5520 & 5552 Eighth Line Residential Development

Traffic Impact Study

Final

October 20, 2023

Prepared for:

Mattamy (Erin) Limited
and 2779181 Ontario Inc.

5520 & 5552 Eighth Line Residential Development

Traffic Impact Study

Draft

Mattamy (Erin) Limited and 2779181 Ontario Inc.

RVA 215876

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EXECUTIVE SUMMARY

R.V. Anderson Associates Limited (RVA) was retained by Mattamy (Erin) Limited and 2779181 Ontario Inc.to complete a Traffic Impact Study (TIS) for the proposed residential subdivision development located at 5520 and 5552 Eighth Line in the Town of Erin. The development is planned to include 409 single family detached units and 121 townhouse units, with vehicular access to the development via two new local road intersections along 8th Line and Sideroad 17. The proposed internal road network layout of the subject development is considered acceptable per TAC geometric design guidelines. An AutoTurn Analysis was conducted for the 90-degree bend on Street 'C' (adjacent to the stