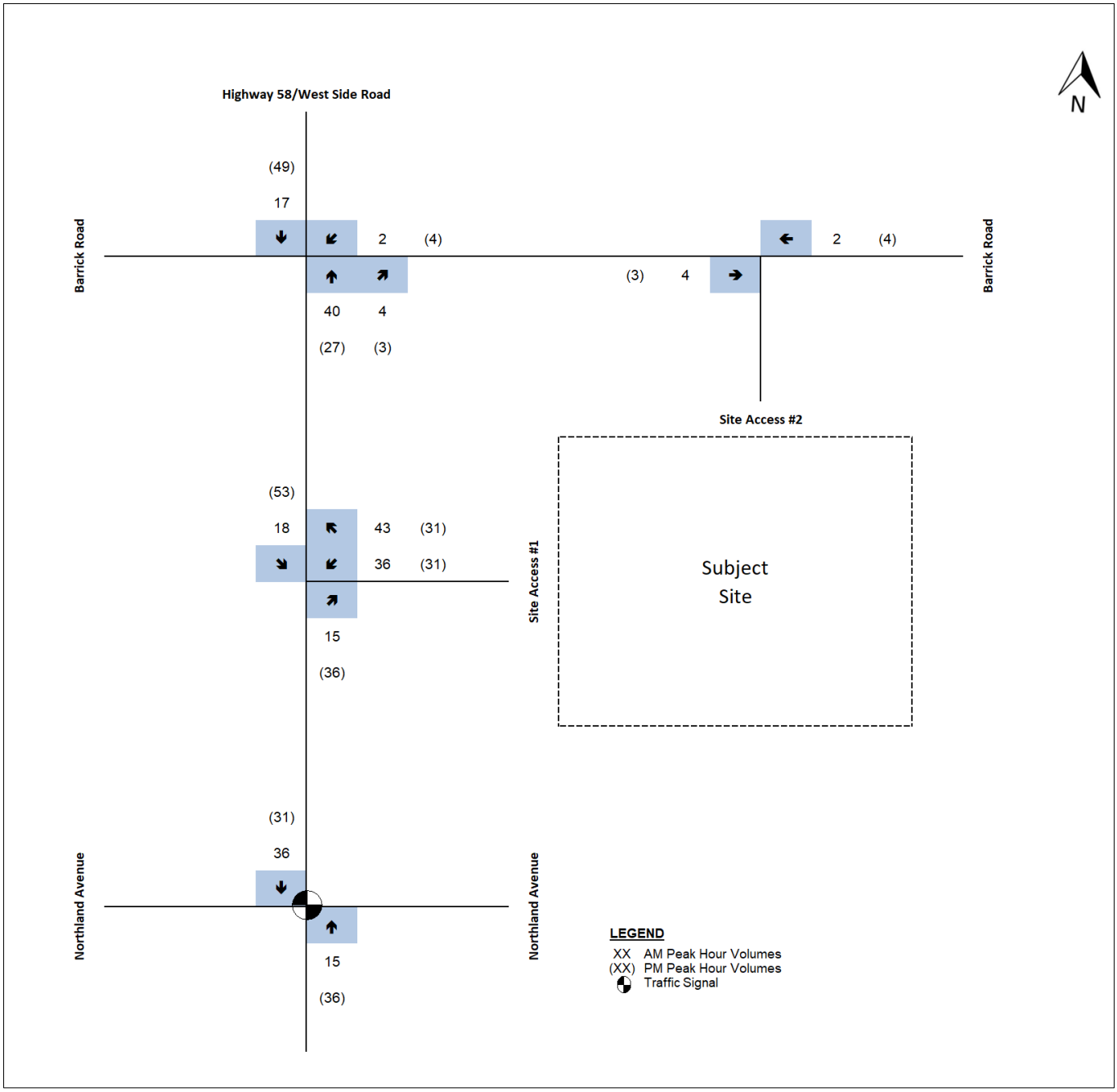

Figure 14 Site Trips – Phase 1 and 3

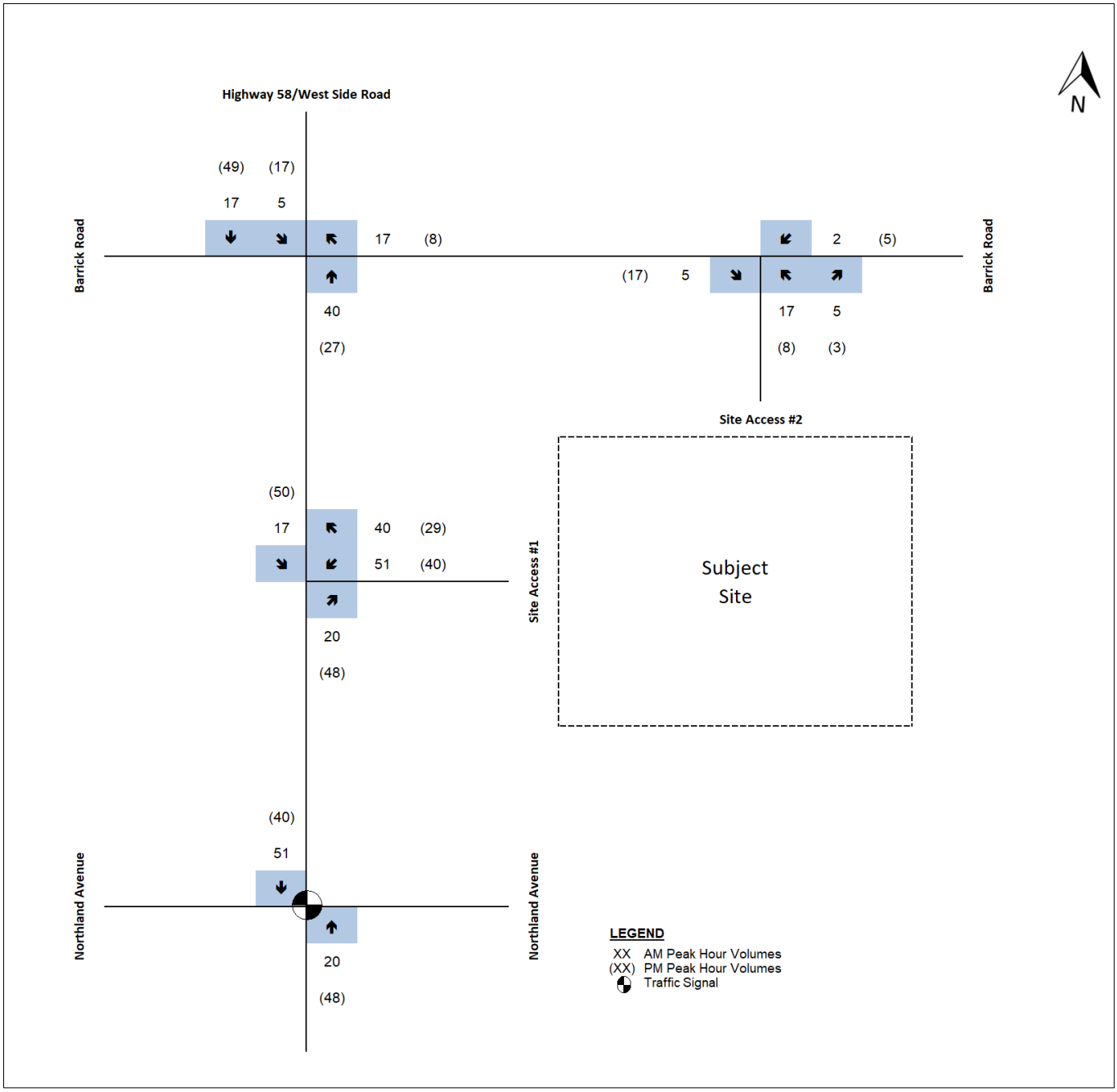

Figure 15 Site Trips – Full Build-out

6. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2028, 2030, 2032, 2037, and 2042 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 16**, **Figure 17**, **Figure 18**, **Figure 19**, and **Figure 20**, for the for the 2028, 2030, 2032, 2037, and 2042 horizon years, respectively.

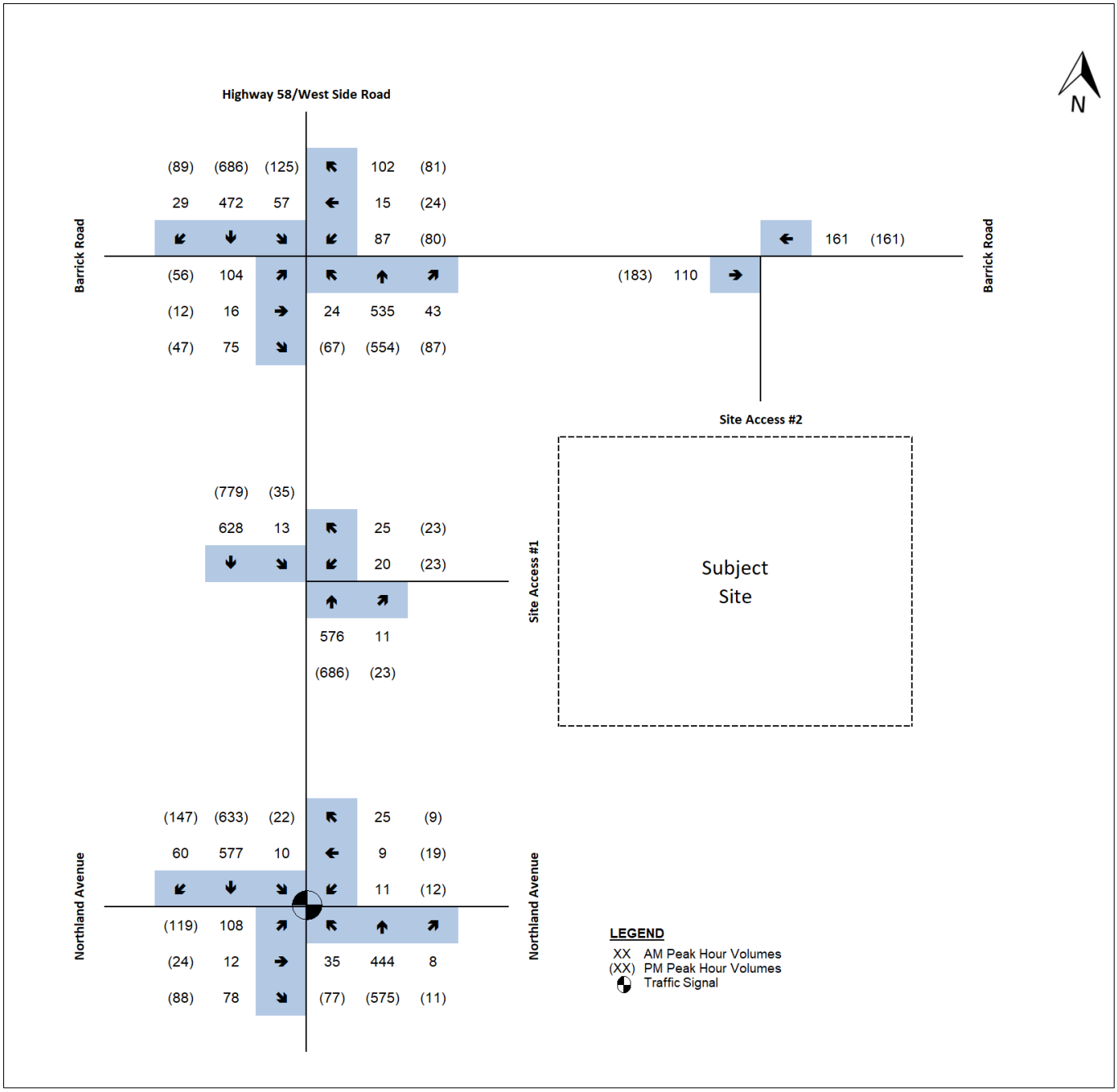

Figure 16 2028 Future Total Traffic Volumes (Phase 1)

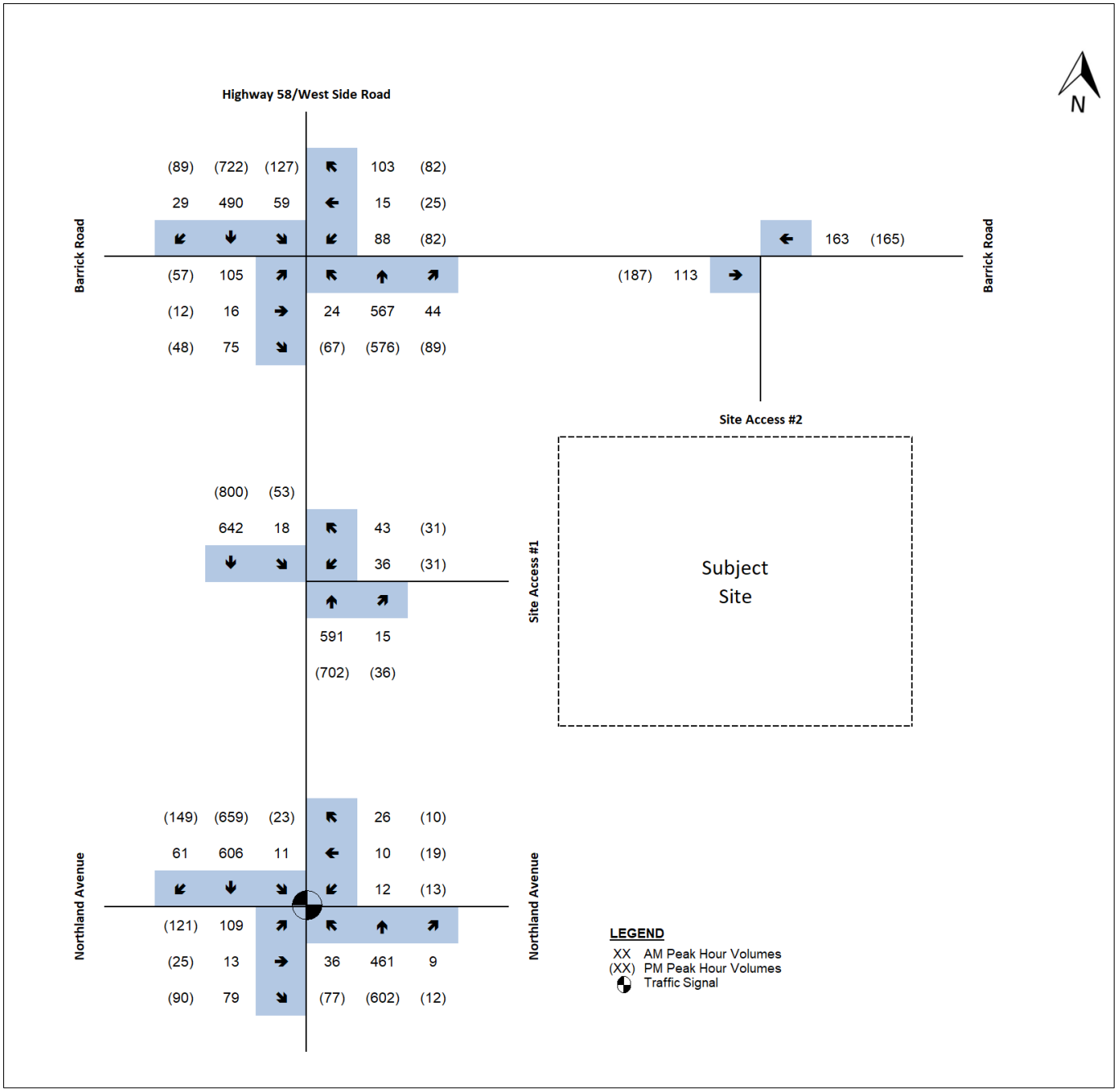

Figure 17 2030 Future Total Traffic Volumes (Phase 3)

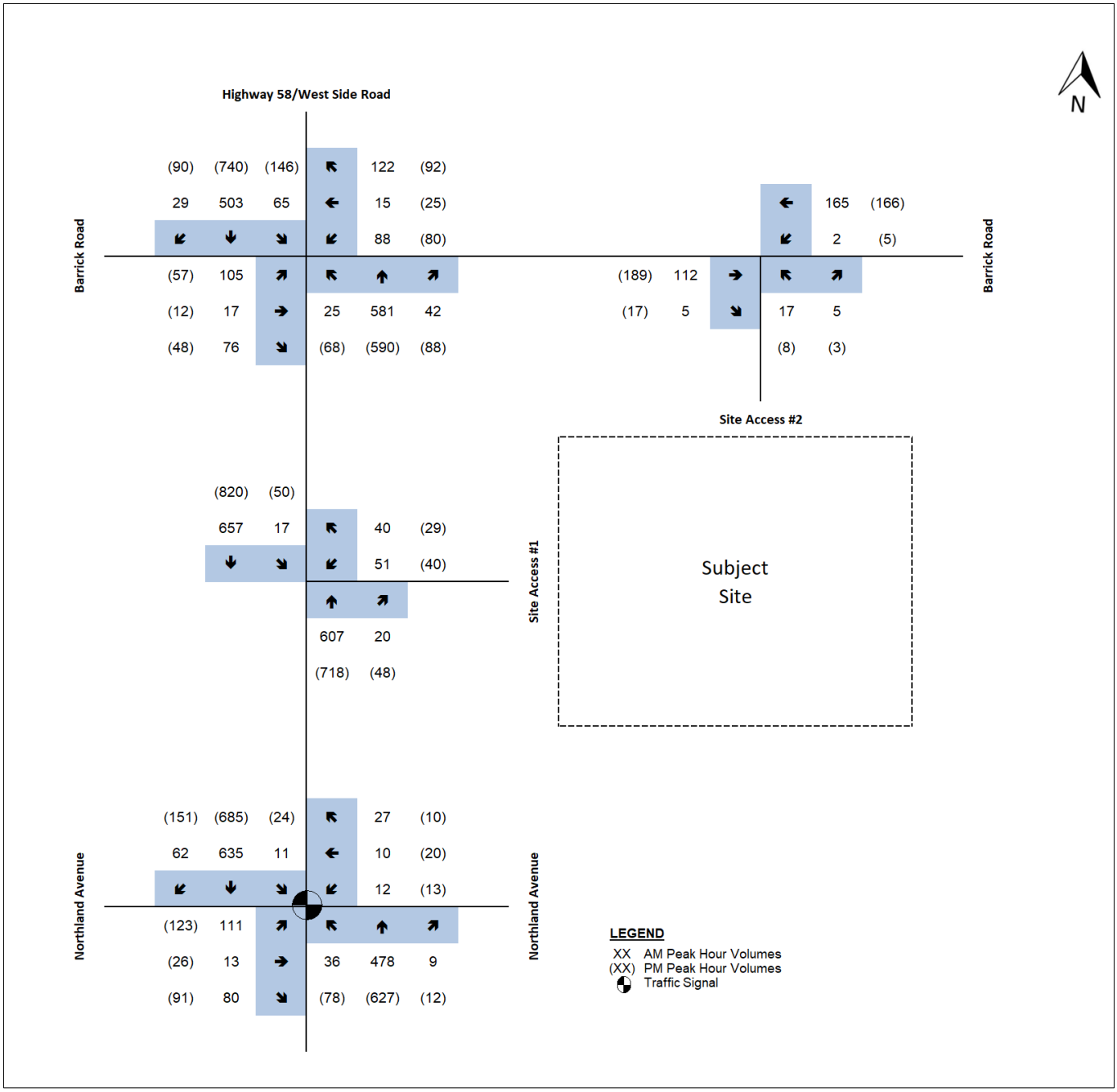

Figure 18 2032 Future Total Traffic Volumes (Phase 4, Full Build-out)

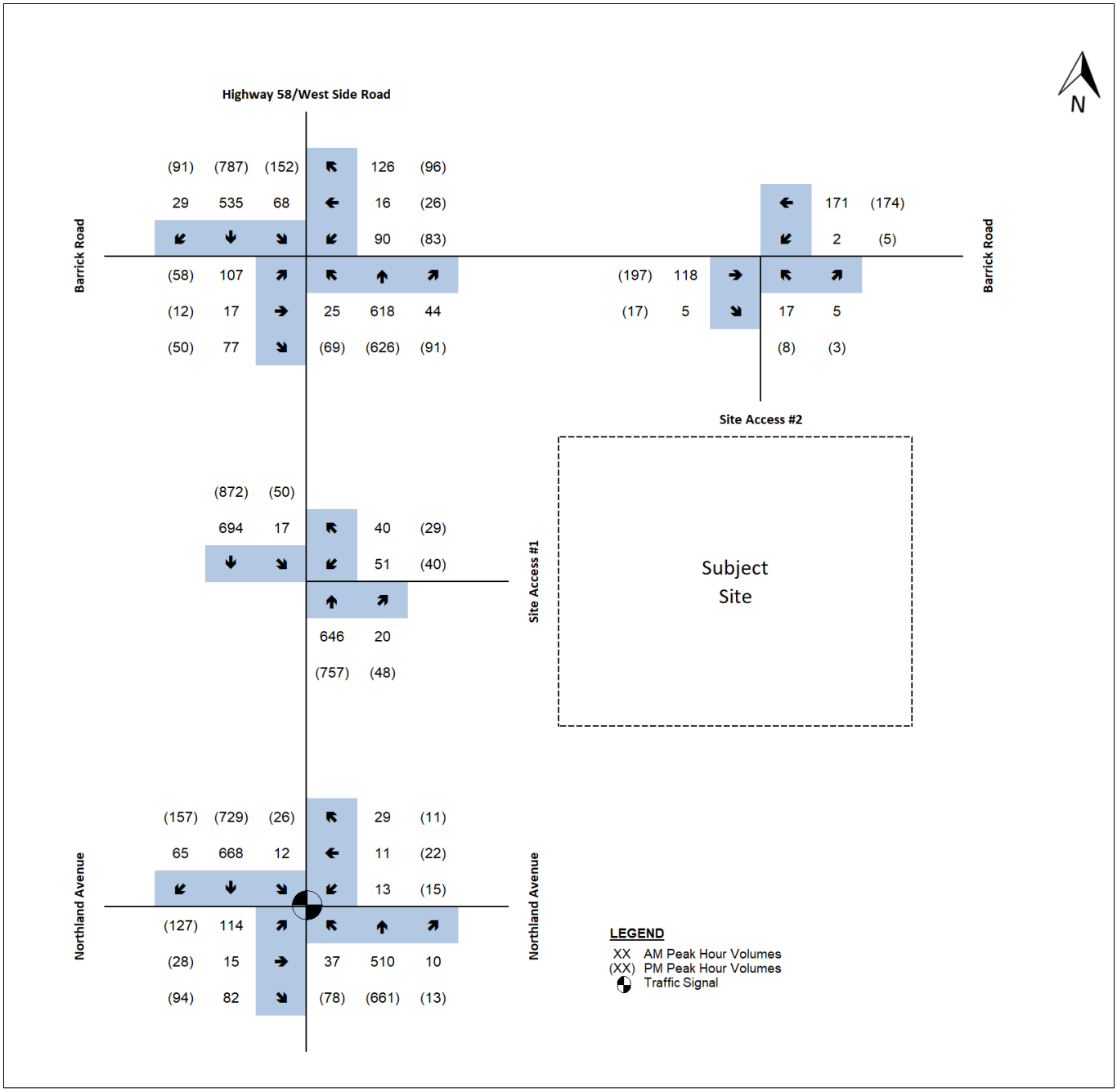

Figure 19 2037 Future Total Traffic Volumes (5 years Post Build-out)

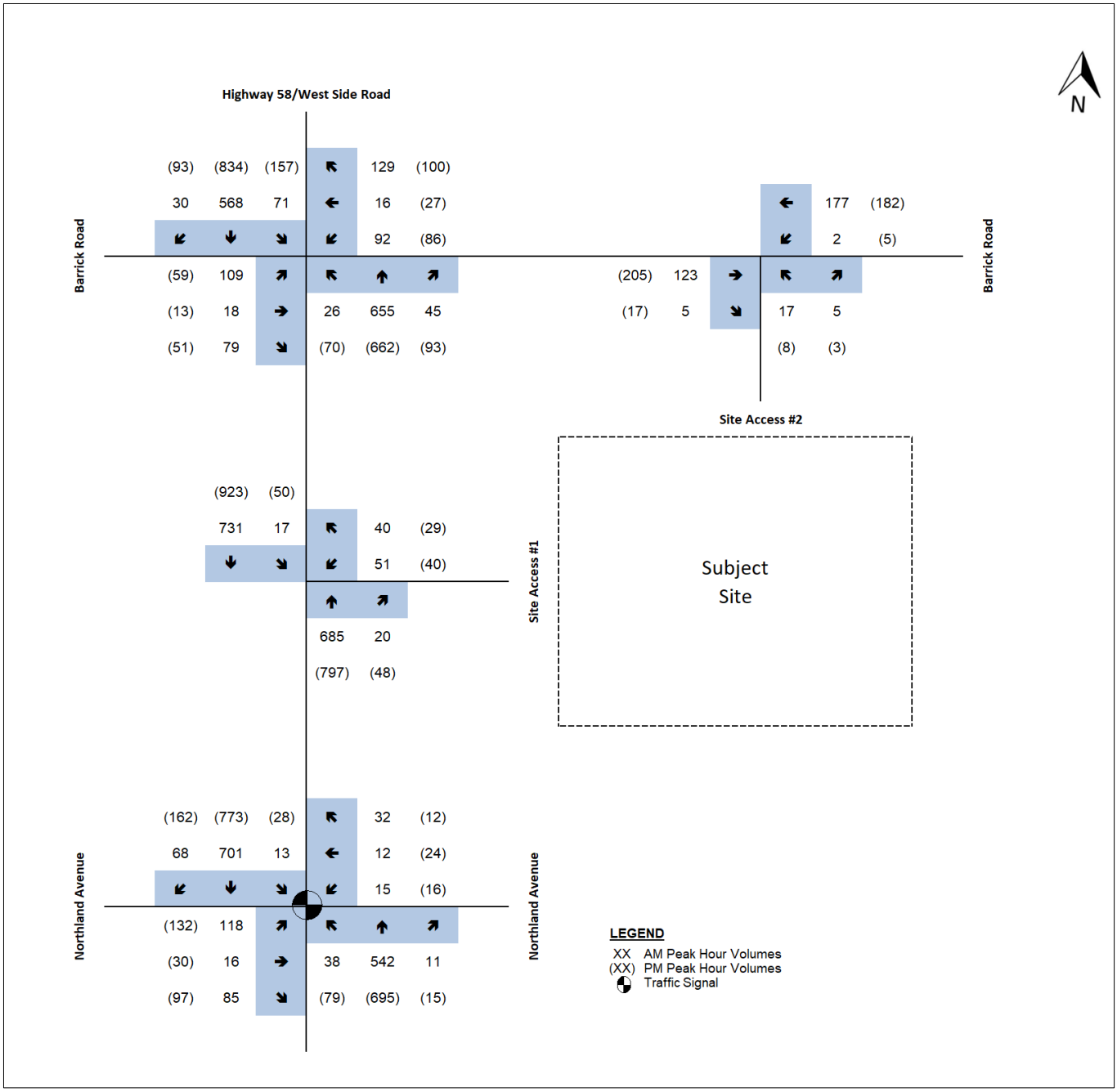

Figure 20 2042 Future Total Traffic Volumes (10 years Post Build-out)

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 12 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 and 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:

'Critical' intersections and movements for intersections and ramp terminals under the MTO's jurisdiction include:

- For signalized intersections, movements with a volume/capacity (v/c) ratio greater than 0.85

'Critical' intersections and movements for intersections under the City of Port Colborne's jurisdiction, based on the Niagara Region Traffic Impact Study Guidelines, include:

- At signalized intersections, movements with v/c ratio greater than 0.85 and/or LOS "E" or worse are deemed to be "critical" in terms of operations. Movements that exceed those thresholds shall be evaluated for possible operational improvements.
- At unsignalized intersections, movements expected to operate at LOS "D" or worse and/or where the estimated 95th percentile queue length for an individual movement exceeds the available queuing space.
- Any site accesses where entrances or egress is anticipated to be blocked by traffic queues from an upstream/downstream intersection.
- An exclusive turning movement in which the 95th percentile queue will exceed the available storage space.
- Exclusive left- and right turn lanes that are inaccessible due to the length of queues in the adjacent through lanes.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2026), future background (2028, 2030, 2032, 2037, and 2042) and future total (2028, 2030, 2032, 2037, and 2042) traffic conditions. The detailed calculation sheets are provided in **Appendix E**.

7.1 Highway 58/West Side Road and Barrick 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 Highway 58/West Side Road and Barrick Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2026	EBTLR = 0.07 (B) 12 WBTLR = 0.11 (B) 11 NBL = 0.01 (A) 8 NBTR = 0.09 (A) 0 SBL = 0.03 (A) 8 SBTR = 0.07 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.05 (B) 13 WBTLR = 0.16 (B) 13 NBL = 0.01 (A) 8 NBTR = 0.09 (A) 0 SBL = 0.05 (A) 8 SBTR = 0.11 (A) 0	EBTLR = 5 m WBTLR = 5 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Background 2028	EBTLR = 0.55 (C) 25 WBTLR = 0.51 (C) 22 NBL = 0.03 (A) 9 NBTR = 0.13 (A) 0 SBL = 0.07 (A) 9 SBTR = 0.12 (A) 0	EBTLR = 25 m WBTLR = 25 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.54 (E) 37 WBTLR = 0.75 (F) 50 NBL = 0.09 (A) 10 NBTR = 0.17 (A) 0 SBL = 0.15 (A) 10 SBTR = 0.2 (A) 0	EBTLR = 25 m WBTLR = 45 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2028	EBTLR = 0.56 (D) 26 WBTLR = 0.54 (C) 24 NBL = 0.03 (A) 9 NBTR = 0.14 (A) 0 SBL = 0.07 (A) 9 SBTR = 0.12 (A) 0	EBTLR = 25 m WBTLR = 25 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.57 (E) 41 WBTLR = 0.8 (F) 59 NBL = 0.09 (A) 10 NBTR = 0.17 (A) 0 SBL = 0.15 (A) 10 SBTR = 0.2 (A) 0	EBTLR = 25 m WBTLR = 50 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Background 2030	EBTLR = 0.56 (D) 26 WBTLR = 0.53 (C) 23 NBL = 0.03 (A) 9 NBTR = 0.14 (A) 0 SBL = 0.07 (A) 9 SBTR = 0.12 (A) 0	EBTLR = 25 m WBTLR = 25 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.57 (E) 41 WBTLR = 0.79 (F) 57 NBL = 0.09 (A) 10 NBTR = 0.17 (A) 0 SBL = 0.15 (A) 10 SBTR = 0.2 (A) 0	EBTLR = 25 m WBTLR = 45 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Total 2030	EBTLR = 0.59 (D) 28 WBTLR = 0.57 (D) 25 NBL = 0.03 (A) 9 NBTR = 0.15 (A) 0 SBL = 0.07 (A) 9 SBTR = 0.12 (A) 0	EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.61 (E) 46 WBTLR = **0.87** (F) 73 NBL = 0.09 (A) 10 NBTR = 0.18 (A) 0 SBL = 0.16 (A) 10 SBTR = 0.21 (A) 0	EBTLR = 30 m WBTLR = 55 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Background 2032	EBTLR = 0.58 (D) 28 WBTLR = 0.55 (C) 24 NBL = 0.03 (A) 9 NBTR = 0.14 (A) 0 SBL = 0.07 (A) 9 SBTR = 0.12 (A) 0	EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.6 (E) 44 WBTLR = 0.83 (F) 65 NBL = 0.09 (A) 10 NBTR = 0.18 (A) 0 SBL = 0.16 (A) 10 SBTR = 0.2 (A) 0	EBTLR = 25 m WBTLR = 50 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Total 2032	EBTLR = 0.64 (D) 33 WBTLR = 0.62 (D) 28 NBL = 0.03 (A) 9 NBTR = 0.15 (A) 0 SBL = 0.08 (A) 10 SBT = 0.21 (A) 0 SBTR = 0.13 (A) 0	EBTLR = 35 m WBTLR = 30 m NBL = 5 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m	EBTLR = 0.7 (F) 62 WBTLR = **0.98** (F) 102 NBL = 0.1 (A) 10 NBTR = 0.18 (A) 0 SBL = 0.18 (A) 10 SBT = 0.32 (A) 0 SBTR = 0.22 (A) 0	EBTLR = 35 m WBTLR = 65 m NBL = 5 m NBTR = 0 m SBL = 5 m SBT = 0 m SBTR = 0 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2037	EBTLR = 0.63 (D) 32 WBTLR = 0.6 (D) 28 NBL = 0.03 (A) 9 NBTR = 0.15 (A) 0 SBL = 0.08 (A) 10 SBTR = 0.13 (A) 0	EBTLR = 35 m WBTLR = 30 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.68 (F) 57 WBTLR = **0.96** (F) 96 NBL = 0.1 (A) 10 NBTR = 0.19 (A) 0 SBL = 0.17 (A) 10 SBTR = 0.22 (A) 0	EBTLR = 35 m WBTLR = 65 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Total 2037	EBTLR = 0.7 (E) 39 WBTLR = 0.67 (D) 32 NBL = 0.03 (A) 9 NBTR = 0.16 (A) 0 SBL = 0.09 (A) 10 SBTR = 0.13 (A) 0	EBTLR = 40 m WBTLR = 35 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.81 (F) 86 WBTLR = **1.14** (F) 156 NBL = 0.1 (A) 10 NBTR = 0.19 (A) 0 SBL = 0.2 (A) 10 SBTR = 0.23 (A) 0	EBTLR = 40 m WBTLR = 85 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Background 2042	EBTLR = 0.7 (E) 39 WBTLR = 0.66 (D) 32 NBL = 0.03 (A) 9 NBTR = 0.16 (A) 0 SBL = 0.09 (A) 10 SBTR = 0.14 (A) 0	EBTLR = 40 m WBTLR = 35 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = 0.79 (F) 78 WBTLR = **1.11** (F) 145 NBL = 0.1 (A) 10 NBTR = 0.19 (A) 0 SBL = 0.18 (A) 10 SBTR = 0.23 (A) 0	EBTLR = 40 m WBTLR = 80 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m
Future Total 2042	EBTLR = 0.77 (E) 49 WBTLR = 0.72 (E) 38 NBL = 0.03 (A) 10 NBTR = 0.17 (A) 0 SBL = 0.1 (A) 10 SBTR = 0.14 (A) 0	EBTLR = 45 m WBTLR = 45 m NBL = 5 m NBTR = 0 m SBL = 5 m SBTR = 0 m	EBTLR = **0.97** (F) 132 WBTLR = **1.34** (F) 239 NBL = 0.11 (A) 11 NBTR = 0.2 (A) 0 SBL = 0.21 (A) 11 SBTR = 0.24 (A) 0	EBTLR = 55 m WBTLR = 105 m NBL = 5 m NBTR = 0 m SBL = 10 m SBTR = 0 m

Under existing traffic conditions, the intersection is operating at satisfactory levels during both peak hours. The greatest delays occur in the eastbound and westbound minor approaches with average delays of up to 12 seconds during the a.m. peak hour and 13 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increasing to 25 seconds during the a.m. peak hour and 50 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increases to 26 seconds during the a.m. peak hour and to 59 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2030 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increasing to 26 seconds during the a.m. peak hour and 57 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2030 future total traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increasing to 28 seconds during the a.m. peak hour and 73 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours. The intersection operates without any critical movements during the a.m. peak hour while the westbound approach operates critically during the p.m. peak hour with a v/c ratio of 0.87 LOS F.

With the addition of corridor growth and background development traffic for the 2032 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increasing to 28 seconds during the a.m. peak hour and 65 seconds during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of site generated traffic for the 2032 future total traffic scenario, the intersection is reported to continue to operate at satisfactory levels with the average delay along the minor approaches increasing to 33 seconds during the a.m. peak hour and 102 seconds during the p.m. peak hour. The intersection operates without any critical movements during the a.m. peak hour while the westbound approach operates critically during the p.m. peak hour with a v/c ratio of 0.98 LOS F.

With the addition of corridor growth and background development traffic for the 2037 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels during the a.m. peak hour with the average delay along the minor approaches increasing to 32 seconds, while the westbound approach operates at a critical level with a v/c ratio of 0.96 LOS F and average delay of 96 seconds during the p.m. peak hour.

With the addition of site generated traffic for the 2037 future total traffic scenario, the intersection reports an increase in the average delay to 39 seconds during the a.m. peak hour while the v/c ratio in the westbound approach operates critically and increases to 1.14 LOS F and a 156 second delay during the p.m. peak hour.

With the addition of corridor growth and background development traffic for the 2042 future background traffic scenario, the intersection is reported to continue to operate at satisfactory levels during the a.m. peak hour with the average delay along the minor approaches increasing to 39 seconds, while the westbound approach operates critically with a v/c ratio of 1.11 LOS F and average delay of 145 seconds during the p.m. peak hour.

With the addition of site generated traffic for the 2042 future total traffic scenario, the intersection reports an increase in the average delay to 49 seconds during the a.m. peak hour while the v/c ratio in the westbound approach operates critically with a v/c ratio of 1.34 LOS F and a 239 second delay during the p.m. peak hour in addition to the eastbound approach with a v/c ratio of 0.97 LOS F.

Beginning in the 2030 future horizon, forecast operations show the minor-street approach slightly surpassing the MTO threshold for delay and capacity under unsignalized control. While this exceedance is minimal and reflects threshold-level conditions rather than a substantive operational deficiency; consistent with MTO practice, it warrants consideration of potential intersection improvements. As such, the feasibility of signalization has been evaluated, as presented in **Section 7.1.1**.

7.1.1 Highway 58/West Side Road and Barrick Road - Signalization

Following the assessment of the unsignalized intersection identifying that the intersection would operate at critical levels beginning under the Future Total 2032 conditions, the intersection was evaluated under signalized traffic control.

Traffic signal warrants were assessed in accordance with the Ontario Traffic Manual (OTM) Book 12 using existing eight-hour turning movement count data. The results of this assessment confirm that the signalization of the intersection is not warranted under existing traffic conditions based on the applicable warrant criteria set out in OTM Book 12.

Under future traffic conditions, in which the 8-hour count cannot be projected to account for background development and site generated traffic, the traffic signal warrants were assessed in accordance with the OTM Book 12 using the a.m. and p.m. peak hour estimate under Justification 7. The results of this assessment confirm that the signalization of the intersection might be warranted (Case 2).

The signal warrants are provided in **Appendix F**.

Operational analysis of the signalized intersection was subsequently completed under the 2030, 2032, 2037 and 2042 future horizon years, in which critical movements have been identified. Capacity analysis at this intersection as a signalized intersection during the weekday a.m. and p.m. peak hours for the future background, and future total traffic conditions are summarized in the following table.

Table 6 Capacity Analysis of Highway 58/West Side Road and Barrick Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2030	Overall: 0.39 (A) 9 EBTLR = 0.53 (B) 18 WBTLR = 0.47 (B) 18 NBL = 0.06 (A) 5 NBTR = 0.33 (A) 6 SBL = 0.16 (A) 6 SBTR = 0.3 (A) 6	 EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 30 m SBL = 10 m SBTR = 25 m	Overall: 0.42 (A) 8 EBTLR = 0.31 (B) 20 WBTLR = 0.52 (C) 21 NBL = 0.2 (A) 6 NBTR = 0.32 (A) 6 SBL = 0.32 (A) 7 SBTR = 0.39 (A) 6	 EBTLR = 20 m WBTLR = 30 m NBL = 10 m NBTR = 30 m SBL = 20 m SBTR = 40 m
Future Total 2030	Overall: 0.4 (A) 9 EBTLR = 0.53 (B) 18 WBTLR = 0.48 (B) 18 NBL = 0.06 (A) 5 NBTR = 0.35 (A) 6 SBL = 0.17 (A) 6 SBTR = 0.31 (A) 6	 EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 30 m SBL = 10 m SBTR = 25 m	Overall: 0.45 (A) 8 EBTLR = 0.31 (B) 20 WBTLR = 0.53 (C) 22 NBL = 0.21 (A) 6 NBTR = 0.34 (A) 6 SBL = 0.33 (A) 8 SBTR = 0.42 (A) 6	 EBTLR = 20 m WBTLR = 30 m NBL = 10 m NBTR = 30 m SBL = 20 m SBTR = 40 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2032	Overall: 0.39 (A) 9 EBTLR = 0.54 (B) 19 WBTLR = 0.48 (B) 18 NBL = 0.07 (A) 5 NBTR = 0.33 (A) 6 SBL = 0.16 (A) 6 SBTR = 0.3 (A) 6	 EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 30 m SBL = 10 m SBTR = 25 m	Overall: 0.43 (A) 8 EBTLR = 0.31 (B) 20 WBTLR = 0.53 (C) 22 NBL = 0.2 (A) 6 NBTR = 0.32 (A) 6 SBL = 0.33 (A) 7 SBTR = 0.4 (A) 6	 EBTLR = 20 m WBTLR = 30 m NBL = 10 m NBTR = 30 m SBL = 20 m SBTR = 40 m
Future Total 2032	Overall: 0.42 (A) 9 EBTLR = 0.55 (B) 18 WBTLR = 0.5 (B) 18 NBL = 0.07 (A) 5 NBTR = 0.36 (A) 7 SBL = 0.19 (A) 7 SBTR = 0.32 (A) 6	 EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 30 m SBL = 10 m SBTR = 30 m	Overall: 0.45 (A) 9 EBTLR = 0.31 (B) 20 WBTLR = 0.54 (C) 22 NBL = 0.22 (A) 6 NBTR = 0.34 (A) 6 SBL = 0.39 (A) 8 SBTR = 0.42 (A) 6	 EBTLR = 20 m WBTLR = 30 m NBL = 15 m NBTR = 35 m SBL = 25 m SBTR = 45 m
Future Background 2037	Overall: 0.41 (A) 9 EBTLR = 0.55 (B) 19 WBTLR = 0.5 (B) 18 NBL = 0.07 (A) 5 NBTR = 0.36 (A) 7 SBL = 0.18 (A) 6 SBTR = 0.33 (A) 6	 EBTLR = 30 m WBTLR = 25 m NBL = 5 m NBTR = 35 m SBL = 10 m SBTR = 30 m	Overall: 0.45 (A) 9 EBTLR = 0.31 (B) 20 WBTLR = 0.54 (C) 22 NBL = 0.23 (A) 6 NBTR = 0.35 (A) 6 SBL = 0.37 (A) 8 SBTR = 0.43 (A) 6	 EBTLR = 20 m WBTLR = 30 m NBL = 15 m NBTR = 35 m SBL = 25 m SBTR = 45 m
Future Total 2037	Overall: 0.44 (A) 10 EBTLR = 0.56 (B) 19 WBTLR = 0.51 (B) 18 NBL = 0.07 (A) 6 NBTR = 0.39 (A) 7 SBL = 0.21 (A) 7 SBTR = 0.34 (A) 7	 EBTLR = 30 m WBTLR = 30 m NBL = 5 m NBTR = 35 m SBL = 15 m SBTR = 30 m	Overall: 0.48 (A) 9 EBTLR = 0.32 (B) 20 WBTLR = 0.55 (C) 22 NBL = 0.25 (A) 7 NBTR = 0.36 (A) 6 SBL = 0.43 (A) 9 SBTR = 0.45 (A) 7	 EBTLR = 20 m WBTLR = 30 m NBL = 15 m NBTR = 35 m SBL = 30 m SBTR = 45 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Background 2042	Overall: 0.44 (A) 10 EBTLR = 0.57 (B) 19 WBTLR = 0.51 (B) 18 NBL = 0.08 (A) 6 NBTR = 0.38 (A) 7 SBL = 0.21 (A) 7 SBTR = 0.35 (A) 7	 EBTLR = 30 m WBTLR = 30 m NBL = 5 m NBTR = 35 m SBL = 15 m SBTR = 30 m	Overall: 0.48 (A) 9 EBTLR = 0.32 (B) 20 WBTLR = 0.56 (C) 22 NBL = 0.25 (A) 7 NBTR = 0.37 (A) 6 SBL = 0.41 (A) 9 SBTR = 0.45 (A) 7	 EBTLR = 20 m WBTLR = 30 m NBL = 15 m NBTR = 35 m SBL = 25 m SBTR = 45 m
Future Total 2042	Overall: 0.46 (A) 10 EBTLR = 0.58 (B) 20 WBTLR = 0.53 (B) 18 NBL = 0.08 (A) 6 NBTR = 0.41 (A) 7 SBL = 0.23 (A) 7 SBTR = 0.36 (A) 7	 EBTLR = 30 m WBTLR = 30 m NBL = 5 m NBTR = 40 m SBL = 15 m SBTR = 35 m	Overall: 0.5 (A) 9 EBTLR = 0.32 (B) 19 WBTLR = 0.57 (C) 22 NBL = 0.27 (A) 8 NBTR = 0.39 (A) 6 SBL = 0.48 (B) 11 SBTR = 0.48 (A) 7	 EBTLR = 20 m WBTLR = 30 m NBL = 15 m NBTR = 40 m SBL = 30 m SBTR = 50 m

The queueing analysis was completed for the signalized intersection based on the MTO's Protocol using the MTO's Geometric Design Standards.

The findings are summarized in **Table 7**. The recommended storage length (in vehicles) has been retrieved from the MTO's Geometric Design Standards for Ontario Highways, Chapter B, Table B7-5 for urban/commuter intersections.

Table 7 MTO Queuing Protocol - Highway 58/West Side Road and Barrick Road, Left-Turns

Scenario	Lane	Volumes	Heavy Vehicle%	PCU	Cycle Length (in seconds)	Arrival Rate (vehicles/ cycle)	Recommended Storage, MTO Table B7-5 (vehicles)	Recommended Storage (in metres, 7.5 m/vehicle)	Available Storage (metres)
Future Background 2028 - AM	NBL	24	17%	28	60	0.5	2	15	TWLTL
	SBL	57	9%	62	60	1.0	3	22.5	90
Future Background 2028 - PM	NBL	67	0%	67	60	1.1	3	22.5	TWLTL
	SBL	125	2%	128	60	2.1	5	37.5	90
Future Total 2028 - AM	NBL	24	17%	28	60	0.5	2	15	TWLTL
	SBL	57	9%	62	60	1.0	3	22.5	90
Future Total 2028 - PM	NBL	67	0%	67	60	1.1	3	22.5	TWLTL
	SBL	125	2%	128	60	2.1	5	37.5	90
Future Background 2030 - AM	NBL	24	17%	28	60	0.5	2	15	TWLTL
	SBL	59	9%	64	60	1.1	3	22.5	90
Future Background 2030 - PM	NBL	67	0%	67	60	1.1	3	22.5	TWLTL
	SBL	127	2%	130	60	2.2	5	37.5	90

Future Total 2030 - AM	NBL	24	17%	28	60	0.5	2	15	TWLTL
	SBL	59	9%	64	60	1.1	3	22.5	90
Future Total 2030 - PM	NBL	67	0%	67	60	1.1	3	22.5	TWLTL
	SBL	127	2%	130	60	2.2	5	37.5	90
Future Background 2032 - AM	NBL	25	17%	29	60	0.5	2	15	TWLTL
	SBL	60	9%	65	60	1.1	3	22.5	90
Future Background 2032 - PM	NBL	68	0%	68	60	1.1	3	22.5	TWLTL
	SBL	129	2%	132	60	2.2	5	37.5	90
Future Total 2032 - AM	NBL	25	17%	29	60	0.5	2	15	TWLTL
	SBL	65	9%	71	60	1.2	3	22.5	90
Future Total 2032 - PM	NBL	68	0%	68	60	1.1	3	22.5	TWLTL
	SBL	146	2%	149	60	2.5	5	37.5	90
Future Background 2037 - AM	NBL	25	17%	29	60	0.5	2	15	TWLTL
	SBL	63	9%	69	60	1.1	3	22.5	90
Future Background 2037 - PM	NBL	69	0%	69	60	1.2	3	22.5	TWLTL
	SBL	135	2%	138	60	2.3	5	37.5	90
Future Total 2037 - AM	NBL	25	17%	29	60	0.5	2	15	TWLTL
	SBL	68	9%	74	60	1.2	3	22.5	90
Future Total 2037 - PM	NBL	69	0%	69	60	1.2	3	22.5	TWLTL
	SBL	152	2%	155	60	2.6	5	37.5	90
Future Background 2042 - AM	NBL	26	17%	30	60	0.5	2	15	TWLTL
	SBL	66	9%	72	60	1.2	3	22.5	90
Future Background 2042 - PM	NBL	70	0%	70	60	1.2	3	22.5	TWLTL
	SBL	140	2%	143	60	2.4	5	37.5	90
Future Total 2042 - AM	NBL	26	17%	30	60	0.5	2	15	TWLTL
	SBL	71	9%	77	60	1.3	3	22.5	90
Future Total 2042 - PM	NBL	70	0%	70	60	1.2	3	22.5	TWLTL
	SBL	157	2%	160	60	2.7	5	37.5	90

As a signalized intersection under the 2028 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.38 LOS A during the a.m. peak hour and increases to 0.41 LOS A during the p.m. peak hour. The intersection is reported to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.39 LOS A during the a.m. peak hour and to 0.42 LOS A during the p.m. peak hour. The intersection is reported to continue to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2030 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.39 LOS A during the a.m. peak hour and 0.42 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2030 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.40 LOS A during the a.m. peak hour and to 0.45 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2032 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.39 LOS A during the a.m. peak hour and increases to 0.43 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2032 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.42 LOS A during the a.m. peak hour and to 0.45 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2037 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.41 LOS A during the a.m. peak hour and increases to 0.45 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2037 future total traffic scenario, the overall intersection reports an increase in the v/c ratio to 0.44 LOS A during the a.m. peak hour and to 0.48 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2037 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.44 LOS A during the a.m. peak hour and 0.48 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2037 future total traffic scenario, the overall intersection reports an increase in the v/c ratio to 0.46 LOS A during the a.m. peak hour and to 0.50 LOS A during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

Based on the analysis, the recommended long-term improvement at the intersection is the implementation of full traffic signal control, together with auxiliary left-turn lanes on the major street approaches. Under signalized operation, the intersection is forecast to operate within acceptable capacity and delay thresholds during both peak periods, with no critical movements identified. The recommended geometric configuration includes provision of a 90-metre southbound left-turn storage length, which has been demonstrated to accommodate projected turning volumes across all assessed horizon years, as well as a northbound left-turn storage length of 40 metres based on 2042 total traffic volumes.

The need for signalization and associated turn-lane improvements is driven by forecast long-range traffic growth, reflecting a combination of background development, regional traffic demand, and cumulative site traffic, rather than an isolated or immediate site-specific deficiency. As such, the timing and final implementation of these improvements should be confirmed through future traffic monitoring using updated turning movement counts and observed operational conditions and should proceed only when warranted in accordance with MTO signal warrant practices in effect at that time.

Given the growth-related nature of the identified deficiencies, the ultimate implementation of signalization and auxiliary turn lanes is appropriately considered a regional capital improvement. Accordingly, when warranted, these works should be delivered through the Region’s capital roadway program and funded through the applicable Development Charges framework.

7.2 Highway 58/West Side Road and Northland Avenue

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 8 Capacity Analysis of Highway 58/West Side Road and Northland Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Existing 2026	Overall: 0.19 (A) 7 EBTLR = 0.33 (C) 27 WBTLR = 0.13 (C) 26 NBL = 0.02 (A) 3 NBT = 0.14 (A) 3 SBL = 0.02 (A) 3 SBTR = 0.16 (A) 3	 EBTLR = 20 m WBTLR = 10 m NBL = 5 m NBT = 10 m SBL = 5 m SBTR = 15 m	Overall: 0.25 (A) 7 EBTLR = 0.43 (C) 28 WBTLR = 0.16 (C) 26 NBL = 0.01 (A) 3 NBT = 0.15 (A) 3 SBL = 0.03 (A) 3 SBTR = 0.22 (A) 4	 EBTLR = 25 m WBTLR = 15 m NBL = 5 m NBT = 15 m SBL = 5 m SBTR = 20 m
Future Background 2028	Overall: 0.39 (A) 10 EBTLR = 0.64 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.1 (A) 6 NBT = 0.22 (A) 6 SBL = 0.02 (A) 5 SBTR = 0.31 (A) 6	 EBTLR = 40 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 35 m	Overall: 0.46 (B) 10 EBTLR = 0.67 (C) 30 WBTLR = 0.1 (C) 22 NBL = 0.22 (A) 7 NBT = 0.28 (A) 6 SBL = 0.05 (A) 5 SBTR = 0.38 (A) 7	 EBTLR = 50 m WBTLR = 10 m NBL = 15 m NBT = 35 m SBL = 5 m SBTR = 45 m
Future Total 2028	Overall: 0.4 (A) 10 EBTLR = 0.64 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.11 (A) 6 NBT = 0.22 (A) 6 SBL = 0.02 (A) 5 SBTR = 0.32 (A) 6	 EBTLR = 40 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 35 m	Overall: 0.46 (B) 10 EBTLR = 0.67 (C) 30 WBTLR = 0.1 (C) 22 NBL = 0.23 (A) 7 NBT = 0.29 (A) 6 SBL = 0.05 (A) 5 SBTR = 0.39 (A) 7	 EBTLR = 50 m WBTLR = 10 m NBL = 15 m NBT = 35 m SBL = 5 m SBTR = 45 m
Future Background 2030	Overall: 0.4 (A) 10 EBTLR = 0.65 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.11 (A) 6 NBT = 0.22 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.32 (A) 6	 EBTLR = 40 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 35 m	Overall: 0.47 (B) 10 EBTLR = 0.68 (C) 31 WBTLR = 0.1 (C) 22 NBL = 0.23 (A) 7 NBT = 0.28 (A) 6 SBL = 0.05 (A) 5 SBTR = 0.39 (A) 7	 EBTLR = 50 m WBTLR = 10 m NBL = 15 m NBT = 35 m SBL = 5 m SBTR = 45 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2030	Overall: 0.41 (A) 10 EBTLR = 0.65 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.11 (A) 6 NBT = 0.23 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.34 (A) 6	EBTLR = 40 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 35 m	Overall: 0.48 (B) 10 EBTLR = 0.68 (C) 31 WBTLR = 0.1 (C) 22 NBL = 0.24 (A) 8 NBT = 0.3 (A) 6 SBL = 0.06 (A) 5 SBTR = 0.41 (A) 7	EBTLR = 50 m WBTLR = 10 m NBL = 15 m NBT = 35 m SBL = 5 m SBTR = 50 m
Future Background 2032	Overall: 0.41 (B) 10 EBTLR = 0.65 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.11 (A) 6 NBT = 0.23 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.33 (A) 6	EBTLR = 45 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 35 m	Overall: 0.48 (B) 10 EBTLR = 0.69 (C) 31 WBTLR = 0.1 (C) 22 NBL = 0.24 (A) 8 NBT = 0.29 (A) 6 SBL = 0.06 (A) 5 SBTR = 0.4 (A) 7	EBTLR = 50 m WBTLR = 15 m NBL = 15 m NBT = 35 m SBL = 5 m SBTR = 50 m
Future Total 2032	Overall: 0.43 (A) 10 EBTLR = 0.65 (C) 30 WBTLR = 0.09 (C) 22 NBL = 0.12 (A) 6 NBT = 0.24 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.35 (A) 6	EBTLR = 45 m WBTLR = 10 m NBL = 10 m NBT = 25 m SBL = 5 m SBTR = 40 m	Overall: 0.49 (B) 10 EBTLR = 0.69 (C) 31 WBTLR = 0.1 (C) 22 NBL = 0.26 (A) 8 NBT = 0.32 (A) 7 SBL = 0.06 (A) 6 SBTR = 0.42 (A) 7	EBTLR = 50 m WBTLR = 15 m NBL = 15 m NBT = 40 m SBL = 5 m SBTR = 50 m
Future Background 2037	Overall: 0.43 (B) 10 EBTLR = 0.66 (C) 30 WBTLR = 0.1 (C) 22 NBL = 0.12 (A) 6 NBT = 0.25 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.35 (A) 7	EBTLR = 45 m WBTLR = 10 m NBL = 10 m NBT = 30 m SBL = 5 m SBTR = 40 m	Overall: 0.5 (B) 11 EBTLR = 0.7 (C) 31 WBTLR = 0.11 (C) 22 NBL = 0.26 (A) 8 NBT = 0.31 (A) 7 SBL = 0.07 (A) 6 SBTR = 0.43 (A) 8	EBTLR = 55 m WBTLR = 15 m NBL = 15 m NBT = 40 m SBL = 5 m SBTR = 55 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95th % Que.	V/C (LOS) seconds	95th % Que
Future Total 2037	Overall: 0.45 (B) 10 EBTLR = 0.66 (C) 30 WBTLR = 0.1 (C) 22 NBL = 0.13 (A) 6 NBT = 0.26 (A) 6 SBL = 0.03 (A) 5 SBTR = 0.37 (A) 7	 EBTLR = 45 m WBTLR = 10 m NBL = 10 m NBT = 30 m SBL = 5 m SBTR = 45 m	Overall: 0.52 (B) 11 EBTLR = 0.7 (C) 31 WBTLR = 0.11 (C) 22 NBL = 0.28 (A) 8 NBT = 0.33 (A) 7 SBL = 0.07 (A) 6 SBTR = 0.45 (A) 8	 EBTLR = 55 m WBTLR = 15 m NBL = 15 m NBT = 40 m SBL = 5 m SBTR = 55 m
Future Background 2042	Overall: 0.45 (B) 11 EBTLR = 0.68 (C) 31 WBTLR = 0.11 (C) 22 NBL = 0.13 (A) 6 NBT = 0.27 (A) 6 SBL = 0.04 (A) 5 SBTR = 0.37 (A) 7	 EBTLR = 45 m WBTLR = 15 m NBL = 10 m NBT = 30 m SBL = 5 m SBTR = 45 m	Overall: 0.53 (B) 11 EBTLR = 0.71 (C) 32 WBTLR = 0.12 (C) 22 NBL = 0.29 (A) 9 NBT = 0.33 (A) 7 SBL = 0.08 (A) 6 SBTR = 0.46 (A) 8	 EBTLR = 55 m WBTLR = 15 m NBL = 20 m NBT = 40 m SBL = 5 m SBTR = 60 m
Future Total 2042	Overall: 0.47 (B) 11 EBTLR = 0.68 (C) 31 WBTLR = 0.11 (C) 22 NBL = 0.14 (A) 6 NBT = 0.28 (A) 6 SBL = 0.04 (A) 5 SBTR = 0.39 (A) 7	 EBTLR = 45 m WBTLR = 15 m NBL = 10 m NBT = 35 m SBL = 5 m SBTR = 45 m	Overall: 0.55 (B) 11 EBTLR = 0.71 (C) 32 WBTLR = 0.12 (C) 22 NBL = 0.31 (A) 10 NBT = 0.36 (A) 7 SBL = 0.08 (A) 6 SBTR = 0.48 (A) 8	 EBTLR = 55 m WBTLR = 15 m NBL = 20 m NBT = 45 m SBL = 10 m SBTR = 65 m

The queueing analysis was completed for the signalized intersection based on the MTO's Protocol using the MTO's Geometric Design Standards.

The findings are summarized in **Table 9**. The recommended storage length (in vehicles) has been retrieved from the MTO's Geometric Design Standards for Ontario Highways, Chapter B, Table B7-5 for urban/commuter intersections.

Table 9 MTO Queuing Protocol - Highway 58/West Side Road and Northland Avenue, Left-Turns

Scenario	Lane	Volumes	Heavy Vehicle%	PCU	Cycle Length (in seconds)	Arrival Rate (vehicles/ cycle)	Recommended Storage, MTO Table B7-5 (vehicles)	Recommended Storage (in metres, 7.5 m/vehicle)	Available Storage (metres)
Existing 2026 - AM	NBL	9	33%	12	102.2	0.3	1	7.5	55
	SBL	10	30%	13	102.2	0.4	2	15	75
Existing 2026 - PM	NBL	5	0%	5	102.2	0.1	1	7.5	55
	SBL	21	5%	22	102.2	0.6	2	15	75

Future Background 2028 - AM	NBL	35	33%	47	102.2	1.3	3	22.5	55
	SBL	10	30%	13	102.2	0.4	2	15	75
Future Background 2028 - PM	NBL	77	0%	77	102.2	2.2	5	37.5	55
	SBL	22	5%	23	102.2	0.7	2	15	75
Future Total 2028 - AM	NBL	35	33%	47	102.2	1.3	3	22.5	55
	SBL	10	30%	13	102.2	0.4	2	15	75
Future Total 2028 - PM	NBL	77	0%	77	102.2	2.2	5	37.5	55
	SBL	22	5%	23	102.2	0.7	2	15	75
Future Background 2030 - AM	NBL	36	33%	48	102.2	1.4	3	22.5	55
	SBL	11	30%	14	102.2	0.4	2	15	75
Future Background 2030 - PM	NBL	77	0%	77	102.2	2.2	5	37.5	55
	SBL	23	5%	24	102.2	0.7	2	15	75
Future Total 2030 - AM	NBL	36	33%	48	102.2	1.4	3	22.5	55
	SBL	11	30%	14	102.2	0.4	2	15	75
Future Total 2030 - PM	NBL	77	0%	77	102.2	2.2	5	37.5	55
	SBL	23	5%	24	102.2	0.7	2	15	75
Future Background 2032 - AM	NBL	36	33%	48	102.2	1.4	3	22.5	55
	SBL	11	30%	14	102.2	0.4	2	15	75
Future Background 2032 - PM	NBL	78	0%	78	102.2	2.2	5	37.5	55
	SBL	24	5%	25	102.2	0.7	2	15	75
Future Total 2032 - AM	NBL	36	33%	48	102.2	1.4	3	22.5	55
	SBL	11	30%	14	102.2	0.4	2	15	75
Future Total 2032 - PM	NBL	78	0%	78	102.2	2.2	5	37.5	55
	SBL	24	5%	25	102.2	0.7	2	15	75
Future Background 2037 - AM	NBL	37	33%	49	102.2	1.4	3	22.5	55
	SBL	12	30%	16	102.2	0.4	2	15	75
Future Background 2037 - PM	NBL	78	0%	78	102.2	2.2	5	37.5	55
	SBL	26	5%	27	102.2	0.8	2	15	75
Future Total 2037 - AM	NBL	37	33%	49	102.2	1.4	3	22.5	55
	SBL	12	30%	16	102.2	0.4	2	15	75
Future Total 2037 - PM	NBL	78	0%	78	102.2	2.2	5	37.5	55
	SBL	26	5%	27	102.2	0.8	2	15	75
Future Background 2042 - AM	NBL	38	33%	51	102.2	1.4	3	22.5	55
	SBL	13	30%	17	102.2	0.5	2	15	75
Future Background 2042 - PM	NBL	79	0%	79	102.2	2.2	5	37.5	55
	SBL	28	5%	29	102.2	0.8	2	15	75
Future Total 2042 - AM	NBL	38	33%	51	102.2	1.4	3	22.5	55
	SBL	13	30%	17	102.2	0.5	2	15	75

Future Total 2042 - PM	NBL	79	0%	79	102.2	2.2	5	37.5	55
	SBL	28	5%	29	102.2	0.8	2	15	75

Under existing traffic conditions, the signalized intersection is operating at satisfactory levels with an overall v/c of 0.19 LOS A during the a.m. peak hour and an overall v/c of 0.25 LOS A during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic for the 2028 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.39 LOS A during the a.m. peak hour and increases to 0.46 LOS B during the p.m. peak hour. The intersection is reported to continue to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2028 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.40 LOS A during the a.m. peak hour and to 0.46 LOS B during the p.m. peak hour. The intersection is reported to continue to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2030 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.40 LOS A during the a.m. peak hour and 0.47 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2030 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.41 LOS A during the a.m. peak hour and to 0.48 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2032 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.41 LOS B during the a.m. peak hour and increases to 0.48 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2032 future total traffic scenario, the intersection reports an increase in the v/c ratio to 0.43 LOS A during the a.m. peak hour and to 0.49 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2037 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.43 LOS B during the a.m. peak hour and increases to 0.50 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2037 future total traffic scenario, the overall intersection reports an increase in the v/c ratio to 0.45 LOS B during the a.m. peak hour and to 0.52 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic as well as signal optimization for the 2037 future background traffic scenario, the intersection is reported to operate with an overall v/c ratio of 0.45 LOS B during the a.m. peak hour and increases to 0.53 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

With the addition of site generated traffic for the 2037 future total traffic scenario, the overall intersection reports an increase in the v/c ratio to 0.47 LOS B during the a.m. peak hour and to 0.55 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

As summarized in **Table 9**, the 55 and 75 metres of storage length provided for the northbound and southbound left-turn lanes, respectively, provide sufficient storage length for the projected turning volumes under all horizon years.

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

7.3 Highway 58/West Side Road and the Site Access

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 10 Capacity Analysis of Highway 58/West Side Road 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 = 0.09 (B) 12 NBTR = 0.13 (A) 0 SBL = 0.01 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m	WBLR = 0.1 (B) 13 NBTR = 0.16 (A) 0 SBL = 0.04 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m
Future Total 2030	WBLR = 0.15 (B) 13 NBTR = 0.14 (A) 0 SBL = 0.02 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m	WBLR = 0.14 (B) 14 NBTR = 0.17 (A) 0 SBL = 0.07 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m
Future Total 2032	WBLR = 0.19 (B) 13 NBTR = 0.14 (A) 0 SBL = 0.02 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m	WBLR = 0.16 (B) 14 NBTR = 0.18 (A) 0 SBL = 0.06 (A) 10	WBLR = 5 m NBTR = 0 m SBL = 5 m
Future Total 2037	WBLR = 0.19 (B) 14 NBTR = 0.15 (A) 0 SBL = 0.02 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m	WBLR = 0.17 (B) 15 NBTR = 0.19 (A) 0 SBL = 0.06 (A) 10	WBLR = 5 m NBTR = 0 m SBL = 5 m
Future Total 2042	WBLR = 0.2 (B) 14 NBTR = 0.16 (A) 0 SBL = 0.02 (A) 9	WBLR = 5 m NBTR = 0 m SBL = 5 m	WBLR = 0.17 (C) 15 NBTR = 0.2 (A) 0 SBL = 0.07 (A) 10	WBLR = 5 m NBTR = 0 m SBL = 5 m

Under the future total traffic conditions, the full-move site access along Highway 58/West Side Road is reported to operate at satisfactory levels with the westbound approach (site access) reported to operate with an average delay of 12 seconds during the a.m. peak hour and 13 second delay during the p.m. peak hour under the first horizon year in 2028. With the continued addition of corridor growth up to the 2042 horizon year, the average delay is reported to increase to 14 seconds during the a.m. peak hour and 15 seconds during the p.m. peak hour.

7.3.1 Right-Turn Lane Warrant

The right-turn lane warrant was reviewed for the proposed site access based on Chapter E of the MTO Geometric Design Standards. Based on Section E.2.7.1, a minimum of 60 right-turns during any design hour would trigger the need for a right-turn lane.

With the full build-out of the site, it is anticipated that the northbound right-turn movement would have a total of 14 vehicles during the a.m. peak hour and 37 vehicles during the p.m. peak hour. As a result, a northbound right-turn lane is not warranted during either peak hour.

7.4 Barrick Road and the Site Access

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

Table 11 Capacity Analysis of Barrick Road 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 2032	EBTR = 0.07 (A) 0 WBTL = 0 (A) 0 NBLR = 0.03 (B) 10	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.13 (A) 0 WBTL = 0 (A) 0 NBLR = 0.02 (B) 11	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2037	EBTR = 0.08 (A) 0 WBTL = 0 (A) 0 NBLR = 0.03 (B) 10	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.14 (A) 0 WBTL = 0 (A) 0 NBLR = 0.02 (B) 11	EBTR = 0 m WBTL = 5 m NBLR = 5 m
Future Total 2042	EBTR = 0.08 (A) 0 WBTL = 0 (A) 0 NBLR = 0.03 (B) 10	EBTR = 0 m WBTL = 0 m NBLR = 5 m	EBTR = 0.14 (A) 0 WBTL = 0 (A) 0 NBLR = 0.02 (B) 11	EBTR = 0 m WBTL = 5 m NBLR = 5 m

Under the future total traffic conditions, the full-move site access along Barrick Road is reported to operate at satisfactory levels with the northbound approach (site access) reported to operate with an average delay of 10 seconds during the a.m. peak hour and 11 seconds during the p.m. peak hour under the 2032 horizon year. With the continued addition of corridor growth up to the 2042 horizon year, the average delay is reported to remain at 10 seconds during the a.m. peak hour and 11 seconds during the p.m. peak hour.

7.4.1 Left-Turn Lane Warrant

A left-turn lane warrant analysis was completed for this proposed site access using the weekday a.m. and p.m. peak hour volumes for the ultimate total traffic condition. The analysis confirms that a westbound left-turn lane is not warranted during either peak period.

The left-turn lane warrant is provided in **Appendix G**.

8. Parking Review

GHD reviewed the City's current Comprehensive Zoning By-law 6575/30/18 parking and loading requirements for the subject site.

8.1 City of Port Colborne Comprehensive Zoning By-law 6575/30/18

8.1.1 Vehicular Parking

The current City of Port Colborne Comprehensive Zoning By-law 6575/30/18 minimum parking requirements are found in Section 3.1.1. The minimum By-Law requirement for the subject site would be as follows:

- Apartment Building
    - A minimum of 1.25 parking space per dwelling unit
- Retail Store
    - A minimum of 1.00 parking space per 20 m^2 GFA

The minimum parking required for the subject site is as follows:

- Apartment dwelling
    - A minimum of 1.25 parking space per dwelling unit x 372 units = 465 spaces
- Retail Store
    - A minimum of 1.00 parking space per 20 m^2 GFA x 558 m^2 = 28 spaces

In total, the subject would be required to provide a minimum of 493 spaces under the City's By-law.

8.1.2 Accessible Parking

The minimum requirement for accessible parking spaces can also be found in the City of Port Colborne Comprehensive Zoning By-law 6575/30/18, Section 3.3. The minimum By-Law requirement for accessible parking is based on the number of parking spaces required, as follows:

- Number of parking spaces provided
    - 1-25: 1 barrier free space
    - 26-50: 2 barrier free space
    - 51-75: 3 barrier free space
    - 76-100: 4 barrier free space
    - 101-150: 6 barrier free space
    - 151-200: 7 barrier free space
    - 201-300: 8 barrier free space
    - 301-400: 10 barrier free space
    - 401-500: 12 barrier free space
    - 501 and over: 2% of the required parking

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

- Number of parking spaces required: 493 spaces
- Number of accessible parking spaces required: 12 accessible parking spaces

In total, 12 accessible parking spaces are required under the City's current By-Law.

8.1.3 Bicycle Parking

Under the City of Port Colborne Comprehensive Zoning By-law 6575/30/18, the bicycle parking requirement are found in Section 3.13.1. The minimum By-Law requirement for bicycle parking for the subject site is as follows:

- Residential Buildings with 10 or more dwelling units
    - A minimum of 6 spaces, plus 1 additional space for every additional 10 dwelling units above 20

The minimum parking required for the subject site is as follows:

- Apartment dwelling
    - A minimum of 6 spaces,
    - Plus 1 additional space for every additional 10 dwelling units above 20 x 42 units = 4 spaces

The subject site is required to provide a minimum of 10 bicycle parking spaces per building, resulting in a total required of 60 bicycle parking spaces for the subject site.

8.1.4 Loading Spaces

Under the City of Port Colborne Comprehensive Zoning By-law 6575/30/18, there are no minimum requirements for the provision of loading spaces.

8.2 Proposed Site Parking

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

Table 12 Parking Requirements and Provisions

Type	Unit Count/GFA	By-Law 6575/30/18 Requirement	Provided
Vehicle Parking	372 residential units	A minimum of 493 parking spaces	738 parking spaces
Barrier Free Parking		A minimum of 12 accessible parking spaces	12 accessible parking spaces
Bicycle Parking		A minimum of 60 bicycle parking spaces	60 bicycle parking spaces
Loading Spaces		No loading spaces required	6 loading zones

The proposed parking and loading supply satisfies the City's Comprehensive Zoning By-law requirements.

A total of 94 tandem spaces are proposed within the Phase 1 and 3 lands with each set of tandem parking spaces being allocated to one dwelling unit. Based on the surplus of 245 parking spaces being proposed and 94 tandem spaces, the minimum By-law requirement remains satisfied.

9. Site Plan Review

9.1 Access Width and Radius

The design standards for accesses along MTO roadways are provided in OPSD 350.010, which requires a minimum driveway width of 7.2 metres and maximum width of 12.0 metres and curb return radii between 4.5 and 12.0 metres. Similarly, accesses onto roadways under the City of Port Colborne's jurisdiction should be designed based on OPSD 350.010.

The proposed full-movement accesses to Highway 58 / West Side Road and Barrick Road reflect OPSD 350.010 design standards, including a 7.5-metre driveway throat width and 9.0-metre curb returns, consistent with MTO and City access design criteria.

9.2 Sightline Assessment

A sightline assessment was completed for the proposed driveway access along Highway 58. In the vicinity of the site, Highway 58 has a posted speed limit of 70 km/h and is characterized by a straight, relatively flat alignment with no notable vertical or horizontal curvature that would restrict driver visibility. For the purposes of the sight distance assessment, a conservative design speed of 90 km/h was assumed, consistent with standard engineering practice for higher-speed rural roadways.

Field sight distance measurements were not undertaken, as unrestricted and unobstructed sightlines are available in both directions from the proposed access location. Based on roadway geometry and surrounding conditions, available sight distance clearly exceeds minimum stopping sight distance requirements for the assumed design speed. As a result, reliance on design-based assessment was considered appropriate and representative of existing conditions.

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 road is assumed to be the site driveway.

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 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. For single-unit trucks, the time gap for the minor road vehicle to enter the major road for single unit trucks is 9.5 seconds for turning left from stop, 8.5 seconds for vehicles turning right from a stop and 6.5 seconds for left turns from the major road

For left turns along multi-lane highways with more than two lanes, the time gap shall be increased by 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

As a result, 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 8.0 seconds for turning left from stop, 7.0 seconds for vehicles turning right from a stop and 6.0 seconds for left turns from the major road. For single-unit trucks, the time gap for the minor road vehicle to enter the major road for single unit trucks is 10.2 seconds for turning left from stop, 9.2 seconds for vehicles turning right from a stop and 7.2 seconds for left turns from the major road

The required intersection sight distances for the site access on Highway 58 is summarized in the table below based on a 90 km/h design speed along Highway 58.

Table 13 Intersection Sight Distance Requirement For Highway 58 and the Site Driveway

Case (Design Speed of 90 km/h)	Required Intersection Sight Distance for Passenger Cars (TAC 2017)	Required Intersection Sight Distance for Single Unit Trucks (TAC 2017	Available Intersection Sight Distance	TAC Reference
B1: Vehicles turning left from stop	205 m	260 m	260 m	Table 9.9.4
B2: Vehicles turning right from stop	180 m	235 m	260 m	Table 9.9.6
F: Left turns from the major road	155 m	185 m	260 m	Table 9.9.12

The available sight distances along Highway 58 to the north and south of the proposed access exceeds the minimum required stopping sight distance for a 90 km/h design speed. The sightline for a single unit truck exiting the site and turning left is illustrated in **Figure 21** looking towards the north and in **Figure 22** looking towards the south. In addition, **Figure 22** also illustrates the available sight distance for Case F – Left-turns from the major road. The sightline assessment is also provided in **Appendix H**.

Figure 21 Intersection Sight Distance (Highway 58 – Towards the North)

Figure 22 Intersection Sight Distance (Highway 58 – Towards the South)

10. Vehicle Swept Path Analysis

GHD completed a vehicle swept path analysis to evaluate internal site circulation and confirm that the proposed site layout can accommodate the turning requirements of key design vehicles, including a fire/emergency services vehicle, a medium single-unit (MSU) truck, a waste collection vehicle, and a standard passenger vehicle. The swept path simulations were conducted using AutoTURN software and are included in **Appendix I**. The results demonstrate that all design vehicles can maneuver safely and efficiently through the site, including at loading areas, drive aisles, and access points, without encroachment or operational conflict. These findings confirm that the proposed site layout meets functional circulation requirements and is consistent with municipal and emergency access design guidelines.

11. Conclusion

The proposed development consists of six 6-storey residential buildings, each containing 62 dwelling units, for a total of 372 units, and a 1-storey commercial building with a total of 558 m^2 of GFA. The development is proposed to be constructed in four phases, with two residential buildings constructed per phase with one phase allocated to the 2-storey parkade (Phase 2). Phase 1 is anticipated in 2028, Phase 3 in 2030, and Phase 4 representing full build-out in 2032.

Access to the proposed development is planned via a full-movement driveway on Highway 58 / West Side Road and a full-movement driveway on Barrick Road. The Highway 58 / West Side Road access is proposed to be operational with Phase 1, while the Barrick Road access is proposed to be constructed as part of Phase 4 (full build-out). At full build-out, the subject site is expected to generate a total of 156 two-way vehicle trips during the a.m. peak hour consisting of 43 inbound and 113 outbound trips. During the p.m. peak hour, it is expected to generate 198 new two-way vehicle trips consisting of 120 inbound and 78 outbound trips.

Based on the intersection capacity analysis, all study intersections are projected to operate at acceptable volume-to-capacity ratios and levels of service during both the a.m. and p.m. peak hours under existing (2026), 2028, and 2030 future background and future total traffic conditions.

Under the 2030 future total condition (build-out of Phase 3) and the subsequent 2032, 2037 and 2042 horizon years, all intersections are projected to continue operating at acceptable levels during the a.m. and p.m. peak hours, with the exception of the westbound approach at the intersection of Highway 58 / West Side Road and Barrick Road, which is identified as a critical movement during the p.m. peak hour.

To address this localized capacity constraint under future conditions, the intersection of Highway 58 / West Side Road and Barrick Road was also evaluated under signalized traffic control. Under the signalized scenario, the intersection is projected to operate at satisfactory levels during both peak periods, with no critical movements identified. A traffic signal warrant assessment completed in accordance with OTM Book 12 indicates that signalization is not warranted under existing conditions and falls under Case 2 (“Might Be Warranted”) under future horizon year conditions.

Turning lane warrant analyses were completed for both site accesses. The left-turn lane warrant analysis for the Barrick Road access and the right-turn lane warrant analysis for the Highway 58 / West Side Road access confirm that auxiliary turning lanes are not warranted under ultimate future horizon year traffic volumes.

Parking for the proposed development was reviewed against the City of Port Colborne Comprehensive Zoning By-law 6575/30/18. The subject site is required to provide a minimum of 493 vehicle parking spaces and 60 bicycle parking spaces. The proposed supply of 738 vehicle parking spaces (including 12 accessible spaces), 60 bicycle parking spaces, and 6 loading zones meets the applicable Zoning By-law requirements.

A sightline assessment completed for the proposed site access along Highway 58 / West Side Road confirms that sufficient sight distance is available. In addition, a vehicle swept path analysis confirms that on-site circulation can accommodate emergency vehicles, waste collection vehicles, MSU trucks, and passenger vehicles, with no operational issues identified.

Recommendations

Based on the findings of this Traffic Impact Study, the following recommendation is provided:

- Signalize the intersection of Highway 58 / West Side Road and Barrick Road

As a signalized intersection, the intersection of Highway 58/West Side Road and Barrick Road is reported to operate at satisfactory levels with no critical movements during both peak periods.

Given that the identified improvements are driven by growth, it is anticipated that the ultimate implementation of signalization and auxiliary turn lanes would be addressed as part of the Region’s capital roadway program. Accordingly, when warranted, the works would be funded through the applicable Development Charges framework.

Appendix A

Terms of Reference

LAND DEVELOPMENT REVIEW CORRESPONDENCE

Correspondence: Terms of Reference for Transportation Impact Study - 434 & 484 Barrick Road, Port Colborne

Usama Ali (Regional Planner (CMP/SPM))
Friday March 27, 2026 4:46 p.m.

To: Raf Andrenacci <raf.andrenacci@ghd.com>
Attachments: Terms of Reference for Transportation Impact Study - 434 & 484 Barrick Road, Port Colborne.msg, 20260325_sent_RE Terms of Reference for Transportation Impact Study - 434 484 Barrick Road Port Colborne.msg

Good Afternoon Ref:
Re: Provision of MTO Comments on a draft ToR of a TIS
Note: PDFs for this ToR response in found in the attached email
MTO LDR File: MTO-LD-2026-20T-000121
Application Address: 484 Barrick Road, Port Colborne, ON (Hwy 58)
Proposed:1 2-Storey Parkade, 1 Service Building, 6 6-Storey Residential Buildings (4349.1m^2 – Combined) with 372 Units and 756 parking spaces
Purpose: Rezone from Institutional to Fourth Density Residential (R4)
Est. Const. Date: June 2027
Traffic Office's Comments on the Proposed Access onto Hwy 58:
The primary access appears to close to our signalized intersection to the south. MTO requires a minimum of 350m-400m as this allows 'Back-to-back' left turn lanes and proper tapers and to minimize conflict with adjacent signals among other operational and safety issues.
Our Traffic Office reviewed the draft ToR and provides the following comments for a TIS Submission:
Study intersections: Existing Barrick Road and West Side Road/Hwy 58 - acceptable and include Hwy 58/Northland Ave to the south.
Traffic Data: Any data collected for the TIS must be by a RAQS qualified company/consultant. Counts from the local municipality or RAQS qualified consultant collection counts may be considered acceptable, however, only data collected within 18 months of the submission date for the study will be accepted. inter counts are not accepted. Counts should be completed after Easter in April. MTO data attached.
Study Peak Hours: acceptable.
Study Horizon Year: acceptable as it appears they are following MTO TIS policy.

Background Growth Rate: 2.0% is acceptable for Hwy 58.
Background Development Traffic:
Corridor's Response:
Please include the following recent Developments; these developments are the Pre-Consultation stage:
1) Application Reference: Site Plan Application (SPA D11-08-23)
Application Address: 45-53 West Side Road, Port Colborne, ON (Hwy 58)
Purpose: 3 Drive-Thru Restaurants (527.5m^2 combined)
Attached Drawing: 22-135 WestsidePlaza-SiteLayout-SPA REVD-Sept 2025
2) Application Reference: 6403
Application Address: Unaddressed Parcel at the NE Quad of Hwy 58 (aka West Side Rd) & Barrick Road, Port Colborne, ON. (Hwy 58)
Proposed: Townhome Complex
Attached Drawing: 6. Architectural Drawing Set
3) Application Reference:Unknown
Application Address: 242-246 West Side Road ,Port Colborne, ON. (Hwy 58)
Proposed: Apartment Development (198 Units)
Attached Drawing: 242-246 West Side Road - Application + Sketch
Note: There is an OPA/ZBA (D09-03-24 + D14-04-24) that calls for 198-unit complex. The proposal of the site has changed multiple times. No drawings was provided to MTO
4) Application Reference:Unknown
Application Address: 607 Barrick Road, Port Colborne, ON. (Hwy 58)
Proposed: Stonebridge Subdivision
Attached Drawing: 2. Draft Plan of Subdivision
5) Application Reference:Unknown
Application Address: Unaddressed Parcel at the NW Quad of Hwy 58 (aka West Side Rd) & Northland Ave, Port Colborne, ON. (Hwy 58)
Proposed: Northland Estates Subdivision
Attached Drawing: 21132_May_2024_CONCEPT
6) Application Reference:Unknown
Application Address: 100 Oxford Road, Port Colborne, ON. (Hwy 58)
Proposed: Rosedale Subdivision
Attached Drawing: 5331-ROSEDALE DP SIGNED (008)_reduced
7) Application Reference:Unknown
Application Address: 268 West Side Road, Port Colborne, ON. (Hwy 58)
Proposed: 4-Storey Condo Building with 55 Units (1219.3m2) and 10 2-Storey Townhomes (92.3m^2)
Attached Drawing: 268 West Side Road – Sketch
8) Application Reference: SPA Amend (Unknown)
Application Address: 250 West Side Road, Port Colborne, ON (Hwy 58)
Proposed: 5 3-Storey Stacked Townhome Blocks (2006m^2 – Combined) with 71 Units and 91 parking spaces
Attached Drawing: 25016 250 West Side Road - Arch Drawings for SPA - 10Jun2025_reduced
9) Application Reference: SPA Amend (Unknown)

Application Address: 250 West Side Road, Port Colborne, ON (Hwy 58)
Proposed: 5 3-Storey Stacked Townhome Blocks (2006m^2 – Combined) with 71 Units and 91 parking spaces
Attached Drawing: 25016 250 West Side Road - Arch Drawings for SPA - 10Jun2025_reduced
10) Application Reference: Unknown
Application Address: 135 Coronation Drive, Port Colborne, ON (Hwy 58)
Proposed: 114 dwelling units in the form of 6 stacked townhouse blocks
Attached Drawing: 135 Coronation Drive - Pre-con request
Trip Generation: acceptable and included in other comments.
Other comments:

1.
    1. MTO require the submission of a full TIS (following MTO TIS guidelines and by a RAQS qualified consultant) to assess the future impact of the proposed development to identify if there are any warranted highway/road improvements. Digital Synchro version 12 files are required at the time of submission. Both editable/printable and unlocked/stamped and signed by P.Eng, version of the TIS is required. MTO will not review a TIS/TIB completed by a company that is not RAQS qualified, or that includes counts/data that is collected by a non RAQS qualified company. ITE 12th edition is the latest version and must be used.
    2. The consultant is responsible for thoroughly reading and adhering to the MTO TIS guidelines. If any reasonable requirements are missed, it is the consultant's obligation to provide them. The absence of a specific instruction in the ToR does not negate the necessity of fulfilling the reasonable requirement.
    3. Any data collected for the TIS must be by a RAQS qualified company/consultant. Counts from the local municipality or RAQS qualified consultant collection counts may be considered acceptable, however, only data collected within 18 months of the submission date for the study will be accepted. It is the responsibility of the RAQS qualified consultant to ensure the proper data is used (ex. season or non MTO) and seasonal factors applied as appropriate. Winter counts are not accepted. It is the consultant's responsibility to update and use proper data. MTO data attached.
    4. Please refer to MTO TIS guidelines/policy, page 16 for Trip Distribution/Assignment.
    5. A summary of the key findings on the transportation impact of the proposed development on the highway corridor shall be presented, along with a summary of the recommended improvements. Any improvements identified in the TIS as warranted within the first five years of the development's operation shall be constructed prior to opening day. Please note that 'monitoring' is not an acceptable recommendation.
    6. Use simple (linear) growth rate for volume projections.
    7. Use a 2.0% growth rate for Hwy 58.

8. A site plan and site circulation plan is required to ensure that internal blockage does not occur or cause vehicle backups on the roadway. Include distances.
9. As part of the TIS, sightlines must be reviewed and a field measured distance provided (with photos) and compared to TAC with mitigation measures if the minimum is not met. This includes (but not limited to) stopping sight distance and intersection sight distance and sightline triangles. We will not accept estimates of sight distance or desktop sight distance reviews.
10. Design speed is typically 20km/hr over posted speed.
11. As part of the TIS, a LT warrant analysis and right turn auxiliary lane analysis must be included to determine if mitigation measures are required at study intersections (if there are current LT/RT lanes – they should analyze the lanes to ensure they are appropriate) using TAC and MTO TAC supplemental. For the LTL, if the value of the left turning volume % falls between two charts, the designer should check storage lengths produced using the two warrant charts that it falls between and then select the more conservative value after considering other project-specific factors (for example, if the LTL volume % is 16%, the designer should be using both the 15% and 20% warrant charts and then select the most conservative storage length of the two. Similarly, for a 28% left turning volume %, the 25% and 30% warrant charts should be looked at and the conservative storage length should be selected). If the left turning volume % is less than 5%, the 5% warrant chart must be used. In a constrained environment (other than cost) where the installation of conservative left turn storage length creates challenges, the designer should review the pros and cons of all elements and document such. If the intersection is being newly proposed, the designer should compare the safety of other similar (traffic volume and geometry) intersections in the corridor or vicinity with the proposed intersection. If the percentage of trucks is ≥ 10% an additional storage length should be added tot the graph value, see exhibit 9A-1.
12. Capacity analysis shall be performed at all proposed site access points and intersections in the study network in accordance with the methodology described in the latest edition of the Highway Capacity Manual (HCM). At signalized intersections, movements with a volume/capacity (v/c) ratio greater than 0.85 are deemed to be “critical” in terms of operations. Movements that experience a v/c ratio of 0.85 or greater shall be evaluated for possible operational improvements.
13. All intersection capacity analysis on impacted intersections or interchanges within MTO facilities must follow MTO/TAC protocols. When evaluating impacts at intersections please refer to the TAC’s Geometric Design Guide for Canadian Roads, MTO Design Supplement for TAC’s Geometric Design Guide for Canadian Roads (http://www.mto.gov.on.ca/phmpmbp/Reference%20Materials/HwyDes-MTO_DS_TAC_GDG-April2020-Final.pdf) and the OTM Books.)

14. Use the guiding principles included in the ITE's 12th edition Trip Generation Handbook for the selection between rates and equations.
15. The need for geometric improvements shall be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements. A schematic representation of all geometric improvements shall be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.
16. The need for traffic signals and/or underground traffic signal utility provisions shall be reviewed at all locations affected by the proposed development and for each proposed development stage. Determination of whether traffic signals or provisions for signals are warranted shall be made according to the process described in OTM Book 12. Eight (8) hours of data as a minimum are required to assess signal warrants for existing and background conditions. We do not use Average Hour Volume.
17. Queue and storage lengths for left turn and through movements for signalized intersections under MTO jurisdiction need to be calculated using the arrival rate method explained on MTO's Signal Timing Policy. For queues/storage lengths for right turn movements please refer to Chapter 9 of TAC's Geometric Design Guide for Canadian Roads. Queue assessment shall include a review to determine if the thru queues impede access to auxiliary lanes or if they reach the adjacent intersection. For LT and thru, must convert trucks to passenger vehicles, use factor of 2.0. Provide the results in tabular form. For thru and left turn queues include: peak period, movement, volume, cycle length, %trucks, pcph, m value, number of vehicles and total length. For right turn storage length include peak period, volume, cycle length, design speed, total length.
18. Signal timing optimization can improve operations however; the resulting settings should still be consistent with our Signal Timing Policy. For example: the timing settings cannot be adjusted to favour the sideroad over the highway.

Kind Regards,
Usama Ali
Corridor Management Planner (Hamilton/Niagara) | Corridor Management Office/Operations Division
Ministry of Transportation (Central Operations) | Ontario Public Service
416-457-8973 | usama.ali@ontario.ca
Taking pride in strengthening Ontario, its places and its people

Thank you,

Usama Ali
Acting Corridor Management Officer
Highway Corridor Management
Ministry of Transportation of Ontario

Raf Andrenacci

From: Chris Viccica <Chris.Viccica@portcolborne.ca>
Sent: April 7, 2026 10:45 AM
To: Raf Andrenacci
Cc: Will Maria; Erik Acs
Subject: Re: Terms of Reference - 434 and 484 Barrick Road
Attachments: Northland TIS reference.pdf; Stonebridge TIS reference.pdf

Hi Raf,

Thank you for reaching out and providing this information. I have included a few additional developments (with attached TIS for reference) in the vicinity of this proposed development:

- Stonebridge Subdivision located at the NW corner of Barrick Road and West Side Road
- Northland Estates Subdivision located at the NW corner of Northland Avenue and West Side Road

Additionally, the MTO may have its own requirements for the TIS which the City will support.

Thanks,
Chris

Chris Viccica
Engineering Technologist
City of Port Colborne

66 Charlotte Street
Port Colborne, ON L3K 3C8
Phone 905-228-8112
Email Chris.Viccica@portcolborne.ca

www.portcolborne.ca

To provide an exceptional small-town experience in a big way

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From: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Sent: Thursday, April 2, 2026 9:16 AM
To: Erik Acs <Erik.Acs@portcolborne.ca>; Chris Viccica <Chris.Viccica@portcolborne.ca>
Cc: Will Maria <William.Maria@ghd.com>
Subject: Terms of Reference - 434 and 484 Barrick Road

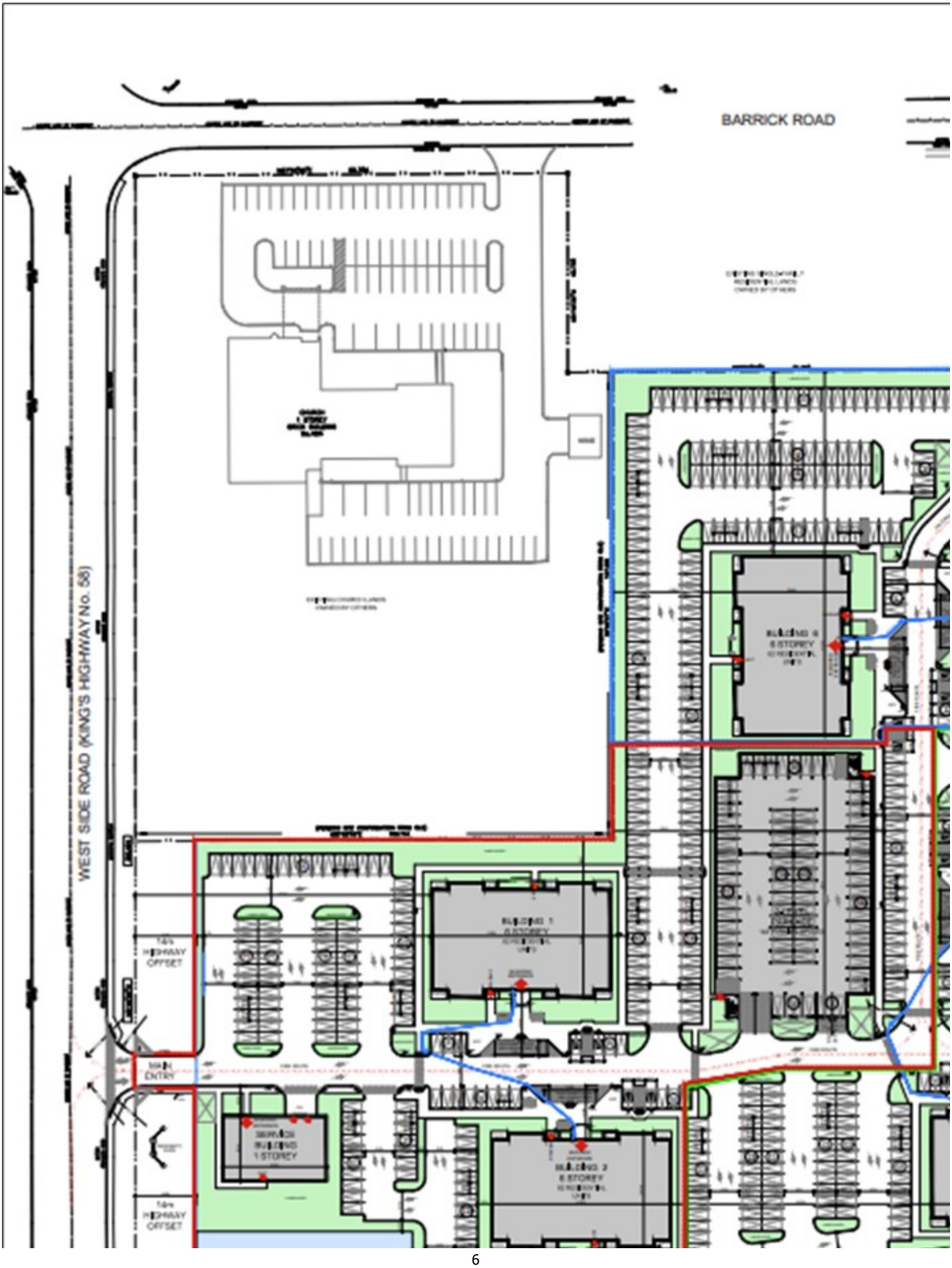
Some people who received this message don't often get email from raf.andrenacci@ghd.com. Learn why this is important

Hi Erik and Chris,

GHD Inc. has been retained to prepare a Transportation Impact Study in support of an Official Plan Amendment and Zoning By-law Amendment for the lands located on lands municipally known as 434 and 484 Barrick Road in the City of Port Colborne.

The proposed residential developments consists of six 6-storey residential buildings to be constructed in three phases (2 buildings per phase).

Access is proposed via two full-moves driveways, consisting of full-moves driveways along West Side Road and Barrick Road


BARRICK ROAD
WEST SIDE ROAD (KING'S HIGHWAY No. 58)
BUILDING 4
6 STOREY
BUILDING 1
6 STOREY
BUILDING 2
6 STOREY
SERVICE BUILDING
1 STOREY
MAIN ENTRY
14m HIGHWAY OFFSET
14m HIGHWAY OFFSET

In order to properly scope this project, we ask that the City review and provide comments on the following scope and confirm if there are any additional items required as part of the study. The TOR has also been circulated to the MTO through their portal for their review.

Study intersections

- Existing
    - Barrick Road and West Side Road/Hwy 58
    - Hwy 58 and Northland Ave, as requested by the MTO.
- Future/Proposed
    - Barrick Road and the future site access
    - West Side Road and the future site access

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

2026 (existing), 2028, 2030, 2032, 2037, and 2042, consisting of the year of build-out for each phase and 5 and 10 years post full build-out, consistent with the MTO's Traffic Impact Study guidelines.

Background Growth Rate

GHD proposes to use a 2% per annum growth rate, consistent with the growth rate typically used along MTO roadways.

Background Development Traffic

GHD reviewed the City's development application portal and identified the following background developments:

- Rosedale Estates Subdivision
- Millar's Crossing Subdivision

City staff to confirm if any additional developments should be included as background developments.

Trip Generation

Will be completed using rates published by the ITE Trip Generation 12th Edition.

The directional distribution of traffic approaching and departing the site will be determined based on TTS 2022 data, existing local 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 City guidelines will be reviewed in order to complete an access management.
Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance.

If the above scope is acceptable to the City and MTO, it will form the basis of our scope of work.

Thank you,

Regards,
Raf

Rafael Andrenacci
Transportation Planner

GHD Ltd.
T: 905 814 4386 | E: raf.andrenacci@ghd.com
100 Milverton Drive Suite 404, Mississauga, ON L5R 4H1 | **www.ghd.com**
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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Appendix B

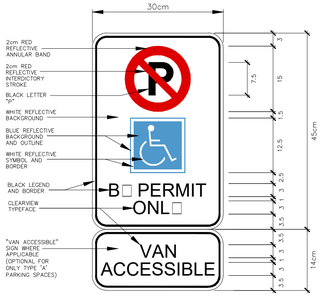
Site Plan

ACCESSIBLE PAR□ING SIGN
HIGH□ A□ TRAFFIC ACT□REGULATION 581

PRESCRIBED SIGNS FOR PAR□ING SPACES UNDER
THE *HIGHWAY TRAFFIC ACT*□REGULATION 581
PRESCRIBED SIGNS FOR PAR□ING SPACES DESIGNATED UNDER A
MUNICIPAL B□LA□ FOR THE USE OF PEOPLE □ITH DISABILITIES

NOT TO SCALE
DIMENSIONS SHOWN IN CENTIMETRES

PLATE DETAIL

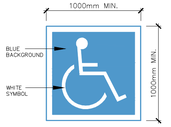


□0□m X □5□m MIN□

NOTE: SIGN ON A POST TO BE AT LEAST 1.5m ABOVE GRADE AND NOT MORE THAN 2.5m WHEN MEASURING FROM GRADE TO THE CENTRE OF THE SIGN.

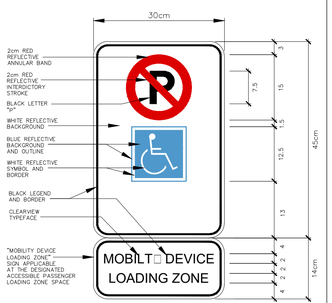
INTERNATIONAL S□MBOL OF ACCESS □OPTIONAL ON SURFACE OF THE PAR□ING SPACE□

NOT TO SCALE DIMENSIONS SHOWN IN MILLIMETRES



ACCESSIBLE PASSENGER LOADING ZONE SIGN

NOT TO SCALE
DIMENSIONS SHOWN IN CENTIMETRES



□0□m X □5□m MIN□

NOTE: SIGN ON A POST TO BE AT LEAST 1.5m ABOVE GRADE AND NOT MORE THAN 2.5m WHEN MEASURING FROM GRADE TO THE CENTRE OF THE SIGN.

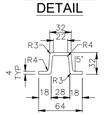
FIRE ROUTE SIGN DETAILS

N.T.S. DIMENSIONS SHOWN IN MILLIMETRES

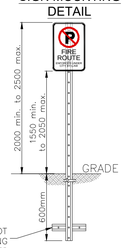
FIRE ROUTE SIGN PLATE DETAIL

COLOUR		SIZING
Sign Plate	Aluminum	300mm wide 450mm high 0.063 thick
Front Background	Reflective white w/ black border	
	Unfinished	
Rear Background	Black	101.6mm
"P"	Red	190.5mm
Circle w/ Slash	Black	44.5mm
"FIRE ROUTE"	Black	19.1mm
Enforced Wording		

SIGN POST DETAIL



SIGN MOUNTING DETAIL



AS PER CITY OF PORT COLBORNE EMERGENCY SERVICES POLICY

SITE DATA

	REQ'D/MAX./MIN.	PROPOSED
ZONING	I □INSTITUTIONAL□	R□ RESIDENTIAL□
LOT AREA □ENTIRE SITE□ DEVELOPMENT AREA	5 21 m² □0□7 □□m²	5 □0□7 □□□
LOT FRONTAGE	18.0m □MIN.□	1□7.□□□m
FRONT □ARD SETBAC□	□0m □MIN.□	□5.78m
EXTERIOR SIDE□ARD SETBAC□	15.0m □MIN.□	□7□m
REAR □ARD SETBAC□	□0m □MIN.□	10□82m
INTERIOR SIDE□ARD SETBAC□	□0m □MIN.□	22.□□1m
LANDSCAPED OPEN SPACE	25□ □MIN.□	25 10 1 m²
BUILDING COVERAGE	□0□ □MAX.□	21 0 8 15 m²
HEIGHT □TALLEST PARAPET□		20.78m □MAX.□

ACCOMMODATION DATA:
□□STORE□ APARTMENT BUILDINGS □2 UNITS/BUILDING
DEVELOPMENT TOTAL □72 UNITS

SUITE BREA□DO□N
□2 SUITES PER BUILDING:
□1 1□BEDROOM SUITES PER BUILDING
□1 2□BEDROOM SUITES PER BUILDING

INTERIOR AMENIT□ AREAS □PER BUILDING□
FITNESS ROOM □□□0m²
RECREATION ROOM □8.5m²
TOTAL INTERIOR AMENIT□ AREA PER BUILDING 10□5m²

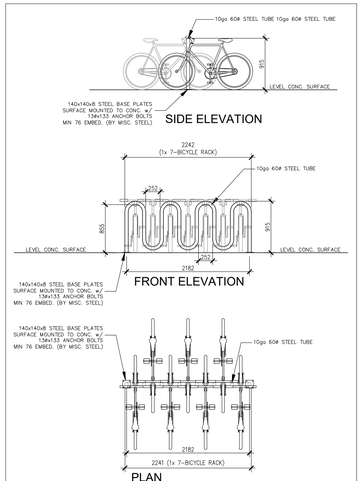
ANCILLAR□ SPACES □PER BUILDING□
BIC□CLE STORAGE ROOM 12□□□m²
TENANT STORAGE LOC□ER ROOMS □05□m²
TOTAL ANCILLAR□ SPACES AREA PER BUILDING □2□□m²

GRAND TOTAL INTERIOR AMENIT□ AREA □27.0m²
GRAND TOTAL ANCILLAR□ SPACES AREA 2□577□m²

PAR□ING RE□UIRED:
□72 □1.5 SPACES/UNIT 558 SPACES
TOTAL RE□UIRED PAR□ING 558 SPACES

PAR□ING PROVIDED:
2□LEVEL PAR□ADE 1□8 SPACES
SURFACE LEVEL 5□0 SPACES
TOTAL PROVIDED PAR□ING 7□8 SPACES
□2.00 SPACES/UNIT□

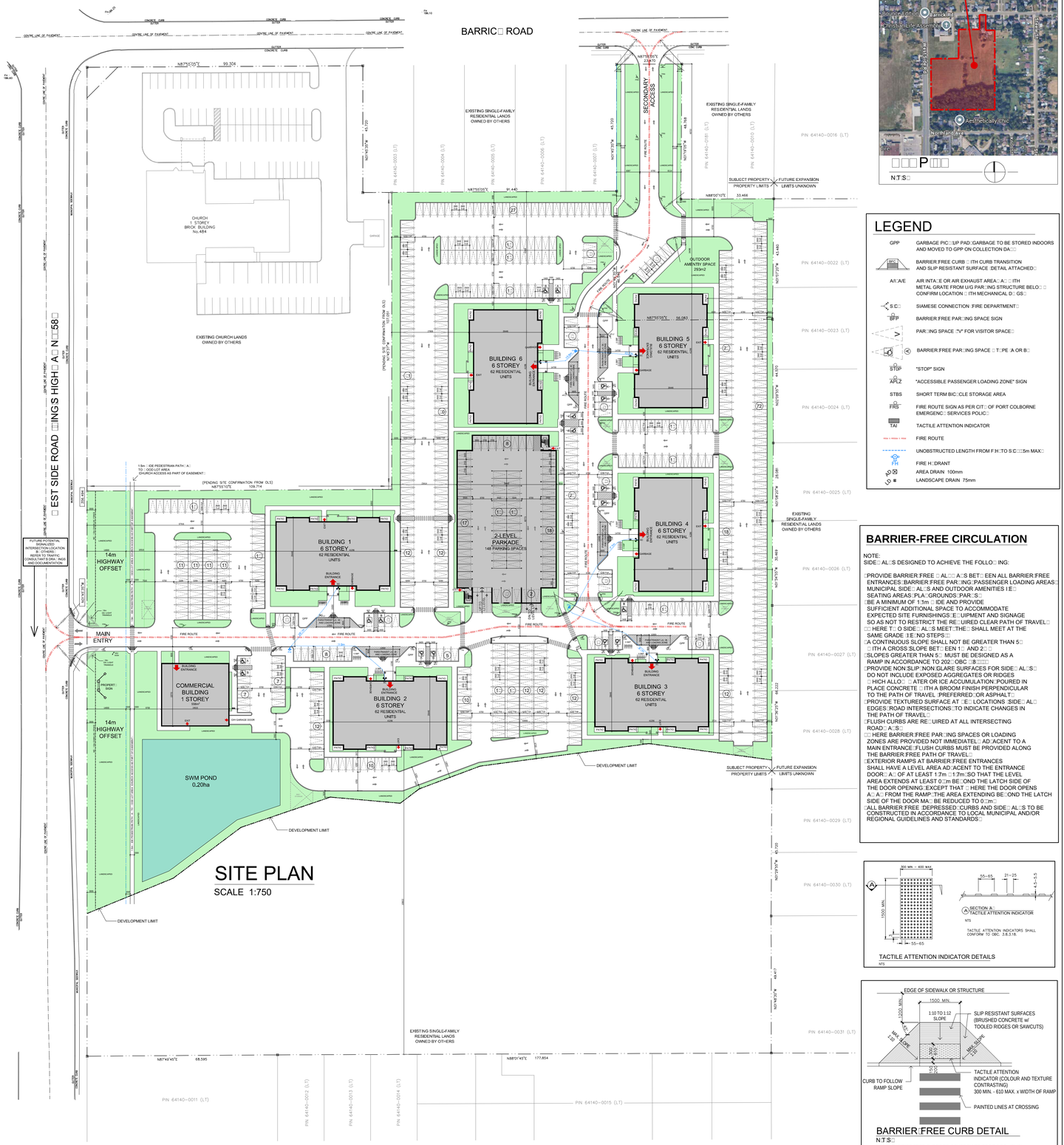
COVERAGE:
BUILDING AREA:
BUILDING 1 1018.5 m²
BUILDING 2 1018.5 m²
BUILDING □ 1018.5 m²
BUILDING □ 1018.5 m²
BUILDING 5 1018.5 m²
BUILDING □ 1018.5 m²
COMMERCIAL BUILDING 558.0 m²
PAR□ADE 1□ m²
TOTAL COVERAGE AREA 8 15 m²
□21.0□ □



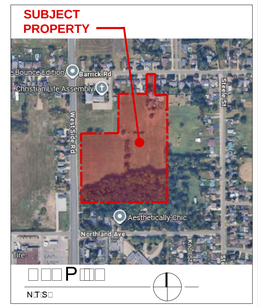
◯ SHORT□TERM BIC□CLE PAR□ING □ROLLING RAC□
SCALE 1:50 GRAINGER CANADA "MADRAX" S□STEM OR E□UIVALENT

□ ASTE MANAGEMENT NOTE:
GARBAGE AND REC□CLING TO BE STORED INSIDE EACH BUILDING □REFER TO FLOOR PLANS□AND MOVED TO GARBAGE PIC□ UP PAD □GPP□ FOR PIC□ UP ON COLLECTION DA□S

FIRE ROUTE □ ILL NOT HAVE AN□ CENTRE LINE TURNING RADII OF LESS THAN 12m OR A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12□5 □8□ □OVER A MINIMUM DISTANCE OF 15m□



SITE PLAN
SCALE 1:750



LEGEND

GPP	GARBAGE PIC□UP PAD□GARBAGE TO BE STORED INDOORS AND MOVED TO GPP ON COLLECTION DA□□
BFC	BARRIER□FREE CURB □ITH CURB TRANSITION AND SLIP RESISTANT SURFACE□DETAIL ATTACHED□
A/I□A/E	AIR INTA□E OR AIR EXHAUST AREA□ A□□ITH METAL GRATE FROM U/G PAR□ING STRUCTURE BELO□□ CONFIRM LOCATION □ ITH MECHANICAL D□GS□
S.C□	SIAMESE CONNECTION □FIRE DEPARTMENT□
BFP	BARRIER□FREE PAR□ING SPACE SIGN
>	PAR□ING SPACE □V" FOR VISITOR SPACE□
	BARRIER□FREE PAR□ING SPACE □T□PE "A OR B□
STOP	"STOP" SIGN
APLZ	"ACCESSIBLE PASSENGER LOADING ZONE" SIGN
STBS	SHORT TERM BIC□CLE STORAGE AREA
FRS	FIRE ROUTE SIGN AS PER CIT□ OF PORT COLBORNE EMERGENC□ SERVICES POLIC□
TAI	TACTILE ATTENTION INDICATOR
	FIRE ROUTE
	UNOBSTRUCTED LENGTH FROM F.H.□TO S.C□□5m MAX.□
FH	FIRE H□DRANT
	AREA DRAIN 100mm
	LANDSCAPE DRAIN 75mm

BARRIER-FREE CIRCULATION

NOTE:
SIDE□ AL□S DESIGNED TO ACHIEVE THE FOLLO□ ING:

□PROVIDE BARRIER□FREE □ AL□□ A□S BET□ EEN ALL BARRIER□FREE ENTRANCES; BARRIER□FREE PAR□ING; PASSENGER LOADING AREAS□ MUNICIPAL SIDE□ AL□S AND OUTDOOR AMENITIES □E□ SEATING AREAS□PLA□GROUNDS□PAR□S□
□BE A MINIMUM OF 1.1m □IDE AND PROVIDE SUFFICIENT ADDITIONAL SPACE TO ACCOMMODATE EXPECTED SITE FURNISHINGS□E□UIPMENT AND SIGNAGE SO AS NOT TO RESTRICT THE RE□UIRED CLEAR PATH OF TRAVEL□
□□ HERE T□O SIDE□ AL□S MEET□THE□ SHALL MEET AT THE SAME GRADE □E□NO STEPS□
□A CONTINUOUS SLOPE SHALL NOT BE GREATER THAN 5□ □ ITH A CROSS□SLOPE BET□ EEN 1□ AND 2□□
□SLOPES GREATER THAN 5□ MUST BE DESIGNED AS A RAMP IN ACCORDANCE TO 202□OBC □3□□□□
□PROVIDE NON□SLIP□NON□GLARE SURFACES FOR SIDE□ AL□S□ DO NOT INCLUDE EXPOSED AGGREGATES OR RIDGES □ HICH ALLO□ □ ATER OR ICE ACCUMULATION□POURED IN PLACE CONCRETE □ ITH A BROOM FINISH PERPENDICULAR TO THE PATH OF TRAVEL □PREFERRED□OR ASPHALT□
□PROVIDE TEXTURED SURFACE AT □E□ LOCATIONS □SIDE□ AL□ EDGES□ROAD INTERSECTIONS□TO INDICATE CHANGES IN THE PATH OF TRAVEL□
□FLUSH CURBS ARE RE□UIRED AT ALL INTERSECTING ROAD□ A□S□
□□ HERE BARRIER□FREE PAR□ING SPACES OR LOADING ZONES ARE PROVIDED NOT IMMEDIATEL□AD□ACENT TO A MAIN ENTRANCE□FLUSH CURBS MUST BE PROVIDED ALONG THE BARRIER□FREE PATH OF TRAVEL□
□EXTERIOR RAMPS AT BARRIER□FREE ENTRANCES SHALL HAVE A LEVEL AREA AD□ACENT TO THE ENTRANCE DOOR□ A□ OF AT LEAST 1.7m □1.7m□SO THAT THE LEVEL AREA EXTENDS AT LEAST 0□m BE□OND THE LATCH SIDE OF THE DOOR OPENING□EXCEPT THAT □HERE THE DOOR OPENS A□ A□ FROM THE RAMP□THE AREA EXTENDING BE□OND THE LATCH SIDE OF THE DOOR MA□ BE REDUCED TO 0□m□
□ALL BARRIER□FREE DEPRESSED□CURBS AND SIDE□ AL□S TO BE CONSTRUCTED IN ACCORDANCE TO LOCAL MUNICIPAL AND/OR REGIONAL GUIDELINES AND STANDARDS□

TACTILE ATTENTION INDICATOR DETAILS
NTS

BARRIER□FREE CURB DETAIL
N.T.S□
NOTE: BARRIER-FREE CURBS TO CONFORM TO OBC 3.8.3.2. (2) (3)
TACTILE ATTENTION INDICATORS TO CONFORM TO O.B.C. 3.8.3.18.

GENERAL NOTES

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ALL ERRORS AND / OR OMISSIONS TO THE THE OWNER BEFORE PROCEEDING WITH ANY WORK. ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT BUILDING CODE REGULATIONS AND BYLAWS HAVING JURISDICTION. ALL WORKMANSHIP AND MATERIALS MUST CONFORM WITH O.B.C. C.S.A., C.M.H.C. ULC, ETC. STANDARDS AND BE APPROVED BY OWNER. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL IT HAS BEEN SIGNED BY THE ARCHITECT AND A BUILDING PERMIT HAS BEEN ISSUED. CONSTRUCTION TO BE ACCORDING TO BEST COMMON PRACTICE. DO NOT SCALE DRAWINGS. WHEN REQUIRED, VERIFY DIMENSIONS WITH THE ARCHITECT. ALL DRAWINGS & SPECIFICATIONS ARE THE PROPERTY OF MARSH KATSIOS ARCHITECT INC. & MUST BE RETURNED UPON COMPLETION OF THIS PROJECT. THIS DRAWING & ALL DETAILS ARE FOR THIS PROJECT ONLY AND SHOULD NOT BE USED FOR ANY OTHER WORK.

DETAIL SYMBOL

A – DETAIL NUMBER
B – LOCATION SHEET
C – DETAIL SHEET

ELEVATION SYMBOL

A – ELEVATION NO.
B – LOCATION SHEET
C – DETAIL SHEET

NO.	DATE	ISSUED / REVISIONS
1	NOV 18 2025	SCHEMATIC #1 CLIENT REVIEW
2	DEC 12 2025	SCHEMATIC #2 CLIENT REVIEW
3	DEC 17 2025	SCHEMATIC #3 CLIENT REVIEW
4	JAN 7 2026	REVISED PER CLIENT COMMENTS FROM REVIEW OF SCHEMATIC #3
5	JAN 14 2026	REVISED PER CLIENT COMMENTS RESUBMITTED FOR CLIENT REVIEW
6	JAN 23 2026	SCHEMATIC #4 CLIENT REVIEW
7	FEB 23 2026	SCHEMATIC #5 CLIENT REVIEW
8	FEB 25 2026	REVISED PER CLIENT COMMENTS RESUBMITTED FOR CLIENT REVIEW
9	FEB 26 2026	INCLUDED THE 14m HIGHWAY OFFSET INTO THE LANDSCAPED OPEN SPACE AREA CALCS.
10	MAR 4 2026	REVISED PER CLIENT COMMENTS RESUBMITTED FOR CLIENT REVIEW
11	MAY 12 2026	RESUBMITTED TO CLIENT

ONTARIO ASSOCIATION OF ARCHITECTS
VASILE KATSIOS
LICENCE 5010

NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED

MARSH KATSIOS
MKA Architect Inc.
□□□m□r□□□□□□□r□□□□□□□
200 □UEENS AVE□ SUITE 10□□ LONDON□ ONTARIO N□A1□□
TEL: 51□ □□2□2020 m□r□□□□ r□□□r□□□m

PROJECT

MULTI BUILDING RESIDENTIAL APARTMENT COMPLEX

□□□ □ □8□BARRIC□ RD□□PORT COLBORNE□ON□□

CLIENT

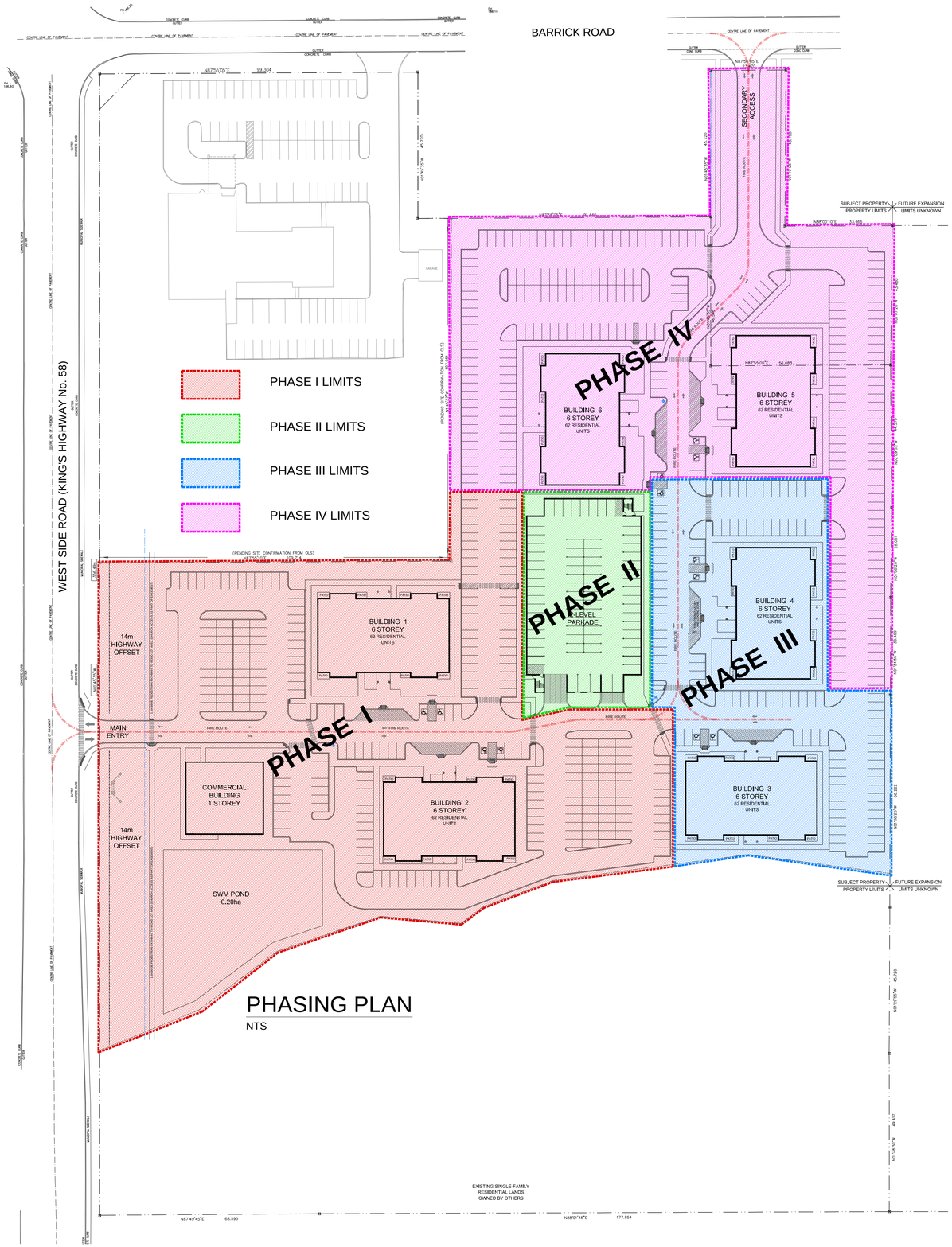
DUNSIRE PROPERTIES INC.

2□HARRIET ST□
HAMILTON□ONTARIO L8R 2E5

DRAWING TITLE

● SITE PLAN□SCHEMATIC □5

FILE	※\OSCAR'S COMP\DUNSIRE\PORT COLBORNE\BARRICK	PROJ. NO.	25-2455
SCALE	AS SHOWN	DRAWING NO.	SP1
DATE	OCT 31, 2025		
DRAWN	O.M.		
CHECKED	B.K.		
SITE PLAN APPLICATION No.			□□□□□□□□□□□□
PRINTED/PLOTTED			



PHASING PLAN

NTS

LEGEND

GPP	GARBAGE PICK-UP PAD. GARBAGE TO BE STORED INDOORS AND MOVED TO GPP ON COLLECTION DAY.
BFC	BARRIER-FREE CURB WITH CURB TRANSITION AND SLIP RESISTANT SURFACE (DETAIL ATTACHED)
AI, AE	AIR INTAKE OR AIR EXHAUST AREAWAY WITH METAL GRATE FROM U/G PARKING STRUCTURE BELOW. CONFIRM LOCATION WITH MECHANICAL DWGS.
S.C.	SIAMESE CONNECTION (FIRE DEPARTMENT)
BFP	BARRIER-FREE PARKING SPACE SIGN
V	PARKING SPACE ("V" FOR VISITOR SPACE)
A / B	BARRIER-FREE PARKING SPACE & TYPE (A OR B)
STOP	"STOP" SIGN
APL2	"ACCESSIBLE PASSENGER LOADING ZONE" SIGN
STBS	SHORT TERM BICYCLE STORAGE AREA
FRS	FIRE ROUTE SIGN AS PER CITY OF PORT COLBORNE EMERGENCY SERVICES POLICY
TAI	TACTILE ATTENTION INDICATOR
FIRE ROUTE	FIRE ROUTE
	UNOBSTRUCTED LENGTH FROM F.H. TO S.C. (45m MAX)
FH	FIRE HYDRANT
AD	AREA DRAIN (100mm Ø)
LD	LANDSCAPE DRAIN (75mm Ø)
	PHASE I LIMITS
	PHASE II LIMITS
	PHASE III LIMITS
	PHASE IV LIMITS

N

NORTH

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ONTARIO ASSOCIATION OF ARCHITECTS
VASILE KATSIOS
LICENCE
5010

NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED

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MKA Architect Inc.
www.marshkatsiosarchitect.ca
200 QUEENS AVE, SUITE 103, LONDON, ONTARIO N6A1J3
TEL: 519 432-2020 marshvk@rogers.com

PROJECT

MULTI BUILDING RESIDENTIAL APARTMENT COMPLEX

434 & 484 BARRICK RD., PORT COLBORNE, ON.

CLIENT

DUNSIRE PROPERTIES INC.

29 HARRIET ST.
HAMILTON, ONTARIO L8R 2E5

DRAWING TITLE

● CONSTRUCTION PHASING PLAN
SCHEMATIC #5

FILE	W:\OSCAR'S COMP\DUNSIRE\PORT COLBORNE\BARRICK	PROJ. NO.	25-2455
SCALE	AS SHOWN	DRAWING NO.	SP2
DATE	OCT 31, 2025		
DRAWN	O.M.		
CHECKED	B.K.		
SITE PLAN APPLICATION No.			
PRINTED/PLOTTED			

Appendix C

Traffic Data

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #26-097 - GHD

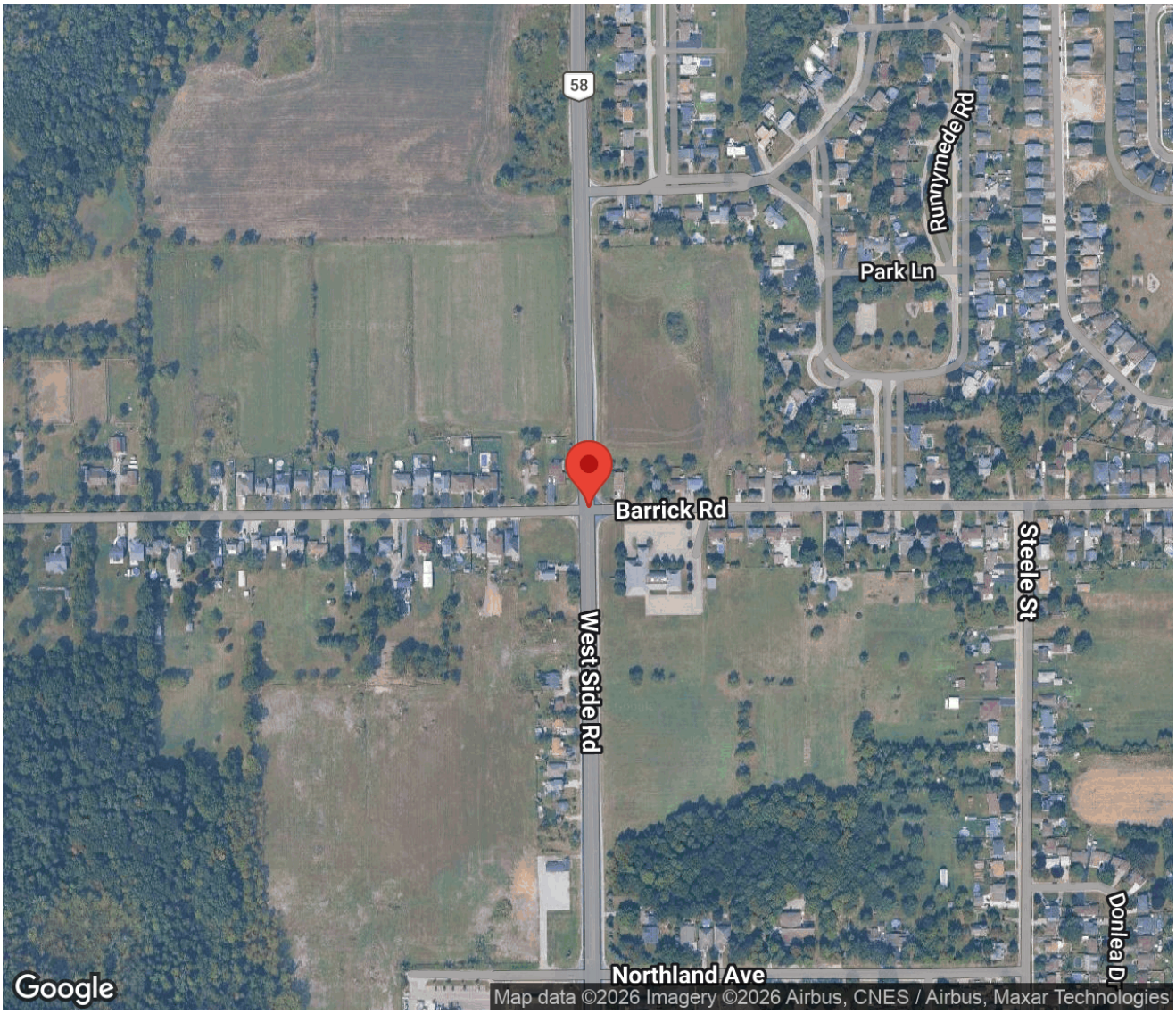
Intersection Count Report

Intersection:	Barrick Rd & West Side Rd
Municipality:	Port Colborne
Count Date:	Wednesday, Apr 08, 2026
Site Code:	2609700001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	06:30-09:00, 11:00-14:00, 16:00-18:30
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Barrick Rd & West Side Rd
Site Code:	2609700001
Municipality:	Port Colborne
Count Date:	Apr 08, 2026



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Barrick Rd & West Side Rd
Site Code:	2609700001
Municipality:	Port Colborne
Count Date:	Apr 08, 2026

West Side 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
06:30 - 07:00	23	82	0	0	105	0	1	128	13	0	142	0	247
07:00 - 08:00	24	231	4	0	259	0	6	291	6	0	303	0	562
08:00 - 09:00	32	324	2	0	358	1	6	369	17	0	392	0	750
BREAK													
11:00 - 12:00	21	304	6	0	331	0	11	324	25	0	360	0	691
12:00 - 13:00	23	295	11	0	329	0	11	349	53	0	413	2	742
13:00 - 14:00	32	317	10	0	359	0	7	285	24	0	316	1	675
BREAK													
16:00 - 17:00	53	470	15	0	538	1	13	358	26	0	397	1	935
17:00 - 18:00	40	409	18	0	467	0	11	314	30	0	355	2	822
18:00 - 18:30	17	163	4	0	184	0	7	129	17	0	153	0	337
GRAND TOTAL	**265**	**2595**	**70**	**0**	**2930**	**2**	**73**	**2547**	**211**	**0**	**2831**	**6**	**5761**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Barrick Rd & West Side Rd
Site Code:	2609700001
Municipality:	Port Colborne
Count Date:	Apr 08, 2026

Barrick 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
06:30 - 07:00	5	3	14	0	22	0	5	1	4	0	10	0	32
07:00 - 08:00	18	0	44	0	62	0	9	1	11	0	21	1	83
08:00 - 09:00	21	3	39	0	63	0	20	5	15	0	40	1	103
BREAK													
11:00 - 12:00	26	7	29	0	62	1	4	2	7	0	13	0	75
12:00 - 13:00	47	4	39	0	90	1	6	5	8	0	19	1	109
13:00 - 14:00	26	7	37	0	70	2	5	5	11	0	21	0	91
BREAK													
16:00 - 17:00	29	10	41	0	80	0	9	2	12	0	23	2	103
17:00 - 18:00	22	3	38	0	63	1	9	2	4	0	15	1	78
18:00 - 18:30	9	3	17	0	29	0	3	5	3	0	11	0	40
GRAND TOTAL	**203**	**40**	**298**	**0**	**541**	**5**	**70**	**28**	**75**	**0**	**173**	**6**	**714**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

North Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
06:30	10	34	0	0	44	0	0	0	0	0	0	0	0	0	0	0
06:45	13	46	0	0	59	0	2	0	0	2	0	0	0	0	0	0
07:00	3	35	3	0	41	0	6	0	0	6	0	0	0	0	0	0
07:15	7	58	1	0	66	0	0	0	0	0	0	0	0	0	0	0
07:30	5	51	0	0	56	0	9	0	0	9	0	0	0	0	0	0
07:45	9	68	0	0	77	0	4	0	0	4	0	0	0	0	0	0
08:00	6	57	0	0	63	0	6	0	0	6	0	0	0	0	0	1
08:15	7	77	0	0	84	2	14	0	0	16	0	0	0	0	0	0
08:30	8	85	1	0	94	0	6	0	0	6	0	0	0	0	0	0
08:45	8	69	1	0	78	1	10	0	0	11	0	0	0	0	0	0
SUBTOTAL	76	580	6	0	662	3	57	0	0	60	0	0	0	0	0	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

North Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:00	2	70	0	0	72	0	5	0	0	5	0	0	0	0	0	0
11:15	7	69	1	0	77	1	4	0	0	5	0	0	0	0	0	0
11:30	6	70	2	0	78	0	7	0	0	7	0	0	0	0	0	0
11:45	5	74	3	0	82	0	5	0	0	5	0	0	0	0	0	0
12:00	9	72	2	0	83	0	3	0	0	3	0	0	0	0	0	0
12:15	3	73	2	0	78	0	2	0	0	2	0	0	0	0	0	0
12:30	5	67	4	0	76	0	5	0	0	5	0	0	0	0	0	0
12:45	6	68	3	0	77	0	5	0	0	5	0	0	0	0	0	0
13:00	6	74	2	0	82	0	3	0	0	3	0	0	0	0	0	0
13:15	8	78	2	0	88	1	8	0	0	9	0	0	0	0	0	0
13:30	9	65	4	0	78	0	9	0	0	9	0	0	0	0	0	0
13:45	8	75	2	0	85	0	5	0	0	5	0	0	0	0	0	0
SUBTOTAL	74	855	27	0	956	2	61	0	0	63	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

North Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	11	112	5	0	128	1	8	0	0	9	0	0	0	0	0	0
16:15	16	109	5	0	130	0	4	0	0	4	0	0	0	0	0	1
16:30	15	121	3	0	139	0	3	0	0	3	0	0	0	0	0	0
16:45	10	105	2	0	117	0	8	0	0	8	0	0	0	0	0	0
17:00	11	111	5	0	127	0	0	0	0	0	0	0	0	0	0	0
17:15	10	102	6	0	118	0	3	0	0	3	0	0	0	0	0	0
17:30	12	119	3	0	134	0	2	0	0	2	0	0	0	0	0	0
17:45	7	72	4	0	83	0	0	0	0	0	0	0	0	0	0	0
18:00	10	74	2	0	86	0	6	0	0	6	0	0	0	0	0	0
18:15	7	81	2	0	90	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	109	1006	37	0	1152	1	36	0	0	37	0	0	0	0	0	1
GRAND TOTAL	259	2441	70	0	2770	6	154	0	0	160	0	0	0	0	0	2

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

South Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
06:30	1	60	5	0	66	0	1	0	0	1	0	0	0	0	0	0
06:45	0	65	8	0	73	0	2	0	0	2	0	0	0	0	0	0
07:00	1	52	1	0	54	0	2	0	0	2	0	0	0	0	0	0
07:15	1	71	1	0	73	0	2	0	0	2	0	0	0	0	0	0
07:30	1	78	0	0	79	0	5	0	0	5	0	0	0	0	0	0
07:45	3	77	4	0	84	0	4	0	0	4	0	0	0	0	0	0
08:00	1	86	3	0	90	0	8	0	0	8	0	0	0	0	0	0
08:15	1	86	3	0	90	0	10	0	0	10	0	0	0	0	0	0
08:30	1	90	7	0	98	1	6	0	0	7	0	0	0	0	0	0
08:45	2	79	4	0	85	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	12	744	36	0	792	1	44	0	0	45	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

South Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:00	5	68	4	0	77	0	5	0	0	5	0	0	0	0	0	0
11:15	4	76	8	0	88	0	12	0	0	12	0	0	0	0	0	0
11:30	1	69	7	0	77	0	9	0	0	9	0	0	0	0	0	0
11:45	1	81	6	0	88	0	4	0	0	4	0	0	0	0	0	0
12:00	3	68	15	0	86	0	9	0	0	9	0	1	0	0	1	0
12:15	3	93	21	0	117	0	7	0	0	7	0	0	0	0	0	1
12:30	3	82	11	0	96	0	6	0	0	6	0	0	0	0	0	1
12:45	2	79	5	0	86	0	4	1	0	5	0	0	0	0	0	0
13:00	2	65	8	0	75	0	4	0	0	4	0	0	0	0	0	1
13:15	3	68	5	0	76	0	8	0	0	8	0	0	0	0	0	0
13:30	0	60	2	0	62	0	6	0	0	6	0	0	0	0	0	0
13:45	2	64	9	0	75	0	10	0	0	10	0	0	0	0	0	0
SUBTOTAL	29	873	101	0	1003	0	84	1	0	85	0	1	0	0	1	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

South Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
16:00	2	106	9	0	117	0	2	0	0	2	0	0	0	0	0	0
16:15	4	75	4	0	83	0	4	1	0	5	0	0	0	0	0	0
16:30	2	96	7	0	105	0	2	0	0	2	1	0	0	0	1	1
16:45	4	72	5	0	81	0	1	0	0	1	0	0	0	0	0	0
17:00	3	85	7	0	95	0	3	0	0	3	1	0	0	0	1	1
17:15	2	84	5	0	91	0	3	0	0	3	0	0	0	0	0	0
17:30	2	72	9	0	83	0	2	0	0	2	0	0	0	0	0	0
17:45	3	65	9	0	77	0	0	0	0	0	0	0	0	0	0	1
18:00	3	63	6	0	72	0	0	0	0	0	0	0	0	0	0	0
18:15	4	66	11	0	81	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	29	784	72	0	885	0	17	1	0	18	2	0	0	0	2	3
GRAND TOTAL	70	2401	209	0	2680	1	145	2	0	148	2	1	0	0	3	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

East Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
06:30	2	0	10	0	12	0	0	1	0	1	0	0	0	0	0	0
06:45	3	3	3	0	9	0	0	0	0	0	0	0	0	0	0	0
07:00	6	0	5	0	11	0	0	0	0	0	0	0	0	0	0	0
07:15	5	0	8	0	13	0	0	0	0	0	0	0	0	0	0	0
07:30	2	0	20	0	22	1	0	0	0	1	0	0	0	0	0	0
07:45	4	0	11	0	15	0	0	0	0	0	0	0	0	0	0	0
08:00	3	1	5	0	9	1	1	0	0	2	0	0	0	0	0	0
08:15	7	1	13	0	21	0	0	0	0	0	0	0	0	0	0	0
08:30	3	0	11	0	14	0	0	0	0	0	0	0	0	0	0	0
08:45	7	0	10	0	17	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	42	5	96	0	143	2	1	1	0	4	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

East Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:00	5	2	6	0	13	0	0	0	0	0	0	0	0	0	0	1
11:15	6	3	10	0	19	0	0	0	0	0	0	0	0	0	0	0
11:30	8	0	6	0	14	0	0	0	0	0	0	0	0	0	0	0
11:45	7	2	7	0	16	0	0	0	0	0	0	0	0	0	0	0
12:00	19	1	7	0	27	0	1	0	0	1	0	0	0	0	0	0
12:15	9	0	7	0	16	0	0	0	0	0	1	0	0	0	1	0
12:30	7	1	8	0	16	0	0	0	0	0	0	0	0	0	0	1
12:45	11	1	17	0	29	0	0	0	0	0	0	0	0	0	0	0
13:00	9	1	13	0	23	0	0	0	0	0	0	0	0	0	0	0
13:15	4	2	9	0	15	0	0	0	0	0	0	0	0	0	0	2
13:30	5	1	6	0	12	0	0	0	0	0	0	0	0	0	0	0
13:45	8	3	8	0	19	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	98	17	104	0	219	0	1	1	0	2	1	0	0	0	1	4

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

East Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	5	4	9	0	18	1	0	0	0	1	0	0	0	0	0	0
16:15	7	2	7	0	16	0	0	0	0	0	0	1	0	0	1	0
16:30	9	1	16	0	26	1	0	0	0	1	0	0	0	0	0	0
16:45	6	2	9	0	17	0	0	0	0	0	0	0	0	0	0	0
17:00	5	1	11	0	17	0	0	0	0	0	0	0	0	0	0	0
17:15	6	1	7	0	14	1	0	0	0	1	0	0	0	0	0	0
17:30	6	0	11	0	17	0	0	0	0	0	0	0	0	0	0	1
17:45	4	1	9	0	14	0	0	0	0	0	0	0	0	0	0	0
18:00	4	1	11	0	16	0	0	0	0	0	0	0	0	0	0	0
18:15	5	2	5	0	12	0	0	0	0	0	0	0	1	0	1	0
SUBTOTAL	57	15	95	0	167	3	0	0	0	3	0	1	1	0	2	1
GRAND TOTAL	197	37	295	0	529	5	2	2	0	9	1	1	1	0	3	5

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

West Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
06:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
06:45	5	1	2	0	8	0	0	0	0	0	0	0	0	0	0	0
07:00	3	1	2	0	6	0	0	0	0	0	0	0	0	0	0	0
07:15	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0	1
07:30	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0
07:45	4	0	3	0	7	0	0	1	0	1	0	0	0	0	0	0
08:00	5	0	7	0	12	0	0	0	0	0	1	0	0	0	1	1
08:15	6	2	3	0	11	0	0	0	0	0	0	0	0	0	0	0
08:30	3	1	3	0	7	0	0	0	0	0	0	0	0	0	0	0
08:45	5	2	2	0	9	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	32	7	28	0	67	1	0	2	0	3	1	0	0	0	1	2

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

West Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:00	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
11:15	1	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0
11:30	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0
11:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
12:15	3	3	4	0	10	0	0	0	0	0	0	0	0	0	0	0
12:30	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	1
12:45	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
13:00	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0
13:15	2	2	5	0	9	0	0	0	0	0	0	0	0	0	0	0
13:30	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0
13:45	1	1	4	0	6	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	15	12	26	0	53	0	0	0	0	0	0	0	0	0	0	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Municipality: Port Colborne
Count Date: Apr 08, 2026

West Approach - Barrick Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	3	0	3	0	6	0	0	0	0	0	0	0	1	0	1	0
16:15	2	1	2	0	5	0	0	0	0	0	0	0	0	0	0	0
16:30	1	1	2	0	4	0	0	0	0	0	0	0	1	0	1	2
16:45	3	0	3	0	6	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	1
17:15	3	2	1	0	6	0	0	0	0	0	0	0	0	0	0	0
17:30	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
17:45	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
18:00	2	1	1	0	4	0	0	0	0	0	0	1	0	0	1	0
18:15	1	3	1	0	5	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	21	8	16	0	45	0	0	1	0	1	0	1	2	0	3	3
GRAND TOTAL	68	27	70	0	165	1	0	3	0	4	1	1	2	0	4	6

Peak Hour Diagram

Specified Period
From: 06:30:00
To: 09:00:00

One Hour Peak
From: 08:00:00
To: 09:00:00

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: West Side Rd runs N/S

North Approach

	Out	In	Total
Cars	319	399	718
Trucks	39	28	67
Bicycles	0	1	1
	358	**428**	**786**

West Side Rd

Bicycles	0	0	0	0
Trucks	0	36	3	0
Cars	2	288	29	0
Totals	**2**	**324**	**32**	**0**

East Approach

	Out	In	Total
Cars	61	51	112
Trucks	2	3	5
Bicycles	0	0	0
	63	**54**	**117**

Barrick Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
1	0	19	**20**
0	0	5	**5**
0	0	15	**15**

Peds: 1

Peds: 0

Peds: 0

Barrick Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
39	39	0	0
3	2	1	0
21	20	1	0

West Approach

	Out	In	Total
Cars	39	9	48
Trucks	0	2	2
Bicycles	1	0	1
	40	**11**	**51**

Totals	**6**	**369**	**17**	**0**
Cars	5	341	17	0
Trucks	1	28	0	0
Bicycles	0	0	0	0

West Side Rd

South Approach

	Out	In	Total
Cars	363	323	686
Trucks	29	37	66
Bicycles	0	0	0
	392	**360**	**752**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026
Period: 06:30 - 09:00

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

Start Time	North Approach West Side Rd						South Approach West Side Rd						East Approach Barrick Rd						West Approach Barrick Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	6	63	0	0	1	69	1	94	3	0	0	98	4	2	5	0	0	11	6	0	7	0	1	13	191
08:15	9	91	0	0	0	100	1	96	3	0	0	100	7	1	13	0	0	21	6	2	3	0	0	11	232
08:30	8	91	1	0	0	100	2	96	7	0	0	105	3	0	11	0	0	14	3	1	3	0	0	7	226
08:45	9	79	1	0	0	89	2	83	4	0	0	89	7	0	10	0	0	17	5	2	2	0	0	9	204
Grand Total	**32**	**324**	**2**	**0**	**1**	**358**	**6**	**369**	**17**	**0**	**0**	**392**	**21**	**3**	**39**	**0**	**0**	**63**	**20**	**5**	**15**	**0**	**1**	**40**	**853**
Approach %	8.9	90.5	0.6	0		-	1.5	94.1	4.3	0		-	33.3	4.8	61.9	0		-	50	12.5	37.5	0		-	
Totals %	3.8	38	0.2	0		42	0.7	43.3	2	0		46	2.5	0.4	4.6	0		7.4	2.3	0.6	1.8	0		4.7	
PHF	**0.89**	**0.89**	**0.5**	**0**		**0.9**	**0.75**	**0.96**	**0.61**	**0**		**0.93**	**0.75**	**0.38**	**0.75**	**0**		**0.75**	**0.83**	**0.63**	**0.54**	**0**		**0.77**	**0.92**
Cars	29	288	2	0		319	5	341	17	0		363	20	2	39	0		61	19	5	15	0		39	782
% Cars	90.6	88.9	100	0		89.1	83.3	92.4	100	0		92.6	95.2	66.7	100	0		96.8	95	100	100	0		97.5	91.7
Trucks	3	36	0	0		39	1	28	0	0		29	1	1	0	0		2	0	0	0	0		0	70
% Trucks	9.4	11.1	0	0		10.9	16.7	7.6	0	0		7.4	4.8	33.3	0	0		3.2	0	0	0	0		0	8.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	5	0	0	0		2.5	0.1
Peds					1	-					0	-					0	-					1	-	2
% Peds					50	-					0	-					0	-					50	-	

Peak Hour Diagram

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

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

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: West Side Rd runs N/S

North Approach

	Out	In	Total
Cars	314	367	681
Trucks	15	26	41
Bicycles	0	1	1
	329	**394**	**723**

West Side Rd

Bicycles	0	0	0	0
Trucks	0	15	0	0
Cars	11	280	23	0
Totals	**11**	**295**	**23**	**0**

East Approach

	Out	In	Total
Cars	88	80	168
Trucks	1	1	2
Bicycles	1	0	1
	90	**81**	**171**

Barrick Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	6	**6**
0	0	5	**5**
0	0	8	**8**

Peds: 0

Peds: 1

Peds: 1

Peds: 2

Barrick Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	39	39	0	0
	4	3	1	0
	47	46	0	1

West Approach

	Out	In	Total
Cars	19	25	44
Trucks	0	1	1
Bicycles	0	0	0
	19	**26**	**45**

West Side Rd

Totals	**11**	**349**	**53**	**0**
Cars	11	322	52	0
Trucks	0	26	1	0
Bicycles	0	1	0	0

South Approach

	Out	In	Total
Cars	385	334	719
Trucks	27	15	42
Bicycles	1	1	2
	413	**350**	**763**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026
Period: 11:00 - 14:00

Peak Hour Data (12:00 - 13:00)

Start Time	North Approach West Side Rd						South Approach West Side Rd						East Approach Barrick Rd						West Approach Barrick Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:00	9	75	2	0	0	86	3	78	15	0	0	96	19	2	7	0	0	28	0	0	1	0	0	1	211
12:15	3	75	2	0	0	80	3	100	21	0	1	124	10	0	7	0	0	17	3	3	4	0	0	10	231
12:30	5	72	4	0	0	81	3	88	11	0	1	102	7	1	8	0	1	16	0	2	3	0	1	5	204
12:45	6	73	3	0	0	82	2	83	6	0	0	91	11	1	17	0	0	29	3	0	0	0	0	3	205
Grand Total	**23**	**295**	**11**	**0**	**0**	**329**	**11**	**349**	**53**	**0**	**2**	**413**	**47**	**4**	**39**	**0**	**1**	**90**	**6**	**5**	**8**	**0**	**1**	**19**	**851**
Approach %	7	89.7	3.3	0		-	2.7	84.5	12.8	0		-	52.2	4.4	43.3	0		-	31.6	26.3	42.1	0		-	
Totals %	2.7	34.7	1.3	0		38.7	1.3	41	6.2	0		48.5	5.5	0.5	4.6	0		10.6	0.7	0.6	0.9	0		2.2	
PHF	**0.64**	**0.98**	**0.69**	**0**		**0.96**	**0.92**	**0.87**	**0.63**	**0**		**0.83**	**0.62**	**0.5**	**0.57**	**0**		**0.78**	**0.5**	**0.42**	**0.5**	**0**		**0.48**	**0.92**
Cars	23	280	11	0		314	11	322	52	0		385	46	3	39	0		88	6	5	8	0		19	806
% Cars	100	94.9	100	0		95.4	100	92.3	98.1	0		93.2	97.9	75	100	0		97.8	100	100	100	0		100	94.7
Trucks	0	15	0	0		15	0	26	1	0		27	0	1	0	0		1	0	0	0	0		0	43
% Trucks	0	5.1	0	0		4.6	0	7.4	1.9	0		6.5	0	25	0	0		1.1	0	0	0	0		0	5.1
Bicycles	0	0	0	0		0	0	1	0	0		1	1	0	0	0		1	0	0	0	0		0	2
% Bicycles	0	0	0	0		0	0	0.3	0	0		0.2	2.1	0	0	0		1.1	0	0	0	0		0	0.2
Peds					0	-					2	-					1	-					1	-	4
% Peds					0	-					50	-					25	-					25	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:30:00

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

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: West Side Rd runs N/S

North Approach

	Out	In	Total
Cars	514	399	913
Trucks	24	9	33
Bicycles	0	0	0
	538	**408**	**946**

West Side Rd

Bicycles	0	0	0	0
Trucks	0	23	1	0
Cars	15	447	52	0
Totals	**15**	**470**	**53**	**0**

East Approach

	Out	In	Total
Cars	77	79	156
Trucks	2	2	4
Bicycles	1	0	1
	80	**81**	**161**

Peds: 1

Barrick Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	9	**9**
0	0	2	**2**
2	0	10	**12**

Peds: 2

Peds: 0

Barrick Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
41	41	0	0
10	9	0	1
29	27	2	0

Peds: 1

West Approach

	Out	In	Total
Cars	21	36	57
Trucks	0	0	0
Bicycles	2	2	4
	23	**38**	**61**

Totals	**13**	**358**	**26**	**0**
Cars	12	349	25	0
Trucks	0	9	1	0
Bicycles	1	0	0	0

West Side Rd

South Approach

	Out	In	Total
Cars	386	484	870
Trucks	10	25	35
Bicycles	1	2	3
	397	**511**	**908**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Barrick Rd & West Side Rd
Site Code: 2609700001
Count Date: Apr 08, 2026
Period: 16:00 - 18:30

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

Start Time	North Approach West Side Rd						South Approach West Side Rd						East Approach Barrick Rd						West Approach Barrick Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	12	120	5	0	0	137	2	108	9	0	0	119	6	4	9	0	0	19	3	0	4	0	0	7	282
16:15	16	113	5	0	1	134	4	79	5	0	0	88	7	3	7	0	0	17	2	1	2	0	0	5	244
16:30	15	124	3	0	0	142	3	98	7	0	1	108	10	1	16	0	0	27	1	1	3	0	2	5	282
16:45	10	113	2	0	0	125	4	73	5	0	0	82	6	2	9	0	0	17	3	0	3	0	0	6	230
Grand Total	**53**	**470**	**15**	**0**	**1**	**538**	**13**	**358**	**26**	**0**	**1**	**397**	**29**	**10**	**41**	**0**	**0**	**80**	**9**	**2**	**12**	**0**	**2**	**23**	**1038**
Approach %	9.9	87.4	2.8	0		-	3.3	90.2	6.5	0		-	36.3	12.5	51.3	0		-	39.1	8.7	52.2	0		-	
Totals %	5.1	45.3	1.4	0		51.8	1.3	34.5	2.5	0		38.2	2.8	1	3.9	0		7.7	0.9	0.2	1.2	0		2.2	
PHF	**0.83**	**0.95**	**0.75**	**0**		**0.95**	**0.81**	**0.83**	**0.72**	**0**		**0.83**	**0.73**	**0.63**	**0.64**	**0**		**0.74**	**0.75**	**0.5**	**0.75**	**0**		**0.82**	**0.92**
Cars	52	447	15	0		514	12	349	25	0		386	27	9	41	0		77	9	2	10	0		21	998
% Cars	98.1	95.1	100	0		95.5	92.3	97.5	96.2	0		97.2	93.1	90	100	0		96.3	100	100	83.3	0		91.3	96.1
Trucks	1	23	0	0		24	0	9	1	0		10	2	0	0	0		2	0	0	0	0		0	36
% Trucks	1.9	4.9	0	0		4.5	0	2.5	3.8	0		2.5	6.9	0	0	0		2.5	0	0	0	0		0	3.5
Bicycles	0	0	0	0		0	1	0	0	0		1	0	1	0	0		1	0	0	2	0		2	4
% Bicycles	0	0	0	0		0	7.7	0	0	0		0.3	0	10	0	0		1.3	0	0	16.7	0		8.7	0.4
Peds					1	-					1	-					0	-					2	-	4
% Peds					25	-					25	-					0	-					50	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #26-097 - GHD

Intersection Count Report

Intersection:	Northland Ave & West Side Rd
Municipality:	Port Colborne
Count Date:	Wednesday, Apr 08, 2026
Site Code:	2609700002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	06:30-09:00, 16:00-18:30
Weather:	Clear
Comments:	

Ontario Traffic Inc.
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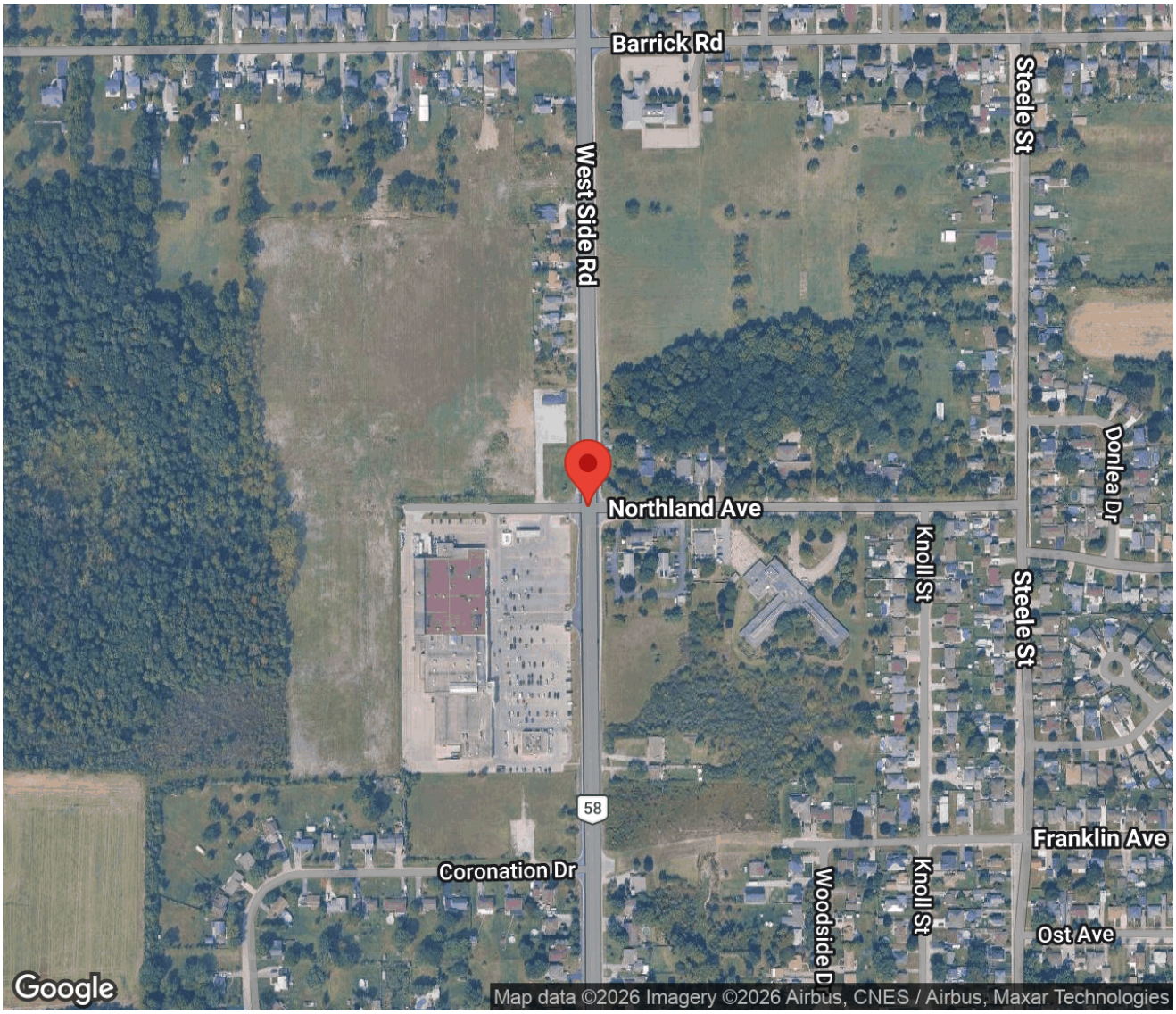
Traffic Count Map

Intersection:	Northland Ave & West Side Rd
Site Code:	2609700002
Municipality:	Port Colborne
Count Date:	Apr 08, 2026



Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Northland Ave & West Side Rd
Site Code:	2609700002
Municipality:	Port Colborne
Count Date:	Apr 08, 2026

West Side 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
06:30 - 07:00	5	80	8	0	93	0	4	119	3	0	126	0	219
07:00 - 08:00	0	254	12	1	267	0	6	238	3	0	247	3	514
08:00 - 09:00	10	331	27	0	368	0	9	320	8	0	337	2	705
BREAK													
16:00 - 17:00	21	437	54	0	512	0	5	337	11	0	353	1	865
17:00 - 18:00	31	378	34	0	443	0	6	310	8	0	324	13	767
18:00 - 18:30	6	156	12	0	174	0	4	128	3	0	135	3	309
GRAND TOTAL	**73**	**1636**	**147**	**1**	**1857**	**0**	**34**	**1452**	**36**	**0**	**1522**	**22**	**3379**

Ontario Traffic Inc.
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Traffic Count Summary

Intersection:	Northland Ave & West Side Rd
Site Code:	2609700002
Municipality:	Port Colborne
Count Date:	Apr 08, 2026

Northland Ave - 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
06:30 - 07:00	3	1	12	0	16	0	12	2	3	0	17	0	33
07:00 - 08:00	8	4	31	0	43	0	27	5	7	0	39	0	82
08:00 - 09:00	11	9	24	0	44	1	38	12	24	0	74	0	118
BREAK													
16:00 - 17:00	12	18	9	0	39	2	46	23	32	0	101	0	140
17:00 - 18:00	6	10	14	0	30	5	32	14	26	0	72	0	102
18:00 - 18:30	3	8	5	0	16	0	16	9	19	0	44	0	60
GRAND TOTAL	**43**	**50**	**95**	**0**	**188**	**8**	**171**	**65**	**111**	**0**	**347**	**0**	**535**

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

North Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
06:30	1	34	3	0	38	0	1	0	0	1	0	0	0	0	0	0
06:45	4	44	4	0	52	0	1	1	0	2	0	0	0	0	0	0
07:00	0	42	1	0	43	0	5	0	0	5	0	0	0	0	0	0
07:15	0	58	4	1	63	0	7	0	0	7	0	0	0	0	0	0
07:30	0	54	3	0	57	0	10	0	0	10	0	0	0	0	0	0
07:45	0	75	4	0	79	0	3	0	0	3	0	0	0	0	0	0
08:00	0	63	5	0	68	2	4	0	0	6	0	0	0	0	0	0
08:15	2	82	6	0	90	1	12	2	0	15	0	0	0	0	0	0
08:30	0	84	5	0	89	0	6	0	0	6	0	0	0	0	0	0
08:45	5	71	9	0	85	0	9	0	0	9	0	0	0	0	0	0
SUBTOTAL	12	607	44	1	664	3	58	3	0	64	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

North Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
16:00	5	97	12	0	114	1	9	0	0	10	0	0	0	0	0	0
16:15	6	96	16	0	118	0	3	0	0	3	0	0	0	0	0	0
16:30	6	124	12	0	142	0	3	0	0	3	0	1	0	0	1	0
16:45	3	97	14	0	114	0	7	0	0	7	0	0	0	0	0	0
17:00	9	99	11	0	119	0	1	0	0	1	0	0	0	0	0	0
17:15	6	102	9	0	117	0	0	0	0	0	0	0	0	0	0	0
17:30	11	105	7	0	123	0	4	0	0	4	0	1	0	0	1	0
17:45	5	64	7	0	76	0	2	0	0	2	0	0	0	0	0	0
18:00	1	69	5	0	75	0	5	1	0	6	0	2	0	0	2	0
18:15	5	72	6	0	83	0	5	0	0	5	0	3	0	0	3	0
SUBTOTAL	57	925	99	0	1081	1	39	1	0	41	0	7	0	0	7	0
GRAND TOTAL	69	1532	143	1	1745	4	97	4	0	105	0	7	0	0	7	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

South Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
06:30	3	54	1	0	58	0	2	0	0	2	0	0	0	0	0	0
06:45	1	61	2	0	64	0	2	0	0	2	0	0	0	0	0	0
07:00	0	53	1	0	54	0	3	0	0	3	0	1	0	0	1	1
07:15	1	49	1	0	51	0	2	0	0	2	0	0	0	0	0	0
07:30	2	54	0	0	56	0	6	0	0	6	0	0	0	0	0	2
07:45	3	67	1	0	71	0	3	0	0	3	0	0	0	0	0	0
08:00	4	77	0	0	81	1	5	0	0	6	0	0	0	0	0	0
08:15	0	77	3	0	80	1	9	0	0	10	0	0	0	0	0	1
08:30	0	80	3	0	83	0	5	0	0	5	0	0	0	0	0	1
08:45	2	65	2	0	69	1	2	0	0	3	0	0	0	0	0	0
SUBTOTAL	16	637	14	0	667	3	39	0	0	42	0	1	0	0	1	5

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

South Approach - West Side Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	95	3	0	98	0	2	0	0	2	0	0	0	0	0	0
16:15	1	66	3	0	70	0	5	0	0	5	1	0	0	0	1	1
16:30	3	92	3	0	98	0	2	0	0	2	0	0	0	0	0	0
16:45	0	75	2	0	77	0	0	0	0	0	0	0	0	0	0	0
17:00	3	81	1	0	85	0	3	0	0	3	0	0	0	0	0	4
17:15	1	81	1	0	83	0	4	0	0	4	0	0	0	0	0	5
17:30	0	72	5	0	77	0	1	0	0	1	0	0	0	0	0	3
17:45	2	67	1	0	70	0	0	0	0	0	0	1	0	0	1	1
18:00	4	65	2	0	71	0	0	0	0	0	0	0	0	0	0	2
18:15	0	63	1	0	64	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	14	757	22	0	793	0	17	0	0	17	1	1	0	0	2	17
GRAND TOTAL	30	1394	36	0	1460	3	56	0	0	59	1	2	0	0	3	22

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

East Approach - Northland Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
06:30	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
06:45	2	1	8	0	11	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	7	0	8	0	0	0	0	0	0	0	0	0	0	0
07:15	2	2	7	0	11	1	0	0	0	1	0	0	0	0	0	0
07:30	2	0	9	0	11	0	0	0	0	0	0	0	0	0	0	0
07:45	3	1	8	0	12	0	0	0	0	0	0	0	0	0	0	0
08:00	3	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0
08:15	2	2	5	0	9	1	0	0	0	1	1	0	0	0	1	1
08:30	1	3	8	0	12	0	0	1	0	1	0	0	0	0	0	0
08:45	3	4	4	0	11	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	19	14	66	0	99	2	0	1	0	3	1	0	0	0	1	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

East Approach - Northland Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	↰	↑	↱	↷	Total	
16:00	1	4	3	0	8	0	0	0	0	0	0	0	0	0	0	0
16:15	5	5	4	0	14	0	0	0	0	0	0	0	0	0	0	1
16:30	3	5	1	0	9	0	0	0	0	0	0	0	0	0	0	1
16:45	3	4	1	0	8	0	0	0	0	0	0	0	0	0	0	0
17:00	3	3	3	0	9	0	0	0	0	0	0	0	0	0	0	1
17:15	1	4	5	0	10	1	0	0	0	1	0	0	0	0	0	2
17:30	0	1	4	0	5	0	0	0	0	0	0	0	0	0	0	1
17:45	1	2	2	0	5	0	0	0	0	0	0	0	0	0	0	1
18:00	2	5	3	0	10	0	0	0	0	0	0	0	0	0	0	0
18:15	0	3	2	0	5	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	19	36	28	0	83	2	0	0	0	2	0	0	0	0	0	7
GRAND TOTAL	38	50	94	0	182	4	0	1	0	5	1	0	0	0	1	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

West Approach - Northland Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
06:30	7	2	2	0	11	0	0	0	0	0	0	0	0	0	0	0
06:45	5	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0
07:00	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0
07:15	5	0	0	0	5	0	0	1	0	1	0	0	0	0	0	0
07:30	10	2	2	0	14	0	0	0	0	0	0	0	0	0	0	0
07:45	6	2	4	0	12	1	0	0	0	1	0	0	0	0	0	0
08:00	9	3	5	0	17	2	0	0	0	2	0	0	0	0	0	0
08:15	4	1	5	0	10	0	0	2	0	2	0	0	2	0	2	0
08:30	11	6	3	0	20	0	1	1	0	2	0	0	0	0	0	0
08:45	11	1	6	0	18	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	73	18	28	0	119	4	1	4	0	9	0	0	2	0	2	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Municipality: Port Colborne
Count Date: Apr 08, 2026

West Approach - Northland Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
16:00	15	7	8	0	30	0	0	0	0	0	0	0	0	0	0	0
16:15	12	7	8	0	27	0	0	0	0	0	0	1	1	0	2	0
16:30	10	2	7	0	19	0	0	0	0	0	0	0	0	0	0	0
16:45	9	6	8	0	23	0	0	0	0	0	0	0	0	0	0	0
17:00	11	5	1	0	17	1	0	0	0	1	0	0	0	0	0	0
17:15	6	3	7	0	16	0	0	0	0	0	0	0	0	0	0	0
17:30	8	4	10	0	22	0	0	0	0	0	0	0	0	0	0	0
17:45	6	2	8	0	16	0	0	0	0	0	0	0	0	0	0	0
18:00	6	5	10	0	21	0	0	1	0	1	0	0	0	0	0	0
18:15	10	4	7	0	21	0	0	0	0	0	0	0	1	0	1	0
SUBTOTAL	93	45	74	0	212	1	0	1	0	2	0	1	2	0	3	0
GRAND TOTAL	166	63	102	0	331	5	1	5	0	11	0	1	4	0	5	0

Peak Hour Diagram

Specified Period
From: 06:30:00
To: 09:00:00

One Hour Peak
From: 08:00:00
To: 09:00:00

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Count Date: Apr 08, 2026

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: West Side Rd runs N/S

North Approach

	Out	In	Total
Cars	332	357	689
Trucks	36	25	61
Bicycles	0	0	0
	368	**382**	**750**

West Side Rd

Bicycles	0	0	0	0
Trucks	2	31	3	0
Cars	25	300	7	0
Totals	**27**	**331**	**10**	**0**

East Approach

	Out	In	Total
Cars	41	26	67
Trucks	2	4	6
Bicycles	1	0	1
	44	**30**	**74**

Northland Ave

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	3	35	**38**
0	1	11	**12**
2	3	19	**24**

Peds: 0

Peds: 0

Peds: 1

Peds: 2

Northland Ave

Totals	Cars	Trucks	Bicycles
0	0	0	0
24	23	1	0
9	9	0	0
11	9	1	1

West Approach

	Out	In	Total
Cars	65	40	105
Trucks	7	5	12
Bicycles	2	0	2
	74	**45**	**119**

West Side Rd

Totals	**9**	**320**	**8**	**0**
Cars	6	299	8	0
Trucks	3	21	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	313	328	641
Trucks	24	35	59
Bicycles	0	3	3
	337	**366**	**703**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Count Date: Apr 08, 2026
Period: 06:30 - 09:00

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

Start Time	North Approach West Side Rd						South Approach West Side Rd						East Approach Northland Ave						West Approach Northland Ave						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	2	67	5	0	0	74	5	82	0	0	0	87	3	0	6	0	0	9	11	3	5	0	0	19	189
08:15	3	94	8	0	0	105	1	86	3	0	1	90	4	2	5	0	1	11	4	1	9	0	0	14	220
08:30	0	90	5	0	0	95	0	85	3	0	1	88	1	3	9	0	0	13	11	7	4	0	0	22	218
08:45	5	80	9	0	0	94	3	67	2	0	0	72	3	4	4	0	0	11	12	1	6	0	0	19	196
Grand Total	**10**	**331**	**27**	**0**	**0**	**368**	**9**	**320**	**8**	**0**	**2**	**337**	**11**	**9**	**24**	**0**	**1**	**44**	**38**	**12**	**24**	**0**	**0**	**74**	**823**
Approach %	2.7	89.9	7.3	0		-	2.7	95	2.4	0		-	25	20.5	54.5	0		-	51.4	16.2	32.4	0		-	
Totals %	1.2	40.2	3.3	0		44.7	1.1	38.9	1	0		40.9	1.3	1.1	2.9	0		5.3	4.6	1.5	2.9	0		9	
PHF	**0.5**	**0.88**	**0.75**	**0**		**0.88**	**0.45**	**0.93**	**0.67**	**0**		**0.94**	**0.69**	**0.56**	**0.67**	**0**		**0.85**	**0.79**	**0.43**	**0.67**	**0**		**0.84**	**0.94**
Cars	7	300	25	0		332	6	299	8	0		313	9	9	23	0		41	35	11	19	0		65	751
% Cars	70	90.6	92.6	0		90.2	66.7	93.4	100	0		92.9	81.8	100	95.8	0		93.2	92.1	91.7	79.2	0		87.8	91.3
Trucks	3	31	2	0		36	3	21	0	0		24	1	0	1	0		2	3	1	3	0		7	69
% Trucks	30	9.4	7.4	0		9.8	33.3	6.6	0	0		7.1	9.1	0	4.2	0		4.5	7.9	8.3	12.5	0		9.5	8.4
Bicycles	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	2	0		2	3
% Bicycles	0	0	0	0		0	0	0	0	0		0	9.1	0	0	0		2.3	0	0	8.3	0		2.7	0.4
Peds					0	-					2	-					1	-					0	-	3
% Peds					0	-					66.7	-					33.3	-					0	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:30:00

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

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Count Date: Apr 08, 2026

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: West Side Rd runs N/S

North Approach

	Out	In	Total
Cars	488	383	871
Trucks	23	9	32
Bicycles	1	0	1
	512	**392**	**904**

West Side Rd

Bicycles	0	1	0	0
Trucks	0	22	1	0
Cars	54	414	20	0
Totals	**54**	**437**	**21**	**0**

East Approach

	Out	In	Total
Cars	39	53	92
Trucks	0	1	1
Bicycles	0	1	1
	39	**55**	**94**

Peds: 0

Northland Ave

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	46	**46**
1	0	22	**23**
1	0	31	**32**

Peds: 0

Peds: 2

Northland Ave

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	9	9	0	0
	18	18	0	0
	12	12	0	0

Peds: 1

West Approach

	Out	In	Total
Cars	99	76	175
Trucks	0	0	0
Bicycles	2	1	3
	101	**77**	**178**

Totals	**5**	**337**	**11**	**0**
Cars	4	328	11	0
Trucks	0	9	0	0
Bicycles	1	0	0	0

West Side Rd

South Approach

	Out	In	Total
Cars	343	457	800
Trucks	9	22	31
Bicycles	1	2	3
	353	**481**	**834**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Northland Ave & West Side Rd
Site Code: 2609700002
Count Date: Apr 08, 2026
Period: 16:00 - 18:30

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

Start Time	North Approach West Side Rd						South Approach West Side Rd						East Approach Northland Ave						West Approach Northland Ave						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	6	106	12	0	0	124	0	97	3	0	0	100	1	4	3	0	0	8	15	7	8	0	0	30	262
16:15	6	99	16	0	0	121	2	71	3	0	1	76	5	5	4	0	1	14	12	8	9	0	0	29	240
16:30	6	128	12	0	0	146	3	94	3	0	0	100	3	5	1	0	1	9	10	2	7	0	0	19	274
16:45	3	104	14	0	0	121	0	75	2	0	0	77	3	4	1	0	0	8	9	6	8	0	0	23	229
Grand Total	**21**	**437**	**54**	**0**	**0**	**512**	**5**	**337**	**11**	**0**	**1**	**353**	**12**	**18**	**9**	**0**	**2**	**39**	**46**	**23**	**32**	**0**	**0**	**101**	**1005**
Approach %	4.1	85.4	10.5	0		-	1.4	95.5	3.1	0		-	30.8	46.2	23.1	0		-	45.5	22.8	31.7	0		-	
Totals %	2.1	43.5	5.4	0		50.9	0.5	33.5	1.1	0		35.1	1.2	1.8	0.9	0		3.9	4.6	2.3	3.2	0		10	
PHF	**0.88**	**0.85**	**0.84**	**0**		**0.88**	**0.42**	**0.87**	**0.92**	**0**		**0.88**	**0.6**	**0.9**	**0.56**	**0**		**0.7**	**0.77**	**0.72**	**0.89**	**0**		**0.84**	**0.92**
Cars	20	414	54	0		488	4	328	11	0		343	12	18	9	0		39	46	22	31	0		99	969
% Cars	95.2	94.7	100	0		95.3	80	97.3	100	0		97.2	100	100	100	0		100	100	95.7	96.9	0		98	96.4
Trucks	1	22	0	0		23	0	9	0	0		9	0	0	0	0		0	0	0	0	0		0	32
% Trucks	4.8	5	0	0		4.5	0	2.7	0	0		2.5	0	0	0	0		0	0	0	0	0		0	3.2
Bicycles	0	1	0	0		1	1	0	0	0		1	0	0	0	0		0	0	1	1	0		2	4
% Bicycles	0	0.2	0	0		0.2	20	0	0	0		0.3	0	0	0	0		0	0	4.3	3.1	0		2	0.4
Peds					0	-					1	-					2	-					0	-	3
% Peds					0	-					33.3	-					66.7	-					0	-	

Signal Code: H58NRT

Intersection: HIGHWAY #58 & NORTHLAND AVE./CANADIAN TIRE

Municipality: ptcolborne

Owner: MTO

Last Modified: 2026-03-26 3:49:36 PM

Timing Parameters	NBD & SBD HWY 58	EBD & WBD NORTHLAND	n/a	n/a	n/a	n/a
Min Green	20	10	0	0	0	0
Walk	26	17	0	0	0	0
Ped Clearance	15	31	0	0	0	0
Vehicle Ext.	4.5	3	0	0	0	0
Max Green	41	30	0	0	0	0
Yellow	5	4	0	0	0	0
All Red	2	2.2	0	0	0	0

		Offset
Minimum Cycle	43.2	0
Pedestrian Cycle	102.2	
Maximum Cycle	84.2	0
Operation	SA	

Installed On:	2000-06-27
Count Date:	--/--/----

FA = Fully Actuated SA = Semi Actuated FT = Fixed Time

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Appendix D

Background Development Excerpts

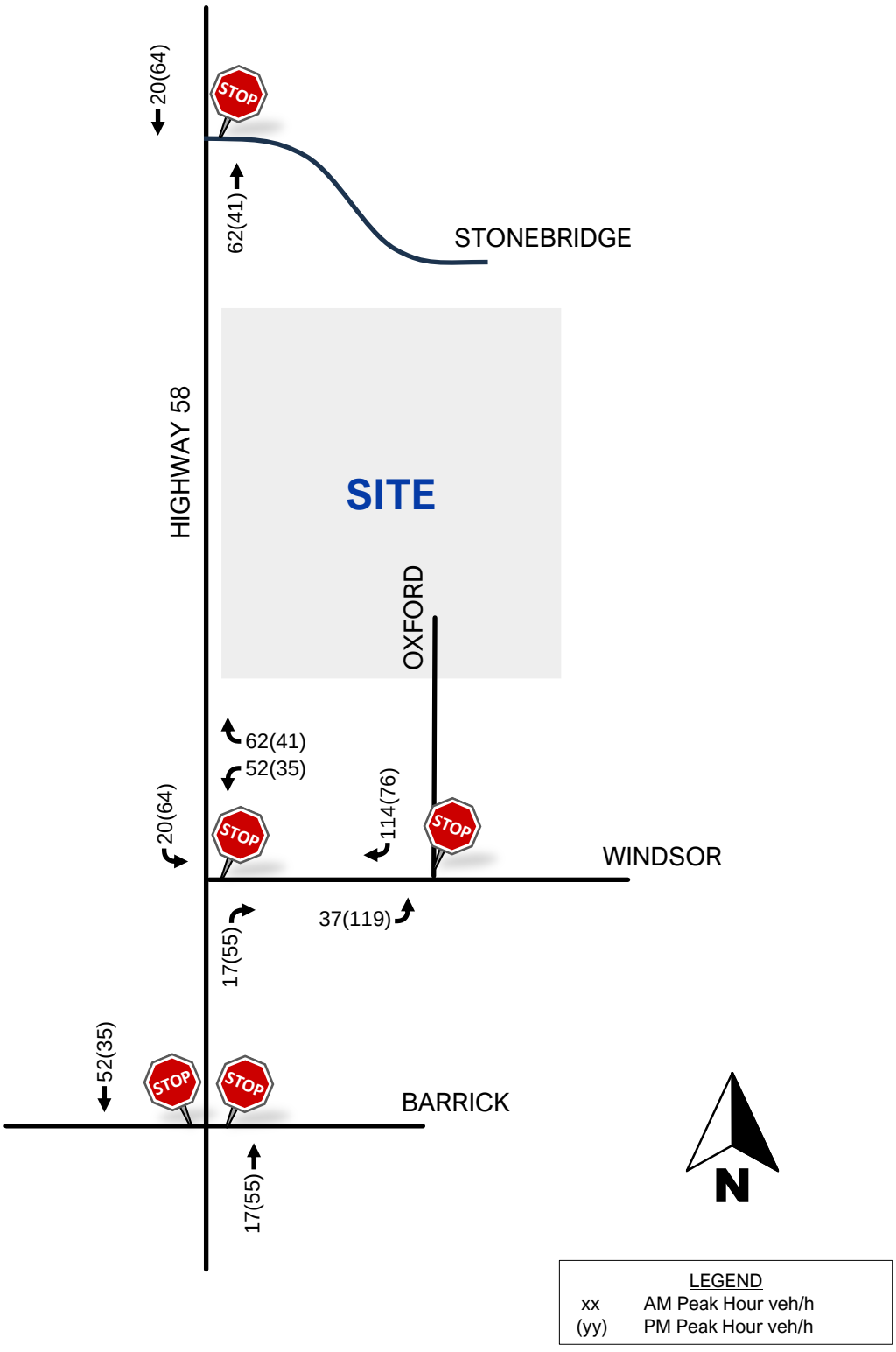
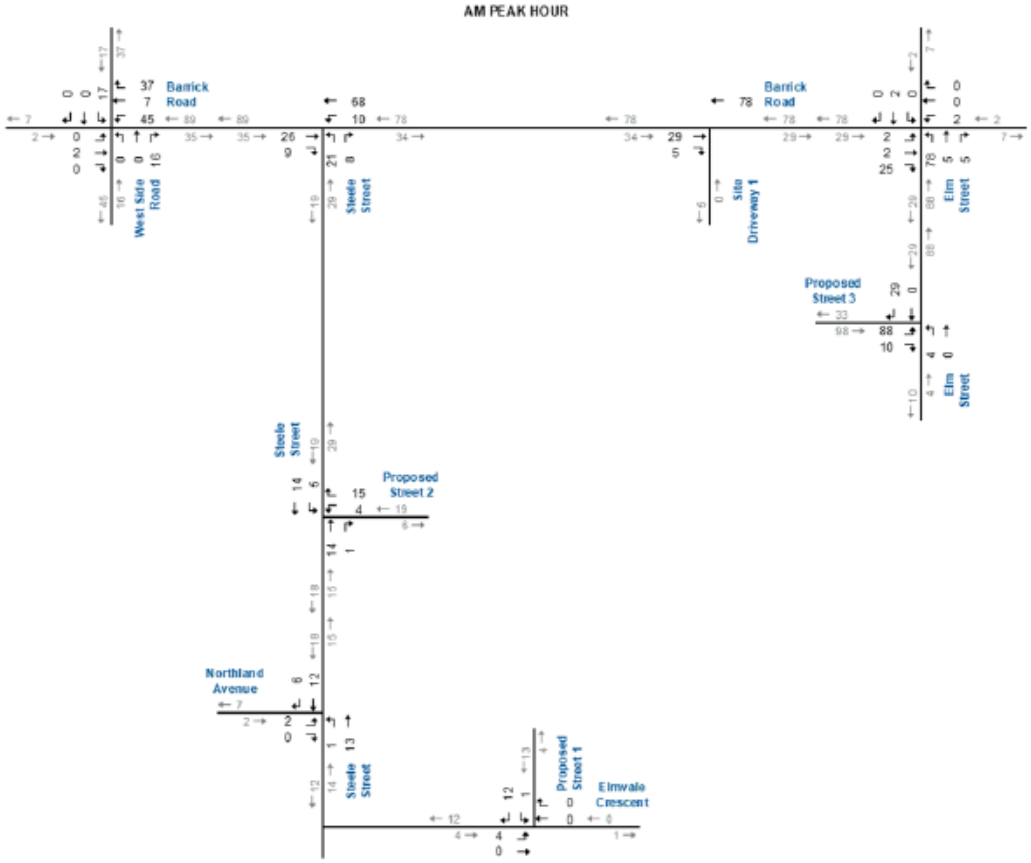


Figure 6-1 – Projected Site-Generated Trips

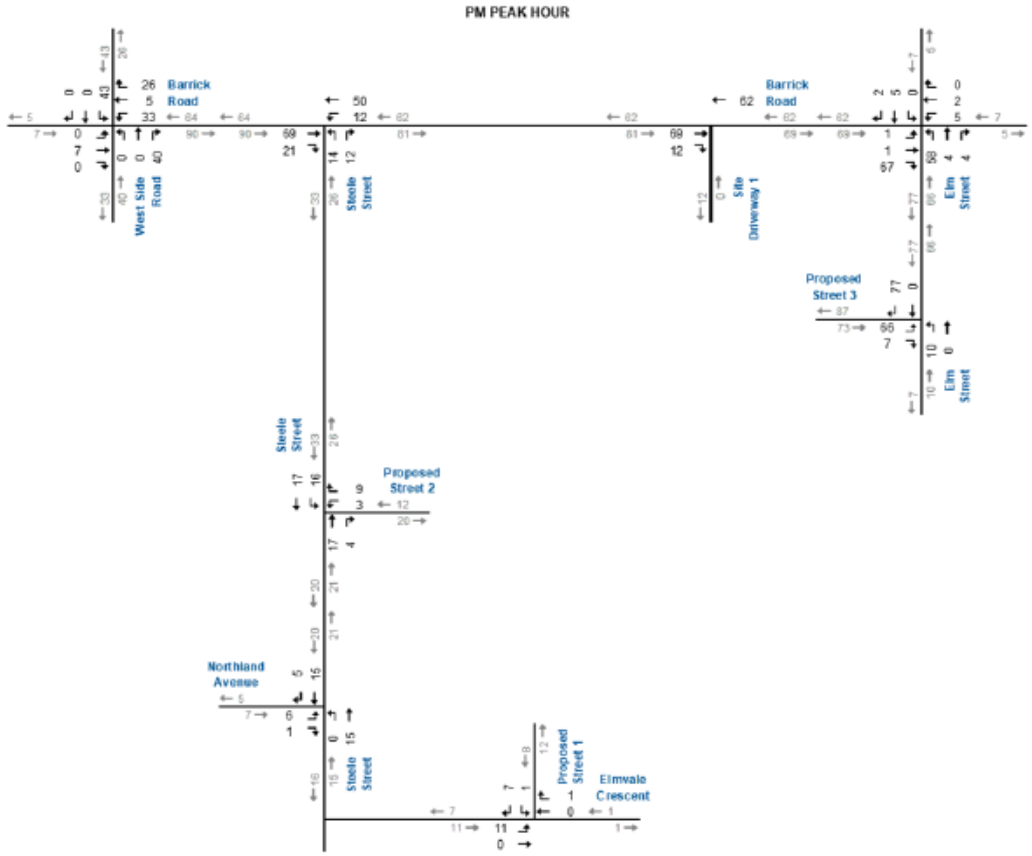


NTS

Forecast Site Generated Traffic – AM Peak Hour

Elm Street Development, Port Colborne
240031

Figure 3.2A

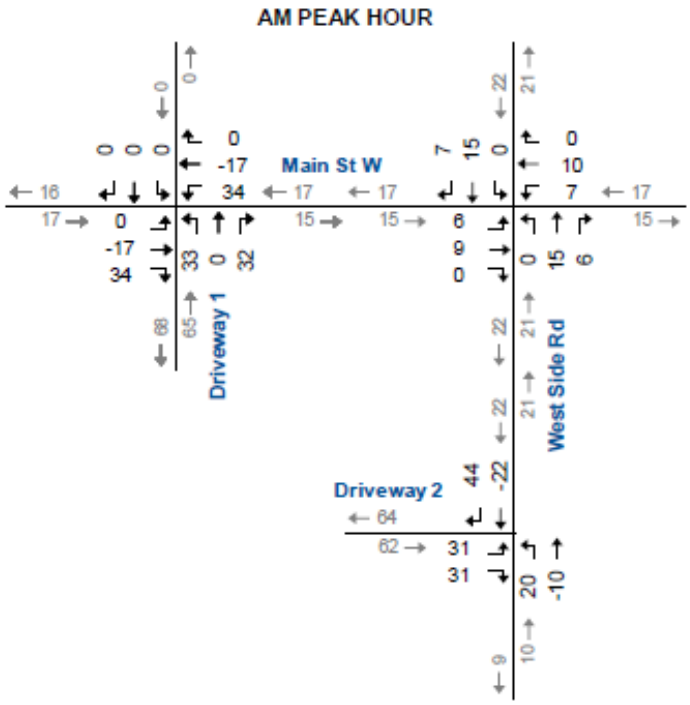


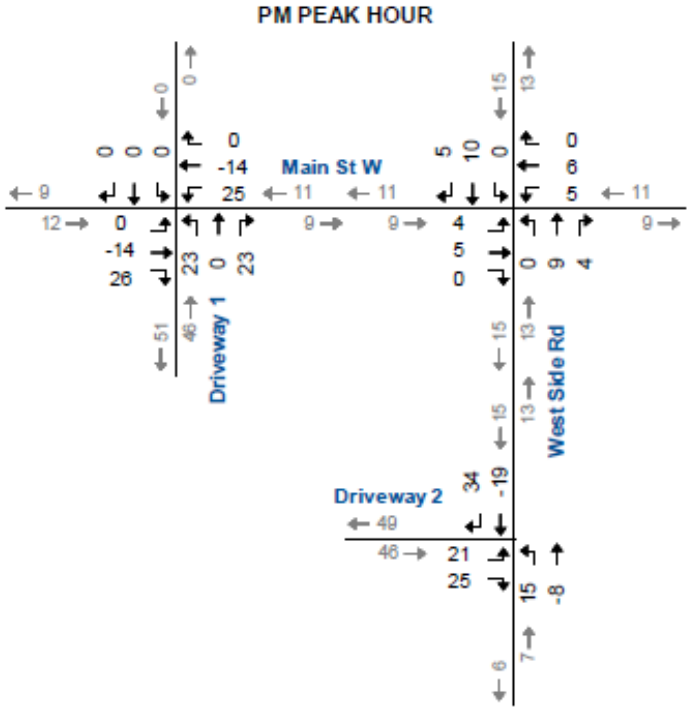
NTS

Forecast Site Generated Traffic – PM Peak Hour

Elm Street Development, Port Colborne
240031

Figure 3.2B



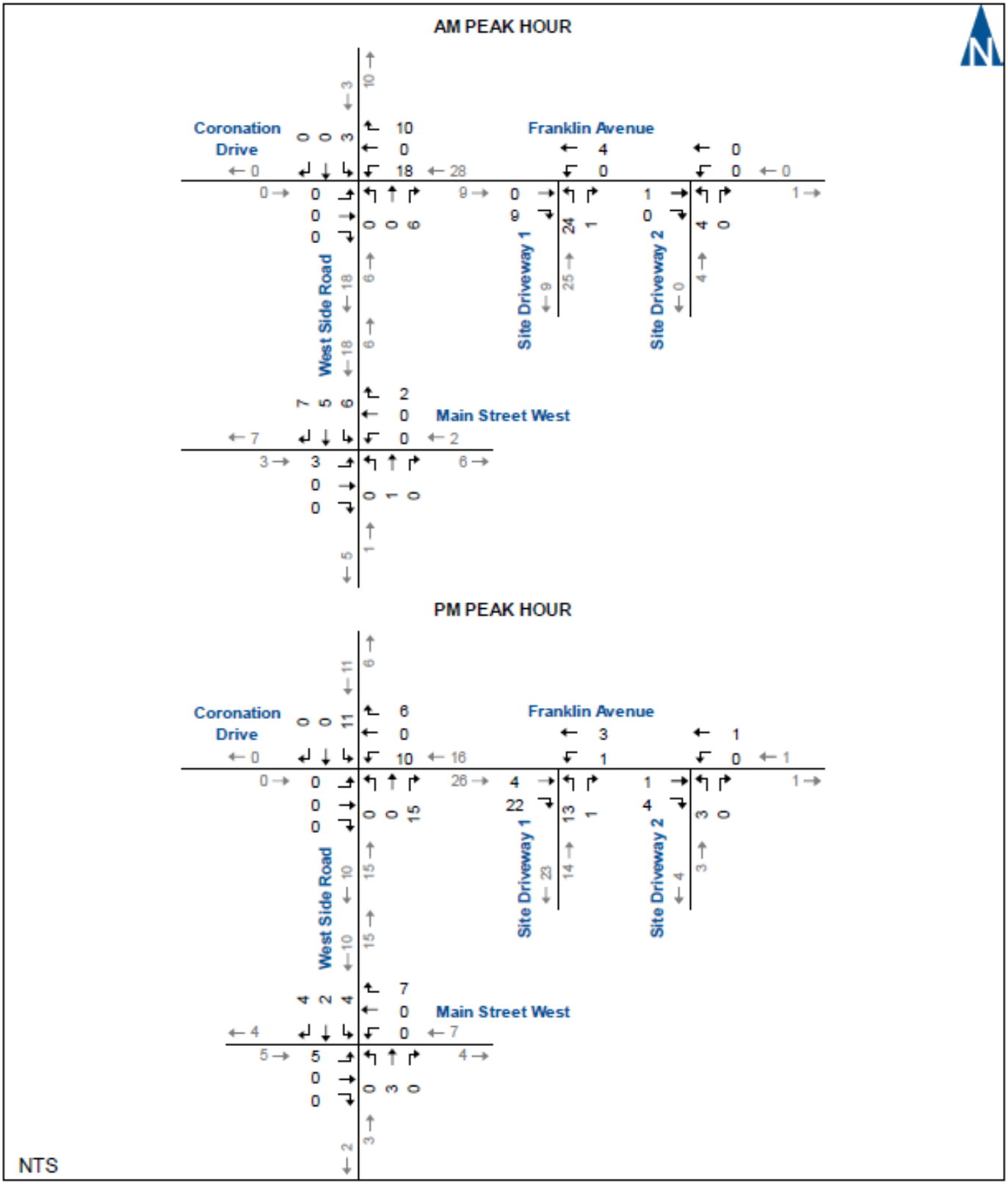


NTS

Site Generated Volumes (Weekday Peak Hours)

45-53 West Side Road, Port Colborne, TIA
230097

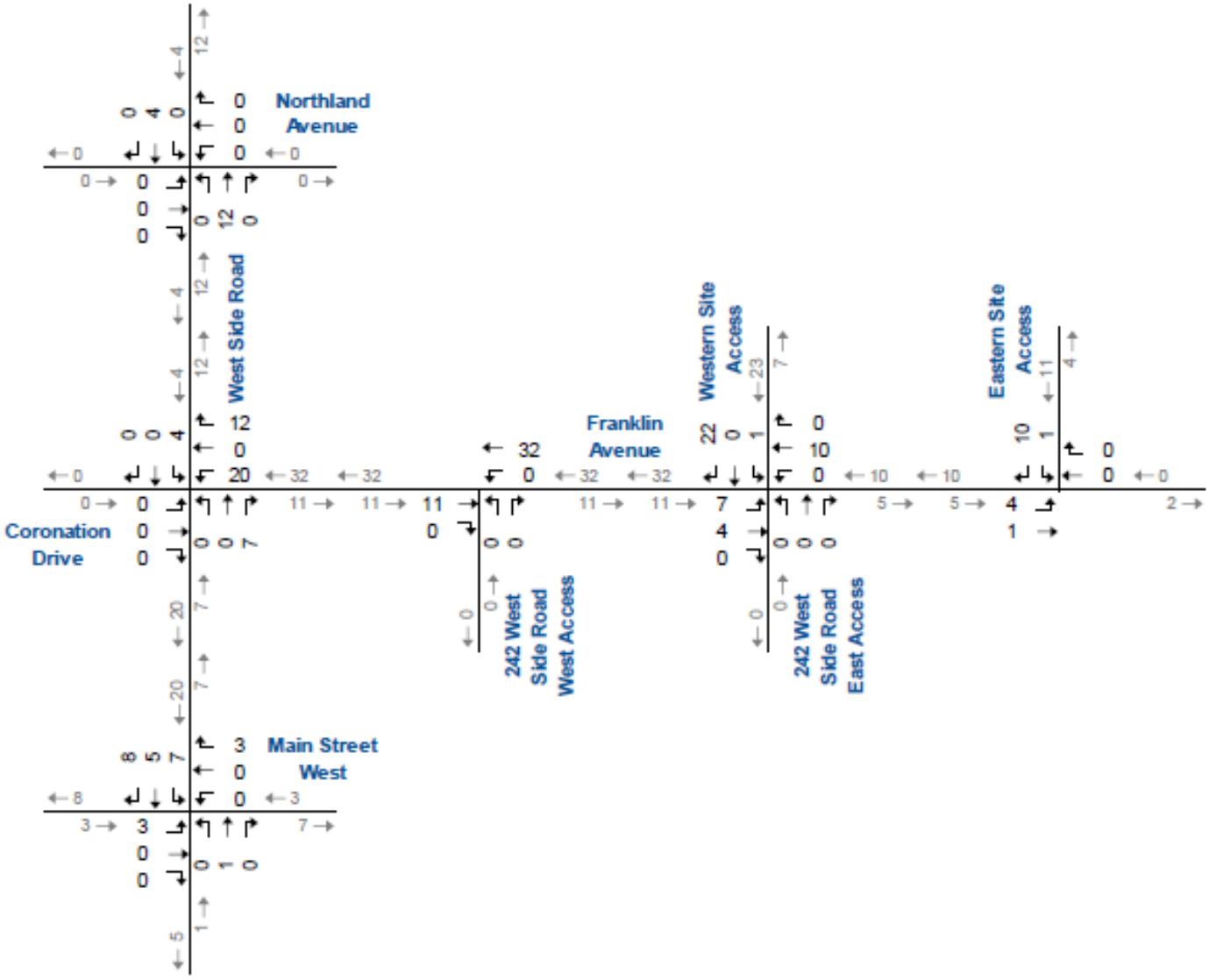
Figure 3.2A



Site Generated Traffic

242-246 West Side Road
230107

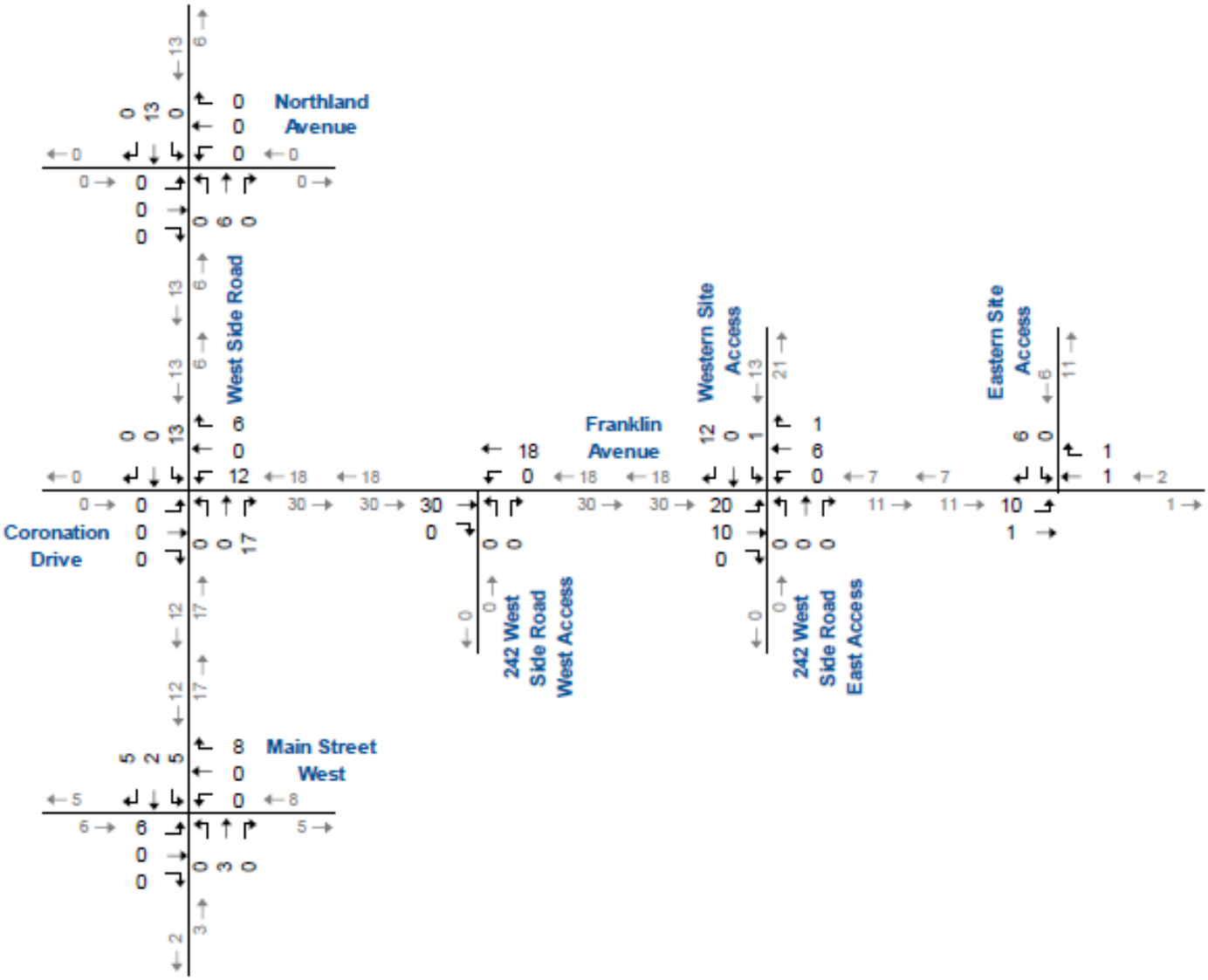
Figure 3.2



Site-Generated Traffic Volumes (AM Peak Hour)

250 West Side Road, Port Colborne TIS Update
250223

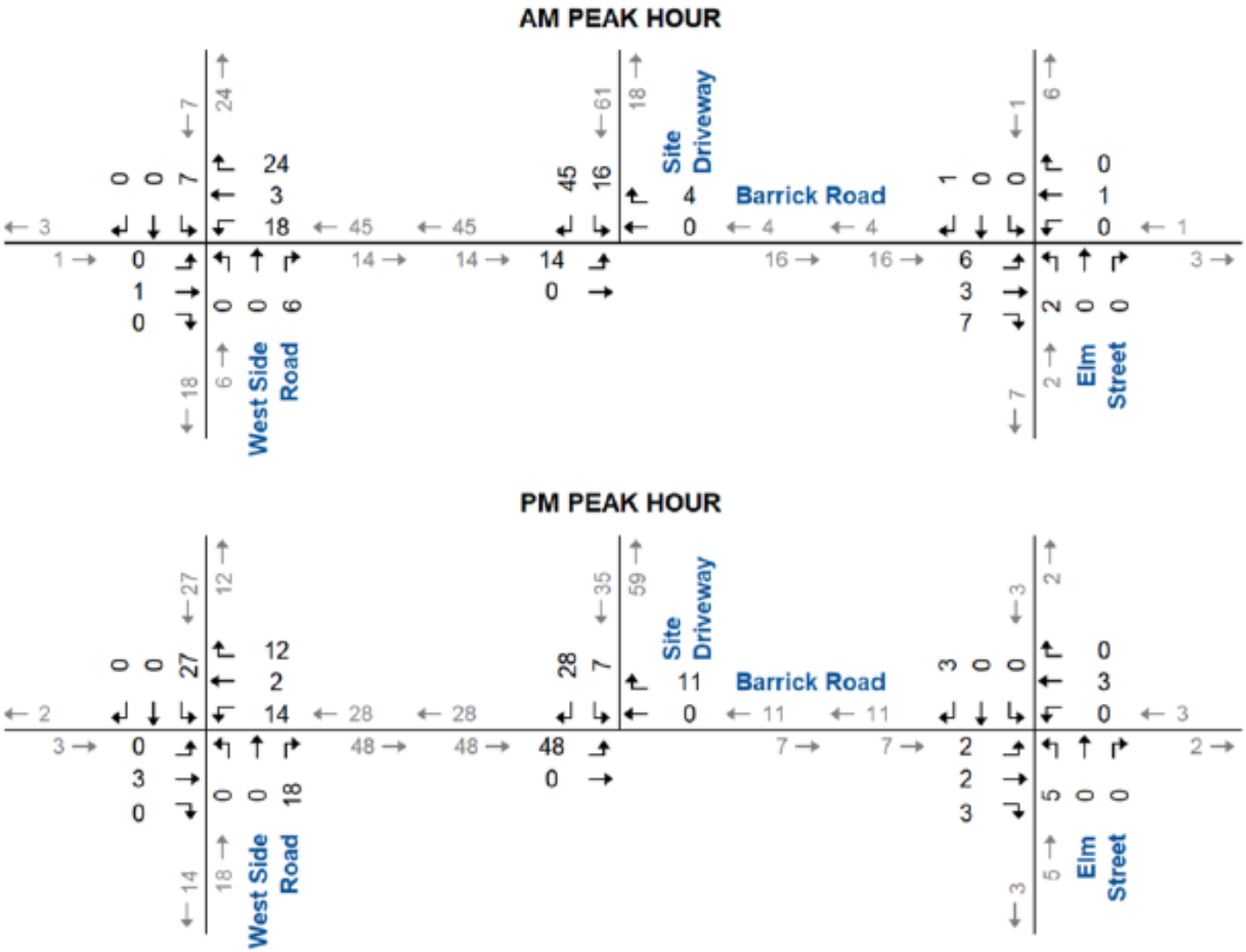
Figure 3.2



Site-Generated Traffic Volumes (PM Peak Hour)

250 West Side Road, Port Colborne TIS Update
250223

Figure 3.3



NTS

Forecast Site Generated Traffic

Barrick Road & Highway 58
230423

Figure 3.2

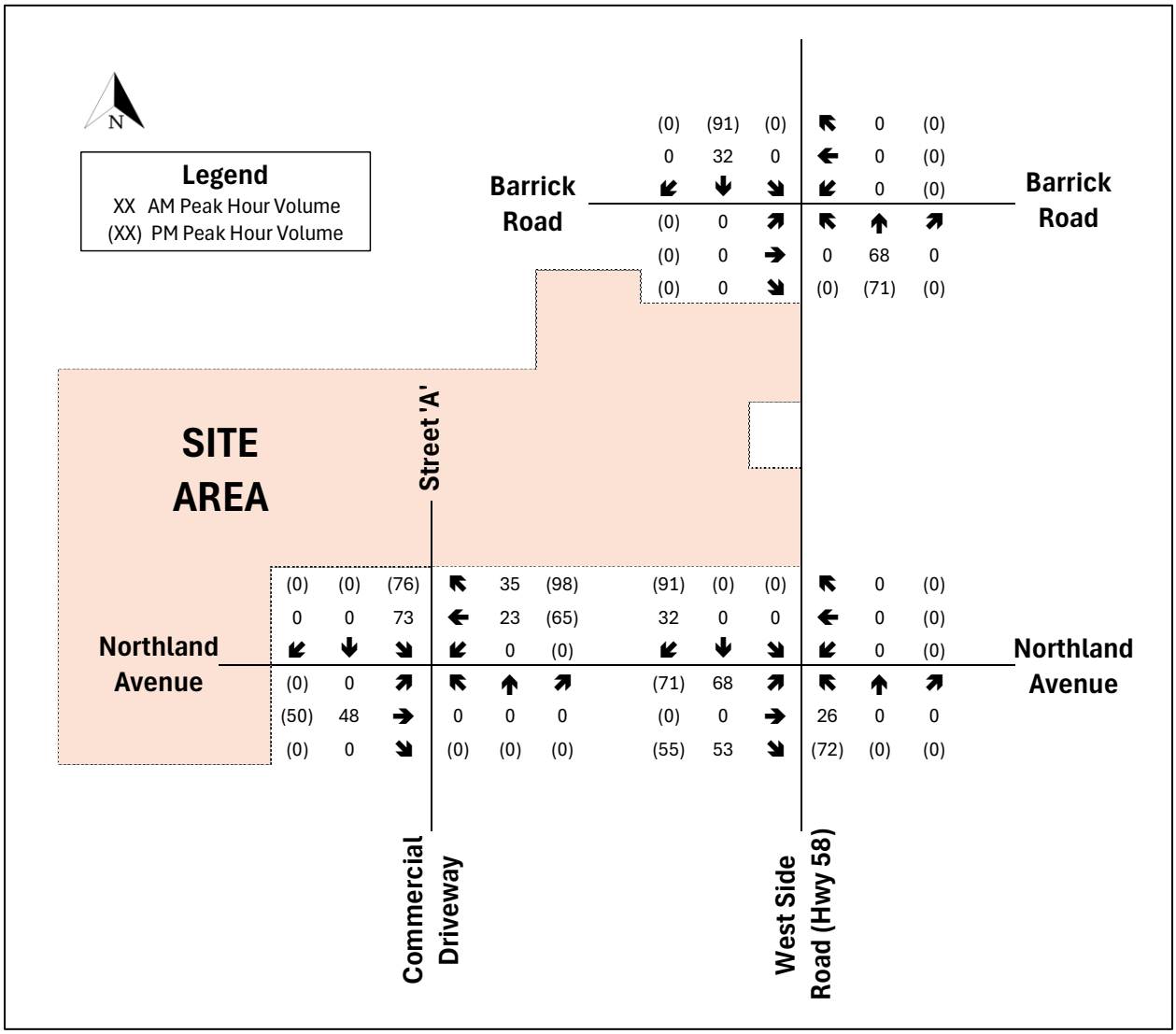
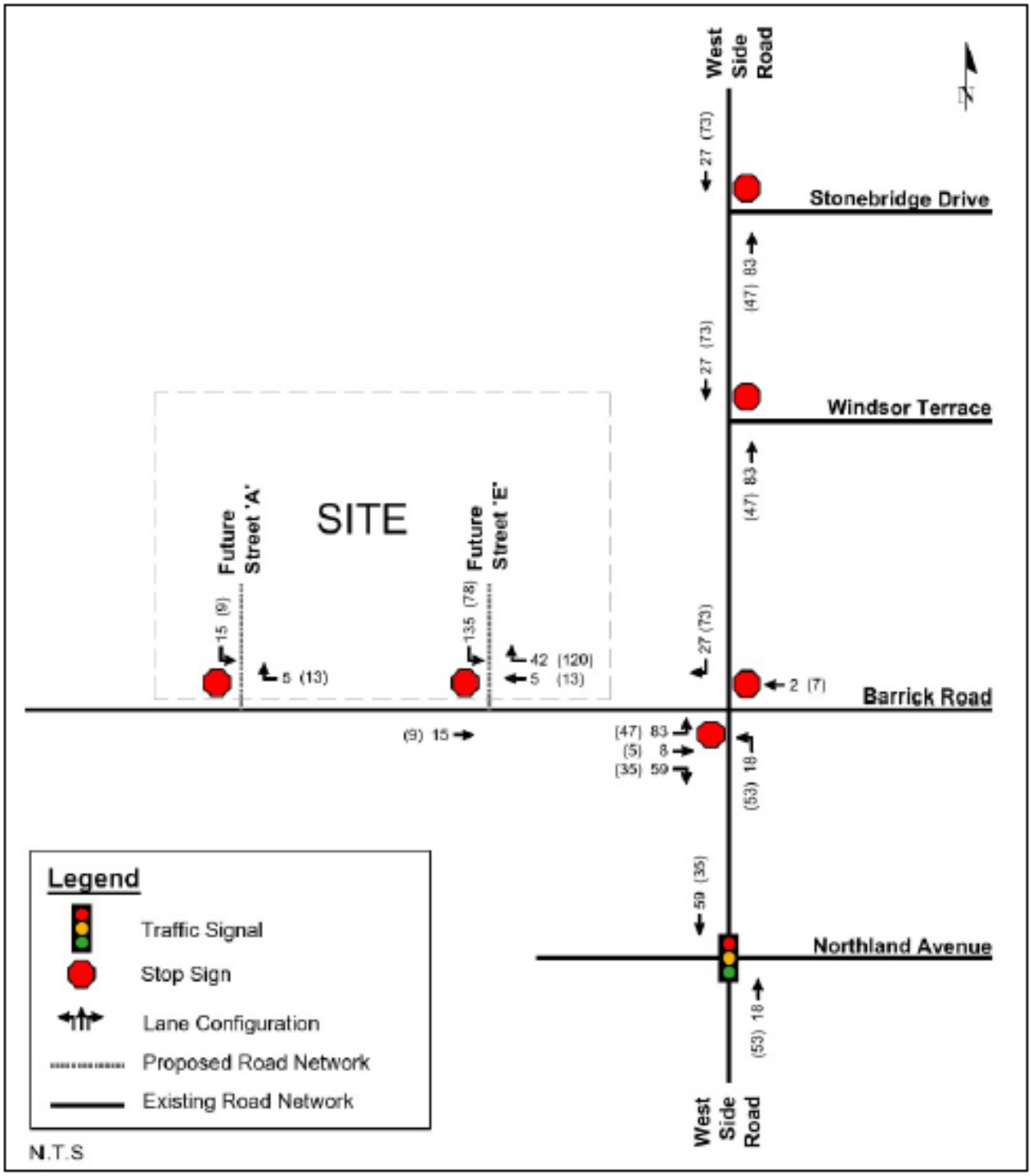


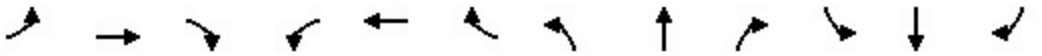
Figure 1: Site Generated Traffic

Figure 10: Site Traffic Volumes



Appendix E

Synchro Outputs



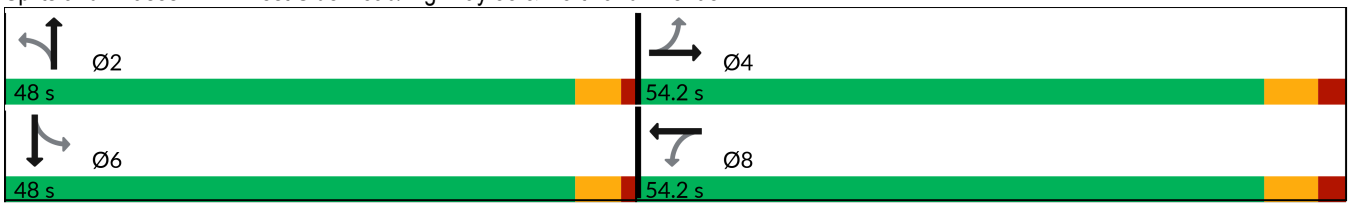
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	12	24	11	9	24	9	320	8	10	331	27
Future Volume (vph)	38	12	24	11	9	24	9	320	8	10	331	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00			1.00		1.00		
Frt		0.956			0.927			0.996			0.989	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1626	0	0	1685	0	1372	3402	0	1404	3317	0
Flt Permitted		0.815			0.890		0.526			0.542		
Satd. Flow (perm)	0	1359	0	0	1517	0	760	3402	0	800	3317	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			26			3			10	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	40	13	26	12	10	26	10	340	9	11	352	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	48	0	10	349	0	11	381	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.2			10.2		47.5	47.5		47.5	47.5	
Actuated g/C Ratio		0.16			0.16		0.74	0.74		0.74	0.74	
v/c Ratio		0.33			0.18		0.02	0.14		0.02	0.16	
Control Delay (s/veh)		22.0			16.2		3.7	3.6		3.6	3.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.0			16.2		3.7	3.6		3.6	3.6	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		22.0			16.2			3.6			3.6	
Approach LOS		C			B			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 102.2
Actuated Cycle Length: 64.1
Natural Cycle: 100
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.33
Intersection Signal Delay (s/veh): 5.9 Intersection LOS: A
Intersection Capacity Utilization 53.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



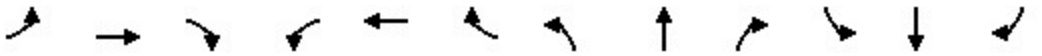
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	48	10	349	11	381
v/c Ratio	0.33	0.18	0.02	0.14	0.02	0.16
Control Delay (s/veh)	22.0	16.2	3.7	3.6	3.6	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	16.2	3.7	3.6	3.6	3.6
Queue Length 50th (m)	5.6	2.3	0.3	6.3	0.4	6.8
Queue Length 95th (m)	16.3	10.2	1.5	10.4	1.6	11.3
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1023	1142	562	2519	592	2458
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.04	0.02	0.14	0.02	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	12	24	11	9	24	9	320	8	10	331	27
Future Volume (vph)	38	12	24	11	9	24	9	320	8	10	331	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1626			1684		1372	3402		1403	3315	
Flt Permitted		0.82			0.89		0.53	1.00		0.54	1.00	
Satd. Flow (perm)		1359			1517		760	3402		801	3315	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	40	13	26	12	10	26	10	340	9	11	352	29
RTOR Reduction (vph)	0	23	0	0	23	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	56	0	0	25	0	10	348	0	11	378	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.1			8.1		46.6	46.6		46.6	46.6	
Effective Green, g (s)		8.1			8.1		46.6	46.6		46.6	46.6	
Actuated g/C Ratio		0.12			0.12		0.71	0.71		0.71	0.71	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		168			187		541	2424		570	2362	
v/s Ratio Prot								0.10			c0.11	
v/s Ratio Perm		c0.04			0.02		0.01			0.01		
v/c Ratio		0.33			0.13		0.02	0.14		0.02	0.16	
Uniform Delay, d1		26.2			25.5		2.7	3.0		2.7	3.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2			0.3		0.1	0.1		0.1	0.1	
Delay (s)		27.4			25.9		2.8	3.1		2.8	3.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		27.4			25.9			3.1			3.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	10.7
Intersection Capacity Utilization	53.5%	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)	20	5	15	21	3	39	6	369	17	32	324	2
Future Volume (vph)	20	5	15	21	3	39	6	369	17	32	324	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.950			0.917			0.994			0.999	
Flt Protected		0.975			0.983		0.950			0.950		
Satd. Flow (prot)	0	1779	0	0	1679	0	1560	3370	0	1674	3287	0
Flt Permitted		0.975			0.983		0.950			0.950		
Satd. Flow (perm)	0	1779	0	0	1679	0	1560	3370	0	1674	3287	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	22	5	16	23	3	42	7	401	18	35	352	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	68	0	7	419	0	35	354	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

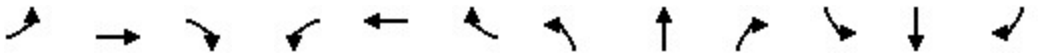
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	15	21	3	39	6	369	17	32	324	2
Future Volume (Veh/h)	20	5	15	21	3	39	6	369	17	32	324	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	5	16	23	3	42	7	401	18	35	352	2
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	683	857	178	689	849	211	355			419		
vC1, stage 1 conf vol	424	424		424	424							
vC2, stage 2 conf vol	259	433		265	425							
vCu, unblocked vol	683	857	178	689	849	211	355			419		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	96	99	98	95	99	95	99			97		
cM capacity (veh/h)	490	456	840	493	402	801	1098			1088		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	68	7	267	152	35	235	119
Volume Left	22	23	7	0	0	35	0	0
Volume Right	16	42	0	0	18	0	0	2
cSH	574	638	1098	1700	1700	1088	1700	1700
Volume to Capacity	0.07	0.11	0.00*	0.16	0.09	0.03	0.14	0.07
Queue Length 95th (m)	1.8	2.7	0.1	0.0	0.0	0.8	0.0	0.0
Control Delay (s/veh)	11.8	11.3	8.3	0.0	0.0	8.4	0.0	0.0
Lane LOS	B	B	A			A		
Approach Delay (s/veh)	11.8	11.3	0.1			0.8		
Approach LOS	B	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	28.6%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.

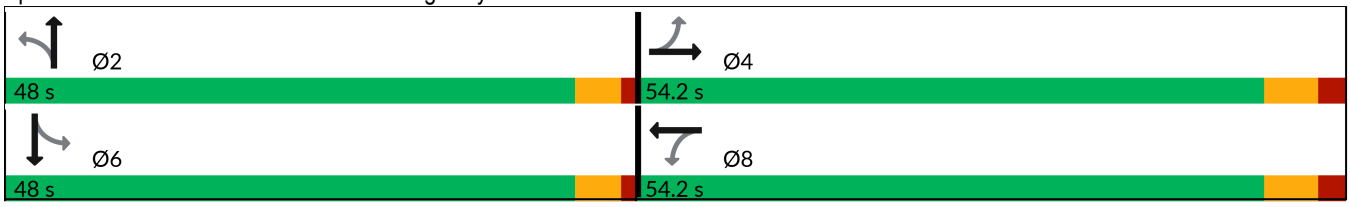


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	23	32	12	18	9	5	337	11	21	437	54
Future Volume (vph)	46	23	32	12	18	9	5	337	11	21	437	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.957			0.969			0.995			0.983	
Flt Protected		0.978			0.985		0.950			0.950		
Satd. Flow (prot)	0	1798	0	0	1834	0	1825	3529	0	1738	3435	0
Flt Permitted		0.833			0.894		0.453			0.528		
Satd. Flow (perm)	0	1531	0	0	1664	0	870	3529	0	966	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			10			4			16	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	50	25	35	13	20	10	5	366	12	23	475	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	43	0	5	378	0	23	534	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.4			10.4		47.5	47.5		47.5	47.5	
Actuated g/C Ratio		0.16			0.16		0.74	0.74		0.74	0.74	
v/c Ratio		0.40			0.16		0.01	0.15		0.03	0.21	
Control Delay (s/veh)		23.2			20.7		3.8	3.7		3.9	3.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.2			20.7		3.8	3.7		3.9	3.8	
LOS		C			C		A	A		A	A	
Approach Delay (s/veh)		23.2			20.7			3.7			3.8	
Approach LOS		C			C			A			A	

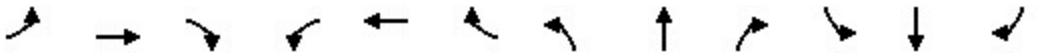
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 64.3			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay (s/veh): 6.4		Intersection LOS: A	
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



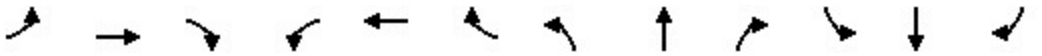
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	110	43	5	378	23	534
v/c Ratio	0.40	0.16	0.01	0.15	0.03	0.21
Control Delay (s/veh)	23.2	20.7	3.8	3.7	3.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.2	20.7	3.8	3.7	3.9	3.8
Queue Length 50th (m)	8.5	3.4	0.2	6.8	0.8	9.9
Queue Length 95th (m)	21.1	11.0	1.1	12.0	2.8	16.7
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1150	1244	642	2606	713	2539
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.03	0.01	0.15	0.03	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	23	32	12	18	9	5	337	11	21	437	54
Future Volume (vph)	46	23	32	12	18	9	5	337	11	21	437	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.97		1.00	1.00		1.00	0.98	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1798			1833		1825	3530		1738	3437	
Flt Permitted		0.83			0.89		0.45	1.00		0.53	1.00	
Satd. Flow (perm)		1532			1663		871	3530		965	3437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	25	35	13	20	10	5	366	12	23	475	59
RTOR Reduction (vph)	0	27	0	0	9	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	83	0	0	34	0	5	377	0	23	529	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.3			8.3		46.6	46.6		46.6	46.6	
Effective Green, g (s)		8.3			8.3		46.6	46.6		46.6	46.6	
Actuated g/C Ratio		0.13			0.13		0.71	0.71		0.71	0.71	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		193			210		618	2507		685	2441	
v/s Ratio Prot								0.11			c0.15	
v/s Ratio Perm		c0.05			0.02		0.01			0.02		
v/c Ratio		0.43			0.16		0.01	0.15		0.03	0.22	
Uniform Delay, d1		26.5			25.6		2.8	3.1		2.8	3.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5			0.4		0.0	0.1		0.1	0.2	
Delay (s)		28.0			25.9		2.8	3.2		2.9	3.5	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		28.0			25.9			3.2			3.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



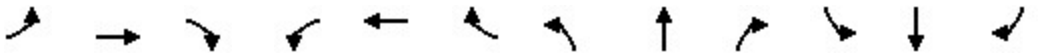
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2	12	29	10	41	13	358	26	53	470	15
Future Volume (vph)	9	2	12	29	10	41	13	358	26	53	470	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.930			0.931			0.990			0.995	
Flt Protected		0.980			0.982		0.950			0.950		
Satd. Flow (prot)	0	1751	0	0	1713	0	1825	3506	0	1789	3464	0
Flt Permitted		0.980			0.982		0.950			0.950		
Satd. Flow (perm)	0	1751	0	0	1713	0	1825	3506	0	1789	3464	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	10	2	13	32	11	45	14	389	28	58	511	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	88	0	14	417	0	58	527	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.0%		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)	9	2	12	29	10	41	13	358	26	53	470	15
Future Volume (Veh/h)	9	2	12	29	10	41	13	358	26	53	470	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	2	13	32	11	45	14	389	28	58	511	16
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	911	1082	267	818	1076	210	529			417		
vC1, stage 1 conf vol	637	637		431	431							
vC2, stage 2 conf vol	274	445		387	645							
vCu, unblocked vol	911	1082	267	818	1076	210	529			417		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	98	93	97	94	99			95		
cM capacity (veh/h)	371	377	736	433	381	802	1046			1138		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	25	88	14	259	158	58	341	186
Volume Left	10	32	14	0	0	58	0	0
Volume Right	13	45	0	0	28	0	0	16
cSH	501	554	1046	1700	1700	1138	1700	1700
Volume to Capacity	0.05	0.16	0.01	0.15	0.09	0.05	0.20	0.11
Queue Length 95th (m)	1.2	4.3	0.3	0.0	0.0	1.2	0.0	0.0
Control Delay (s/veh)	12.6	12.7	8.5	0.0	0.0	8.3	0.0	0.0
Lane LOS	B	B	A			A		
Approach Delay (s/veh)	12.6	12.7	0.3			0.8		
Approach LOS	B	B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	33.0%	ICU Level of Service		A
Analysis Period (min)	15			

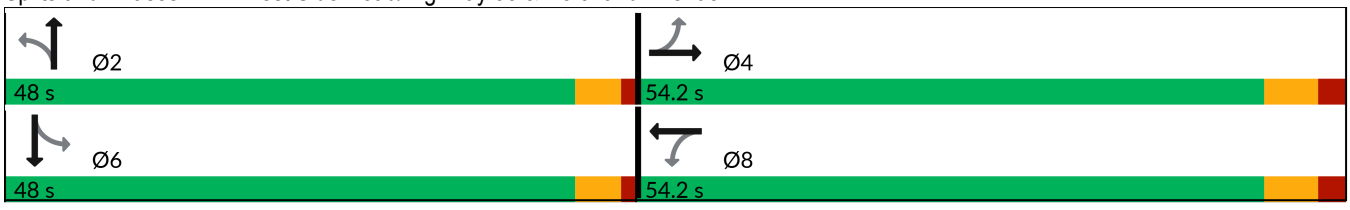


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	12	78	11	9	25	35	433	8	10	557	60
Future Volume (vph)	108	12	78	11	9	25	35	433	8	10	557	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.926			0.997			0.985	
Flt Protected		0.973			0.988		0.950			0.950		
Satd. Flow (prot)	0	1601	0	0	1683	0	1372	3404	0	1404	3304	0
Flt Permitted		0.803			0.910		0.389			0.483		
Satd. Flow (perm)	0	1322	0	0	1550	0	562	3404	0	713	3304	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			27			2			14	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	115	13	83	12	10	27	37	461	9	11	593	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	49	0	37	470	0	11	657	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.68			0.14		0.10	0.22		0.02	0.31	
Control Delay (s/veh)		31.1			13.5		7.1	6.2		6.3	6.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.1			13.5		7.1	6.2		6.3	6.7	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.1			13.5			6.3			6.6	
Approach LOS		C			B			A			A	

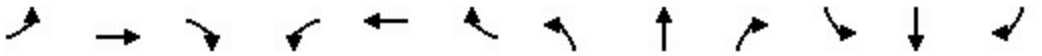
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 68.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 10.3		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	211	49	37	470	11	657
v/c Ratio	0.68	0.14	0.10	0.22	0.02	0.31
Control Delay (s/veh)	31.1	13.5	7.1	6.2	6.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.1	13.5	7.1	6.2	6.3	6.7
Queue Length 50th (m)	19.7	2.3	1.6	11.2	0.4	16.4
Queue Length 95th (m)	39.7	9.6	6.2	22.7	2.6	32.3
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	937	1092	356	2159	452	2100
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.04	0.10	0.22	0.02	0.31

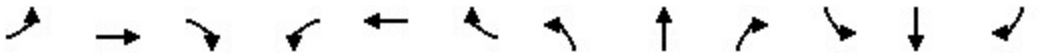
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	12	78	11	9	25	35	433	8	10	557	60
Future Volume (vph)	108	12	78	11	9	25	35	433	8	10	557	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1602			1682		1372	3404		1403	3306	
Flt Permitted		0.80			0.91		0.39	1.00		0.48	1.00	
Satd. Flow (perm)		1322			1549		561	3404		713	3306	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	13	83	12	10	27	37	461	9	11	593	64
RTOR Reduction (vph)	0	34	0	0	21	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	177	0	0	28	0	37	469	0	11	652	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Effective Green, g (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		277			324		356	2160		452	2098	
v/s Ratio Prot								0.14			c0.20	
v/s Ratio Perm		c0.13			0.02		0.07			0.02		
v/c Ratio		0.64			0.09		0.10	0.22		0.02	0.31	
Uniform Delay, d1		24.8			21.9		4.9	5.3		4.7	5.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.8			0.1		0.6	0.2		0.1	0.4	
Delay (s)		29.6			22.0		5.5	5.5		4.8	6.1	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.6			22.0			5.5			6.1	
Approach LOS		C			C			A			A	

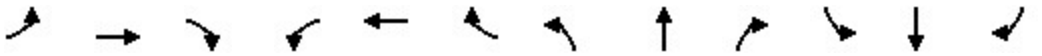
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	16	75	85	15	102	24	512	40	57	460	29
Future Volume (vph)	104	16	75	85	15	102	24	512	40	57	460	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.932			0.989			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1677	0	1560	3360	0	1674	3278	0
Flt Permitted		0.974			0.979		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1677	0	1560	3360	0	1674	3278	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	113	17	82	92	16	111	26	557	43	62	500	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	219	0	26	600	0	62	532	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		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)	104	16	75	85	15	102	24	512	40	57	460	29
Future Volume (Veh/h)	104	16	75	85	15	102	24	512	40	57	460	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	17	82	92	16	111	26	557	43	62	500	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1092	1293	267	1095	1288	301	533			600		
vC1, stage 1 conf vol	641	641		631	631							
vC2, stage 2 conf vol	451	652		465	657							
vCu, unblocked vol	1092	1293	267	1095	1288	301	533			600		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	62	95	89	70	94	84	97			93		
cM capacity (veh/h)	296	318	737	309	272	700	932			927		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	212	219	26	371	229	62	333	199
Volume Left	113	92	26	0	0	62	0	0
Volume Right	82	111	0	0	43	0	0	32
cSH	388	426	932	1700	1700	927	1700	1700
Volume to Capacity	0.55	0.51	0.03	0.22	0.13	0.07	0.20	0.12
Queue Length 95th (m)	24.0	21.8	0.7	0.0	0.0	1.6	0.0	0.0
Control Delay (s/veh)	24.9	22.1	9.0	0.0	0.0	9.2	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s/veh)	24.9	22.1	0.4			1.0		
Approach LOS	C	C						

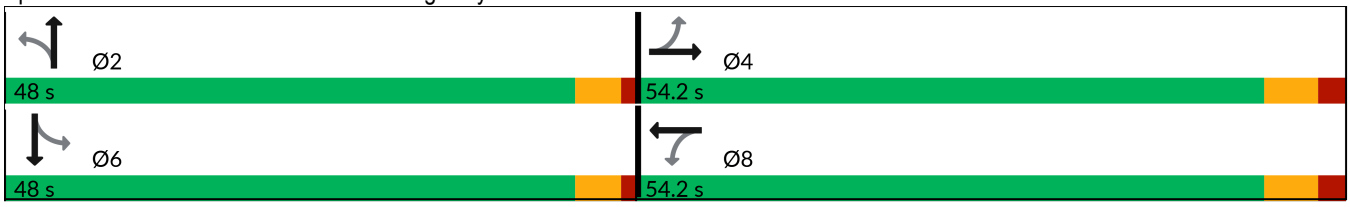
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	24	88	12	19	9	77	552	11	22	610	147
Future Volume (vph)	119	24	88	12	19	9	77	552	11	22	610	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.969			0.997			0.971	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1776	0	0	1834	0	1825	3535	0	1738	3407	0
Flt Permitted		0.815			0.891		0.312			0.409		
Satd. Flow (perm)	0	1484	0	0	1659	0	599	3535	0	748	3407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			10			2			36	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	129	26	96	13	21	10	84	600	12	24	663	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	251	0	0	44	0	84	612	0	24	823	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.3			15.3		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
v/c Ratio		0.70			0.12		0.22	0.28		0.05	0.38	
Control Delay (s/veh)		31.8			18.0		8.9	6.9		6.8	7.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.8			18.0		8.9	6.9		6.8	7.3	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.8			18.0			7.1			7.3	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.7			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

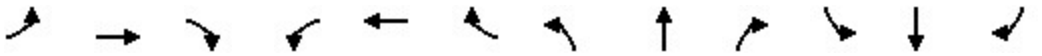


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	251	44	84	612	24	823
v/c Ratio	0.70	0.12	0.22	0.28	0.05	0.38
Control Delay (s/veh)	31.8	18.0	8.9	6.9	6.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.8	18.0	8.9	6.9	6.8	7.3
Queue Length 50th (m)	25.1	3.5	4.1	16.2	1.1	22.5
Queue Length 95th (m)	46.9	10.5	13.3	31.0	4.5	42.3
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1038	1149	374	2214	468	2146
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.04	0.22	0.28	0.05	0.38

Intersection Summary

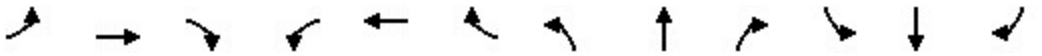
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	24	88	12	19	9	77	552	11	22	610	147
Future Volume (vph)	119	24	88	12	19	9	77	552	11	22	610	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776			1835		1825	3535		1738	3406	
Flt Permitted		0.82			0.89		0.31	1.00		0.41	1.00	
Satd. Flow (perm)		1485			1659		600	3535		748	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	26	96	13	21	10	84	600	12	24	663	160
RTOR Reduction (vph)	0	32	0	0	8	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	219	0	0	36	0	84	611	0	24	810	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.3			15.3		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.3			15.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		325			364		376	2216		468	2135	
v/s Ratio Prot								0.17			c0.24	
v/s Ratio Perm		c0.15			0.02		0.14			0.03		
v/c Ratio		0.67			0.10		0.22	0.28		0.05	0.38	
Uniform Delay, d1		24.9			21.7		5.6	5.9		5.0	6.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.4			0.1		1.4	0.3		0.2	0.5	
Delay (s)		30.3			21.8		7.0	6.2		5.2	6.9	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.3			21.8			6.3			6.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	12	47	77	24	81	67	534	85	125	654	89
Future Volume (vph)	56	12	47	77	24	81	67	534	85	125	654	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.940			0.979			0.982	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1717	0	1825	3465	0	1789	3433	0
Flt Permitted		0.976			0.979		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1717	0	1825	3465	0	1789	3433	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	61	13	51	84	26	88	73	580	92	136	711	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	198	0	73	672	0	136	808	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

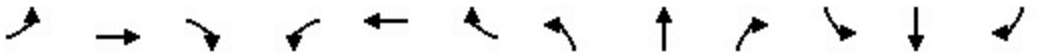
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	12	47	77	24	81	67	534	85	125	654	89
Future Volume (Veh/h)	56	12	47	77	24	81	67	534	85	125	654	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	13	51	84	26	88	73	580	92	136	711	97
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1572	1852	407	1458	1854	337	810			672		
vC1, stage 1 conf vol	1034	1034		772	772							
vC2, stage 2 conf vol	538	818		686	1082							
vCu, unblocked vol	1572	1852	407	1458	1854	337	810			672		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	62	93	91	54	84	87	91			85		
cM capacity (veh/h)	160	175	597	183	163	664	823			915		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	125	198	73	387	285	136	474	334
Volume Left	61	84	73	0	0	136	0	0
Volume Right	51	88	0	0	92	0	0	97
cSH	231	264	823	1700	1700	915	1700	1700
Volume to Capacity	0.54	0.75	0.09	0.23	0.17	0.15	0.28	0.20
Queue Length 95th (m)	22.0	41.2	2.2	0.0	0.0	4.0	0.0	0.0
Control Delay (s/veh)	37.4	50.4	9.8	0.0	0.0	9.6	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s/veh)	37.4	50.4	1.0			1.4		
Approach LOS	E	F						

Intersection Summary				
Average Delay	8.3			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A	
Analysis Period (min)	15			

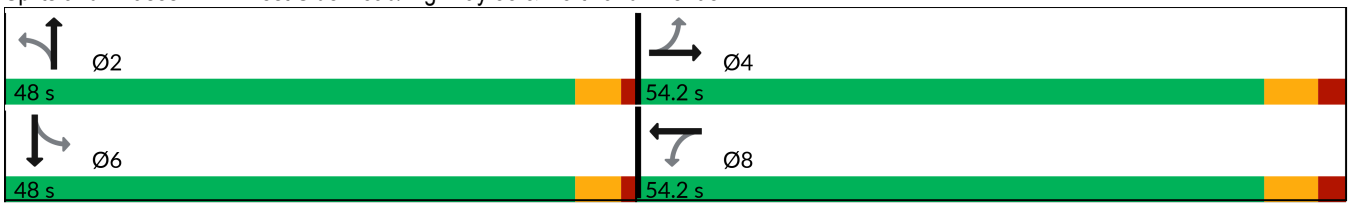


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	12	78	11	9	25	35	444	8	10	577	60
Future Volume (vph)	108	12	78	11	9	25	35	444	8	10	577	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.926			0.997			0.986	
Flt Protected		0.973			0.988		0.950			0.950		
Satd. Flow (prot)	0	1601	0	0	1683	0	1372	3404	0	1404	3308	0
Flt Permitted		0.803			0.910		0.378			0.477		
Satd. Flow (perm)	0	1322	0	0	1550	0	546	3404	0	704	3308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			27			2			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	115	13	83	12	10	27	37	472	9	11	614	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	49	0	37	481	0	11	678	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.68			0.14		0.11	0.22		0.02	0.32	
Control Delay (s/veh)		31.1			13.5		7.1	6.2		6.3	6.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.1			13.5		7.1	6.2		6.3	6.7	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.1			13.5			6.3			6.7	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 68.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 10.3		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	211	49	37	481	11	678
v/c Ratio	0.68	0.14	0.11	0.22	0.02	0.32
Control Delay (s/veh)	31.1	13.5	7.1	6.2	6.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.1	13.5	7.1	6.2	6.3	6.7
Queue Length 50th (m)	19.7	2.3	1.6	11.5	0.4	17.2
Queue Length 95th (m)	39.7	9.6	6.3	23.2	2.6	33.6
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	937	1092	346	2159	446	2102
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.04	0.11	0.22	0.02	0.32

Intersection Summary

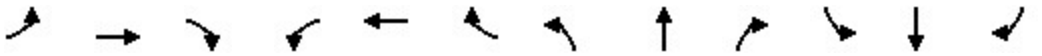
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	12	78	11	9	25	35	444	8	10	577	60
Future Volume (vph)	108	12	78	11	9	25	35	444	8	10	577	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1602			1682		1372	3405		1403	3307	
Flt Permitted		0.80			0.91		0.38	1.00		0.48	1.00	
Satd. Flow (perm)		1322			1549		547	3405		705	3307	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	115	13	83	12	10	27	37	472	9	11	614	64
RTOR Reduction (vph)	0	34	0	0	21	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	177	0	0	28	0	37	480	0	11	673	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Effective Green, g (s)		14.4			14.4		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		277			324		347	2160		447	2098	
v/s Ratio Prot								0.14			c0.20	
v/s Ratio Perm		c0.13			0.02		0.07			0.02		
v/c Ratio		0.64			0.09		0.11	0.22		0.02	0.32	
Uniform Delay, d1		24.8			21.9		4.9	5.3		4.7	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.8			0.1		0.6	0.2		0.1	0.4	
Delay (s)		29.6			22.0		5.5	5.6		4.8	6.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.6			22.0			5.6			6.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	16	75	87	15	102	24	535	43	57	472	29
Future Volume (vph)	104	16	75	87	15	102	24	535	43	57	472	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.932			0.989			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1677	0	1560	3361	0	1674	3278	0
Flt Permitted		0.974			0.979		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1677	0	1560	3361	0	1674	3278	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	113	17	82	95	16	111	26	582	47	62	513	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	222	0	26	629	0	62	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.2%		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)	104	16	75	87	15	102	24	535	43	57	472	29
Future Volume (Veh/h)	104	16	75	87	15	102	24	535	43	57	472	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	17	82	95	16	111	26	582	47	62	513	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1117	1335	274	1129	1328	316	546			629		
vC1, stage 1 conf vol	654	654		658	658							
vC2, stage 2 conf vol	463	681		471	670							
vCu, unblocked vol	1117	1335	274	1129	1328	316	546			629		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	61	94	89	68	94	84	97			93		
cM capacity (veh/h)	288	307	729	300	265	686	921			903		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	212	222	26	388	241	62	342	203
Volume Left	113	95	26	0	0	62	0	0
Volume Right	82	111	0	0	47	0	0	32
cSH	379	412	921	1700	1700	903	1700	1700
Volume to Capacity	0.56	0.54	0.03	0.23	0.14	0.07	0.20	0.12
Queue Length 95th (m)	25.0	23.6	0.7	0.0	0.0	1.7	0.0	0.0
Control Delay (s/veh)	25.9	23.5	9.0	0.0	0.0	9.3	0.0	0.0
Lane LOS	D	C	A			A		
Approach Delay (s/veh)	25.9	23.5	0.4			0.9		
Approach LOS	D	C						

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	45.2%	ICU Level of Service		A
Analysis Period (min)	15			

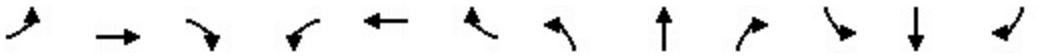
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	25	576	11	13	628
Future Volume (vph)	20	25	576	11	13	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.926		0.997			
Flt Protected	0.978				0.950	
Satd. Flow (prot)	1706	0	3568	0	1789	3579
Flt Permitted	0.978				0.950	
Satd. Flow (perm)	1706	0	3568	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	27	626	12	14	683
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	638	0	14	683
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	25	576	11	13	628
Future Volume (Veh/h)	20	25	576	11	13	628
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)	22	27	626	12	14	683
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	1002	319			638	
vC1, stage 1 conf vol	632					
vC2, stage 2 conf vol	370					
vCu, unblocked vol	954	255			581	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	96			99	
cM capacity (veh/h)	449	727			966	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	49	417	221	14	342	342
Volume Left	22	0	0	14	0	0
Volume Right	27	0	12	0	0	0
cSH	569	1700	1700	966	1700	1700
Volume to Capacity	0.09	0.25	0.13	0.01	0.20	0.20
Queue Length 95th (m)	2.1	0.0	0.0	0.3	0.0	0.0
Control Delay (s/veh)	11.9	0.0	0.0	8.8	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	11.9	0.0		0.2		
Approach LOS	B					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

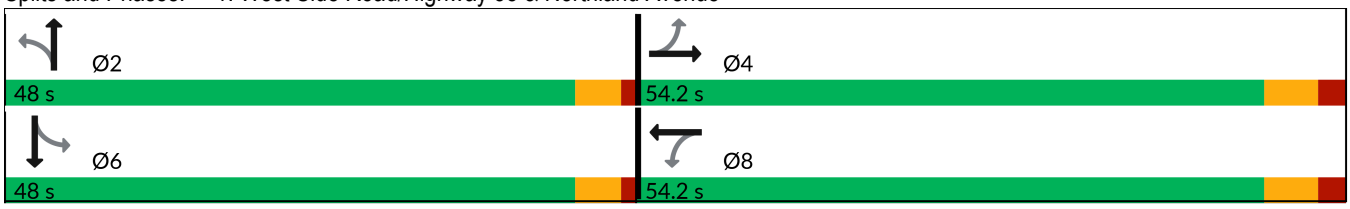


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	24	88	12	19	9	77	575	11	22	633	147
Future Volume (vph)	119	24	88	12	19	9	77	575	11	22	633	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.969			0.997			0.972	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1776	0	0	1834	0	1825	3535	0	1738	3410	0
Flt Permitted		0.815			0.891		0.302			0.396		
Satd. Flow (perm)	0	1484	0	0	1659	0	580	3535	0	725	3410	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			10			2			34	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	129	26	96	13	21	10	84	625	12	24	688	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	251	0	0	44	0	84	637	0	24	848	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.3			15.3		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
v/c Ratio		0.70			0.12		0.23	0.29		0.05	0.39	
Control Delay (s/veh)		31.8			18.0		9.1	6.9		6.8	7.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.8			18.0		9.1	6.9		6.8	7.4	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.8			18.0			7.2			7.4	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.7			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

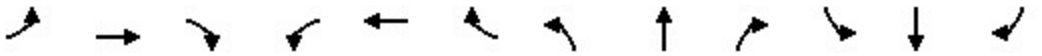


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	251	44	84	637	24	848
v/c Ratio	0.70	0.12	0.23	0.29	0.05	0.39
Control Delay (s/veh)	31.8	18.0	9.1	6.9	6.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.8	18.0	9.1	6.9	6.8	7.4
Queue Length 50th (m)	25.1	3.5	4.1	17.0	1.1	23.5
Queue Length 95th (m)	46.9	10.5	13.5	32.3	4.5	44.1
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1038	1149	363	2214	454	2148
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.04	0.23	0.29	0.05	0.39

Intersection Summary

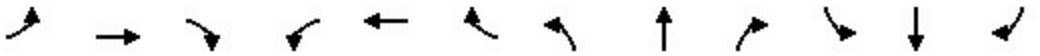
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	24	88	12	19	9	77	575	11	22	633	147
Future Volume (vph)	119	24	88	12	19	9	77	575	11	22	633	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776			1835		1825	3536		1738	3409	
Flt Permitted		0.82			0.89		0.30	1.00		0.40	1.00	
Satd. Flow (perm)		1485			1659		580	3536		725	3409	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	26	96	13	21	10	84	625	12	24	688	160
RTOR Reduction (vph)	0	32	0	0	8	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	219	0	0	36	0	84	636	0	24	835	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.3			15.3		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.3			15.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		325			364		363	2216		454	2137	
v/s Ratio Prot								0.18			c0.25	
v/s Ratio Perm		c0.15			0.02		0.14			0.03		
v/c Ratio		0.67			0.10		0.23	0.29		0.05	0.39	
Uniform Delay, d1		24.9			21.7		5.7	5.9		5.0	6.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.4			0.1		1.5	0.3		0.2	0.5	
Delay (s)		30.3			21.8		7.2	6.2		5.2	7.0	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.3			21.8			6.3			6.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	12	47	80	24	81	67	554	87	125	686	89
Future Volume (vph)	56	12	47	80	24	81	67	554	87	125	686	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.941			0.980			0.983	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1718	0	1825	3468	0	1789	3436	0
Flt Permitted		0.976			0.979		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1718	0	1825	3468	0	1789	3436	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	61	13	51	87	26	88	73	602	95	136	746	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	201	0	73	697	0	136	843	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.4%	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)	56	12	47	80	24	81	67	554	87	125	686	89
Future Volume (Veh/h)	56	12	47	80	24	81	67	554	87	125	686	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	13	51	87	26	88	73	602	95	136	746	97
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1618	1912	425	1499	1913	350	845			697		
vC1, stage 1 conf vol	1069	1069		796	796							
vC2, stage 2 conf vol	549	843		704	1117							
vCu, unblocked vol	1618	1912	425	1499	1913	350	845			697		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	60	92	91	50	83	87	91			85		
cM capacity (veh/h)	152	167	582	175	154	652	799			895		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	125	201	73	401	296	136	497	346
Volume Left	61	87	73	0	0	136	0	0
Volume Right	51	88	0	0	95	0	0	97
cSH	221	251	799	1700	1700	895	1700	1700
Volume to Capacity	0.57	0.80	0.09	0.24	0.17	0.15	0.29	0.20
Queue Length 95th (m)	23.6	46.3	2.3	0.0	0.0	4.1	0.0	0.0
Control Delay (s/veh)	40.6	59.1	10.0	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s/veh)	40.6	59.1	0.9			1.4		
Approach LOS	E	F						

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	23	686	23	35	779
Future Volume (vph)	23	23	686	23	35	779
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.932		0.995			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1713	0	3561	0	1789	3579
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1713	0	3561	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	25	746	25	38	847
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	771	0	38	847
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 36.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	23	686	23	35	779
Future Volume (Veh/h)	23	23	686	23	35	779
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)	25	25	746	25	38	847
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	1258	386			771	
vC1, stage 1 conf vol	759					
vC2, stage 2 conf vol	500					
vCu, unblocked vol	1143	213			624	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	97			96	
cM capacity (veh/h)	386	743			894	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	50	497	274	38	424	424
Volume Left	25	0	0	38	0	0
Volume Right	25	0	25	0	0	0
cSH	508	1700	1700	894	1700	1700
Volume to Capacity	0.10	0.29	0.16	0.04	0.25	0.25
Queue Length 95th (m)	2.5	0.0	0.0	1.0	0.0	0.0
Control Delay (s/veh)	12.9	0.0	0.0	9.2	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	12.9	0.0		0.4		
Approach LOS	B					

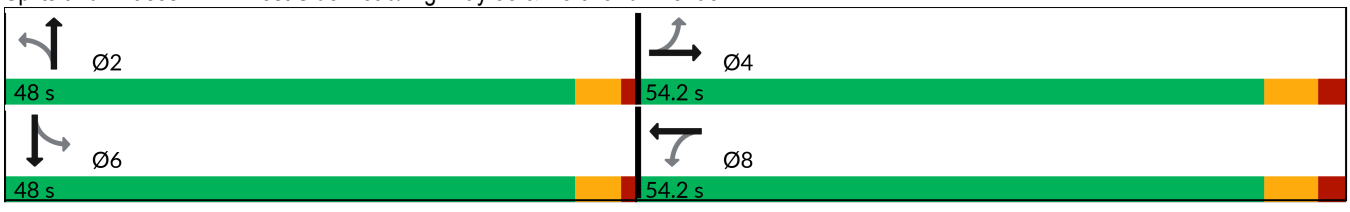
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	79	12	10	26	36	446	9	11	570	61
Future Volume (vph)	109	13	79	12	10	26	36	446	9	11	570	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.927			0.997			0.985	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1603	0	0	1685	0	1372	3404	0	1404	3304	0
Flt Permitted		0.803			0.907		0.381			0.476		
Satd. Flow (perm)	0	1322	0	0	1547	0	550	3404	0	703	3304	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			28			3			14	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	116	14	84	13	11	28	38	474	10	12	606	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	0	52	0	38	484	0	12	671	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.6			14.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.68			0.15		0.11	0.22		0.03	0.32	
Control Delay (s/veh)		31.4			13.6		7.3	6.3		6.5	6.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.4			13.6		7.3	6.3		6.5	6.8	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.4			13.6			6.3			6.8	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 10.4		Intersection LOS: B	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



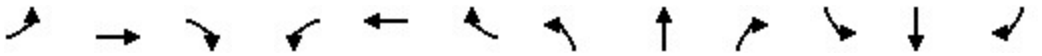
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	214	52	38	484	12	671
v/c Ratio	0.68	0.15	0.11	0.22	0.03	0.32
Control Delay (s/veh)	31.4	13.6	7.3	6.3	6.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.4	13.6	7.3	6.3	6.5	6.8
Queue Length 50th (m)	20.1	2.5	1.6	11.6	0.5	17.1
Queue Length 95th (m)	40.3	10.1	6.5	23.5	2.7	33.4
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	936	1088	348	2155	445	2096
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.05	0.11	0.22	0.03	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	79	12	10	26	36	446	9	11	570	61
Future Volume (vph)	109	13	79	12	10	26	36	446	9	11	570	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1603			1685		1372	3404		1403	3306	
Flt Permitted		0.80			0.91		0.38	1.00		0.48	1.00	
Satd. Flow (perm)		1321			1548		551	3404		703	3306	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	116	14	84	13	11	28	38	474	10	12	606	65
RTOR Reduction (vph)	0	34	0	0	22	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	180	0	0	30	0	38	483	0	12	666	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.6			14.6		43.6	43.6		43.6	43.6	
Effective Green, g (s)		14.6			14.6		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		279			328		348	2154		444	2092	
v/s Ratio Prot								0.14			c0.20	
v/s Ratio Perm		c0.14			0.02		0.07			0.02		
v/c Ratio		0.65			0.09		0.11	0.22		0.03	0.32	
Uniform Delay, d1		24.8			21.8		5.0	5.4		4.7	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1		0.6	0.2		0.1	0.4	
Delay (s)		29.8			21.9		5.6	5.7		4.8	6.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.8			21.9			5.7			6.2	
Approach LOS		C			C			A			A	

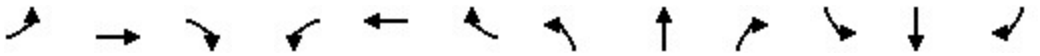
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	10.7
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Future Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.932			0.990			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1678	0	1560	3363	0	1674	3278	0
Flt Permitted		0.974			0.979		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1678	0	1560	3363	0	1674	3278	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	17	82	93	16	112	26	573	43	64	514	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	221	0	26	616	0	64	546	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

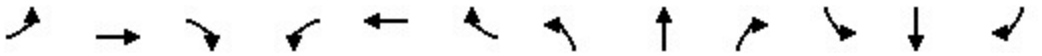
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	16	75	86	15	103	24	527	40	59	473	29
Future Volume (Veh/h)	105	16	75	86	15	103	24	527	40	59	473	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	17	82	93	16	112	26	573	43	64	514	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1119	1327	274	1122	1322	309	547			616		
vC1, stage 1 conf vol	659	659		647	647							
vC2, stage 2 conf vol	460	668		476	675							
vCu, unblocked vol	1119	1327	274	1122	1322	309	547			616		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	60	94	89	69	94	84	97			93		
cM capacity (veh/h)	287	309	729	301	265	692	920			914		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	213	221	26	382	234	64	343	203
Volume Left	114	93	26	0	0	64	0	0
Volume Right	82	112	0	0	43	0	0	32
cSH	378	416	920	1700	1700	914	1700	1700
Volume to Capacity	0.56	0.53	0.03	0.22	0.14	0.07	0.20	0.12
Queue Length 95th (m)	25.4	23.0	0.7	0.0	0.0	1.7	0.0	0.0
Control Delay (s/veh)	26.2	23.0	9.0	0.0	0.0	9.2	0.0	0.0
Lane LOS	D	C	A			A		
Approach Delay (s/veh)	26.2	23.0	0.4			1.0		
Approach LOS	D	C						

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	45.1%	ICU Level of Service	A	
Analysis Period (min)	15			

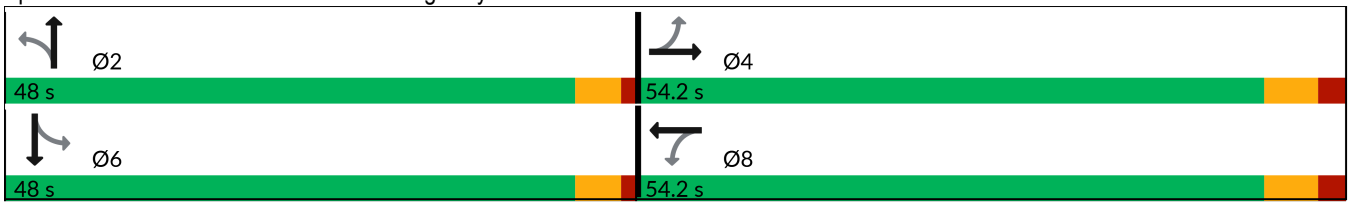


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	25	90	13	19	10	77	566	12	23	628	149
Future Volume (vph)	121	25	90	13	19	10	77	566	12	23	628	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.968			0.997			0.971	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1832	0	1825	3535	0	1738	3407	0
Flt Permitted		0.814			0.885		0.303			0.400		
Satd. Flow (perm)	0	1484	0	0	1646	0	582	3535	0	732	3407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			11			3			35	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	132	27	98	14	21	11	84	615	13	25	683	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	257	0	0	46	0	84	628	0	25	845	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.12		0.23	0.28		0.05	0.40	
Control Delay (s/veh)		32.1			17.7		9.2	7.1		7.0	7.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.1			17.7		9.2	7.1		7.0	7.6	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.1			17.7			7.3			7.6	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.1		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

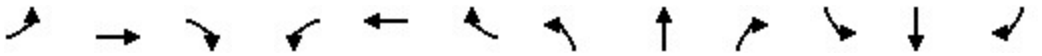


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	257	46	84	628	25	845
v/c Ratio	0.71	0.12	0.23	0.28	0.05	0.40
Control Delay (s/veh)	32.1	17.7	9.2	7.1	7.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.1	17.7	9.2	7.1	7.0	7.6
Queue Length 50th (m)	26.0	3.6	4.2	17.0	1.1	23.8
Queue Length 95th (m)	48.0	10.7	13.7	32.3	4.7	44.7
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1033	1136	362	2205	456	2137
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.23	0.28	0.05	0.40

Intersection Summary

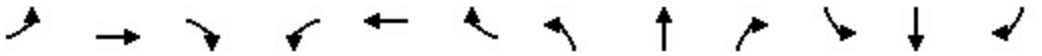
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	25	90	13	19	10	77	566	12	23	628	149
Future Volume (vph)	121	25	90	13	19	10	77	566	12	23	628	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1831		1825	3535		1738	3407	
Flt Permitted		0.81			0.89		0.30	1.00		0.40	1.00	
Satd. Flow (perm)		1483			1645		581	3535		732	3407	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	27	98	14	21	11	84	615	13	25	683	162
RTOR Reduction (vph)	0	32	0	0	9	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	225	0	0	37	0	84	627	0	25	832	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		330			366		362	2206		456	2126	
v/s Ratio Prot								0.18			c0.24	
v/s Ratio Perm		c0.15			0.02		0.14			0.03		
v/c Ratio		0.68			0.10		0.23	0.28		0.05	0.39	
Uniform Delay, d1		24.9			21.6		5.8	6.0		5.1	6.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7			0.1		1.5	0.3		0.2	0.5	
Delay (s)		30.6			21.8		7.3	6.3		5.3	7.1	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.6			21.8			6.4			7.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Future Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.940			0.980			0.982	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1717	0	1825	3468	0	1789	3433	0
Flt Permitted		0.976			0.979		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1717	0	1825	3468	0	1789	3433	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	85	27	89	73	597	93	138	732	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	201	0	73	690	0	138	829	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.0%	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)	57	12	48	78	25	82	67	549	86	127	673	89
Future Volume (Veh/h)	57	12	48	78	25	82	67	549	86	127	673	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	13	52	85	27	89	73	597	93	138	732	97
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1607	1895	418	1491	1897	346	831			690		
vC1, stage 1 conf vol	1059	1059		790	790							
vC2, stage 2 conf vol	548	836		702	1107							
vCu, unblocked vol	1607	1895	418	1491	1897	346	831			690		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	59	92	91	52	83	86	91			85		
cM capacity (veh/h)	153	168	588	176	156	655	808			900		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	127	201	73	398	292	138	488	341
Volume Left	62	85	73	0	0	138	0	0
Volume Right	52	89	0	0	93	0	0	97
cSH	222	254	808	1700	1700	900	1700	1700
Volume to Capacity	0.57	0.79	0.09	0.23	0.17	0.15	0.29	0.20
Queue Length 95th (m)	24.0	45.5	2.3	0.0	0.0	4.1	0.0	0.0
Control Delay (s/veh)	40.8	57.4	9.9	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s/veh)	40.8	57.4	0.9			1.4		
Approach LOS	E	F						

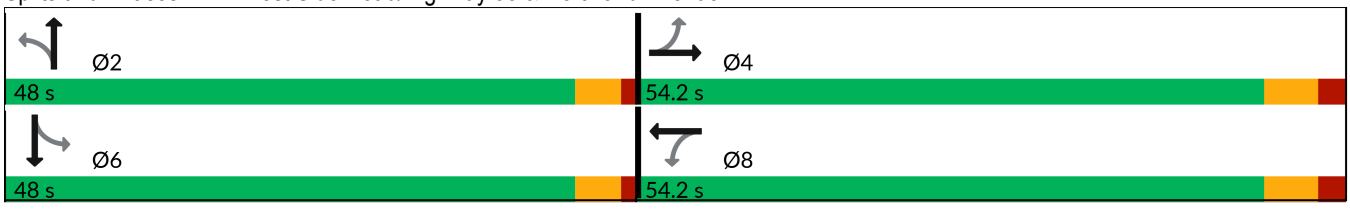
Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	79	12	10	26	36	461	9	11	606	61
Future Volume (vph)	109	13	79	12	10	26	36	461	9	11	606	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.927			0.997			0.986	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1603	0	0	1685	0	1372	3404	0	1404	3307	0
Flt Permitted		0.803			0.907		0.363			0.469		
Satd. Flow (perm)	0	1322	0	0	1547	0	524	3404	0	693	3307	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			28			2			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	116	14	84	13	11	28	38	490	10	12	645	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	0	52	0	38	500	0	12	710	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.6			14.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.68			0.15		0.11	0.23		0.03	0.34	
Control Delay (s/veh)		31.4			13.6		7.4	6.3		6.5	6.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.4			13.6		7.4	6.3		6.5	6.9	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.4			13.6			6.4			6.9	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 10.4		Intersection LOS: B	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



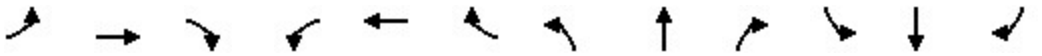
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	214	52	38	500	12	710
v/c Ratio	0.68	0.15	0.11	0.23	0.03	0.34
Control Delay (s/veh)	31.4	13.6	7.4	6.3	6.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.4	13.6	7.4	6.3	6.5	6.9
Queue Length 50th (m)	20.1	2.5	1.6	12.2	0.5	18.4
Queue Length 95th (m)	40.3	10.1	6.5	24.4	2.7	35.7
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	936	1088	331	2155	438	2097
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.05	0.11	0.23	0.03	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	79	12	10	26	36	461	9	11	606	61
Future Volume (vph)	109	13	79	12	10	26	36	461	9	11	606	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1603			1685		1372	3404		1403	3308	
Flt Permitted		0.80			0.91		0.36	1.00		0.47	1.00	
Satd. Flow (perm)		1321			1548		524	3404		692	3308	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	116	14	84	13	11	28	38	490	10	12	645	65
RTOR Reduction (vph)	0	34	0	0	22	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	180	0	0	30	0	38	499	0	12	705	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.6			14.6		43.6	43.6		43.6	43.6	
Effective Green, g (s)		14.6			14.6		43.6	43.6		43.6	43.6	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		279			328		331	2154		437	2093	
v/s Ratio Prot								0.15			c0.21	
v/s Ratio Perm		c0.14			0.02		0.07			0.02		
v/c Ratio		0.65			0.09		0.11	0.23		0.03	0.34	
Uniform Delay, d1		24.8			21.8		5.0	5.4		4.7	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1		0.7	0.3		0.1	0.4	
Delay (s)		29.8			21.9		5.7	5.7		4.8	6.3	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.8			21.9			5.7			6.3	
Approach LOS		C			C			A			A	

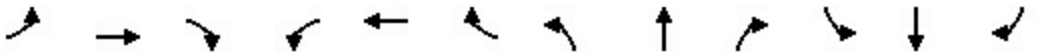
Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	10.7
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Future Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.932			0.989			0.992	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1677	0	1560	3361	0	1674	3280	0
Flt Permitted		0.974			0.979		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1677	0	1560	3361	0	1674	3280	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	17	82	96	16	112	26	616	48	64	533	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	224	0	26	664	0	64	565	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.2%		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)	105	16	75	88	15	103	24	567	44	59	490	29
Future Volume (Veh/h)	105	16	75	88	15	103	24	567	44	59	490	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	17	82	96	16	112	26	616	48	64	533	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1159	1394	284	1177	1386	333	566			664		
vC1, stage 1 conf vol	678	678		692	692							
vC2, stage 2 conf vol	481	716		485	694							
vCu, unblocked vol	1159	1394	284	1177	1386	333	566			664		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	59	94	89	67	94	83	97			93		
cM capacity (veh/h)	275	293	719	287	253	668	904			875		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	213	224	26	411	253	64	355	210
Volume Left	114	96	26	0	0	64	0	0
Volume Right	82	112	0	0	48	0	0	32
cSH	363	396	904	1700	1700	875	1700	1700
Volume to Capacity	0.59	0.57	0.03	0.24	0.15	0.07	0.21	0.12
Queue Length 95th (m)	27.2	25.7	0.7	0.0	0.0	1.8	0.0	0.0
Control Delay (s/veh)	28.0	25.3	9.1	0.0	0.0	9.4	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s/veh)	28.0	25.3	0.3			1.0		
Approach LOS	D	D						

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	43	591	15	18	642
Future Volume (vph)	36	43	591	15	18	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.926		0.996			
Flt Protected	0.978				0.950	
Satd. Flow (prot)	1706	0	3564	0	1789	3579
Flt Permitted	0.978				0.950	
Satd. Flow (perm)	1706	0	3564	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	47	642	16	20	698
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	658	0	20	698
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 29.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	36	43	591	15	18	642
Future Volume (Veh/h)	36	43	591	15	18	642
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)	39	47	642	16	20	698
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1039	329			658	
vC1, stage 1 conf vol	650					
vC2, stage 2 conf vol	389					
vCu, unblocked vol	982	251			590	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	94			98	
cM capacity (veh/h)	439	727			954	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	86	428	230	20	349	349
Volume Left	39	0	0	20	0	0
Volume Right	47	0	16	0	0	0
cSH	560	1700	1700	954	1700	1700
Volume to Capacity	0.15	0.25	0.14	0.02	0.21	0.21
Queue Length 95th (m)	4.1	0.0	0.0	0.5	0.0	0.0
Control Delay (s/veh)	12.6	0.0	0.0	8.9	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	12.6	0.0		0.2		
Approach LOS	B					

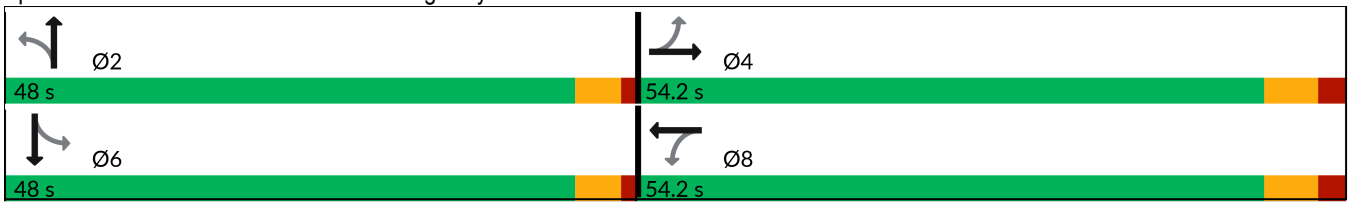
Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	25	90	13	19	10	77	602	12	23	659	149
Future Volume (vph)	121	25	90	13	19	10	77	602	12	23	659	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.968			0.997			0.972	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1832	0	1825	3535	0	1738	3409	0
Flt Permitted		0.814			0.885		0.290			0.381		
Satd. Flow (perm)	0	1484	0	0	1646	0	557	3535	0	697	3409	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			11			2			33	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	132	27	98	14	21	11	84	654	13	25	716	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	257	0	0	46	0	84	667	0	25	878	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.12		0.24	0.30		0.06	0.41	
Control Delay (s/veh)		32.1			17.7		9.5	7.2		7.0	7.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.1			17.7		9.5	7.2		7.0	7.7	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.1			17.7			7.4			7.7	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.0		Intersection LOS: B	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

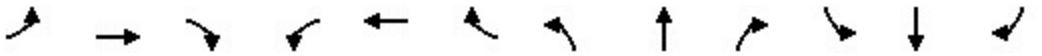


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	257	46	84	667	25	878
v/c Ratio	0.71	0.12	0.24	0.30	0.06	0.41
Control Delay (s/veh)	32.1	17.7	9.5	7.2	7.0	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.1	17.7	9.5	7.2	7.0	7.7
Queue Length 50th (m)	26.0	3.6	4.2	18.3	1.1	25.1
Queue Length 95th (m)	48.0	10.7	14.0	34.6	4.7	47.1
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1033	1136	347	2205	434	2138
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.24	0.30	0.06	0.41

Intersection Summary

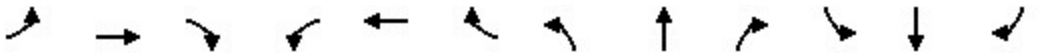
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	25	90	13	19	10	77	602	12	23	659	149
Future Volume (vph)	121	25	90	13	19	10	77	602	12	23	659	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1831		1825	3535		1738	3410	
Flt Permitted		0.81			0.89		0.29	1.00		0.38	1.00	
Satd. Flow (perm)		1483			1645		556	3535		697	3410	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	27	98	14	21	11	84	654	13	25	716	162
RTOR Reduction (vph)	0	32	0	0	9	0	0	1	0	0	12	0
Lane Group Flow (vph)	0	225	0	0	37	0	84	666	0	25	866	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.6			15.6		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		330			366		347	2206		435	2128	
v/s Ratio Prot								0.19			c0.25	
v/s Ratio Perm		c0.15			0.02		0.15			0.04		
v/c Ratio		0.68			0.10		0.24	0.30		0.06	0.41	
Uniform Delay, d1		24.9			21.6		5.8	6.1		5.1	6.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7			0.1		1.6	0.4		0.3	0.6	
Delay (s)		30.6			21.8		7.5	6.4		5.4	7.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.6			21.8			6.6			7.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Future Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.941			0.980			0.984	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1718	0	1825	3468	0	1789	3439	0
Flt Permitted		0.976			0.979		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1718	0	1825	3468	0	1789	3439	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	89	27	89	73	626	97	138	785	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	205	0	73	723	0	138	882	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.7%		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)	57	12	48	82	25	82	67	576	89	127	722	89
Future Volume (Veh/h)	57	12	48	82	25	82	67	576	89	127	722	89
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	13	52	89	27	89	73	626	97	138	785	97
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1674	1981	444	1549	1981	363	884			723		
vC1, stage 1 conf vol	1112	1112		821	821							
vC2, stage 2 conf vol	563	869		728	1160							
vCu, unblocked vol	1674	1981	444	1549	1981	363	884			723		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	56	92	91	46	81	86	91			84		
cM capacity (veh/h)	142	156	565	165	143	639	772			875		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	127	205	73	417	306	138	523	359
Volume Left	62	89	73	0	0	138	0	0
Volume Right	52	89	0	0	97	0	0	97
cSH	208	236	772	1700	1700	875	1700	1700
Volume to Capacity	0.61	0.87	0.09	0.25	0.18	0.16	0.31	0.21
Queue Length 95th (m)	26.6	53.5	2.4	0.0	0.0	4.2	0.0	0.0
Control Delay (s/veh)	46.3	73.3	10.1	0.0	0.0	9.9	0.0	0.0
Lane LOS	E	F	B			A		
Approach Delay (s/veh)	46.3	73.3	0.9			1.3		
Approach LOS	E	F						

Intersection Summary				
Average Delay	10.7			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	31	702	36	53	800
Future Volume (vph)	31	31	702	36	53	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.932		0.993			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1713	0	3553	0	1789	3579
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1713	0	3553	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	34	763	39	58	870
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	802	0	58	870
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 37.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	31	702	36	53	800
Future Volume (Veh/h)	31	31	702	36	53	800
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)	34	34	763	39	58	870
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	1334	401			802	
vC1, stage 1 conf vol	783					
vC2, stage 2 conf vol	551					
vCu, unblocked vol	1209	207			638	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	95			93	
cM capacity (veh/h)	365	743			876	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	68	509	293	58	435	435
Volume Left	34	0	0	58	0	0
Volume Right	34	0	39	0	0	0
cSH	489	1700	1700	876	1700	1700
Volume to Capacity	0.14	0.30	0.17	0.07	0.26	0.26
Queue Length 95th (m)	3.6	0.0	0.0	1.6	0.0	0.0
Control Delay (s/veh)	13.5	0.0	0.0	9.4	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	13.5	0.0		0.6		
Approach LOS	B					

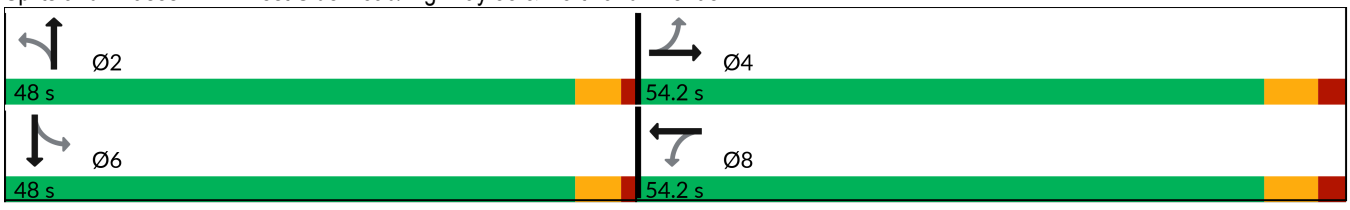
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	13	80	12	10	27	36	458	9	11	584	62
Future Volume (vph)	111	13	80	12	10	27	36	458	9	11	584	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.926			0.997			0.986	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1603	0	0	1684	0	1372	3404	0	1404	3308	0
Flt Permitted		0.802			0.909		0.373			0.470		
Satd. Flow (perm)	0	1320	0	0	1549	0	539	3404	0	694	3308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			29			2			14	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	118	14	85	13	11	29	38	487	10	12	621	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	0	0	53	0	38	497	0	12	687	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.69			0.15		0.11	0.23		0.03	0.33	
Control Delay (s/veh)		31.6			13.3		7.4	6.4		6.5	6.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.6			13.3		7.4	6.4		6.5	6.9	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.6			13.3			6.5			6.9	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 10.6		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



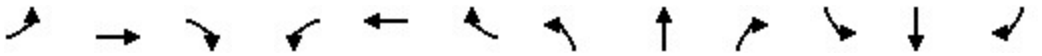
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	217	53	38	497	12	687
v/c Ratio	0.69	0.15	0.11	0.23	0.03	0.33
Control Delay (s/veh)	31.6	13.3	7.4	6.4	6.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.6	13.3	7.4	6.4	6.5	6.9
Queue Length 50th (m)	20.5	2.5	1.6	12.2	0.5	17.8
Queue Length 95th (m)	41.1	10.1	6.6	24.5	2.7	34.7
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	932	1087	340	2148	437	2092
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.05	0.11	0.23	0.03	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	13	80	12	10	27	36	458	9	11	584	62
Future Volume (vph)	111	13	80	12	10	27	36	458	9	11	584	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1603			1683		1372	3404		1403	3306	
Flt Permitted		0.80			0.91		0.37	1.00		0.47	1.00	
Satd. Flow (perm)		1320			1548		539	3404		694	3306	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	118	14	85	13	11	29	38	487	10	12	621	66
RTOR Reduction (vph)	0	34	0	0	23	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	183	0	0	30	0	38	496	0	12	682	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Effective Green, g (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		282			331		340	2149		438	2087	
v/s Ratio Prot								0.15			c0.21	
v/s Ratio Perm		c0.14			0.02		0.07			0.02		
v/c Ratio		0.65			0.09		0.11	0.23		0.03	0.33	
Uniform Delay, d1		24.8			21.8		5.1	5.5		4.8	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1		0.7	0.3		0.1	0.4	
Delay (s)		29.9			21.9		5.7	5.8		4.9	6.3	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.9			21.9			5.7			6.3	
Approach LOS		C			C			A			A	

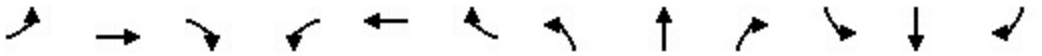
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Future Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.932			0.989			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1678	0	1560	3360	0	1674	3277	0
Flt Permitted		0.974			0.979		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1678	0	1560	3360	0	1674	3277	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	18	83	95	16	114	27	588	45	65	528	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	225	0	27	633	0	65	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

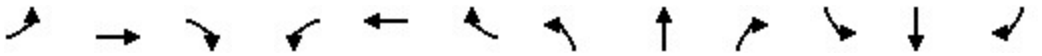
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	17	76	87	15	105	25	541	41	60	486	29
Future Volume (Veh/h)	105	17	76	87	15	105	25	541	41	60	486	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	18	83	95	16	114	27	588	45	65	528	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1146	1362	281	1151	1356	318	561			633		
vC1, stage 1 conf vol	675	675		665	665							
vC2, stage 2 conf vol	471	687		486	691							
vCu, unblocked vol	1146	1362	281	1151	1356	318	561			633		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	59	94	88	67	94	83	97			93		
cM capacity (veh/h)	278	300	721	292	257	684	909			900		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	215	225	27	392	241	65	352	208
Volume Left	114	95	27	0	0	65	0	0
Volume Right	83	114	0	0	45	0	0	32
cSH	368	406	909	1700	1700	900	1700	1700
Volume to Capacity	0.58	0.55	0.03	0.23	0.14	0.07	0.21	0.12
Queue Length 95th (m)	27.0	24.8	0.7	0.0	0.0	1.8	0.0	0.0
Control Delay (s/veh)	27.7	24.3	9.1	0.0	0.0	9.3	0.0	0.0
Lane LOS	D	C	A			A		
Approach Delay (s/veh)	27.7	24.3	0.4			1.0		
Approach LOS	D	C						

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A	
Analysis Period (min)	15			

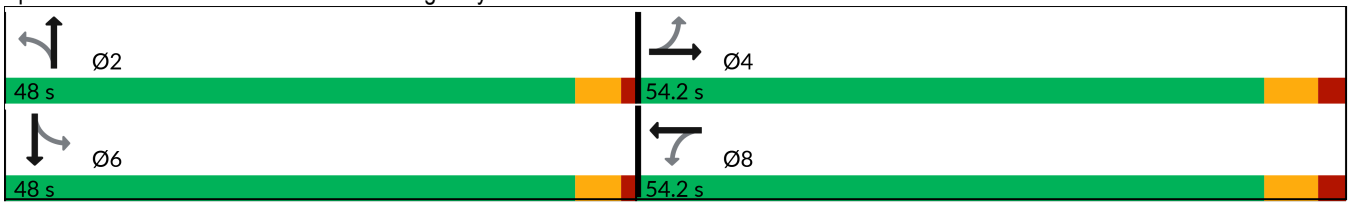


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	26	91	13	20	10	78	579	12	24	645	151
Future Volume (vph)	123	26	91	13	20	10	78	579	12	24	645	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.968			0.997			0.972	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1832	0	1825	3535	0	1738	3410	0
Flt Permitted		0.814			0.887		0.294			0.393		
Satd. Flow (perm)	0	1484	0	0	1649	0	565	3535	0	719	3410	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			11			2			35	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	134	28	99	14	22	11	85	629	13	26	701	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	47	0	85	642	0	26	865	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.12		0.24	0.29		0.06	0.41	
Control Delay (s/veh)		32.3			17.7		9.6	7.2		7.2	7.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.3			17.7		9.6	7.2		7.2	7.8	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.3			17.7			7.5			7.7	
Approach LOS		C			B			A			A	

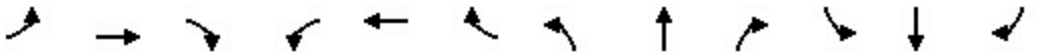
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



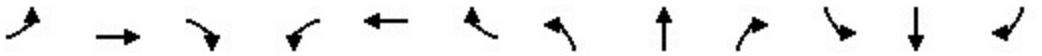
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	261	47	85	642	26	865
v/c Ratio	0.71	0.12	0.24	0.29	0.06	0.41
Control Delay (s/veh)	32.3	17.7	9.6	7.2	7.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.3	17.7	9.6	7.2	7.2	7.8
Queue Length 50th (m)	26.5	3.8	4.3	17.6	1.2	24.7
Queue Length 95th (m)	49.0	11.0	14.2	33.5	4.9	46.6
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1031	1135	351	2198	447	2133
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.24	0.29	0.06	0.41

Intersection Summary



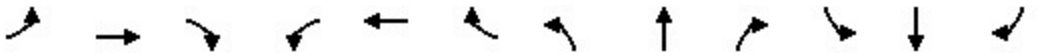
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	26	91	13	20	10	78	579	12	24	645	151
Future Volume (vph)	123	26	91	13	20	10	78	579	12	24	645	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1833		1825	3535		1738	3408	
Flt Permitted		0.81			0.89		0.29	1.00		0.39	1.00	
Satd. Flow (perm)		1483			1650		565	3535		719	3408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	99	14	22	11	85	629	13	26	701	164
RTOR Reduction (vph)	0	32	0	0	9	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	229	0	0	38	0	85	641	0	26	852	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		333			371		351	2200		447	2121	
v/s Ratio Prot								0.18			c0.25	
v/s Ratio Perm		c0.15			0.02		0.15			0.04		
v/c Ratio		0.69			0.10		0.24	0.29		0.06	0.40	
Uniform Delay, d1		24.9			21.6		5.9	6.1		5.2	6.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.8			0.1		1.6	0.3		0.2	0.6	
Delay (s)		30.8			21.7		7.5	6.4		5.4	7.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.8			21.7			6.6			7.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Future Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.940			0.980			0.983	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1717	0	1825	3468	0	1789	3436	0
Flt Permitted		0.976			0.979		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1717	0	1825	3468	0	1789	3436	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	86	27	91	74	612	95	140	751	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	204	0	74	707	0	140	849	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

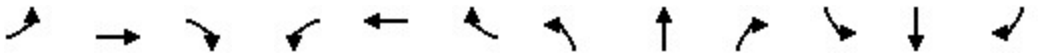
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	12	48	79	25	84	68	563	87	129	691	90
Future Volume (Veh/h)	57	12	48	79	25	84	68	563	87	129	691	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	13	52	86	27	91	74	612	95	140	751	98
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1642	1937	428	1523	1939	355	851			707		
vC1, stage 1 conf vol	1082	1082		808	808							
vC2, stage 2 conf vol	560	855		715	1131							
vCu, unblocked vol	1642	1937	428	1523	1939	355	851			707		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	57	92	91	49	82	86	91			84		
cM capacity (veh/h)	146	161	579	169	149	647	795			887		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	127	204	74	408	299	140	501	348
Volume Left	62	86	74	0	0	140	0	0
Volume Right	52	91	0	0	95	0	0	98
cSH	213	245	795	1700	1700	887	1700	1700
Volume to Capacity	0.60	0.83	0.09	0.24	0.18	0.16	0.29	0.20
Queue Length 95th (m)	25.6	49.6	2.3	0.0	0.0	4.2	0.0	0.0
Control Delay (s/veh)	44.1	64.9	10.0	0.0	0.0	9.8	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s/veh)	44.1	64.9	0.9			1.4		
Approach LOS	E	F						

Intersection Summary				
Average Delay	10.0			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

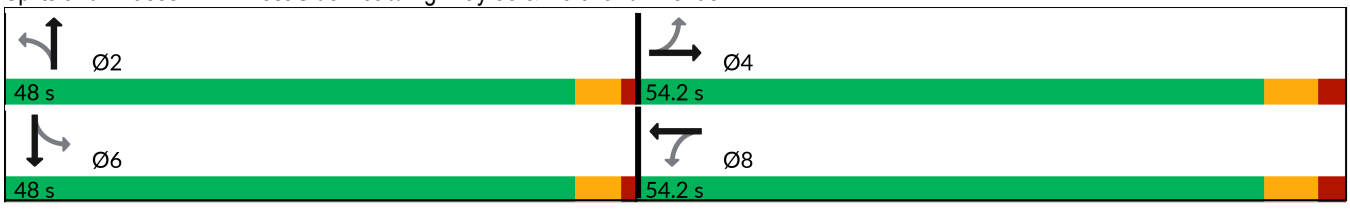


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	13	80	12	10	27	36	478	9	11	635	62
Future Volume (vph)	111	13	80	12	10	27	36	478	9	11	635	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.947			0.926			0.997			0.987	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1603	0	0	1684	0	1372	3404	0	1404	3311	0
Flt Permitted		0.802			0.909		0.348			0.459		
Satd. Flow (perm)	0	1320	0	0	1549	0	503	3404	0	678	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			29			2			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	118	14	85	13	11	29	38	509	10	12	676	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	0	0	53	0	38	519	0	12	742	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
v/c Ratio		0.69			0.15		0.12	0.24		0.03	0.35	
Control Delay (s/veh)		31.6			13.3		7.6	6.5		6.5	7.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.6			13.3		7.6	6.5		6.5	7.1	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		31.6			13.3			6.6			7.1	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 10.5		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



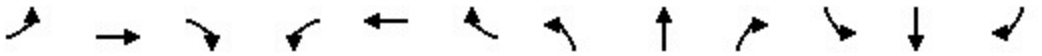
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	217	53	38	519	12	742
v/c Ratio	0.69	0.15	0.12	0.24	0.03	0.35
Control Delay (s/veh)	31.6	13.3	7.6	6.5	6.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.6	13.3	7.6	6.5	6.5	7.1
Queue Length 50th (m)	20.5	2.5	1.7	12.8	0.5	19.8
Queue Length 95th (m)	41.1	10.1	6.7	25.7	2.8	38.2
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	932	1087	317	2148	427	2093
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.05	0.12	0.24	0.03	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	13	80	12	10	27	36	478	9	11	635	62
Future Volume (vph)	111	13	80	12	10	27	36	478	9	11	635	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1603			1683		1372	3404		1403	3309	
Flt Permitted		0.80			0.91		0.35	1.00		0.46	1.00	
Satd. Flow (perm)		1320			1548		503	3404		679	3309	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	118	14	85	13	11	29	38	509	10	12	676	66
RTOR Reduction (vph)	0	34	0	0	23	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	183	0	0	30	0	38	518	0	12	738	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Effective Green, g (s)		14.8			14.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.21			0.21		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		282			331		317	2149		428	2089	
v/s Ratio Prot								0.15			c0.22	
v/s Ratio Perm		c0.14			0.02		0.08			0.02		
v/c Ratio		0.65			0.09		0.12	0.24		0.03	0.35	
Uniform Delay, d1		24.8			21.8		5.1	5.5		4.8	6.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1		0.8	0.3		0.1	0.5	
Delay (s)		29.9			21.9		5.9	5.8		4.9	6.5	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		29.9			21.9			5.8			6.5	
Approach LOS		C			C			A			A	

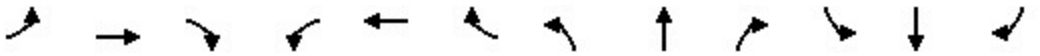
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Future Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.927			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1678	0	1560	3363	0	1674	3280	0
Flt Permitted		0.974			0.981		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1678	0	1560	3363	0	1674	3280	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	18	83	96	16	133	27	632	46	71	547	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	245	0	27	678	0	71	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	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)	105	17	76	88	15	122	25	581	42	65	503	29
Future Volume (Veh/h)	105	17	76	88	15	122	25	581	42	65	503	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	18	83	96	16	133	27	632	46	71	547	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1218	1438	291	1217	1431	340	580			678		
vC1, stage 1 conf vol	706	706		709	709							
vC2, stage 2 conf vol	512	732		508	722							
vCu, unblocked vol	1218	1438	291	1217	1431	340	580			678		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	54	94	88	65	93	80	97			92		
cM capacity (veh/h)	249	280	711	274	242	661	893			864		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	215	245	27	421	257	71	365	214
Volume Left	114	96	27	0	0	71	0	0
Volume Right	83	133	0	0	46	0	0	32
cSH	337	397	893	1700	1700	864	1700	1700
Volume to Capacity	0.64	0.62	0.03	0.25	0.15	0.08	0.21	0.13
Queue Length 95th (m)	31.7	30.4	0.7	0.0	0.0	2.0	0.0	0.0
Control Delay (s/veh)	32.8	27.7	9.2	0.0	0.0	9.5	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s/veh)	32.8	27.7	0.4			1.0		
Approach LOS	D	D						

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	47.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	40	607	20	17	657
Future Volume (vph)	51	40	607	20	17	657
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.941		0.995			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1724	0	3561	0	1789	3579
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1724	0	3561	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	43	660	22	18	714
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	682	0	18	714
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 30.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	40	607	20	17	657
Future Volume (Veh/h)	51	40	607	20	17	657
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)	55	43	660	22	18	714
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.97	0.97			0.97	
vC, conflicting volume	1064	341			682	
vC1, stage 1 conf vol	671					
vC2, stage 2 conf vol	393					
vCu, unblocked vol	997	249			602	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	94			98	
cM capacity (veh/h)	432	726			939	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	98	440	242	18	357	357
Volume Left	55	0	0	18	0	0
Volume Right	43	0	22	0	0	0
cSH	526	1700	1700	939	1700	1700
Volume to Capacity	0.19	0.26	0.14	0.02	0.21	0.21
Queue Length 95th (m)	5.2	0.0	0.0	0.4	0.0	0.0
Control Delay (s/veh)	13.4	0.0	0.0	8.9	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	13.4	0.0		0.2		
Approach LOS	B					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	112	5	2	165	17	5
Future Volume (vph)	112	5	2	165	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.971	
Flt Protected				0.999	0.962	
Satd. Flow (prot)	1874	0	0	1882	1759	0
Flt Permitted				0.999	0.962	
Satd. Flow (perm)	1874	0	0	1882	1759	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	5	2	179	18	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	0	181	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	112	5	2	165	17	5
Future Volume (Veh/h)	112	5	2	165	17	5
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)	122	5	2	179	18	5
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			127		308	125
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			127		308	125
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1459		684	926

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	127	181	23
Volume Left	0	2	18
Volume Right	5	0	5
cSH	1700	1459	725
Volume to Capacity	0.07	0.00*	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.1	10.1
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.1	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

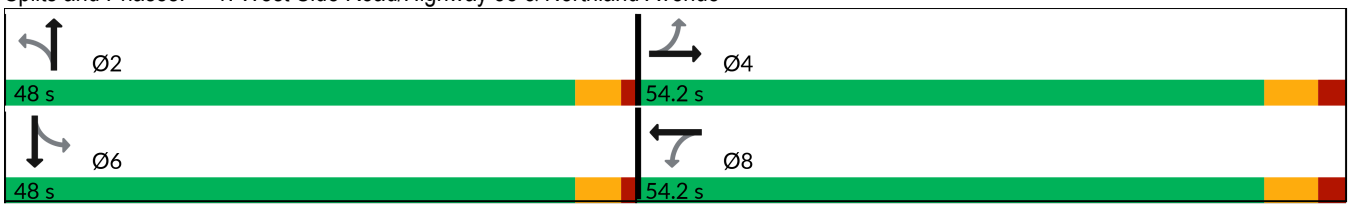
* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	26	91	13	20	10	78	627	12	24	685	151
Future Volume (vph)	123	26	91	13	20	10	78	627	12	24	685	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.968			0.997			0.973	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1832	0	1825	3535	0	1738	3412	0
Flt Permitted		0.814			0.887		0.277			0.367		
Satd. Flow (perm)	0	1484	0	0	1649	0	532	3535	0	671	3412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			11			2			32	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	134	28	99	14	22	11	85	682	13	26	745	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	47	0	85	695	0	26	909	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.12		0.26	0.32		0.06	0.43	
Control Delay (s/veh)		32.3			17.7		10.0	7.4		7.2	8.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.3			17.7		10.0	7.4		7.2	8.0	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.3			17.7			7.7			8.0	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 73.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

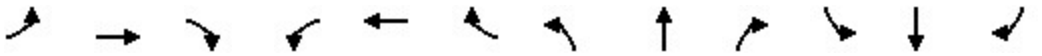


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	261	47	85	695	26	909
v/c Ratio	0.71	0.12	0.26	0.32	0.06	0.43
Control Delay (s/veh)	32.3	17.7	10.0	7.4	7.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.3	17.7	10.0	7.4	7.2	8.0
Queue Length 50th (m)	26.5	3.8	4.4	19.4	1.2	26.6
Queue Length 95th (m)	49.0	11.0	14.6	36.7	5.0	49.8
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1031	1135	330	2198	417	2133
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.26	0.32	0.06	0.43

Intersection Summary

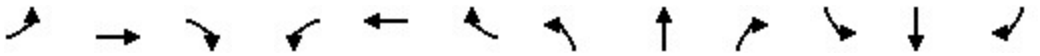
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	26	91	13	20	10	78	627	12	24	685	151
Future Volume (vph)	123	26	91	13	20	10	78	627	12	24	685	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1777			1833		1825	3536		1738	3412	
Flt Permitted		0.81			0.89		0.28	1.00		0.37	1.00	
Satd. Flow (perm)		1483			1650		532	3536		672	3412	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	99	14	22	11	85	682	13	26	745	164
RTOR Reduction (vph)	0	32	0	0	9	0	0	1	0	0	12	0
Lane Group Flow (vph)	0	229	0	0	38	0	85	694	0	26	897	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.8			15.8		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		333			371		331	2201		418	2123	
v/s Ratio Prot								0.20			c0.26	
v/s Ratio Perm		c0.15			0.02		0.16			0.04		
v/c Ratio		0.69			0.10		0.26	0.32		0.06	0.42	
Uniform Delay, d1		24.9			21.6		6.0	6.2		5.2	6.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.8			0.1		1.9	0.4		0.3	0.6	
Delay (s)		30.8			21.7		7.8	6.6		5.5	7.4	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.8			21.7			6.7			7.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.2	Sum of lost time (s)	10.7
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Future Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.945			0.937			0.980			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1715	0	1825	3469	0	1789	3438	0
Flt Permitted		0.976			0.980		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1715	0	1825	3469	0	1789	3438	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	87	27	100	74	641	96	159	804	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	214	0	74	737	0	159	902	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.7%		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)	57	12	48	80	25	92	68	590	88	146	740	90
Future Volume (Veh/h)	57	12	48	80	25	92	68	590	88	146	740	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	13	52	87	27	100	74	641	96	159	804	98
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1756	2058	454	1617	2059	370	904			737		
vC1, stage 1 conf vol	1173	1173		837	837							
vC2, stage 2 conf vol	583	885		780	1222							
vCu, unblocked vol	1756	2058	454	1617	2059	370	904			737		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	49	91	91	40	78	84	90			82		
cM capacity (veh/h)	120	137	557	144	124	633	759			865		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	127	214	74	427	310	159	536	366
Volume Left	62	87	74	0	0	159	0	0
Volume Right	52	100	0	0	96	0	0	98
cSH	181	219	759	1700	1700	865	1700	1700
Volume to Capacity	0.70	0.98	0.10	0.25	0.18	0.18	0.32	0.22
Queue Length 95th (m)	32.8	65.9	2.5	0.0	0.0	5.1	0.0	0.0
Control Delay (s/veh)	61.9	102.0	10.3	0.0	0.0	10.1	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s/veh)	61.9	102.0	0.9			1.5		
Approach LOS	F	F						

Intersection Summary				
Average Delay	14.5			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	29	718	48	50	820
Future Volume (vph)	40	29	718	48	50	820
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.942		0.991			
Flt Protected	0.972				0.950	
Satd. Flow (prot)	1725	0	3546	0	1789	3579
Flt Permitted	0.972				0.950	
Satd. Flow (perm)	1725	0	3546	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	32	780	52	54	891
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	832	0	54	891
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 38.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	29	718	48	50	820
Future Volume (Veh/h)	40	29	718	48	50	820
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)	43	32	780	52	54	891
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	1360	416			832	
vC1, stage 1 conf vol	806					
vC2, stage 2 conf vol	554					
vCu, unblocked vol	1224	203			653	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	96			94	
cM capacity (veh/h)	360	743			859	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	75	520	312	54	446	446
Volume Left	43	0	0	54	0	0
Volume Right	32	0	52	0	0	0
cSH	462	1700	1700	859	1700	1700
Volume to Capacity	0.16	0.31	0.18	0.06	0.26	0.26
Queue Length 95th (m)	4.4	0.0	0.0	1.5	0.0	0.0
Control Delay (s/veh)	14.3	0.0	0.0	9.5	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	14.3	0.0		0.5		
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	189	17	5	166	8	3
Future Volume (vph)	189	17	5	166	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1863	0	0	1882	1754	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1863	0	0	1882	1754	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	18	5	180	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	223	0	0	185	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

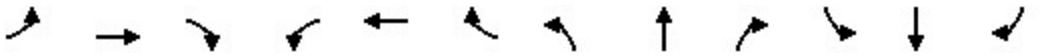
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	189	17	5	166	8	3
Future Volume (Veh/h)	189	17	5	166	8	3
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)	205	18	5	180	9	3
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		404	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			223		404	214
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1346		600	826

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	223	185	12
Volume Left	0	5	9
Volume Right	18	0	3
cSH	1700	1346	644
Volume to Capacity	0.13	0.00*	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s/veh)	0.0	0.2	10.7
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.2	10.7
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.

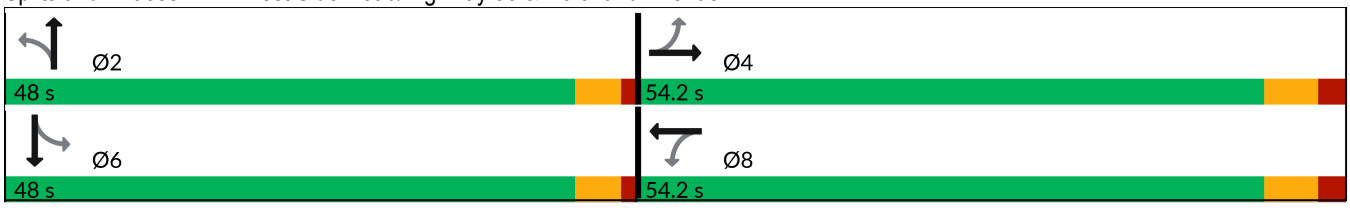


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	15	82	13	11	29	37	490	10	12	617	65
Future Volume (vph)	114	15	82	13	11	29	37	490	10	12	617	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.948			0.927			0.997			0.986	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1605	0	0	1686	0	1372	3404	0	1404	3308	0
Flt Permitted		0.800			0.907		0.355			0.451		
Satd. Flow (perm)	0	1318	0	0	1547	0	513	3404	0	666	3308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			31			3			14	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	121	16	87	14	12	31	39	521	11	13	656	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	57	0	39	532	0	13	725	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
v/c Ratio		0.70			0.16		0.12	0.25		0.03	0.35	
Control Delay (s/veh)		32.3			13.2		7.8	6.7		6.8	7.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.3			13.2		7.8	6.7		6.8	7.3	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.3			13.2			6.8			7.2	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



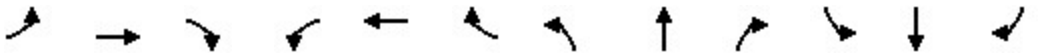
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	224	57	39	532	13	725
v/c Ratio	0.70	0.16	0.12	0.25	0.03	0.35
Control Delay (s/veh)	32.3	13.2	7.8	6.7	6.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.3	13.2	7.8	6.7	6.8	7.3
Queue Length 50th (m)	21.7	2.7	1.7	13.5	0.6	19.6
Queue Length 95th (m)	42.7	10.6	6.9	27.0	3.0	38.0
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	925	1080	321	2136	417	2080
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.05	0.12	0.25	0.03	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	15	82	13	11	29	37	490	10	12	617	65
Future Volume (vph)	114	15	82	13	11	29	37	490	10	12	617	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1604			1684		1372	3404		1403	3307	
Flt Permitted		0.80			0.91		0.35	1.00		0.45	1.00	
Satd. Flow (perm)		1319			1547		513	3404		667	3307	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	121	16	87	14	12	31	39	521	11	13	656	69
RTOR Reduction (vph)	0	33	0	0	24	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	191	0	0	33	0	39	531	0	13	720	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		288			337		322	2137		418	2076	
v/s Ratio Prot								0.16			c0.22	
v/s Ratio Perm		c0.14			0.02		0.08			0.02		
v/c Ratio		0.66			0.10		0.12	0.25		0.03	0.35	
Uniform Delay, d1		24.9			21.7		5.2	5.7		4.9	6.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7			0.1		0.8	0.3		0.1	0.5	
Delay (s)		30.5			21.8		6.0	6.0		5.1	6.6	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.5			21.8			6.0			6.6	
Approach LOS		C			C			A			A	

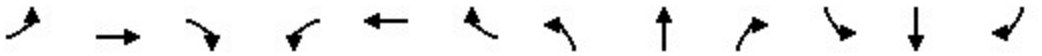
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Future Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.931			0.990			0.992	
Flt Protected		0.974			0.980		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1677	0	1560	3363	0	1674	3280	0
Flt Permitted		0.974			0.980		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1677	0	1560	3363	0	1674	3280	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	116	18	84	97	17	118	27	628	47	68	563	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	232	0	27	675	0	68	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

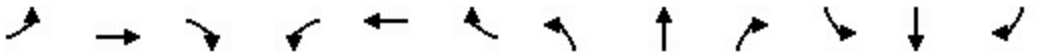
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	17	77	89	16	109	25	578	43	63	518	29
Future Volume (Veh/h)	107	17	77	89	16	109	25	578	43	63	518	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	116	18	84	97	17	118	27	628	47	68	563	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1212	1445	299	1216	1438	339	596			675		
vC1, stage 1 conf vol	716	716		706	706							
vC2, stage 2 conf vol	496	729		511	732							
vCu, unblocked vol	1212	1445	299	1216	1438	339	596			675		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	55	94	88	65	93	82	97			92		
cM capacity (veh/h)	258	281	703	274	241	663	880			867		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	218	232	27	419	256	68	375	220
Volume Left	116	97	27	0	0	68	0	0
Volume Right	84	118	0	0	47	0	0	32
cSH	344	385	880	1700	1700	867	1700	1700
Volume to Capacity	0.63	0.60	0.03	0.25	0.15	0.08	0.22	0.13
Queue Length 95th (m)	31.2	28.8	0.7	0.0	0.0	1.9	0.0	0.0
Control Delay (s/veh)	31.9	27.6	9.2	0.0	0.0	9.5	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s/veh)	31.9	27.6	0.4			1.0		
Approach LOS	D	D						

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A	
Analysis Period (min)	15			

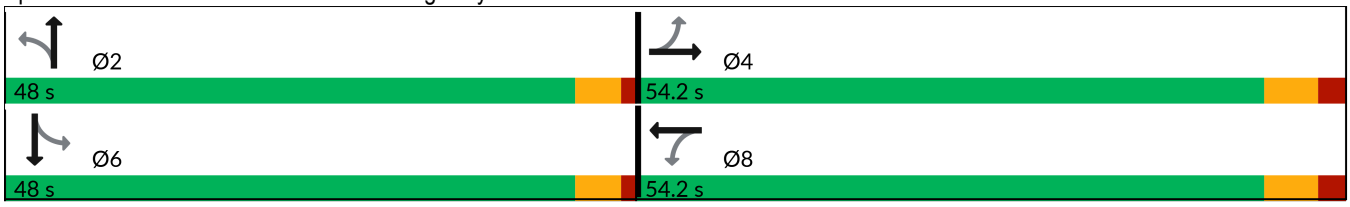


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	28	94	15	22	11	78	613	13	26	689	157
Future Volume (vph)	127	28	94	15	22	11	78	613	13	26	689	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.969			0.997			0.972	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1834	0	1825	3535	0	1738	3409	0
Flt Permitted		0.812			0.878		0.272			0.373		
Satd. Flow (perm)	0	1480	0	0	1634	0	523	3535	0	682	3409	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			12			2			34	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	138	30	102	16	24	12	85	666	14	28	749	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	0	0	52	0	85	680	0	28	920	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
v/c Ratio		0.73			0.13		0.26	0.31		0.07	0.43	
Control Delay (s/veh)		32.9			17.7		10.5	7.6		7.5	8.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.9			17.7		10.5	7.6		7.5	8.3	
LOS		C			B		B	A		A	A	
Approach Delay (s/veh)		32.9			17.7			7.9			8.3	
Approach LOS		C			B			A			A	

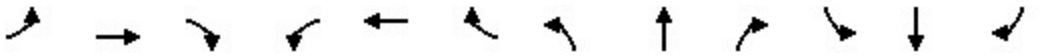
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 11.6		Intersection LOS: B	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



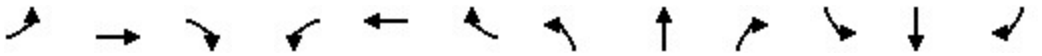
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	270	52	85	680	28	920
v/c Ratio	0.73	0.13	0.26	0.31	0.07	0.43
Control Delay (s/veh)	32.9	17.7	10.5	7.6	7.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	17.7	10.5	7.6	7.5	8.3
Queue Length 50th (m)	28.1	4.2	4.5	19.4	1.3	27.8
Queue Length 95th (m)	51.0	11.7	15.2	36.9	5.3	52.2
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1020	1116	322	2183	421	2117
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.05	0.26	0.31	0.07	0.43

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	28	94	15	22	11	78	613	13	26	689	157
Future Volume (vph)	127	28	94	15	22	11	78	613	13	26	689	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778			1833		1825	3535		1738	3410	
Flt Permitted		0.81			0.88		0.27	1.00		0.37	1.00	
Satd. Flow (perm)		1480			1634		522	3535		683	3410	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	30	102	16	24	12	85	666	14	28	749	171
RTOR Reduction (vph)	0	31	0	0	9	0	0	1	0	0	13	0
Lane Group Flow (vph)	0	239	0	0	43	0	85	679	0	28	907	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Effective Green, g (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		341			376		322	2185		422	2107	
v/s Ratio Prot								0.19			c0.27	
v/s Ratio Perm		c0.16			0.03		0.16			0.04		
v/c Ratio		0.70			0.11		0.26	0.31		0.07	0.43	
Uniform Delay, d1		25.0			21.5		6.2	6.4		5.4	7.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4			0.1		2.0	0.4		0.3	0.6	
Delay (s)		31.4			21.6		8.2	6.8		5.7	7.7	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.4			21.6			6.9			7.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Future Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.939			0.980			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1770	0	0	1718	0	1825	3469	0	1789	3439	0
Flt Permitted		0.976			0.980		0.950			0.950		
Satd. Flow (perm)	0	1770	0	0	1718	0	1825	3469	0	1789	3439	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	63	13	54	89	28	96	75	651	98	147	802	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	213	0	75	749	0	147	901	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.7%		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)	58	12	50	82	26	88	69	599	90	135	738	91
Future Volume (Veh/h)	58	12	50	82	26	88	69	599	90	135	738	91
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	13	54	89	28	96	75	651	98	147	802	99
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1734	2047	454	1607	2047	376	903			749		
vC1, stage 1 conf vol	1148	1148		850	850							
vC2, stage 2 conf vol	587	899		757	1197							
vCu, unblocked vol	1734	2047	454	1607	2047	376	903			749		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	51	91	90	41	79	85	90			83		
cM capacity (veh/h)	127	142	557	150	130	627	760			856		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	130	213	75	434	315	147	535	366
Volume Left	63	89	75	0	0	147	0	0
Volume Right	54	96	0	0	98	0	0	99
cSH	190	222	760	1700	1700	856	1700	1700
Volume to Capacity	0.68	0.96	0.10	0.26	0.19	0.17	0.31	0.22
Queue Length 95th (m)	31.7	63.9	2.5	0.0	0.0	4.7	0.0	0.0
Control Delay (s/veh)	57.0	96.5	10.3	0.0	0.0	10.1	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s/veh)	57.0	96.5	0.9			1.4		
Approach LOS	F	F						

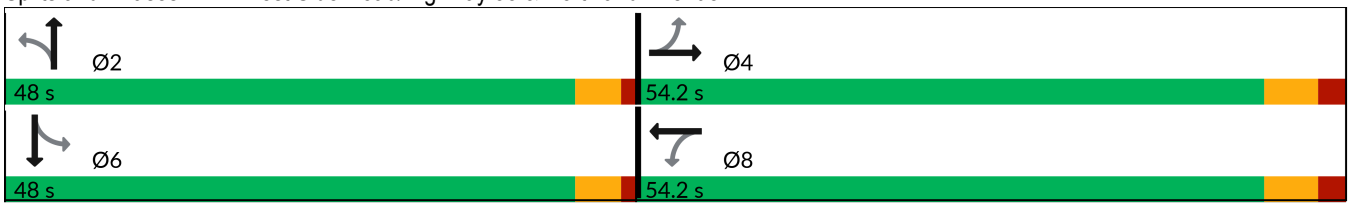
Intersection Summary				
Average Delay	13.6			
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	15	82	13	11	29	37	510	10	12	668	65
Future Volume (vph)	114	15	82	13	11	29	37	510	10	12	668	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.948			0.927			0.997			0.987	
Flt Protected		0.974			0.988		0.950			0.950		
Satd. Flow (prot)	0	1605	0	0	1686	0	1372	3404	0	1404	3311	0
Flt Permitted		0.800			0.907		0.331			0.439		
Satd. Flow (perm)	0	1318	0	0	1547	0	478	3404	0	648	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			31			2			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	121	16	87	14	12	31	39	543	11	13	711	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	57	0	39	554	0	13	780	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
v/c Ratio		0.70			0.16		0.13	0.26		0.03	0.37	
Control Delay (s/veh)		32.3			13.2		8.0	6.8		6.8	7.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.3			13.2		8.0	6.8		6.8	7.5	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.3			13.2			6.8			7.5	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 69.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



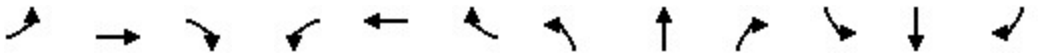
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	224	57	39	554	13	780
v/c Ratio	0.70	0.16	0.13	0.26	0.03	0.37
Control Delay (s/veh)	32.3	13.2	8.0	6.8	6.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.3	13.2	8.0	6.8	6.8	7.5
Queue Length 50th (m)	21.7	2.7	1.8	14.2	0.6	21.7
Queue Length 95th (m)	42.7	10.6	7.1	28.3	3.0	41.6
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	925	1080	299	2136	406	2081
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.05	0.13	0.26	0.03	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	15	82	13	11	29	37	510	10	12	668	65
Future Volume (vph)	114	15	82	13	11	29	37	510	10	12	668	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1604			1684		1372	3404		1403	3310	
Flt Permitted		0.80			0.91		0.33	1.00		0.44	1.00	
Satd. Flow (perm)		1319			1547		478	3404		649	3310	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	121	16	87	14	12	31	39	543	11	13	711	69
RTOR Reduction (vph)	0	33	0	0	24	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	191	0	0	33	0	39	553	0	13	776	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.2			15.2		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.63	0.63		0.63	0.63	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		288			337		300	2137		407	2078	
v/s Ratio Prot								0.16			c0.23	
v/s Ratio Perm		c0.14			0.02		0.08			0.02		
v/c Ratio		0.66			0.10		0.13	0.26		0.03	0.37	
Uniform Delay, d1		24.9			21.7		5.2	5.8		4.9	6.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7			0.1		0.9	0.3		0.1	0.5	
Delay (s)		30.5			21.8		6.1	6.0		5.1	6.8	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		30.5			21.8			6.1			6.8	
Approach LOS		C			C			A			A	

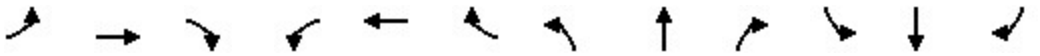
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Future Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.927			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1677	0	1560	3363	0	1674	3279	0
Flt Permitted		0.974			0.981		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1677	0	1560	3363	0	1674	3279	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	116	18	84	98	17	137	27	672	48	74	582	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	252	0	27	720	0	74	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	17	77	90	16	126	25	618	44	68	535	29
Future Volume (Veh/h)	107	17	77	90	16	126	25	618	44	68	535	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	116	18	84	98	17	137	27	672	48	74	582	32
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1284	1521	308	1282	1513	361	615			720		
vC1, stage 1 conf vol	747	747		750	750							
vC2, stage 2 conf vol	537	774		532	763							
vCu, unblocked vol	1284	1521	308	1282	1513	361	615			720		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	49	93	88	62	92	79	97			91		
cM capacity (veh/h)	230	262	693	257	226	641	864			832		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	218	252	27	448	272	74	388	226
Volume Left	116	98	27	0	0	74	0	0
Volume Right	84	137	0	0	48	0	0	32
cSH	314	376	864	1700	1700	832	1700	1700
Volume to Capacity	0.70	0.67	0.03	0.26	0.16	0.09	0.23	0.13
Queue Length 95th (m)	37.0	35.6	0.7	0.0	0.0	2.2	0.0	0.0
Control Delay (s/veh)	39.0	32.0	9.3	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	D	A			A		
Approach Delay (s/veh)	39.0	32.0	0.3			1.0		
Approach LOS	E	D						

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	49.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	40	646	20	17	694
Future Volume (vph)	51	40	646	20	17	694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.941		0.995			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1724	0	3561	0	1789	3579
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1724	0	3561	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	43	702	22	18	754
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	724	0	18	754
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 31.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	40	646	20	17	694
Future Volume (Veh/h)	51	40	646	20	17	694
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)	55	43	702	22	18	754
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	1126	362			724	
vC1, stage 1 conf vol	713					
vC2, stage 2 conf vol	413					
vCu, unblocked vol	1043	245			623	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	94			98	
cM capacity (veh/h)	416	724			914	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	98	468	256	18	377	377
Volume Left	55	0	0	18	0	0
Volume Right	43	0	22	0	0	0
cSH	512	1700	1700	914	1700	1700
Volume to Capacity	0.19	0.28	0.15	0.02	0.22	0.22
Queue Length 95th (m)	5.3	0.0	0.0	0.5	0.0	0.0
Control Delay (s/veh)	13.7	0.0	0.0	9.0	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	13.7	0.0		0.2		
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	118	5	2	171	17	5
Future Volume (vph)	118	5	2	171	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.971	
Flt Protected				0.999	0.962	
Satd. Flow (prot)	1874	0	0	1882	1759	0
Flt Permitted				0.999	0.962	
Satd. Flow (perm)	1874	0	0	1882	1759	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	5	2	186	18	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	0	188	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	118	5	2	171	17	5
Future Volume (Veh/h)	118	5	2	171	17	5
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)	128	5	2	186	18	5
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			133		321	131
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			133		321	131
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1452		672	919

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	133	188	23
Volume Left	0	2	18
Volume Right	5	0	5
cSH	1700	1452	714
Volume to Capacity	0.08	0.00*	0.03
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s/veh)	0.0	0.1	10.2
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.1	10.2
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

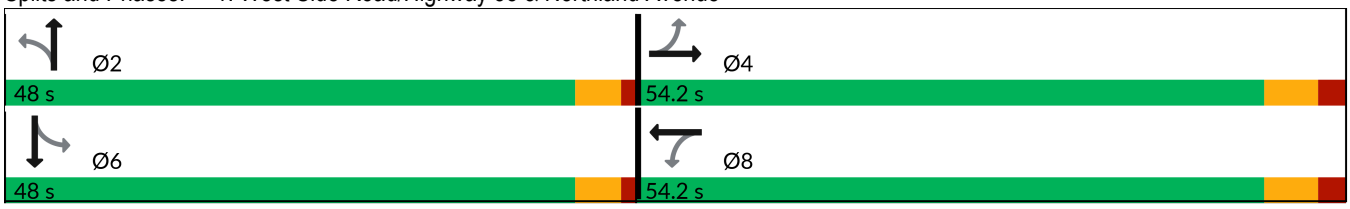
* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	28	94	15	22	11	78	661	13	26	729	157
Future Volume (vph)	127	28	94	15	22	11	78	661	13	26	729	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949			0.969			0.997			0.973	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1778	0	0	1834	0	1825	3535	0	1738	3411	0
Flt Permitted		0.812			0.878		0.256			0.349		
Satd. Flow (perm)	0	1480	0	0	1634	0	492	3535	0	639	3411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			12			2			31	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	138	30	102	16	24	12	85	718	14	28	792	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	0	0	52	0	85	732	0	28	963	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
v/c Ratio		0.73			0.13		0.28	0.34		0.07	0.45	
Control Delay (s/veh)		32.9			17.7		11.0	7.7		7.6	8.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.9			17.7		11.0	7.7		7.6	8.5	
LOS		C			B		B	A		A	A	
Approach Delay (s/veh)		32.9			17.7			8.1			8.5	
Approach LOS		C			B			A			A	

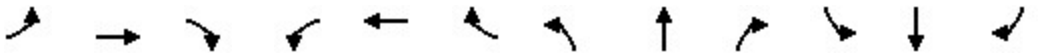
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.8			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 11.7		Intersection LOS: B	
Intersection Capacity Utilization 75.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



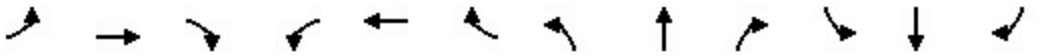
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	270	52	85	732	28	963
v/c Ratio	0.73	0.13	0.28	0.34	0.07	0.45
Control Delay (s/veh)	32.9	17.7	11.0	7.7	7.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	17.7	11.0	7.7	7.6	8.5
Queue Length 50th (m)	28.1	4.2	4.6	21.3	1.3	29.9
Queue Length 95th (m)	51.0	11.7	15.6	40.2	5.4	55.6
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1020	1116	303	2183	394	2117
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.05	0.28	0.34	0.07	0.45

Intersection Summary



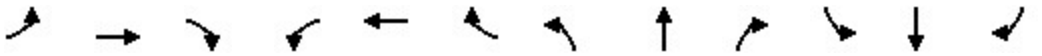
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	28	94	15	22	11	78	661	13	26	729	157
Future Volume (vph)	127	28	94	15	22	11	78	661	13	26	729	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778			1833		1825	3536		1738	3413	
Flt Permitted		0.81			0.88		0.26	1.00		0.35	1.00	
Satd. Flow (perm)		1480			1634		492	3536		639	3413	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	30	102	16	24	12	85	718	14	28	792	171
RTOR Reduction (vph)	0	31	0	0	9	0	0	1	0	0	12	0
Lane Group Flow (vph)	0	239	0	0	43	0	85	731	0	28	951	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Effective Green, g (s)		16.3			16.3		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.23			0.23		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		341			376		304	2185		394	2109	
v/s Ratio Prot								0.21			c0.28	
v/s Ratio Perm		c0.16			0.03		0.17			0.04		
v/c Ratio		0.70			0.11		0.28	0.33		0.07	0.45	
Uniform Delay, d1		25.0			21.5		6.2	6.5		5.4	7.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4			0.1		2.3	0.4		0.3	0.7	
Delay (s)		31.4			21.6		8.5	6.9		5.7	7.8	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.4			21.6			7.1			7.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Future Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.937			0.981			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1770	0	0	1715	0	1825	3472	0	1789	3438	0
Flt Permitted		0.976			0.980		0.950			0.950		
Satd. Flow (perm)	0	1770	0	0	1715	0	1825	3472	0	1789	3438	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	63	13	54	90	28	104	75	680	99	165	855	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	222	0	75	779	0	165	954	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 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)	58	12	50	83	26	96	69	626	91	152	787	91
Future Volume (Veh/h)	58	12	50	83	26	96	69	626	91	152	787	91
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	13	54	90	28	104	75	680	99	165	855	99
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1846	2166	480	1699	2166	391	956			779		
vC1, stage 1 conf vol	1237	1237		880	880							
vC2, stage 2 conf vol	609	929		819	1286							
vCu, unblocked vol	1846	2166	480	1699	2166	391	956			779		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	40	89	90	29	74	83	90			80		
cM capacity (veh/h)	104	120	536	127	108	613	726			834		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	130	222	75	453	326	165	570	384
Volume Left	63	90	75	0	0	165	0	0
Volume Right	54	104	0	0	99	0	0	99
cSH	160	195	726	1700	1700	834	1700	1700
Volume to Capacity	0.81	1.14	0.10	0.27	0.19	0.20	0.34	0.23
Queue Length 95th (m)	40.8	83.2	2.6	0.0	0.0	5.6	0.0	0.0
Control Delay (s/veh)	85.6	156.2	10.5	0.0	0.0	10.4	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s/veh)	85.6	156.2	0.9			1.5		
Approach LOS	F	F						

Intersection Summary				
Average Delay	20.8			
Intersection Capacity Utilization	52.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	29	757	48	50	872
Future Volume (vph)	40	29	757	48	50	872
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.942		0.991			
Flt Protected	0.972				0.950	
Satd. Flow (prot)	1725	0	3546	0	1789	3579
Flt Permitted	0.972				0.950	
Satd. Flow (perm)	1725	0	3546	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	32	823	52	54	948
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	875	0	54	948
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 39.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	29	757	48	50	872
Future Volume (Veh/h)	40	29	757	48	50	872
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)	43	32	823	52	54	948
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1431	438			875	
vC1, stage 1 conf vol	849					
vC2, stage 2 conf vol	582					
vCu, unblocked vol	1283	196			675	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	96			94	
cM capacity (veh/h)	345	742			834	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	75	549	326	54	474	474
Volume Left	43	0	0	54	0	0
Volume Right	32	0	52	0	0	0
cSH	447	1700	1700	834	1700	1700
Volume to Capacity	0.17	0.32	0.19	0.06	0.28	0.28
Queue Length 95th (m)	4.5	0.0	0.0	1.6	0.0	0.0
Control Delay (s/veh)	14.7	0.0	0.0	9.6	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	14.7	0.0		0.5		
Approach LOS	B					

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	39.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	197	17	5	174	8	3
Future Volume (vph)	197	17	5	174	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1865	0	0	1882	1754	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1865	0	0	1882	1754	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	214	18	5	189	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	0	0	194	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	197	17	5	174	8	3
Future Volume (Veh/h)	197	17	5	174	8	3
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)	214	18	5	189	9	3
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			232		422	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			232		422	223
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1336		586	817

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	232	194	12
Volume Left	0	5	9
Volume Right	18	0	3
cSH	1700	1336	631
Volume to Capacity	0.14	0.00*	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s/veh)	0.0	0.2	10.8
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.2	10.8
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

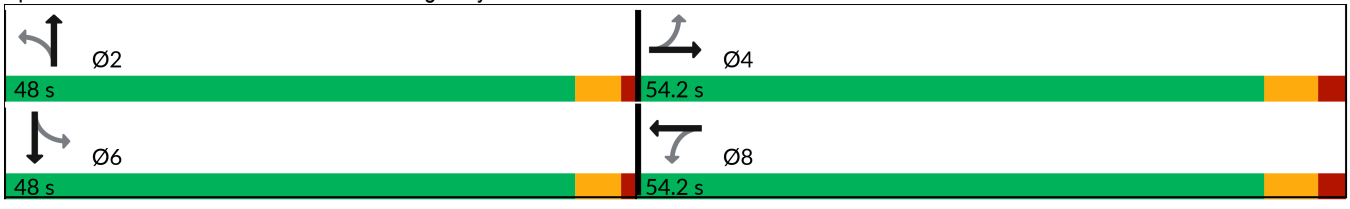
* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	16	85	15	12	32	38	522	11	13	650	68
Future Volume (vph)	118	16	85	15	12	32	38	522	11	13	650	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.948			0.927			0.997			0.986	
Flt Protected		0.974			0.987		0.950			0.950		
Satd. Flow (prot)	0	1605	0	0	1683	0	1372	3404	0	1404	3308	0
Flt Permitted		0.797			0.902		0.337			0.432		
Satd. Flow (perm)	0	1314	0	0	1538	0	487	3404	0	638	3308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			34			3			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	126	17	90	16	13	34	40	555	12	14	691	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	0	0	63	0	40	567	0	14	763	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.17		0.13	0.27		0.04	0.37	
Control Delay (s/veh)		32.9			13.0		8.3	7.1		7.2	7.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.9			13.0		8.3	7.1		7.2	7.7	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.9			13.0			7.1			7.7	
Approach LOS		C			B			A			A	

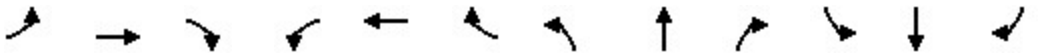
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	233	63	40	567	14	763
v/c Ratio	0.71	0.17	0.13	0.27	0.04	0.37
Control Delay (s/veh)	32.9	13.0	8.3	7.1	7.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	13.0	8.3	7.1	7.2	7.7
Queue Length 50th (m)	23.0	3.0	1.9	15.0	0.6	21.6
Queue Length 95th (m)	44.6	11.2	7.5	29.9	3.2	41.9
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	915	1067	303	2120	397	2064
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.06	0.13	0.27	0.04	0.37

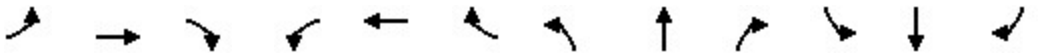
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	16	85	15	12	32	38	522	11	13	650	68
Future Volume (vph)	118	16	85	15	12	32	38	522	11	13	650	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1605			1684		1372	3404		1403	3307	
Flt Permitted		0.80			0.90		0.34	1.00		0.43	1.00	
Satd. Flow (perm)		1314			1538		486	3404		637	3307	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	17	90	16	13	34	40	555	12	14	691	72
RTOR Reduction (vph)	0	33	0	0	26	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	200	0	0	37	0	40	566	0	14	758	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		294			344		302	2122		397	2061	
v/s Ratio Prot								0.17			c0.23	
v/s Ratio Perm		c0.15			0.02		0.08			0.02		
v/c Ratio		0.68			0.11		0.13	0.27		0.04	0.37	
Uniform Delay, d1		24.9			21.6		5.4	6.0		5.1	6.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4			0.1		0.9	0.3		0.2	0.5	
Delay (s)		31.3			21.8		6.3	6.3		5.2	7.0	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.3			21.8			6.3			6.9	
Approach LOS		C			C			A			A	

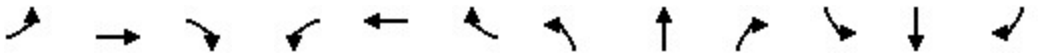
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Future Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.931			0.990			0.992	
Flt Protected		0.974			0.980		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1678	0	1560	3363	0	1674	3279	0
Flt Permitted		0.974			0.980		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1678	0	1560	3363	0	1674	3279	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	118	20	86	99	17	122	28	668	48	72	599	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	238	0	28	716	0	72	632	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

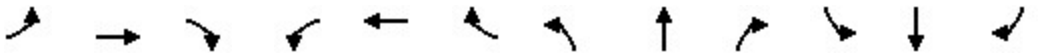
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	18	79	91	16	112	26	615	44	66	551	30
Future Volume (Veh/h)	109	18	79	91	16	112	26	615	44	66	551	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	20	86	99	17	122	28	668	48	72	599	33
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1282	1533	317	1288	1525	359	633			716		
vC1, stage 1 conf vol	761	761		748	748							
vC2, stage 2 conf vol	522	772		540	777							
vCu, unblocked vol	1282	1533	317	1288	1525	359	633			716		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	50	92	87	61	92	81	97			91		
cM capacity (veh/h)	237	261	684	254	224	643	850			835		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	224	238	28	445	271	72	399	233
Volume Left	118	99	28	0	0	72	0	0
Volume Right	86	122	0	0	48	0	0	33
cSH	320	363	850	1700	1700	835	1700	1700
Volume to Capacity	0.70	0.66	0.03	0.26	0.16	0.09	0.23	0.14
Queue Length 95th (m)	37.6	33.8	0.8	0.0	0.0	2.1	0.0	0.0
Control Delay (s/veh)	38.7	31.9	9.4	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	D	A			A		
Approach Delay (s/veh)	38.7	31.9	0.4			1.0		
Approach LOS	E	D						

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			

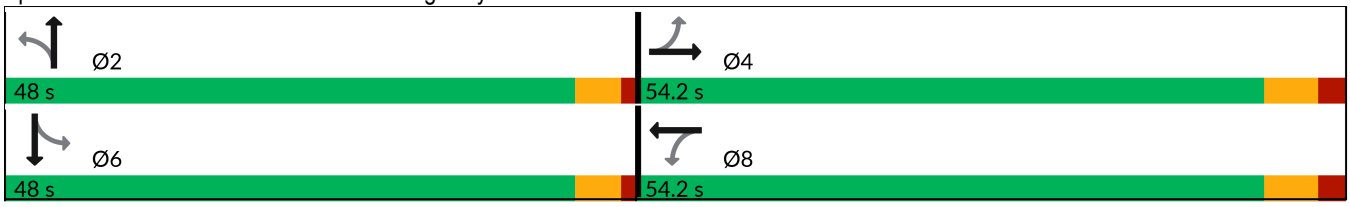


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	30	97	16	24	12	79	647	15	28	733	162
Future Volume (vph)	132	30	97	16	24	12	79	647	15	28	733	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.969			0.997			0.973	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1779	0	0	1834	0	1825	3535	0	1738	3412	0
Flt Permitted		0.810			0.876		0.251			0.353		
Satd. Flow (perm)	0	1478	0	0	1631	0	482	3535	0	646	3412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			13			3			32	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	143	33	105	17	26	13	86	703	16	30	797	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	0	56	0	86	719	0	30	973	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.24			0.24		0.61	0.61		0.61	0.61	
v/c Ratio		0.74			0.14		0.29	0.33		0.08	0.46	
Control Delay (s/veh)		33.4			17.5		11.6	8.0		7.9	8.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		33.4			17.5		11.6	8.0		7.9	8.9	
LOS		C			B		B	A		A	A	
Approach Delay (s/veh)		33.4			17.5			8.4			8.9	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 71.4			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue

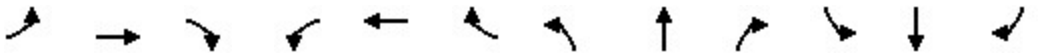


Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	56	86	719	30	973
v/c Ratio	0.74	0.14	0.29	0.33	0.08	0.46
Control Delay (s/veh)	33.4	17.5	11.6	8.0	7.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.4	17.5	11.6	8.0	7.9	8.9
Queue Length 50th (m)	29.7	4.5	4.8	21.5	1.5	31.3
Queue Length 95th (m)	53.3	12.2	16.5	40.5	5.9	58.1
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1011	1105	294	2164	395	2100
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.05	0.29	0.33	0.08	0.46

Intersection Summary

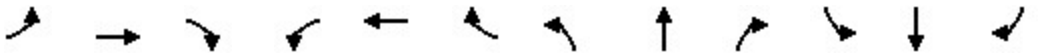
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	30	97	16	24	12	79	647	15	28	733	162
Future Volume (vph)	132	30	97	16	24	12	79	647	15	28	733	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1779			1833		1825	3534		1738	3411	
Flt Permitted		0.81			0.88		0.25	1.00		0.35	1.00	
Satd. Flow (perm)		1478			1631		481	3534		647	3411	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	33	105	17	26	13	86	703	16	30	797	176
RTOR Reduction (vph)	0	30	0	0	10	0	0	1	0	0	12	0
Lane Group Flow (vph)	0	251	0	0	46	0	86	718	0	30	961	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Effective Green, g (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.24			0.24		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		351			388		294	2162		395	2087	
v/s Ratio Prot								0.20			c0.28	
v/s Ratio Perm		c0.17			0.03		0.18			0.05		
v/c Ratio		0.71			0.12		0.29	0.33		0.08	0.46	
Uniform Delay, d1		25.0			21.3		6.5	6.7		5.6	7.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.7			0.1		2.5	0.4		0.4	0.7	
Delay (s)		31.7			21.5		9.1	7.2		6.0	8.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.7			21.5			7.4			8.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	10.7
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Future Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.939			0.981			0.984	
Flt Protected		0.977			0.980		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1718	0	1825	3472	0	1789	3438	0
Flt Permitted		0.977			0.980		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1718	0	1825	3472	0	1789	3438	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	64	14	55	92	29	100	76	690	100	152	853	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	221	0	76	790	0	152	954	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 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)	59	13	51	85	27	92	70	635	92	140	785	93
Future Volume (Veh/h)	59	13	51	85	27	92	70	635	92	140	785	93
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	14	55	92	29	100	76	690	100	152	853	101
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1822	2152	480	1686	2152	396	956			790		
vC1, stage 1 conf vol	1210	1210		892	892							
vC2, stage 2 conf vol	613	942		794	1260							
vCu, unblocked vol	1822	2152	480	1686	2152	396	956			790		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	43	89	90	31	75	84	90			82		
cM capacity (veh/h)	111	127	536	133	114	608	726			826		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	133	221	76	460	330	152	569	385
Volume Left	64	92	76	0	0	152	0	0
Volume Right	55	100	0	0	100	0	0	101
cSH	169	199	726	1700	1700	826	1700	1700
Volume to Capacity	0.79	1.11	0.10	0.27	0.19	0.18	0.33	0.23
Queue Length 95th (m)	39.3	80.2	2.7	0.0	0.0	5.1	0.0	0.0
Control Delay (s/veh)	77.8	145.2	10.5	0.0	0.0	10.3	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s/veh)	77.8	145.2	0.9			1.4		
Approach LOS	F	F						

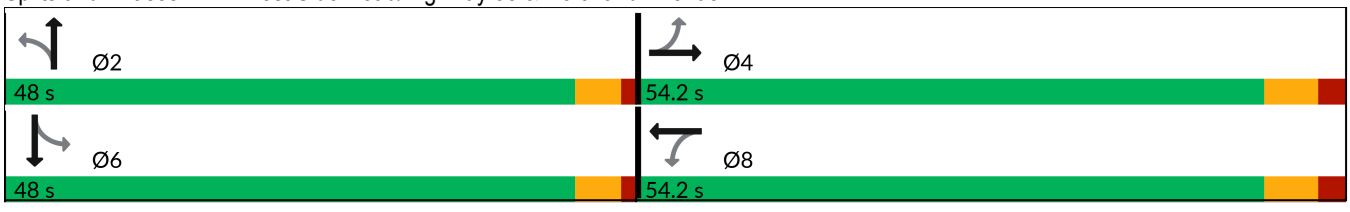
Intersection Summary				
Average Delay	19.3			
Intersection Capacity Utilization	52.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	16	85	15	12	32	38	542	11	13	701	68
Future Volume (vph)	118	16	85	15	12	32	38	542	11	13	701	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00			1.00		1.00		
Frt		0.948			0.927			0.997			0.987	
Flt Protected		0.974			0.987		0.950			0.950		
Satd. Flow (prot)	0	1605	0	0	1683	0	1372	3404	0	1404	3311	0
Flt Permitted		0.797			0.902		0.313			0.420		
Satd. Flow (perm)	0	1314	0	0	1538	0	452	3404	0	620	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			34			2			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Confl. Peds. (#/hr)			2	2					1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Adj. Flow (vph)	126	17	90	16	13	34	40	577	12	14	746	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	0	0	63	0	40	589	0	14	818	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
v/c Ratio		0.71			0.17		0.14	0.28		0.04	0.40	
Control Delay (s/veh)		32.9			13.0		8.6	7.1		7.2	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		32.9			13.0		8.6	7.1		7.2	7.9	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		32.9			13.0			7.2			7.9	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 70.2			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 11.2		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



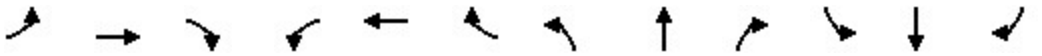
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	233	63	40	589	14	818
v/c Ratio	0.71	0.17	0.14	0.28	0.04	0.40
Control Delay (s/veh)	32.9	13.0	8.6	7.1	7.2	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.9	13.0	8.6	7.1	7.2	7.9
Queue Length 50th (m)	23.0	3.0	1.9	15.8	0.6	23.8
Queue Length 95th (m)	44.6	11.2	7.6	31.2	3.2	45.6
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	915	1067	281	2120	385	2065
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.06	0.14	0.28	0.04	0.40

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	16	85	15	12	32	38	542	11	13	701	68
Future Volume (vph)	118	16	85	15	12	32	38	542	11	13	701	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1605			1684		1372	3404		1403	3310	
Flt Permitted		0.80			0.90		0.31	1.00		0.42	1.00	
Satd. Flow (perm)		1314			1538		453	3404		620	3310	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	17	90	16	13	34	40	577	12	14	746	72
RTOR Reduction (vph)	0	33	0	0	26	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	200	0	0	37	0	40	588	0	14	813	0
Confl. Peds. (#/hr)			2	2					1	1		
Heavy Vehicles (%)	8%	8%	13%	9%	0%	4%	33%	7%	0%	30%	9%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Effective Green, g (s)		15.7			15.7		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.22			0.22		0.62	0.62		0.62	0.62	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		294			344		282	2122		386	2063	
v/s Ratio Prot								0.17			c0.25	
v/s Ratio Perm		c0.15			0.02		0.09			0.02		
v/c Ratio		0.68			0.11		0.14	0.28		0.04	0.39	
Uniform Delay, d1		24.9			21.6		5.5	6.0		5.1	6.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4			0.1		1.1	0.3		0.2	0.6	
Delay (s)		31.3			21.8		6.5	6.3		5.3	7.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.3			21.8			6.3			7.1	
Approach LOS		C			C			A			A	

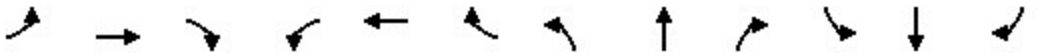
Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	10.7
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Future Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.948			0.926			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1676	0	1560	3362	0	1674	3279	0
Flt Permitted		0.974			0.981		0.950			0.950		
Satd. Flow (perm)	0	1774	0	0	1676	0	1560	3362	0	1674	3279	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	118	20	86	100	17	140	28	712	49	77	617	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	257	0	28	761	0	77	650	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.0%		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)	109	18	79	92	16	129	26	655	45	71	568	30
Future Volume (Veh/h)	109	18	79	92	16	129	26	655	45	71	568	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	20	86	100	17	140	28	712	49	77	617	33
Pedestrians		1									1	
Lane Width (m)		3.7									3.7	
Walking Speed (m/s)		1.1									1.1	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1350	1606	326	1351	1598	382	651			761		
vC1, stage 1 conf vol	789	789		793	793							
vC2, stage 2 conf vol	562	817		559	805							
vCu, unblocked vol	1350	1606	326	1351	1598	382	651			761		
tC, single (s)	7.5	6.5	6.9	7.6	7.2	6.9	4.4			4.3		
tC, 2 stage (s)	6.5	5.5		6.6	6.2							
tF (s)	3.5	4.0	3.3	3.6	4.3	3.3	2.4			2.3		
p0 queue free %	44	92	87	58	92	77	97			90		
cM capacity (veh/h)	212	244	675	239	211	622	836			802		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	224	257	28	475	286	77	411	239
Volume Left	118	100	28	0	0	77	0	0
Volume Right	86	140	0	0	49	0	0	33
cSH	292	355	836	1700	1700	802	1700	1700
Volume to Capacity	0.77	0.72	0.03	0.28	0.17	0.10	0.24	0.14
Queue Length 95th (m)	44.5	41.5	0.8	0.0	0.0	2.4	0.0	0.0
Control Delay (s/veh)	48.6	37.7	9.5	0.0	0.0	10.0	0.0	0.0
Lane LOS	E	E	A			A		
Approach Delay (s/veh)	48.6	37.7	0.3			1.1		
Approach LOS	E	E						

Intersection Summary				
Average Delay	10.8			
Intersection Capacity Utilization	51.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	40	685	20	17	731
Future Volume (vph)	51	40	685	20	17	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.941		0.996			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1724	0	3564	0	1789	3579
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1724	0	3564	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	43	745	22	18	795
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	767	0	18	795
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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 32.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	40	685	20	17	731
Future Volume (Veh/h)	51	40	685	20	17	731
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)	55	43	745	22	18	795
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	1190	384			767	
vC1, stage 1 conf vol	756					
vC2, stage 2 conf vol	434					
vCu, unblocked vol	1090	240			644	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	94			98	
cM capacity (veh/h)	400	722			888	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	98	497	270	18	398	398
Volume Left	55	0	0	18	0	0
Volume Right	43	0	22	0	0	0
cSH	497	1700	1700	888	1700	1700
Volume to Capacity	0.20	0.29	0.16	0.02	0.23	0.23
Queue Length 95th (m)	5.5	0.0	0.0	0.5	0.0	0.0
Control Delay (s/veh)	14.0	0.0	0.0	9.1	0.0	0.0
Lane LOS	B			A		
Approach Delay (s/veh)	14.0	0.0		0.2		
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	123	5	2	177	17	5
Future Volume (vph)	123	5	2	177	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.971	
Flt Protected				0.999	0.962	
Satd. Flow (prot)	1874	0	0	1882	1759	0
Flt Permitted				0.999	0.962	
Satd. Flow (perm)	1874	0	0	1882	1759	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	5	2	192	18	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	0	194	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	123	5	2	177	17	5
Future Volume (Veh/h)	123	5	2	177	17	5
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)	134	5	2	192	18	5
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			139		333	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		333	137
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1445		662	912

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	139	194	23
Volume Left	0	2	18
Volume Right	5	0	5
cSH	1700	1445	704
Volume to Capacity	0.08	0.00*	0.03
Queue Length 95th (m)	0.0	0.0	0.8
Control Delay (s/veh)	0.0	0.1	10.3
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.1	10.3
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

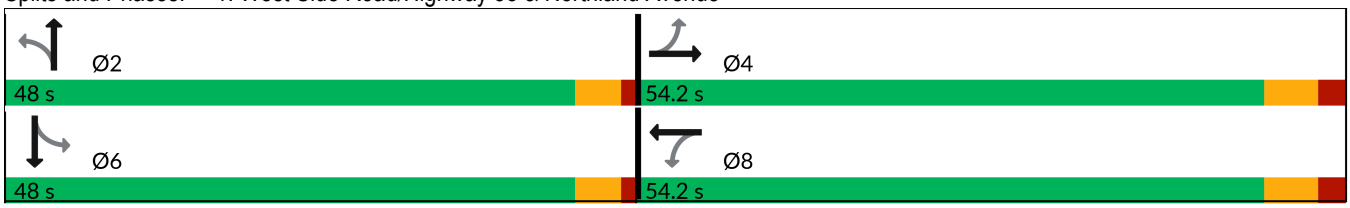
* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	30	97	16	24	12	79	695	15	28	773	162
Future Volume (vph)	132	30	97	16	24	12	79	695	15	28	773	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	55.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.969			0.997			0.974	
Flt Protected		0.975			0.985		0.950			0.950		
Satd. Flow (prot)	0	1779	0	0	1834	0	1825	3535	0	1738	3414	0
Flt Permitted		0.810			0.876		0.236			0.330		
Satd. Flow (perm)	0	1478	0	0	1631	0	453	3535	0	604	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			13			3			30	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		166.5			409.6			168.6			224.6	
Travel Time (s)		12.0			29.5			8.7			11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Adj. Flow (vph)	143	33	105	17	26	13	86	755	16	30	840	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	0	56	0	86	771	0	30	1016	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	54.2	54.2		54.2	54.2		45.5	45.5		45.5	45.5	
Total Split (s)	54.2	54.2		54.2	54.2		48.0	48.0		48.0	48.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		43.5	43.5		43.5	43.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.5	4.5		4.5	4.5	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	17.0	17.0		17.0	17.0		26.0	26.0		26.0	26.0	
Flash Don't Walk (s)	31.0	31.0		31.0	31.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.24			0.24		0.61	0.61		0.61	0.61	
v/c Ratio		0.74			0.14		0.31	0.36		0.08	0.48	
Control Delay (s/veh)		33.4			17.5		12.3	8.2		8.0	9.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		33.4			17.5		12.3	8.2		8.0	9.1	
LOS		C			B		B	A		A	A	
Approach Delay (s/veh)		33.4			17.5			8.6			9.1	
Approach LOS		C			B			A			A	

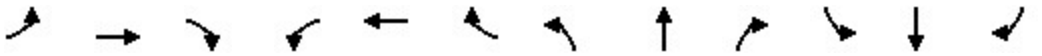
Intersection Summary			
Area Type:	Other		
Cycle Length: 102.2			
Actuated Cycle Length: 71.4			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 12.2		Intersection LOS: B	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: West Side Road/Highway 58 & Northland Avenue



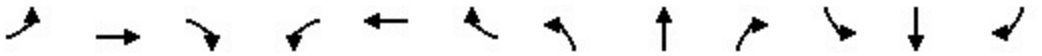
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	281	56	86	771	30	1016
v/c Ratio	0.74	0.14	0.31	0.36	0.08	0.48
Control Delay (s/veh)	33.4	17.5	12.3	8.2	8.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.4	17.5	12.3	8.2	8.0	9.1
Queue Length 50th (m)	29.7	4.5	4.8	23.5	1.5	33.4
Queue Length 95th (m)	53.3	12.2	17.1	43.9	6.0	61.8
Internal Link Dist (m)	142.5	385.6		144.6		200.6
Turn Bay Length (m)			55.0		75.0	
Base Capacity (vph)	1011	1105	277	2164	369	2100
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.05	0.31	0.36	0.08	0.48

Intersection Summary



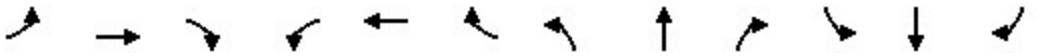
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	30	97	16	24	12	79	695	15	28	773	162
Future Volume (vph)	132	30	97	16	24	12	79	695	15	28	773	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.97		1.00	1.00		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1779			1833		1825	3535		1738	3414	
Flt Permitted		0.81			0.88		0.24	1.00		0.33	1.00	
Satd. Flow (perm)		1478			1631		453	3535		604	3414	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	33	105	17	26	13	86	755	16	30	840	176
RTOR Reduction (vph)	0	30	0	0	10	0	0	1	0	0	12	0
Lane Group Flow (vph)	0	251	0	0	46	0	86	770	0	30	1004	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	3%	0%	5%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Effective Green, g (s)		17.0			17.0		43.7	43.7		43.7	43.7	
Actuated g/C Ratio		0.24			0.24		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		351			388		277	2163		369	2089	
v/s Ratio Prot								0.22			c0.29	
v/s Ratio Perm		c0.17			0.03		0.19			0.05		
v/c Ratio		0.71			0.12		0.31	0.36		0.08	0.48	
Uniform Delay, d1		25.0			21.3		6.6	6.9		5.7	7.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.7			0.1		2.9	0.5		0.4	0.8	
Delay (s)		31.7			21.5		9.5	7.3		6.1	8.4	
Level of Service		C			C		A	A		A	A	
Approach Delay (s/veh)		31.7			21.5			7.5			8.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	10.7
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Future Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.944			0.936			0.982			0.985	
Flt Protected		0.977			0.980		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1714	0	1825	3476	0	1789	3441	0
Flt Permitted		0.977			0.980		0.950			0.950		
Satd. Flow (perm)	0	1772	0	0	1714	0	1825	3476	0	1789	3441	0
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	64	14	55	93	29	109	76	720	101	171	907	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	231	0	76	821	0	171	1008	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	13	51	86	27	100	70	662	93	157	834	93
Future Volume (Veh/h)	59	13	51	86	27	100	70	662	93	157	834	93
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	14	55	93	29	109	76	720	101	171	907	101
Pedestrians		2						1			1	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1938	2275	507	1781	2275	412	1010			821		
vC1, stage 1 conf vol	1302	1302		923	923							
vC2, stage 2 conf vol	637	973		859	1352							
vCu, unblocked vol	1938	2275	507	1781	2275	412	1010			821		
tC, single (s)	7.5	6.5	6.9	7.6	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2		
p0 queue free %	27	87	89	16	68	82	89			79		
cM capacity (veh/h)	88	104	515	110	92	595	693			804		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	133	231	76	480	341	171	605	403
Volume Left	64	93	76	0	0	171	0	0
Volume Right	55	109	0	0	101	0	0	101
cSH	137	172	693	1700	1700	804	1700	1700
Volume to Capacity	0.97	1.34	0.11	0.28	0.20	0.21	0.36	0.24
Queue Length 95th (m)	51.7	104.0	2.8	0.0	0.0	6.1	0.0	0.0
Control Delay (s/veh)	131.6	239.0	10.8	0.0	0.0	10.7	0.0	0.0
Lane LOS	F	F	B			B		
Approach Delay (s/veh)	131.6	239.0	0.9			1.5		
Approach LOS	F	F						

Intersection Summary				
Average Delay	30.9			
Intersection Capacity Utilization	54.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	29	797	48	50	923
Future Volume (vph)	40	29	797	48	50	923
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	15.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.942		0.992			
Flt Protected	0.972				0.950	
Satd. Flow (prot)	1725	0	3550	0	1789	3579
Flt Permitted	0.972				0.950	
Satd. Flow (perm)	1725	0	3550	0	1789	3579
Link Speed (k/h)	48		70			70
Link Distance (m)	154.9		224.6			216.8
Travel Time (s)	11.6		11.6			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	32	866	52	54	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	918	0	54	1003
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane			Yes			Yes
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	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	29	797	48	50	923
Future Volume (Veh/h)	40	29	797	48	50	923
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)	43	32	866	52	54	1003
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)			225			
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	1502	459			918	
vC1, stage 1 conf vol	892					
vC2, stage 2 conf vol	610					
vCu, unblocked vol	1341	187			695	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	96			93	
cM capacity (veh/h)	330	744			810	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	75	577	341	54	502	502
Volume Left	43	0	0	54	0	0
Volume Right	32	0	52	0	0	0
cSH	433	1700	1700	810	1700	1700
Volume to Capacity	0.17	0.34	0.20	0.07	0.30	0.30
Queue Length 95th (m)	4.7	0.0	0.0	1.6	0.0	0.0
Control Delay (s/veh)	15.0	0.0	0.0	9.8	0.0	0.0
Lane LOS	C			A		
Approach Delay (s/veh)	15.0	0.0		0.5		
Approach LOS	C					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	205	17	5	182	8	3
Future Volume (vph)	205	17	5	182	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1865	0	0	1882	1754	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1865	0	0	1882	1754	0
Link Speed (k/h)	50			50	48	
Link Distance (m)	228.1			398.2	120.3	
Travel Time (s)	16.4			28.7	9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	18	5	198	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	0	0	203	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	205	17	5	182	8	3
Future Volume (Veh/h)	205	17	5	182	8	3
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)	223	18	5	198	9	3
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			241		440	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		440	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1326		572	807

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	241	203	12
Volume Left	0	5	9
Volume Right	18	0	3
cSH	1700	1326	617
Volume to Capacity	0.14	0.00*	0.02
Queue Length 95th (m)	0.0	0.1	0.5
Control Delay (s/veh)	0.0	0.2	10.9
Lane LOS		A	B
Approach Delay (s/veh)	0.0	0.2	10.9
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.

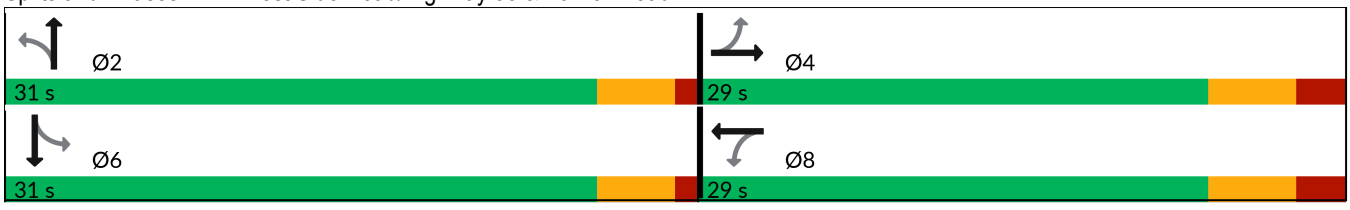
Synchro Outputs - Highway 58 & Barrick Signalized

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Future Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.932			0.990			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1666	0	1560	3363	0	1674	3274	0
Flt Permitted		0.763			0.808		0.448			0.415		
Satd. Flow (perm)	0	1389	0	0	1375	0	735	3363	0	731	3274	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			99			16			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	17	82	93	16	112	26	573	43	64	514	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	221	0	26	616	0	64	546	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.22			0.22		0.56	0.56		0.56	0.56	
v/c Ratio		0.60			0.58		0.06	0.33		0.16	0.30	
Control Delay (s/veh)		19.0			15.7		7.1	7.1		8.0	7.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.0			15.7		7.1	7.1		8.0	7.0	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.0			15.7			7.1			7.1	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 48.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 9.7		Intersection LOS: A	
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	213	221	26	616	64	546
v/c Ratio	0.60	0.58	0.06	0.33	0.16	0.30
Control Delay (s/veh)	19.0	15.7	7.1	7.1	8.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.0	15.7	7.1	7.1	8.0	7.0
Queue Length 50th (m)	11.3	8.8	0.9	12.5	2.3	10.8
Queue Length 95th (m)	26.4	23.6	4.5	27.3	9.1	24.1
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	685	699	408	1877	406	1827
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.32	0.06	0.33	0.16	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Future Volume (vph)	105	16	75	86	15	103	24	527	40	59	473	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1667		1559	3362		1674	3274	
Flt Permitted		0.76			0.81		0.45	1.00		0.41	1.00	
Satd. Flow (perm)		1388			1376		735	3362		731	3274	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	17	82	93	16	112	26	573	43	64	514	32
RTOR Reduction (vph)	0	47	0	0	77	0	0	7	0	0	6	0
Lane Group Flow (vph)	0	166	0	0	144	0	26	609	0	64	540	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		27.1	27.1		27.1	27.1	
Effective Green, g (s)		10.9			10.9		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.22			0.22		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		310			307		409	1870		406	1821	
v/s Ratio Prot								c0.18			0.16	
v/s Ratio Perm		c0.12			0.10		0.04			0.09		
v/c Ratio		0.53			0.47		0.06	0.33		0.16	0.30	
Uniform Delay, d1		16.7			16.4		5.0	5.9		5.3	5.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8			1.1		0.3	0.5		0.8	0.4	
Delay (s)		18.4			17.5		5.3	6.3		6.1	6.2	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.4			17.5			6.3			6.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

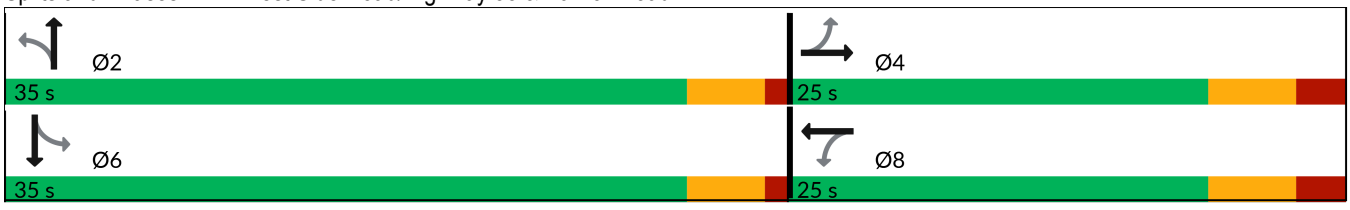
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Future Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.945			0.940			0.980			0.982	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1707	0	1825	3468	0	1789	3424	0
Flt Permitted		0.778			0.824		0.316			0.379		
Satd. Flow (perm)	0	1404	0	0	1436	0	607	3468	0	714	3424	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			69			42			35	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	85	27	89	73	597	93	138	732	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	201	0	73	690	0	138	829	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.8	18.8		18.8	18.8		30.5	30.5		30.5	30.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.7			10.7		33.4	33.4		33.4	33.4	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
v/c Ratio		0.40			0.60		0.20	0.32		0.32	0.40	
Control Delay (s/veh)		14.9			19.9		8.0	6.1		9.2	6.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		14.9			19.9		8.0	6.1		9.2	6.7	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		14.9			19.9			6.3			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 54.8			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 8.5		Intersection LOS: A	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



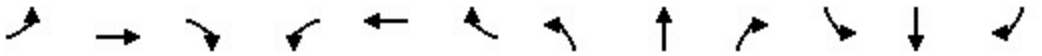
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	201	73	690	138	829
v/c Ratio	0.40	0.60	0.20	0.32	0.32	0.40
Control Delay (s/veh)	14.9	19.9	8.0	6.1	9.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.9	19.9	8.0	6.1	9.2	6.7
Queue Length 50th (m)	5.9	10.8	2.6	13.2	5.4	17.1
Queue Length 95th (m)	16.8	26.1	10.4	28.3	18.6	36.1
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	518	540	369	2127	434	2097
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.37	0.20	0.32	0.32	0.40

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Future Volume (vph)	57	12	48	78	25	82	67	549	86	127	673	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1708		1823	3468		1789	3425	
Flt Permitted		0.78			0.82		0.32	1.00		0.38	1.00	
Satd. Flow (perm)		1404			1437		606	3468		713	3425	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	13	52	85	27	89	73	597	93	138	732	97
RTOR Reduction (vph)	0	42	0	0	56	0	0	16	0	0	14	0
Lane Group Flow (vph)	0	85	0	0	145	0	73	674	0	138	815	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.7			10.7		33.4	33.4		33.4	33.4	
Effective Green, g (s)		10.7			10.7		33.4	33.4		33.4	33.4	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		274			280		369	2113		434	2087	
v/s Ratio Prot								0.19			c0.24	
v/s Ratio Perm		0.06			c0.10		0.12			0.19		
v/c Ratio		0.31			0.52		0.20	0.32		0.32	0.39	
Uniform Delay, d1		18.9			19.7		4.8	5.2		5.2	5.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			1.6		1.2	0.4		1.9	0.6	
Delay (s)		19.5			21.4		6.0	5.6		7.1	6.0	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.5			21.4			5.6			6.2	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.7
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

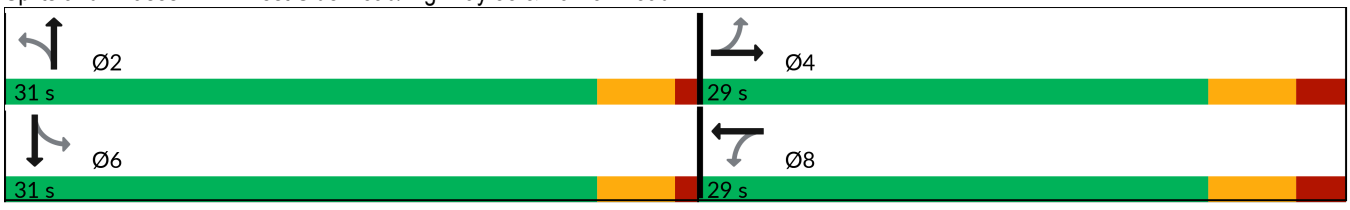


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Future Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.932			0.989			0.992	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1667	0	1560	3361	0	1674	3276	0
Flt Permitted		0.761			0.806		0.440			0.389		
Satd. Flow (perm)	0	1385	0	0	1372	0	722	3361	0	686	3276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			97			17			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	17	82	96	16	112	26	616	48	64	533	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	224	0	26	664	0	64	565	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9		27.1	27.1		27.1	27.1	
Actuated g/C Ratio		0.22			0.22		0.56	0.56		0.56	0.56	
v/c Ratio		0.60			0.59		0.06	0.35		0.17	0.31	
Control Delay (s/veh)		19.1			16.2		7.2	7.3		8.2	7.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.1			16.2		7.2	7.3		8.2	7.0	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.1			16.2			7.3			7.1	
Approach LOS		B			B			A			A	

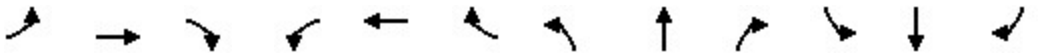
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 48.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 9.8		Intersection LOS: A	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	213	224	26	664	64	565
v/c Ratio	0.60	0.59	0.06	0.35	0.17	0.31
Control Delay (s/veh)	19.1	16.2	7.2	7.3	8.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.1	16.2	7.2	7.3	8.2	7.0
Queue Length 50th (m)	11.3	9.3	0.9	13.7	2.3	11.3
Queue Length 95th (m)	26.4	24.4	4.5	29.6	9.3	25.1
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	684	697	401	1875	381	1826
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.32	0.06	0.35	0.17	0.31

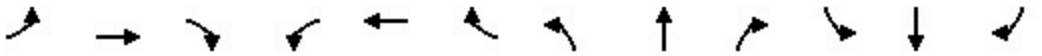
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Future Volume (vph)	105	16	75	88	15	103	24	567	44	59	490	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1668		1559	3361		1674	3275	
Flt Permitted		0.76			0.81		0.44	1.00		0.39	1.00	
Satd. Flow (perm)		1385			1373		722	3361		685	3275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	17	82	96	16	112	26	616	48	64	533	32
RTOR Reduction (vph)	0	47	0	0	75	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	166	0	0	149	0	26	656	0	64	559	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		27.0	27.0		27.0	27.0	
Effective Green, g (s)		10.9			10.9		27.0	27.0		27.0	27.0	
Actuated g/C Ratio		0.22			0.22		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		310			307		401	1867		380	1819	
v/s Ratio Prot								c0.20			0.17	
v/s Ratio Perm		c0.12			0.11		0.04			0.09		
v/c Ratio		0.53			0.48		0.06	0.35		0.17	0.31	
Uniform Delay, d1		16.6			16.4		5.0	6.0		5.3	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8			1.2		0.3	0.5		1.0	0.4	
Delay (s)		18.4			17.6		5.3	6.5		6.3	6.2	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.4			17.6			6.4			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

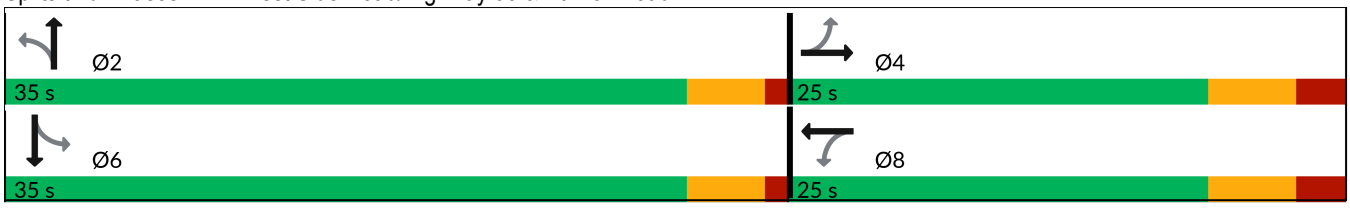


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Future Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.945			0.941			0.980			0.984	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1708	0	1825	3468	0	1789	3430	0
Flt Permitted		0.774			0.820		0.293			0.362		
Satd. Flow (perm)	0	1397	0	0	1430	0	562	3468	0	682	3430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			67			42			32	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	89	27	89	73	626	97	138	785	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	205	0	73	723	0	138	882	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.8	18.8		18.8	18.8		30.5	30.5		30.5	30.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9		33.4	33.4		33.4	33.4	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
v/c Ratio		0.40			0.61		0.21	0.34		0.33	0.42	
Control Delay (s/veh)		14.8			20.3		8.5	6.3		9.7	7.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		14.8			20.3		8.5	6.3		9.7	7.0	
LOS		B			C		A	A		A	A	
Approach Delay (s/veh)		14.8			20.3			6.5			7.4	
Approach LOS		B			C			A			A	

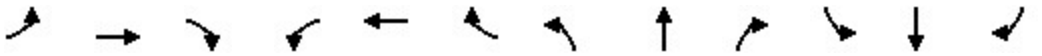
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.1			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 8.7		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	205	73	723	138	882
v/c Ratio	0.40	0.61	0.21	0.34	0.33	0.42
Control Delay (s/veh)	14.8	20.3	8.5	6.3	9.7	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.8	20.3	8.5	6.3	9.7	7.0
Queue Length 50th (m)	5.9	11.4	2.7	14.3	5.6	19.1
Queue Length 95th (m)	16.8	26.9	10.8	30.5	19.5	39.9
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	514	535	340	2118	413	2091
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.38	0.21	0.34	0.33	0.42

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Future Volume (vph)	57	12	48	82	25	82	67	576	89	127	722	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1708		1824	3468		1789	3428	
Flt Permitted		0.77			0.82		0.29	1.00		0.36	1.00	
Satd. Flow (perm)		1397			1430		563	3468		682	3428	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	13	52	89	27	89	73	626	97	138	785	97
RTOR Reduction (vph)	0	42	0	0	54	0	0	16	0	0	13	0
Lane Group Flow (vph)	0	85	0	0	151	0	73	707	0	138	869	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		33.4	33.4		33.4	33.4	
Effective Green, g (s)		10.9			10.9		33.4	33.4		33.4	33.4	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276			283		341	2106		414	2081	
v/s Ratio Prot								0.20			c0.25	
v/s Ratio Perm		0.06			c0.11		0.13			0.20		
v/c Ratio		0.31			0.53		0.21	0.34		0.33	0.42	
Uniform Delay, d1		18.8			19.8		4.9	5.3		5.3	5.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			1.9		1.4	0.4		2.2	0.6	
Delay (s)		19.5			21.7		6.3	5.8		7.5	6.3	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.5			21.7			5.8			6.5	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

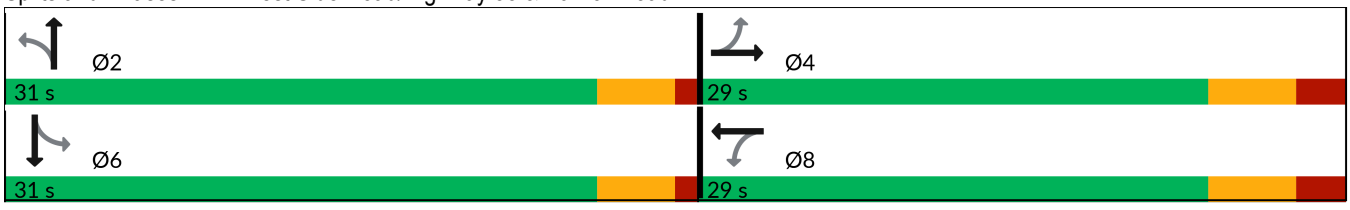
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Future Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.932			0.989			0.991	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1667	0	1560	3360	0	1674	3273	0
Flt Permitted		0.761			0.807		0.442			0.405		
Satd. Flow (perm)	0	1385	0	0	1374	0	725	3360	0	714	3273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			99			17			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	18	83	95	16	114	27	588	45	65	528	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	225	0	27	633	0	65	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9		27.0	27.0		27.0	27.0	
Actuated g/C Ratio		0.22			0.22		0.55	0.55		0.55	0.55	
v/c Ratio		0.60			0.58		0.07	0.34		0.16	0.31	
Control Delay (s/veh)		19.2			16.0		7.2	7.2		8.2	7.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.2			16.0		7.2	7.2		8.2	7.1	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.2			16.0			7.2			7.2	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 48.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 9.8		Intersection LOS: A	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	225	27	633	65	560
v/c Ratio	0.60	0.58	0.07	0.34	0.16	0.31
Control Delay (s/veh)	19.2	16.0	7.2	7.2	8.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.2	16.0	7.2	7.2	8.2	7.1
Queue Length 50th (m)	11.4	9.2	0.9	13.0	2.3	11.3
Queue Length 95th (m)	26.7	24.2	4.5	28.2	9.4	24.9
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	683	698	402	1871	396	1821
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.32	0.07	0.34	0.16	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Future Volume (vph)	105	17	76	87	15	105	25	541	41	60	486	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1667		1559	3361		1674	3275	
Flt Permitted		0.76			0.81		0.44	1.00		0.41	1.00	
Satd. Flow (perm)		1386			1374		725	3361		715	3275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	18	83	95	16	114	27	588	45	65	528	32
RTOR Reduction (vph)	0	47	0	0	77	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	168	0	0	148	0	27	625	0	65	554	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		27.0	27.0		27.0	27.0	
Effective Green, g (s)		10.9			10.9		27.0	27.0		27.0	27.0	
Actuated g/C Ratio		0.22			0.22		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		310			308		402	1867		397	1819	
v/s Ratio Prot								c0.19			0.17	
v/s Ratio Perm		c0.12			0.11		0.04			0.09		
v/c Ratio		0.54			0.48		0.07	0.33		0.16	0.30	
Uniform Delay, d1		16.6			16.4		5.0	5.9		5.3	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.9			1.2		0.3	0.5		0.9	0.4	
Delay (s)		18.6			17.6		5.3	6.4		6.2	6.2	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.6			17.6			6.3			6.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

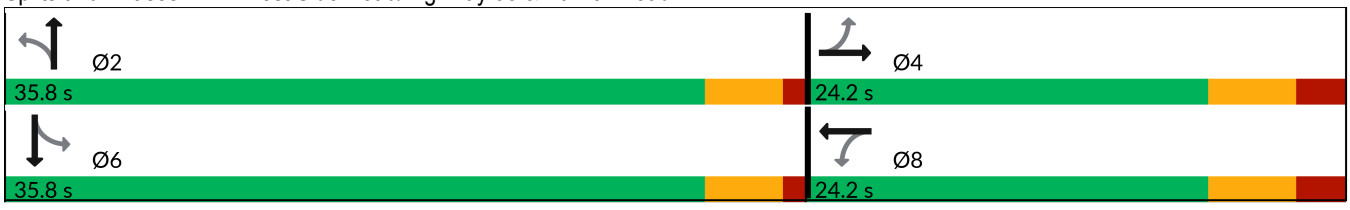
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Future Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.945			0.940			0.980			0.983	
Flt Protected		0.976			0.979		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1707	0	1825	3468	0	1789	3427	0
Flt Permitted		0.772			0.828		0.307			0.370		
Satd. Flow (perm)	0	1394	0	0	1443	0	589	3468	0	697	3427	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			69			43			35	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	86	27	91	74	612	95	140	751	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	204	0	74	707	0	140	849	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9		34.2	34.2		34.2	34.2	
Actuated g/C Ratio		0.19			0.19		0.61	0.61		0.61	0.61	
v/c Ratio		0.40			0.61		0.21	0.33		0.33	0.40	
Control Delay (s/veh)		15.2			20.3		8.2	6.1		9.4	6.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.2			20.3		8.2	6.1		9.4	6.8	
LOS		B			C		A	A		A	A	
Approach Delay (s/veh)		15.2			20.3			6.3			7.1	
Approach LOS		B			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.9			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 8.6		Intersection LOS: A	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



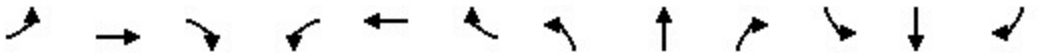
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	204	74	707	140	849
v/c Ratio	0.40	0.61	0.21	0.33	0.33	0.40
Control Delay (s/veh)	15.2	20.3	8.2	6.1	9.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.2	20.3	8.2	6.1	9.4	6.8
Queue Length 50th (m)	6.0	11.3	2.7	13.8	5.6	18.0
Queue Length 95th (m)	17.1	26.8	10.7	29.6	19.5	37.7
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	487	514	360	2138	426	2110
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.40	0.21	0.33	0.33	0.40

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Future Volume (vph)	57	12	48	79	25	84	68	563	87	129	691	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1707		1823	3468		1789	3426	
Flt Permitted		0.77			0.83		0.31	1.00		0.37	1.00	
Satd. Flow (perm)		1393			1443		590	3468		697	3426	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	13	52	86	27	91	74	612	95	140	751	98
RTOR Reduction (vph)	0	42	0	0	56	0	0	17	0	0	14	0
Lane Group Flow (vph)	0	85	0	0	148	0	74	690	0	140	835	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		34.2	34.2		34.2	34.2	
Effective Green, g (s)		10.9			10.9		34.2	34.2		34.2	34.2	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		272			281		361	2125		427	2099	
v/s Ratio Prot								0.20			c0.24	
v/s Ratio Perm		0.06			c0.10		0.13			0.20		
v/c Ratio		0.31			0.53		0.20	0.32		0.33	0.40	
Uniform Delay, d1		19.2			20.1		4.8	5.2		5.2	5.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			1.8		1.3	0.4		2.0	0.6	
Delay (s)		19.9			21.9		6.1	5.6		7.3	6.1	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.9			21.9			5.7			6.3	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	10.7
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



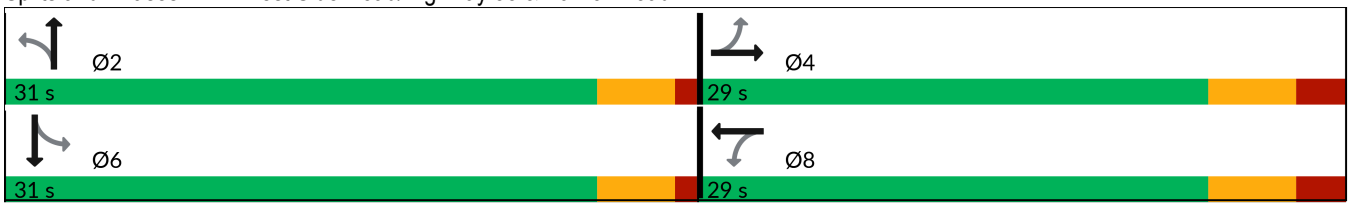
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Future Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.927			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1666	0	1560	3363	0	1674	3276	0
Flt Permitted		0.743			0.818		0.434			0.381		
Satd. Flow (perm)	0	1353	0	0	1389	0	712	3363	0	672	3276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			115			16			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	114	18	83	96	16	133	27	632	46	71	547	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	245	0	27	678	0	71	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.0			11.0		26.7	26.7		26.7	26.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
v/c Ratio		0.61			0.61		0.07	0.36		0.19	0.32	
Control Delay (s/veh)		19.5			15.8		7.4	7.5		8.7	7.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.5			15.8		7.4	7.5		8.7	7.2	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.5			15.8			7.5			7.4	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 48.5
Natural Cycle: 50
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.61
Intersection Signal Delay (s/veh): 10.0 Intersection LOS: A
Intersection Capacity Utilization 51.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



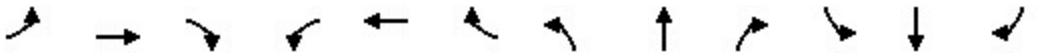
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	245	27	678	71	579
v/c Ratio	0.61	0.61	0.07	0.36	0.19	0.32
Control Delay (s/veh)	19.5	15.8	7.4	7.5	8.7	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.5	15.8	7.4	7.5	8.7	7.2
Queue Length 50th (m)	11.5	9.5	0.9	14.3	2.6	11.8
Queue Length 95th (m)	26.9	25.4	4.6	30.9	10.4	26.2
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	672	717	392	1859	370	1810
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.34	0.07	0.36	0.19	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Future Volume (vph)	105	17	76	88	15	122	25	581	42	65	503	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1665		1559	3362		1674	3275	
Flt Permitted		0.74			0.82		0.43	1.00		0.38	1.00	
Satd. Flow (perm)		1353			1389		712	3362		672	3275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	18	83	96	16	133	27	632	46	71	547	32
RTOR Reduction (vph)	0	47	0	0	89	0	0	7	0	0	6	0
Lane Group Flow (vph)	0	168	0	0	156	0	27	671	0	71	573	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.0			11.0		26.7	26.7		26.7	26.7	
Effective Green, g (s)		11.0			11.0		26.7	26.7		26.7	26.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		307			315		392	1854		370	1806	
v/s Ratio Prot								c0.20			0.18	
v/s Ratio Perm		c0.12			0.11		0.04			0.11		
v/c Ratio		0.55			0.50		0.07	0.36		0.19	0.32	
Uniform Delay, d1		16.5			16.3		5.1	6.1		5.4	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0			1.2		0.3	0.5		1.2	0.5	
Delay (s)		18.5			17.5		5.4	6.6		6.6	6.4	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.5			17.5			6.6			6.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	48.4	Sum of lost time (s)	10.7
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

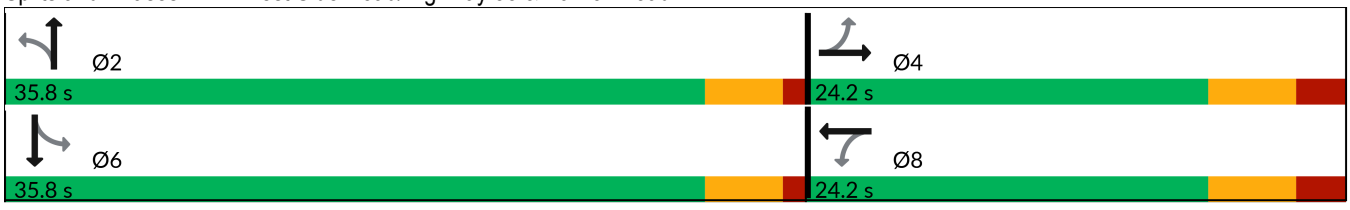


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Future Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.945			0.937			0.980			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1705	0	1825	3469	0	1789	3430	0
Flt Permitted		0.762			0.831		0.285			0.356		
Satd. Flow (perm)	0	1376	0	0	1445	0	547	3469	0	671	3430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			75			41			33	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	62	13	52	87	27	100	74	641	96	159	804	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	214	0	74	737	0	159	902	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.0			11.0		34.0	34.0		34.0	34.0	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
v/c Ratio		0.41			0.62		0.22	0.35		0.39	0.43	
Control Delay (s/veh)		15.2			20.3		8.7	6.4		10.7	7.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.2			20.3		8.7	6.4		10.7	7.1	
LOS		B			C		A	A		B	A	
Approach Delay (s/veh)		15.2			20.3			6.6			7.6	
Approach LOS		B			C			A			A	

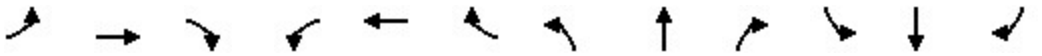
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 8.9		Intersection LOS: A	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	214	74	737	159	902
v/c Ratio	0.41	0.62	0.22	0.35	0.39	0.43
Control Delay (s/veh)	15.2	20.3	8.7	6.4	10.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.2	20.3	8.7	6.4	10.7	7.1
Queue Length 50th (m)	6.1	11.7	2.8	14.7	6.8	19.8
Queue Length 95th (m)	17.0	27.7	11.2	31.7	23.7	41.5
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	481	519	333	2130	408	2103
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.41	0.22	0.35	0.39	0.43

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Future Volume (vph)	57	12	48	80	25	92	68	590	88	146	740	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1762			1704		1824	3470		1789	3429	
Flt Permitted		0.76			0.83		0.29	1.00		0.36	1.00	
Satd. Flow (perm)		1374			1446		548	3470		670	3429	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	13	52	87	27	100	74	641	96	159	804	98
RTOR Reduction (vph)	0	42	0	0	60	0	0	16	0	0	13	0
Lane Group Flow (vph)	0	85	0	0	154	0	74	721	0	159	889	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.0			11.0		34.0	34.0		34.0	34.0	
Effective Green, g (s)		11.0			11.0		34.0	34.0		34.0	34.0	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		271			285		334	2118		408	2093	
v/s Ratio Prot								0.21			c0.26	
v/s Ratio Perm		0.06			c0.11		0.14			0.24		
v/c Ratio		0.31			0.54		0.22	0.34		0.39	0.42	
Uniform Delay, d1		19.1			20.1		4.9	5.3		5.5	5.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			2.0		1.5	0.4		2.8	0.6	
Delay (s)		19.8			22.0		6.4	5.8		8.3	6.3	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.8			22.0			5.8			6.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

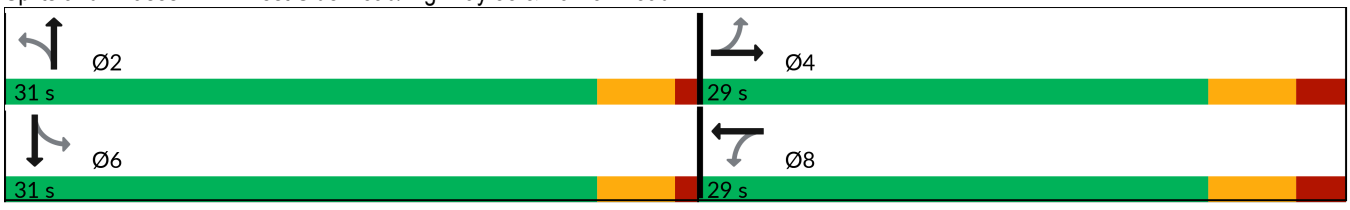
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Future Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.931			0.990			0.992	
Flt Protected		0.974			0.980		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1666	0	1560	3363	0	1674	3276	0
Flt Permitted		0.754			0.806		0.426			0.382		
Satd. Flow (perm)	0	1373	0	0	1370	0	699	3363	0	673	3276	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			100			16			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	116	18	84	97	17	118	27	628	47	68	563	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	232	0	27	675	0	68	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.1			11.1		26.8	26.8		26.8	26.8	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
v/c Ratio		0.61			0.60		0.07	0.36		0.18	0.33	
Control Delay (s/veh)		19.3			16.3		7.4	7.5		8.6	7.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.3			16.3		7.4	7.5		8.6	7.3	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.3			16.3			7.5			7.4	
Approach LOS		B			B			A			A	

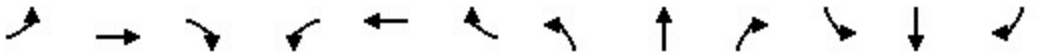
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 48.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 10.0		Intersection LOS: B	
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	218	232	27	675	68	595
v/c Ratio	0.61	0.60	0.07	0.36	0.18	0.33
Control Delay (s/veh)	19.3	16.3	7.4	7.5	8.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.3	16.3	7.4	7.5	8.6	7.3
Queue Length 50th (m)	11.7	9.6	0.9	14.3	2.5	12.4
Queue Length 95th (m)	27.3	25.2	4.7	31.0	10.0	27.2
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	678	697	385	1860	371	1811
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.33	0.07	0.36	0.18	0.33

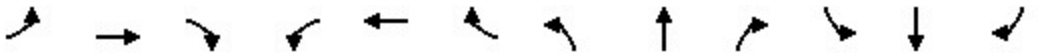
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Future Volume (vph)	107	17	77	89	16	109	25	578	43	63	518	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1666		1559	3362		1674	3276	
Flt Permitted		0.75			0.81		0.43	1.00		0.38	1.00	
Satd. Flow (perm)		1373			1371		699	3362		674	3276	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	18	84	97	17	118	27	628	47	68	563	32
RTOR Reduction (vph)	0	47	0	0	77	0	0	7	0	0	5	0
Lane Group Flow (vph)	0	171	0	0	155	0	27	668	0	68	590	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.1			11.1		26.9	26.9		26.9	26.9	
Effective Green, g (s)		11.1			11.1		26.9	26.9		26.9	26.9	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		312			312		386	1857		372	1809	
v/s Ratio Prot								c0.20			0.18	
v/s Ratio Perm		c0.12			0.11		0.04			0.10		
v/c Ratio		0.55			0.50		0.07	0.36		0.18	0.33	
Uniform Delay, d1		16.6			16.4		5.1	6.1		5.4	6.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0			1.2		0.4	0.5		1.1	0.5	
Delay (s)		18.6			17.6		5.4	6.6		6.5	6.4	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.6			17.6			6.6			6.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	48.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

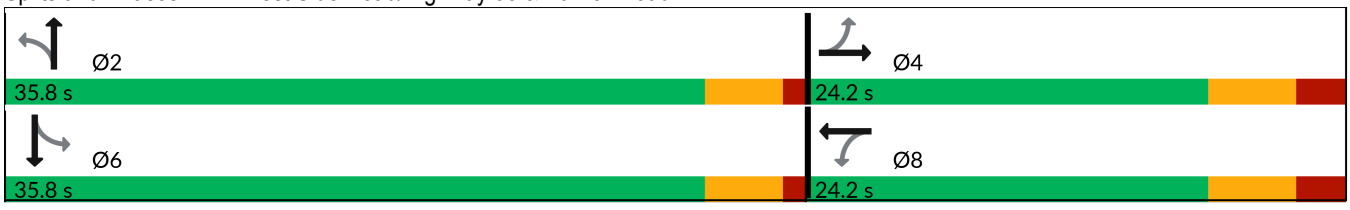


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Future Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.944			0.939			0.980			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1760	0	0	1708	0	1825	3469	0	1789	3430	0
Flt Permitted		0.764			0.830		0.285			0.350		
Satd. Flow (perm)	0	1378	0	0	1446	0	547	3469	0	659	3430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			70			42			33	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	63	13	54	89	28	96	75	651	98	147	802	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	213	0	75	749	0	147	901	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.2			11.2		34.0	34.0		34.0	34.0	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
v/c Ratio		0.41			0.62		0.23	0.35		0.37	0.43	
Control Delay (s/veh)		15.0			20.6		8.8	6.5		10.5	7.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.0			20.6		8.8	6.5		10.5	7.1	
LOS		B			C		A	A		B	A	
Approach Delay (s/veh)		15.0			20.6			6.7			7.6	
Approach LOS		B			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.9			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 8.9		Intersection LOS: A	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	130	213	75	749	147	901
v/c Ratio	0.41	0.62	0.23	0.35	0.37	0.43
Control Delay (s/veh)	15.0	20.6	8.8	6.5	10.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	20.6	8.8	6.5	10.5	7.1
Queue Length 50th (m)	6.1	12.1	2.9	15.2	6.2	20.0
Queue Length 95th (m)	17.2	28.0	11.4	32.5	21.9	41.9
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	482	515	332	2124	400	2097
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.41	0.23	0.35	0.37	0.43

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Future Volume (vph)	58	12	50	82	26	88	69	599	90	135	738	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1760			1707		1824	3470		1789	3428	
Flt Permitted		0.76			0.83		0.29	1.00		0.35	1.00	
Satd. Flow (perm)		1378			1447		547	3470		658	3428	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	13	54	89	28	96	75	651	98	147	802	99
RTOR Reduction (vph)	0	43	0	0	56	0	0	16	0	0	13	0
Lane Group Flow (vph)	0	87	0	0	157	0	75	733	0	147	888	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.2			11.2		34.0	34.0		34.0	34.0	
Effective Green, g (s)		11.2			11.2		34.0	34.0		34.0	34.0	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276			289		332	2110		400	2085	
v/s Ratio Prot								0.21			c0.26	
v/s Ratio Perm		0.06			c0.11		0.14			0.22		
v/c Ratio		0.31			0.54		0.23	0.35		0.37	0.43	
Uniform Delay, d1		19.1			20.1		5.0	5.4		5.5	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			2.1		1.6	0.5		2.6	0.6	
Delay (s)		19.7			22.1		6.5	5.9		8.1	6.4	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.7			22.1			6.0			6.7	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	10.7
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

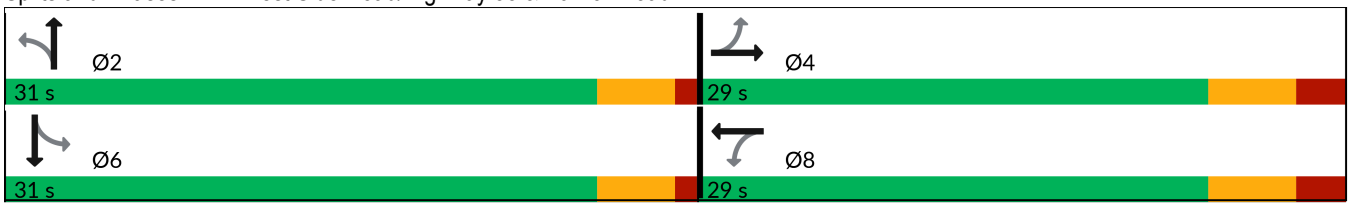
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Future Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.927			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1665	0	1560	3363	0	1674	3275	0
Flt Permitted		0.736			0.817		0.415			0.359		
Satd. Flow (perm)	0	1340	0	0	1387	0	681	3363	0	633	3275	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			115			16			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	116	18	84	98	17	137	27	672	48	74	582	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	252	0	27	720	0	74	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		26.5	26.5		26.5	26.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.2			11.2		26.7	26.7		26.7	26.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
v/c Ratio		0.61			0.62		0.07	0.39		0.21	0.34	
Control Delay (s/veh)		19.7			16.2		7.5	7.8		9.2	7.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.7			16.2		7.5	7.8		9.2	7.5	
LOS		B			B		A	A		A	A	
Approach Delay (s/veh)		19.7			16.2			7.8			7.7	
Approach LOS		B			B			A			A	

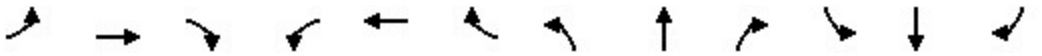
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 48.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 10.2		Intersection LOS: B	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	218	252	27	720	74	614
v/c Ratio	0.61	0.62	0.07	0.39	0.21	0.34
Control Delay (s/veh)	19.7	16.2	7.5	7.8	9.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	16.2	7.5	7.8	9.2	7.5
Queue Length 50th (m)	11.7	10.0	0.9	15.6	2.8	12.9
Queue Length 95th (m)	27.5	26.4	4.7	33.7	11.1	28.5
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	664	714	373	1850	347	1800
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.35	0.07	0.39	0.21	0.34

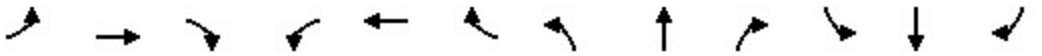
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Future Volume (vph)	107	17	77	90	16	126	25	618	44	68	535	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773			1665		1559	3363		1674	3276	
Flt Permitted		0.74			0.82		0.41	1.00		0.36	1.00	
Satd. Flow (perm)		1339			1386		681	3363		633	3276	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	18	84	98	17	137	27	672	48	74	582	32
RTOR Reduction (vph)	0	47	0	0	88	0	0	7	0	0	5	0
Lane Group Flow (vph)	0	171	0	0	164	0	27	713	0	74	609	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.2			11.2		26.7	26.7		26.7	26.7	
Effective Green, g (s)		11.2			11.2		26.7	26.7		26.7	26.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		308			319		374	1847		347	1799	
v/s Ratio Prot								c0.21			0.19	
v/s Ratio Perm		c0.13			0.12		0.04			0.12		
v/c Ratio		0.56			0.51		0.07	0.39		0.21	0.34	
Uniform Delay, d1		16.5			16.3		5.1	6.3		5.6	6.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2			1.4		0.4	0.6		1.4	0.5	
Delay (s)		18.7			17.7		5.5	6.9		7.0	6.6	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		18.7			17.7			6.8			6.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

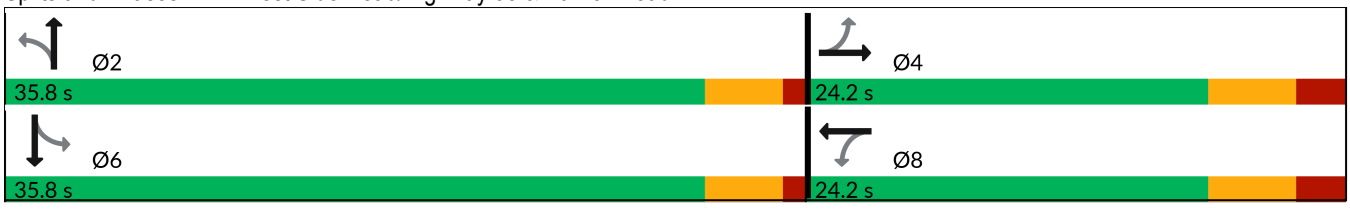


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Future Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.944			0.937			0.981			0.984	
Flt Protected		0.976			0.980		0.950			0.950		
Satd. Flow (prot)	0	1760	0	0	1705	0	1825	3472	0	1789	3429	0
Flt Permitted		0.756			0.833		0.264			0.336		
Satd. Flow (perm)	0	1363	0	0	1449	0	507	3472	0	633	3429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			76			40			31	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	63	13	54	90	28	104	75	680	99	165	855	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	222	0	75	779	0	165	954	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.3			11.3		33.7	33.7		33.7	33.7	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
v/c Ratio		0.41			0.63		0.25	0.37		0.43	0.46	
Control Delay (s/veh)		15.0			20.5		9.5	6.7		12.1	7.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.0			20.5		9.5	6.7		12.1	7.5	
LOS		B			C		A	A		B	A	
Approach Delay (s/veh)		15.0			20.5			6.9			8.2	
Approach LOS		B			C			A			A	

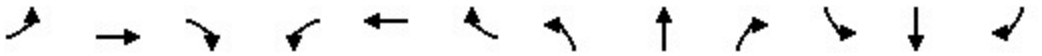
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.7			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 9.3		Intersection LOS: A	
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	130	222	75	779	165	954
v/c Ratio	0.41	0.63	0.25	0.37	0.43	0.46
Control Delay (s/veh)	15.0	20.5	9.5	6.7	12.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	20.5	9.5	6.7	12.1	7.5
Queue Length 50th (m)	6.1	12.3	2.9	16.3	7.4	21.8
Queue Length 95th (m)	17.2	28.9	11.9	34.7	26.7	45.8
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	479	521	306	2115	382	2085
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.43	0.25	0.37	0.43	0.46

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Future Volume (vph)	58	12	50	83	26	96	69	626	91	152	787	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1760			1704		1824	3472		1789	3431	
Flt Permitted		0.76			0.83		0.26	1.00		0.34	1.00	
Satd. Flow (perm)		1363			1448		507	3472		632	3431	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	13	54	90	28	104	75	680	99	165	855	99
RTOR Reduction (vph)	0	43	0	0	61	0	0	16	0	0	12	0
Lane Group Flow (vph)	0	87	0	0	161	0	75	763	0	165	942	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.3			11.3		33.7	33.7		33.7	33.7	
Effective Green, g (s)		11.3			11.3		33.7	33.7		33.7	33.7	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276			293		306	2100		382	2075	
v/s Ratio Prot								0.22			c0.27	
v/s Ratio Perm		0.06			c0.11		0.15			0.26		
v/c Ratio		0.32			0.55		0.25	0.36		0.43	0.45	
Uniform Delay, d1		18.9			19.9		5.1	5.6		5.9	6.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			2.2		1.9	0.5		3.5	0.7	
Delay (s)		19.6			22.2		7.0	6.1		9.4	6.7	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.6			22.2			6.1			7.1	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

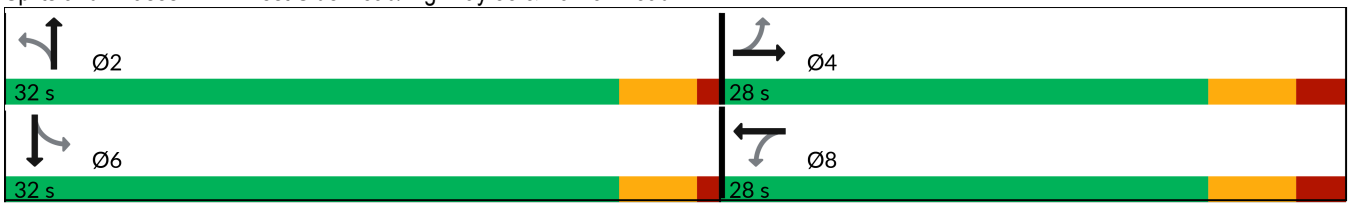
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Future Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.931			0.990			0.992	
Flt Protected		0.974			0.980		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1667	0	1560	3363	0	1674	3275	0
Flt Permitted		0.747			0.801		0.404			0.360		
Satd. Flow (perm)	0	1360	0	0	1363	0	663	3363	0	634	3275	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			99			16			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	118	20	86	99	17	122	28	668	48	72	599	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	238	0	28	716	0	72	632	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	21.8	21.8		21.8	21.8		27.5	27.5		27.5	27.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.6			11.6		27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
v/c Ratio		0.62			0.61		0.08	0.38		0.21	0.35	
Control Delay (s/veh)		20.3			17.0		7.7	7.8		9.2	7.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.3			17.0		7.7	7.8		9.2	7.6	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		20.3			17.0			7.8			7.8	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 50.1			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 10.4		Intersection LOS: B	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



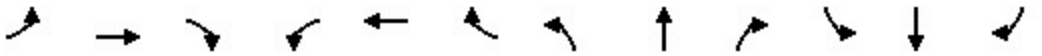
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	224	238	28	716	72	632
v/c Ratio	0.62	0.61	0.08	0.38	0.21	0.35
Control Delay (s/veh)	20.3	17.0	7.7	7.8	9.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.3	17.0	7.7	7.8	9.2	7.6
Queue Length 50th (m)	12.8	10.5	1.0	15.8	2.8	13.8
Queue Length 95th (m)	29.1	26.8	5.0	34.1	11.0	30.1
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	629	652	366	1867	350	1817
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.37	0.08	0.38	0.21	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Future Volume (vph)	109	18	79	91	16	112	26	615	44	66	551	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1666		1559	3362		1674	3276	
Flt Permitted		0.75			0.80		0.40	1.00		0.36	1.00	
Satd. Flow (perm)		1360			1363		663	3362		635	3276	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	20	86	99	17	122	28	668	48	72	599	33
RTOR Reduction (vph)	0	45	0	0	76	0	0	7	0	0	5	0
Lane Group Flow (vph)	0	179	0	0	162	0	28	709	0	72	627	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.6			11.6		27.7	27.7		27.7	27.7	
Effective Green, g (s)		11.6			11.6		27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		315			316		367	1862		351	1814	
v/s Ratio Prot								c0.21			0.19	
v/s Ratio Perm		c0.13			0.12		0.04			0.11		
v/c Ratio		0.57			0.51		0.08	0.38		0.21	0.35	
Uniform Delay, d1		17.0			16.7		5.2	6.3		5.6	6.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3			1.4		0.4	0.6		1.3	0.5	
Delay (s)		19.3			18.1		5.6	6.9		6.9	6.7	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		19.3			18.1			6.8			6.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

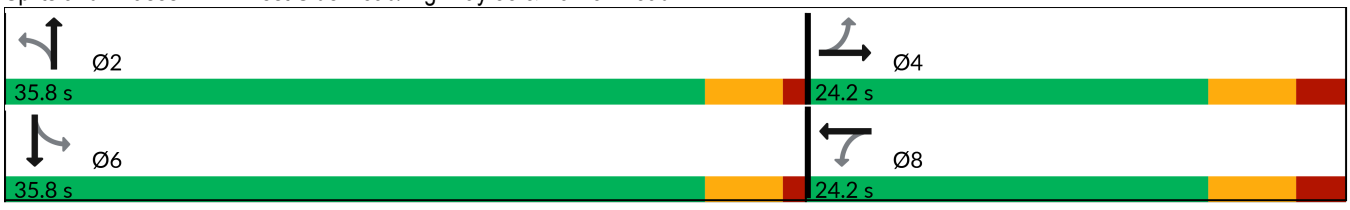


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Future Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.944			0.939			0.981			0.984	
Flt Protected		0.977			0.980		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1708	0	1825	3472	0	1789	3430	0
Flt Permitted		0.759			0.831		0.264			0.330		
Satd. Flow (perm)	0	1369	0	0	1448	0	507	3472	0	622	3430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			71			40			32	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	64	14	55	92	29	100	76	690	100	152	853	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	221	0	76	790	0	152	954	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.4			11.4		33.7	33.7		33.7	33.7	
Actuated g/C Ratio		0.20			0.20		0.60	0.60		0.60	0.60	
v/c Ratio		0.41			0.63		0.25	0.37		0.41	0.46	
Control Delay (s/veh)		15.0			20.9		9.6	6.8		11.7	7.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.0			20.9		9.6	6.8		11.7	7.5	
LOS		B			C		A	A		B	A	
Approach Delay (s/veh)		15.0			20.9			7.0			8.1	
Approach LOS		B			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 9.3		Intersection LOS: A	
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	221	76	790	152	954
v/c Ratio	0.41	0.63	0.25	0.37	0.41	0.46
Control Delay (s/veh)	15.0	20.9	9.6	6.8	11.7	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	20.9	9.6	6.8	11.7	7.5
Queue Length 50th (m)	6.3	12.7	3.0	16.7	6.7	22.2
Queue Length 95th (m)	17.5	29.2	12.0	35.3	24.1	45.6
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	480	517	305	2110	375	2081
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.43	0.25	0.37	0.41	0.46

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Future Volume (vph)	59	13	51	85	27	92	70	635	92	140	785	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1761			1706		1824	3472		1789	3430	
Flt Permitted		0.76			0.83		0.26	1.00		0.33	1.00	
Satd. Flow (perm)		1369			1448		507	3472		622	3430	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	14	55	92	29	100	76	690	100	152	853	101
RTOR Reduction (vph)	0	44	0	0	56	0	0	16	0	0	13	0
Lane Group Flow (vph)	0	89	0	0	165	0	76	774	0	152	941	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.4			11.4		33.6	33.6		33.6	33.6	
Effective Green, g (s)		11.4			11.4		33.6	33.6		33.6	33.6	
Actuated g/C Ratio		0.20			0.20		0.60	0.60		0.60	0.60	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		280			296		305	2094		375	2069	
v/s Ratio Prot								0.22			c0.27	
v/s Ratio Perm		0.07			c0.11		0.15			0.24		
v/c Ratio		0.32			0.56		0.25	0.37		0.41	0.45	
Uniform Delay, d1		18.8			19.9		5.2	5.6		5.8	6.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			2.3		1.9	0.5		3.2	0.7	
Delay (s)		19.5			22.1		7.1	6.1		9.0	6.8	
Level of Service		B			C		A	A		A	A	
Approach Delay (s/veh)		19.5			22.1			6.2			7.1	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	10.7
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

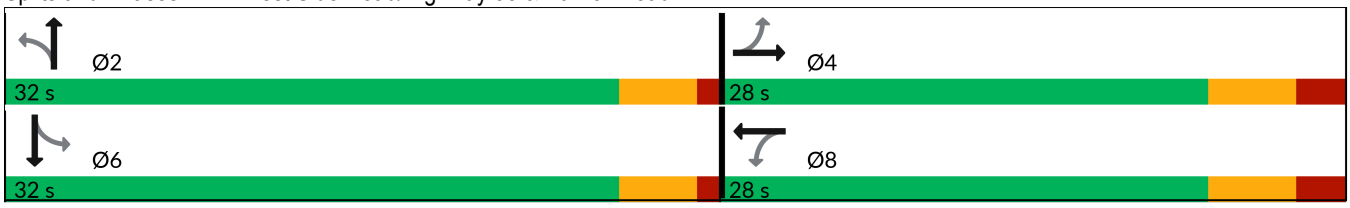
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Future Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00			0.99		1.00				1.00	
Frt		0.948			0.926			0.990			0.992	
Flt Protected		0.974			0.981		0.950			0.950		
Satd. Flow (prot)	0	1774	0	0	1664	0	1560	3362	0	1674	3275	0
Flt Permitted		0.728			0.811		0.394			0.338		
Satd. Flow (perm)	0	1325	0	0	1376	0	647	3362	0	596	3275	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			113			15			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Adj. Flow (vph)	118	20	86	100	17	140	28	712	49	77	617	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	257	0	28	761	0	77	650	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	21.8	21.8		21.8	21.8		27.5	27.5		27.5	27.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.7			11.7		27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
v/c Ratio		0.63			0.63		0.08	0.41		0.23	0.36	
Control Delay (s/veh)		20.8			17.0		7.8	8.1		9.8	7.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.8			17.0		7.8	8.1		9.8	7.7	
LOS		C			B		A	A		A	A	
Approach Delay (s/veh)		20.8			17.0			8.1			8.0	
Approach LOS		C			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 50.2			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 10.6		Intersection LOS: B	
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	224	257	28	761	77	650
v/c Ratio	0.63	0.63	0.08	0.41	0.23	0.36
Control Delay (s/veh)	20.8	17.0	7.8	8.1	9.8	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.8	17.0	7.8	8.1	9.8	7.7
Queue Length 50th (m)	12.9	11.0	1.0	17.3	3.1	14.3
Queue Length 95th (m)	29.3	27.9	5.1	37.2	12.2	31.4
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	612	665	357	1862	328	1812
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.39	0.08	0.41	0.23	0.36

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Future Volume (vph)	109	18	79	92	16	129	26	655	45	71	568	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.93		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1665		1559	3363		1674	3276	
Flt Permitted		0.73			0.81		0.39	1.00		0.34	1.00	
Satd. Flow (perm)		1327			1376		646	3363		596	3276	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	20	86	100	17	140	28	712	49	77	617	33
RTOR Reduction (vph)	0	45	0	0	87	0	0	7	0	0	5	0
Lane Group Flow (vph)	0	179	0	0	170	0	28	754	0	77	645	0
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	0%	0%	0%	5%	33%	0%	17%	8%	0%	9%	11%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.7			11.7		27.7	27.7		27.7	27.7	
Effective Green, g (s)		11.7			11.7		27.7	27.7		27.7	27.7	
Actuated g/C Ratio		0.23			0.23		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		309			321		357	1859		329	1811	
v/s Ratio Prot								c0.22			0.20	
v/s Ratio Perm		c0.13			0.12		0.04			0.13		
v/c Ratio		0.58			0.53		0.08	0.41		0.23	0.36	
Uniform Delay, d1		17.0			16.8		5.2	6.5		5.8	6.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6			1.7		0.4	0.7		1.7	0.5	
Delay (s)		19.6			18.5		5.7	7.1		7.4	6.8	
Level of Service		B			B		A	A		A	A	
Approach Delay (s/veh)		19.6			18.5			7.1			6.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	10.7
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

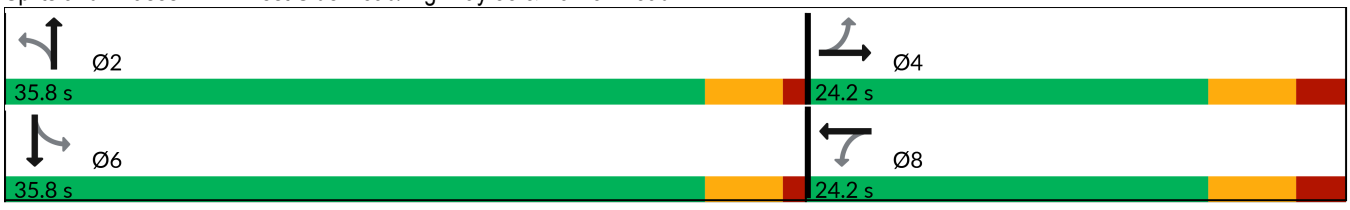
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Future Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	90.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00				1.00	
Frt		0.944			0.936			0.982			0.985	
Flt Protected		0.977			0.980		0.950			0.950		
Satd. Flow (prot)	0	1762	0	0	1703	0	1825	3476	0	1789	3433	0
Flt Permitted		0.749			0.834		0.244			0.316		
Satd. Flow (perm)	0	1351	0	0	1449	0	468	3476	0	595	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			77			38			29	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		167.5			228.1			216.8			152.4	
Travel Time (s)		12.1			16.4			11.1			7.8	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Adj. Flow (vph)	64	14	55	93	29	109	76	720	101	171	907	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	231	0	76	821	0	171	1008	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		30.5			30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		1.8			1.8		6.1	1.8		6.1	1.8	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.2	24.2		24.2	24.2		22.5	22.5		22.5	22.5	
Total Split (s)	24.2	24.2		24.2	24.2		35.8	35.8		35.8	35.8	
Total Split (%)	40.3%	40.3%		40.3%	40.3%		59.7%	59.7%		59.7%	59.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		31.3	31.3		31.3	31.3	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.5			11.5		33.3	33.3		33.3	33.3	
Actuated g/C Ratio		0.21			0.21		0.60	0.60		0.60	0.60	
v/c Ratio		0.41			0.64		0.27	0.39		0.48	0.49	
Control Delay (s/veh)		15.0			21.0		10.3	7.0		13.8	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		15.0			21.0		10.3	7.0		13.8	7.9	
LOS		B			C		B	A		B	A	
Approach Delay (s/veh)		15.0			21.0			7.3			8.8	
Approach LOS		B			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 55.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 9.7		Intersection LOS: A	
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: West Side Road/Highway 58 & Barrick Road



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	231	76	821	171	1008
v/c Ratio	0.41	0.64	0.27	0.39	0.48	0.49
Control Delay (s/veh)	15.0	21.0	10.3	7.0	13.8	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	21.0	10.3	7.0	13.8	7.9
Queue Length 50th (m)	6.3	13.1	3.1	17.9	8.1	24.4
Queue Length 95th (m)	17.6	30.3	12.6	37.1	29.8	49.5
Internal Link Dist (m)	143.5	204.1		192.8		128.4
Turn Bay Length (m)			15.0		90.0	
Base Capacity (vph)	476	523	280	2100	356	2071
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.44	0.27	0.39	0.48	0.49

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Future Volume (vph)	59	13	51	86	27	100	70	662	93	157	834	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	0.98	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1761			1704		1824	3474		1789	3433	
Flt Permitted		0.75			0.83		0.24	1.00		0.32	1.00	
Satd. Flow (perm)		1352			1449		468	3474		596	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	14	55	93	29	109	76	720	101	171	907	101
RTOR Reduction (vph)	0	44	0	0	61	0	0	15	0	0	12	0
Lane Group Flow (vph)	0	89	0	0	170	0	76	806	0	171	996	0
Confl. Peds. (#/hr)	1		1	1		1	2					2
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	3%	4%	2%	5%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.5			11.5		33.3	33.3		33.3	33.3	
Effective Green, g (s)		11.5			11.5		33.3	33.3		33.3	33.3	
Actuated g/C Ratio		0.21			0.21		0.60	0.60		0.60	0.60	
Clearance Time (s)		6.2			6.2		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		280			300		280	2084		357	2059	
v/s Ratio Prot								0.23			c0.29	
v/s Ratio Perm		0.07			c0.12		0.16			0.29		
v/c Ratio		0.32			0.57		0.27	0.39		0.48	0.48	
Uniform Delay, d1		18.7			19.8		5.3	5.8		6.2	6.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			2.4		2.4	0.5		4.5	0.8	
Delay (s)		19.3			22.2		7.7	6.3		10.8	7.1	
Level of Service		B			C		A	A		B	A	
Approach Delay (s/veh)		19.3			22.2			6.4			7.6	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	10.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix F

Signal Warrant

Input Data Sheet

Analysis Sheet | Results Sheet | Justification 5A | Justification 7 | Justification:

What are the intersecting roadways? Barrick Rd & West Side Rd

What is the direction of the Main Road street? North-South

When was the data collected? 2026-04-08

Justification 1 - 4: Volume Warrants

a.- Number of approach lanes on the Main Road? 2 or more

b.- Number of approach lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban **Population >= 10,000 AND Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:30	3	255	15	10	2	8	33	181	4	16	3	27	1
8:30	6	354	10	15	2	17	29	286	0	18	3	49	1
9:00 - 11:30	13	340	23	10	4	10	27	318	3	21	5	37	1
12:30	8	340	49	5	4	7	23	306	9	43	4	27	0
13:30	10	316	30	5	5	9	26	308	11	31	5	47	4
14:00 - 16:30	8	327	25	8	3	10	45	387	16	26	10	31	0
17:30	11	346	24	9	3	7	46	453	16	28	5	43	3
18:30	12	268	35	7	4	5	36	356	11	19	4	36	1
Total	**71**	**2,546**	**211**	**69**	**27**	**73**	**265**	**2,595**	**70**	**202**	**39**	**297**	**11**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	
13-24	
25-36	

Note: If desired, Justification 5A can be calculated instead to determine expected safety improvement following signalization

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection (Zone 1) or in proximity to the intersection (Zones 2-4). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2 (if needed)		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection (Zone 1) or in proximity to the intersection (Zones 2-4). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2 (if needed)		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds									
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Results Sheet

Input Sheet | Analysis Sheet | Justification 5A | Justification 7

Intersection: Barrick Rd & West Side Rd Count Date: 2026-04-08

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	89	%	☐	☑
	B	Crossing Volume	52	%		
2. Delay to Cross Traffic	A	Main Road	80	%	☐	☑
	B	Crossing Road	54	%		
3. Combination	A	Justificaton 1	52	%	☐	☑
	B	Justification 2	54	%		
4. 4-Hr Volume			35	%	☐	☑
5. Collision Experience			0	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Future Background 2028

Justification 7 - Projected Volumes

Intersection: Barrick Rd & West Side Rd Count Date: 2026-04-08

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? Yes

b.- What kind of count estimate available? AM PM Peak Hour **Proceed to c2**

c1.- 8-Hour Count Estimate

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AM Peak Hour	24	512	40	104	16	75	57	460	29	85	15	102	
PM Peak Hour	67	534	85	56	12	47	125	654	89	77	24	81	
AHV	23	262	31	40	7	31	46	279	30	41	10	46	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	669			**174**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AHV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	0			**0**									

d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	-	-	900	843	93.6	**Case 2 - Might be Warranted**
	B. Vehicle volume, along minor streets (average hour)	-	-	-	170	174	102.1	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	-	-	900	669	74.3	
	B. Combined vehicle and pedestrian volume crossing	-	-	-	75	90	120.3	

Future Total 2042

Justification 7 - Projected Volumes

Intersection: Barrick Rd & West Side Rd Count Date: 2026-04-08

Return to Justifications 1 - 6

INPUT

PRIOR TO START - FILL OUT GEOMETRY INPUTS IN THE INPUT DATA SPREADSHEET - STEPS A to D

a.- Both Intersection Roads Exist? Yes

b.- What kind of count estimate available? AM PM Peak Hour **Proceed to c2**

c1.- 8-Hour Count Estimate

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

c2.- Peak Hour Estimate

Peak Hour	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AM Peak Hour	26	655	45	109	18	79	71	568	30	92	16	129	
PM Peak Hour	70	662	93	59	13	51	157	834	93	86	27	100	
AHV	24	329	35	42	8	33	57	351	31	45	11	57	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	826			**195**									

c3.- AADT Estimate - can leave movements without data blank. If midblock reading, can assign demand to through movement.

AADT	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
AHV	0	0	0	0	0	0	0	0	0	0	0	0	0
	Main Street AHV Sum			**Minor Street AHV Sum**									
	0			**0**									

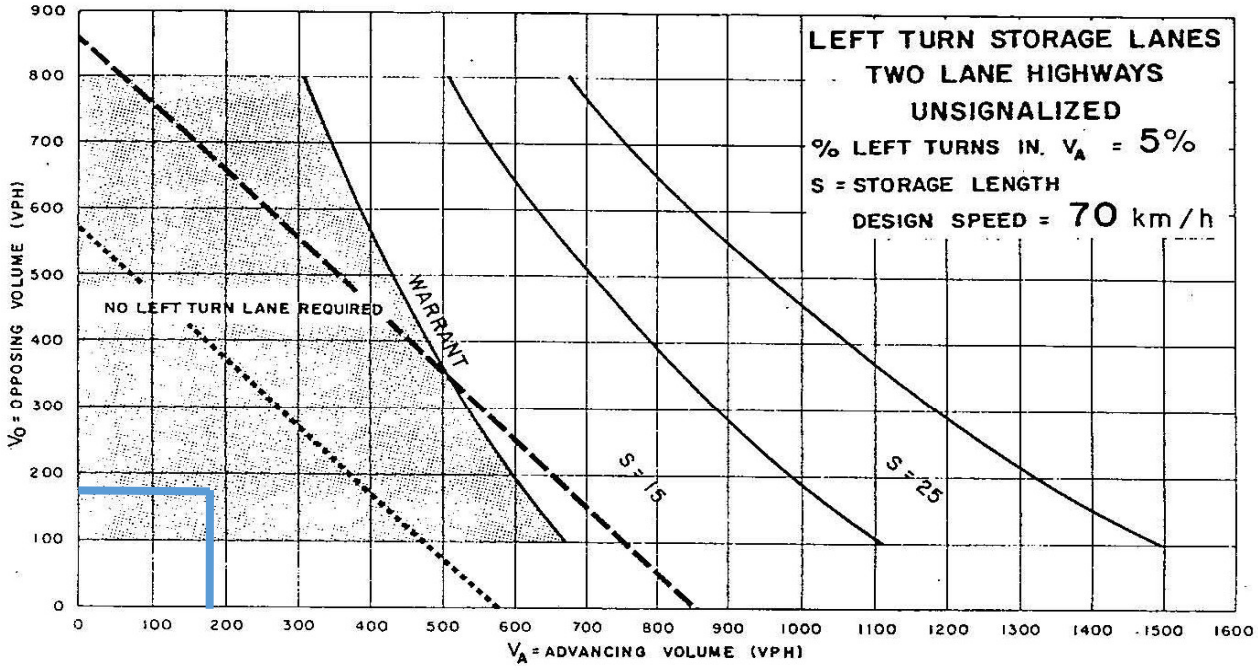
d. Justification 7 Result

Justification	Description	Minimum Requirement 1 Lane Highways		Minimum Requirement 2 or more lanes		Compliance		Case?
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%	
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	-	-	-	900	1021	113.4	**Case 2 - Might be Warranted**
	B. Vehicle volume, along minor streets (average hour)	-	-	-	170	195	114.6	
2. Delay to cross Traffic	A. Vehicle volume, major street (average hour)	-	-	-	900	826	91.8	
	B. Combined vehicle and pedestrian volume crossing	-	-	-	75	97	129.7	

Appendix G

Left-Turn Warrant

AM PEAK HOUR		PM PEAK HOUR	
V_L =	5	V_L =	17
V_A =	128	V_A =	222
V_O =	179	V_O =	187
LT % =	3.91%	LT % =	7.66%
Left Lane Required?		Left Lane Required?	
Storage Length Required		Storage Length Required	



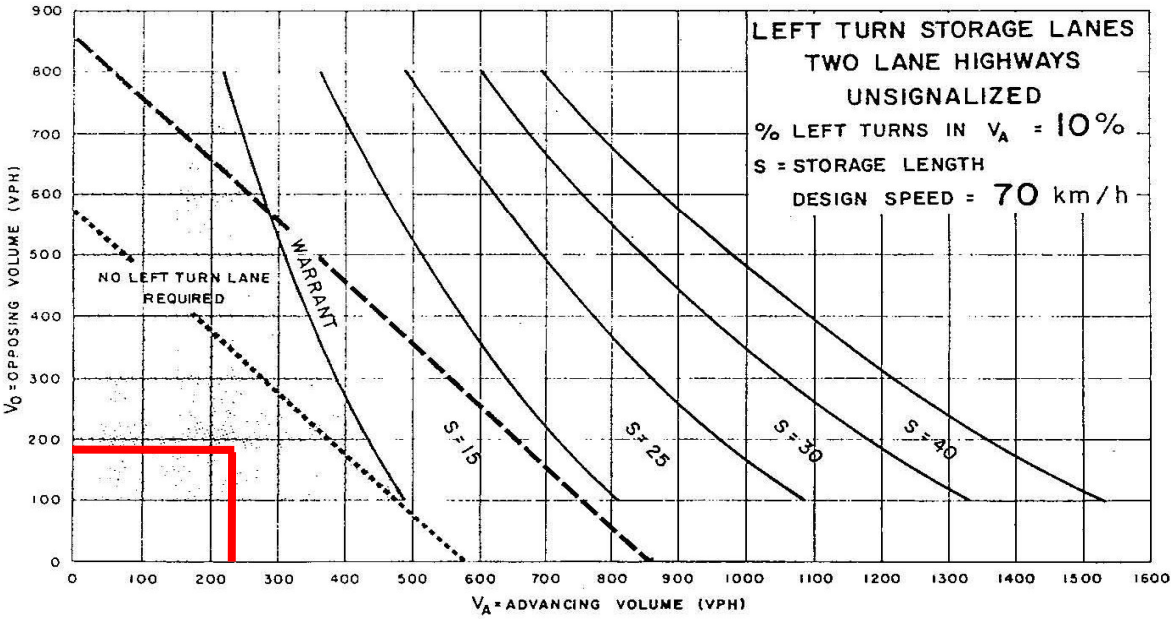
TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

AM PEAK HOUR		PM PEAK HOUR	
V_L =	5	V_L =	17
V_A =	128	V_A =	222
V_O =	179	V_O =	187
LT % =	3.91%	LT % =	7.66%
Left Lane Required?		Left Lane Required?	
Storage Length Required		Storage Length Required	

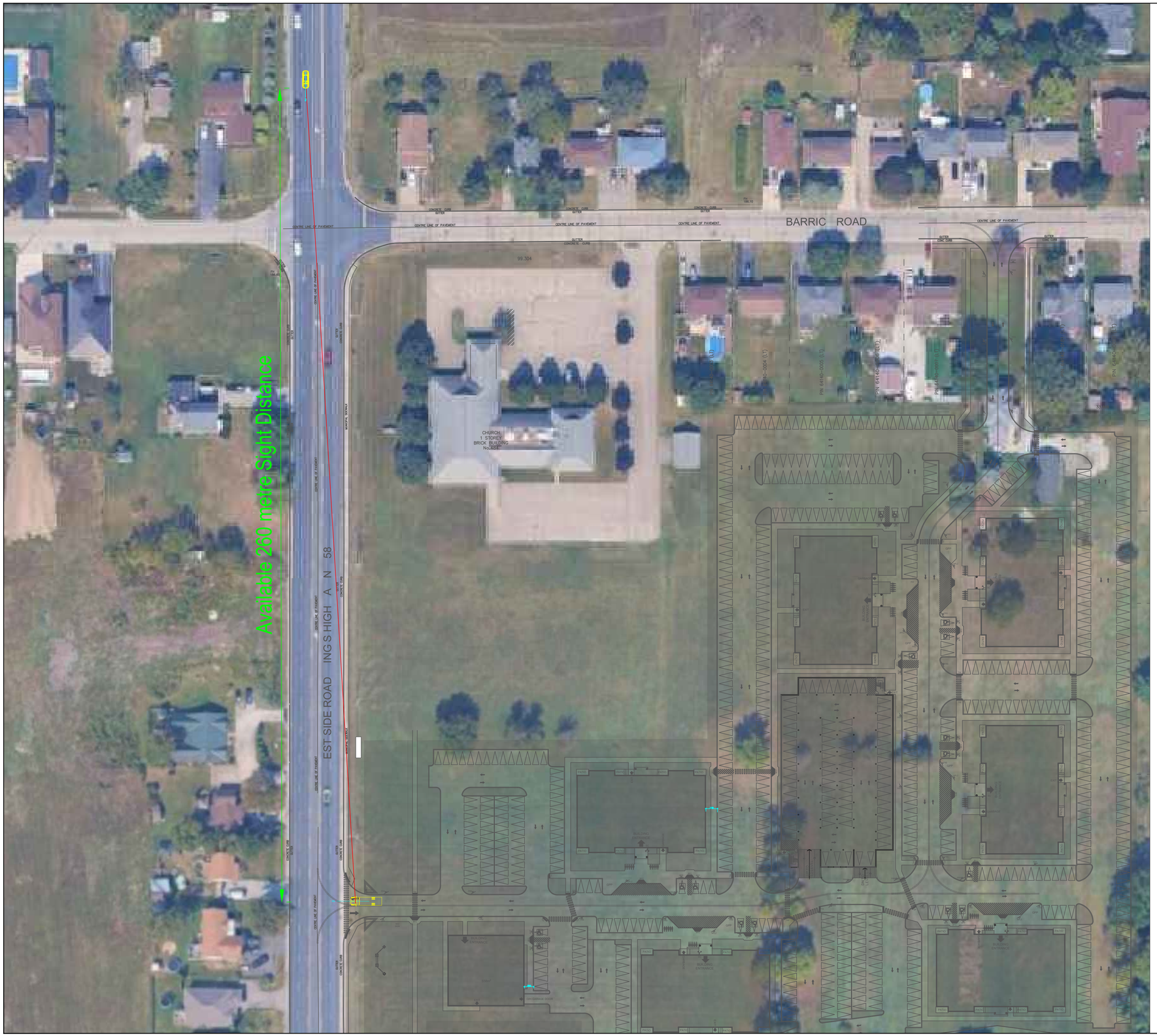
TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



Appendix H

Sightline Assessment


BARRIC ROAD
EST SIDE ROAD
HIGH
A
N
58
Available 260 metre Sight Distance
CHURCH
1 STOREY
BRICK BUILDING
No.434
99.304
CENTRE LINE OF PAVEMENT
CONCRETE CURB
GUTTER
SITE
ENTRANCE
BUILDING
ENTRANCE
ENTRANCE
ENTRANCE
ENTRANCE
PATIO
PATIO
PATIO

Proposed Highway 58 Site Access - Intersection Sight Distance (ISD) Case B1 and Available Sight Distance (ASD) Analysis

Single Unit Truck turning left from Stop onto Highway 58

- Posted Speed: 70 km/hr
- Design Speed: 90 km/hr
- Required ISD onto Highway 58 is 260 m (TAC Table 9.9.4)

The ASD and meets the required ISD.

Proposed Highway 58 Site Access - Intersection Sight Distance (ISD) Case F and Available Sight Distance (ASD) Analysis

Single Unit Truck turning left from Stop onto Highway 58

- Posted Speed: 70 km/hr
- Design Speed: 90 km/hr
- Required ISD on Highway 58 is 160 m (TAC Table 9.9.4)

The ASD and meets the required ISD.

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12 May 2026
W.C. MARIA
PROVINCE OF ONTARIO

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

DUNSIRE PROPERTIES INC.

Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
12694570

Title

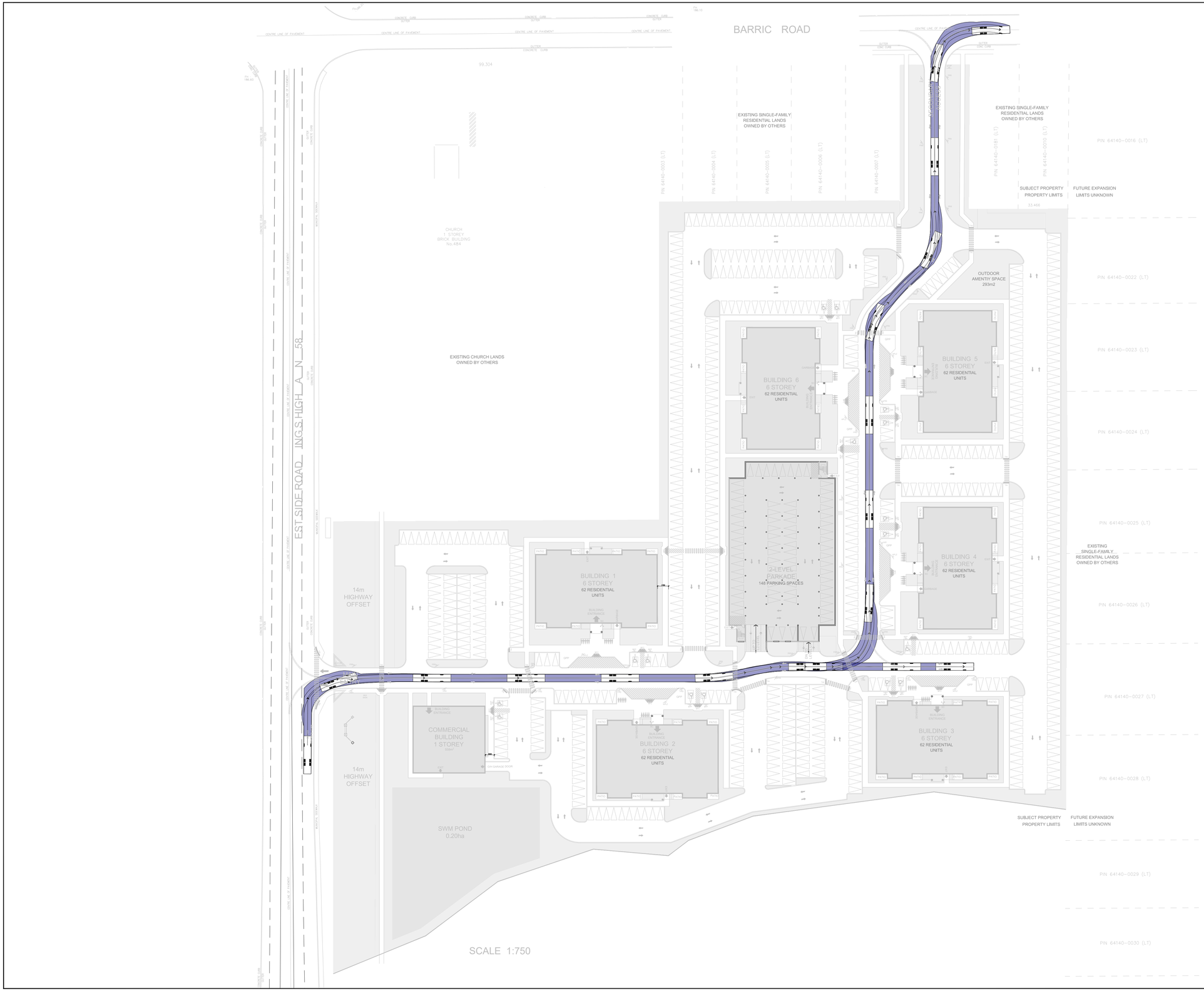
SIGHT DISTANCE DIAGRAM - SINGLE UNIT TRUCK, LOOKING SOUTH

Size
ANSI D

Sheet No.
SD-102

Appendix I

AutoTURN Swept Path Analysis



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May. 12, 2026
W.C. MARIA
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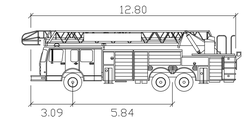

Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

No.	Issue		Checked	Approved	Date
1	First Submission		W.M	W.M	5/12/26
Author	R.A		Designer	R.A	
Drafting Check	W.M		Design Check	W.M	
Project Manager	W.M		Project Director	W.M	

Client
DUNSIRE PROPERTIES INC.

Project
434 & 484 BARRICK ROAD

Date: May 12, 2026
Scale: NTS

Project No.: 12694570

Title
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (NB/EB)

Size: ANSI D

Sheet No.: AT-101

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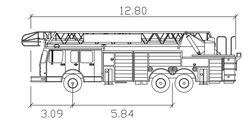

Aerial Fire

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Lock to Lock Time	: 6.0
Steering Angle	: 37.0

No.	Issue	Checked	Approved	Date
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Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

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Project

434 & 484 BARRICK ROAD

Date: May 12, 2026

Scale: NTS

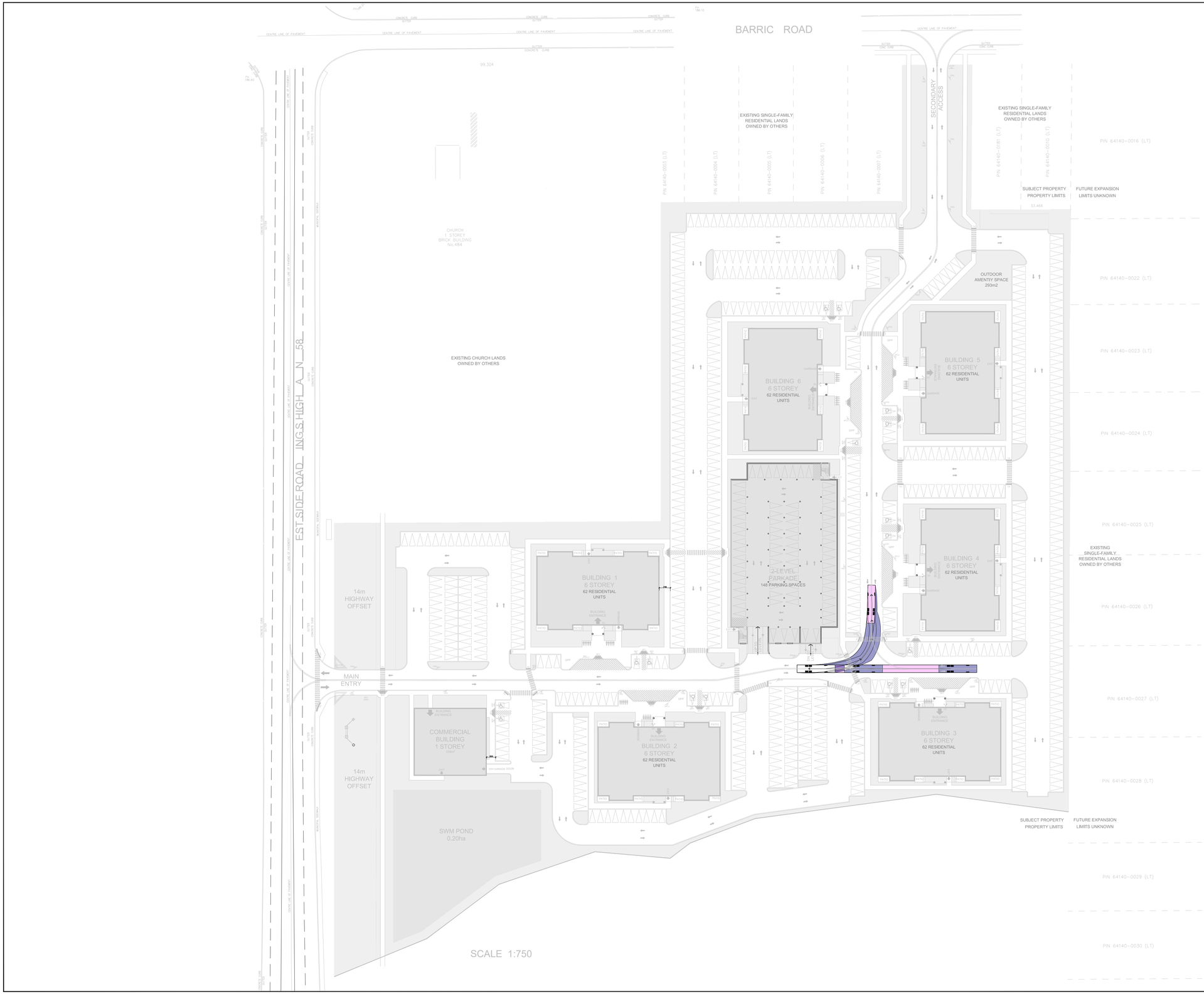
Project No.: 12694570

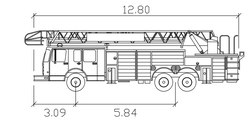
Title

VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (SB/WB)

Size: ANSI D

Sheet No.: AT-102





Aerial Fire

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Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

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Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

DUNSIRE PROPERTIES INC.

Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
12694570

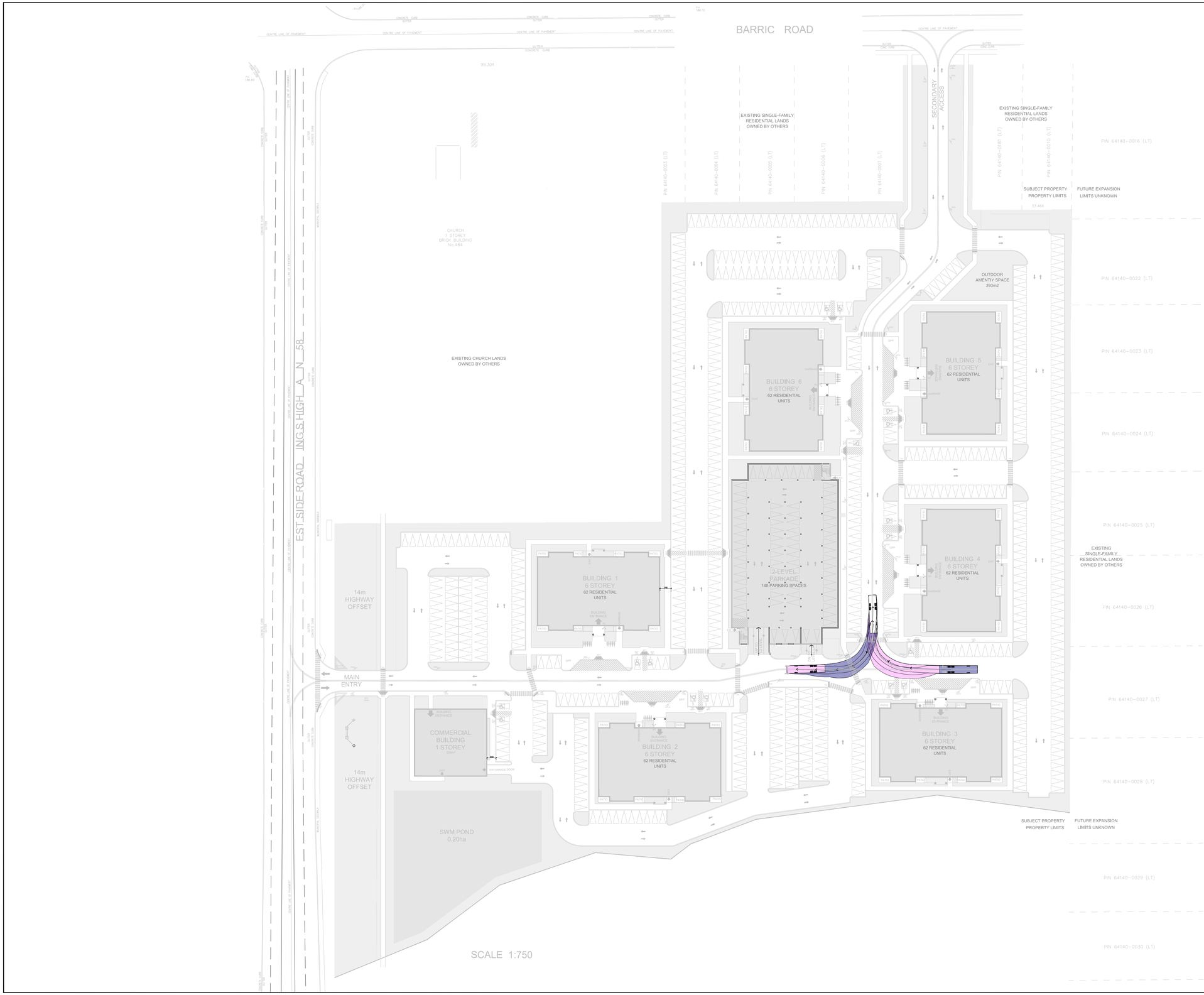
Title

VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (TURNAROUND NB)

Size
ANSI D

Sheet No.
AT-103

Plot Date: 5/12/26 Plotted By: Raf Andrenacci Path and Filename: \\ghdnet\ghd\CA\Mississauga\Projects\662\12694570\Drawings\AutoTURN\434 484 Barrick AutoTURN_May2026.dwg



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May. 12, 2026
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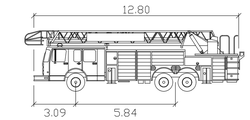

Aerial Fire

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Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

DUNSIRE PROPERTIES INC.

Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

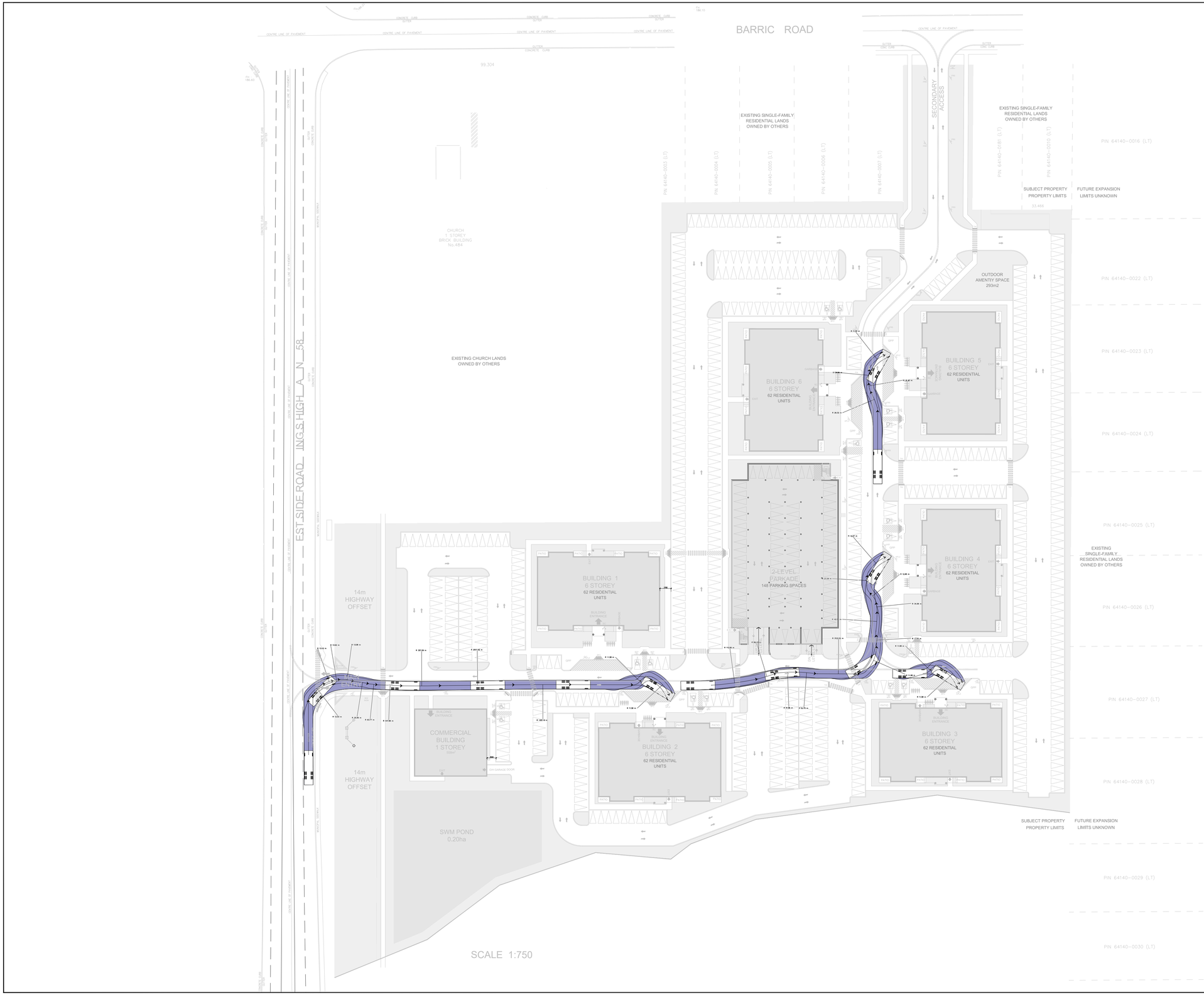
Project No.
12694570

Title

VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (TURNAROUND WB)

Size
ANSI D

Sheet No.
AT-104



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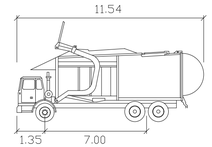

Niagara Region Waste
meters
Width : 2.98
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Lock to Lock Time : 3.0
Steering Angle : 37.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

DUNSIRE PROPERTIES INC.

Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
12694570

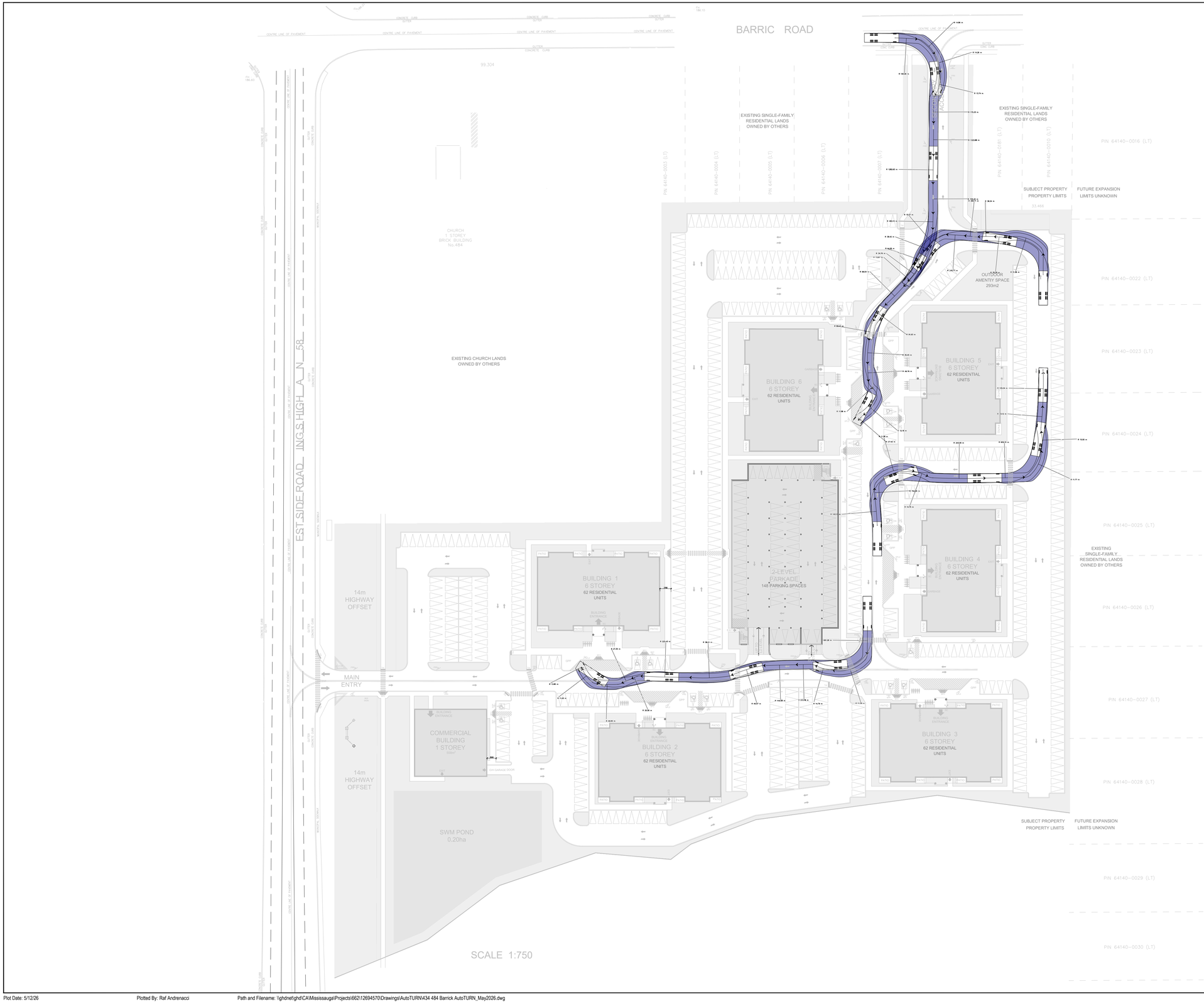
Title

VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (INBOUND NB/EB)

Size
ANSI D

Sheet No.
AT-105

Plot Date: 5/12/26 Plotted By: Raf Andrenacci Path and Filename: \\ghdnet\ghd\CA\Mississauga\Projects\662\12694570\Drawings\AutoTURN\434 484 Barrick AutoTURN_May2026.dwg



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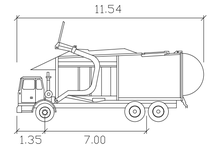

Niagara Region Waste

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Lock to Lock Time	: 3.0
Steering Angle	: 37.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
DUNSIRE PROPERTIES INC.

Project
434 & 484 BARRICK ROAD

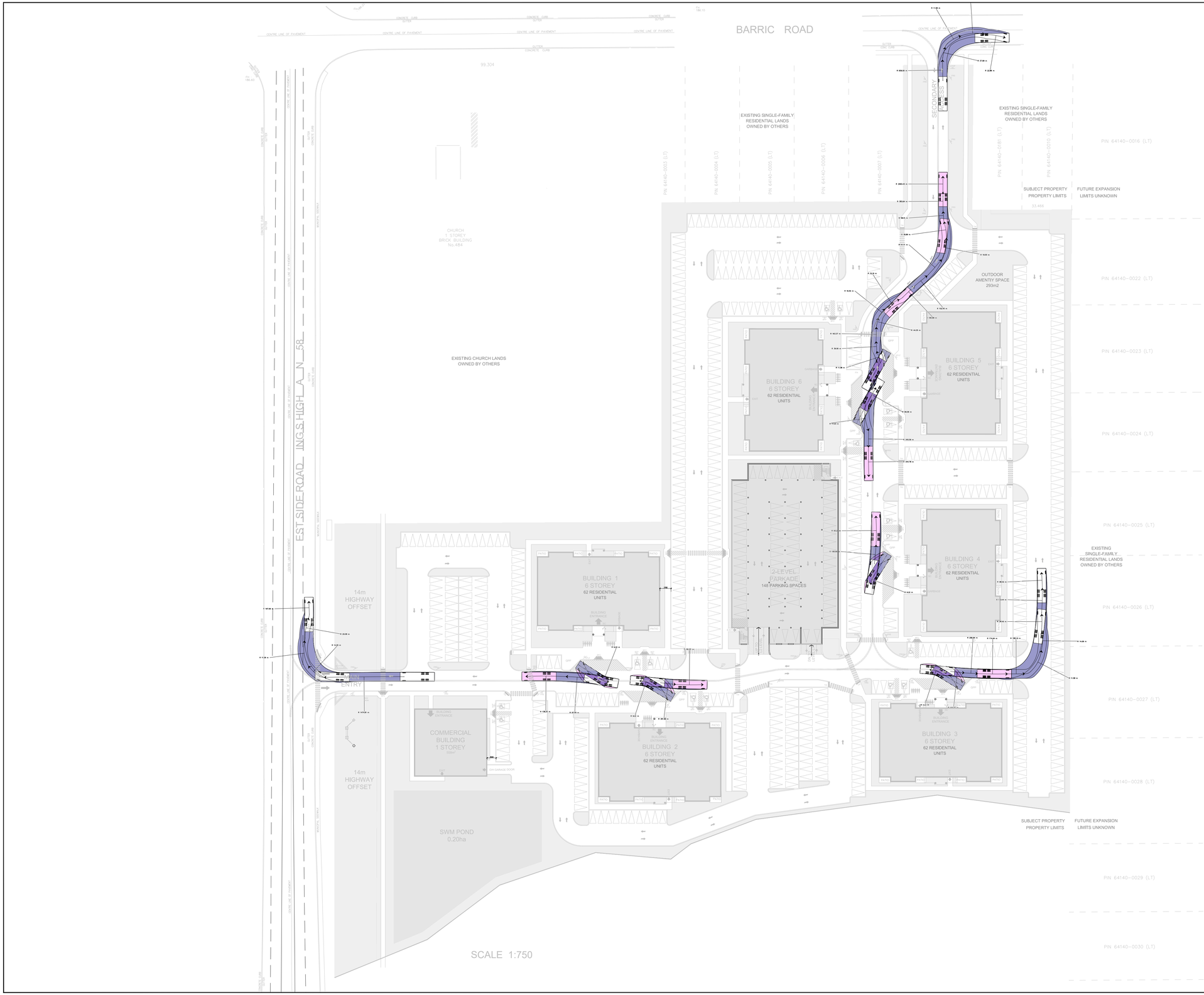
Date: May 12, 2026
Scale: NTS

Project No.: 12694570

Title
VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (INBOUND SB/WB)

Size: ANSI D

Sheet No.: AT-106



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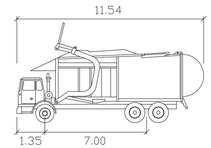

Niagara Region Waste

meters

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Lock to Lock Time	: 3.0
Steering Angle	: 37.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

DUNSIRE PROPERTIES INC.

Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
12694570

Title

VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION (OUTBOUND)

Size
ANSI D

Sheet No.
AT-107

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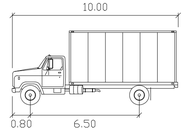

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Lock to Lock Time	6.0
Steering Angle	: 40.2

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client

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Project

434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
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Title

VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (INBOUND)

Size
ANSI D

Sheet No.
AT-108

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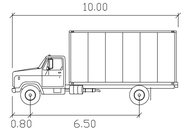

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No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Client
DUNSIRE PROPERTIES INC.

Project
434 & 484 BARRICK ROAD

Date	Scale
May 12, 2026	NTS

Project No.
12694570

Title
VEHICLE MANEUVERING DIAGRAM - MSU TRUCK (OUTBOUND)

Size
ANSI D

Sheet No.
AT-109

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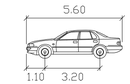

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Lock to Lock Time	6.0
Steering Angle	: 35.9

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	5/12/26

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

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DUNSIRE PROPERTIES INC.

Project
434 & 484 BARRICK ROAD

Date: May 12, 2026
Scale: NTS

Project No.: 12694570

Title
VEHICLE MANEUVERING DIAGRAM - PASSENGER VEHICLES

Size: ANSI D

Sheet No.
AT-110

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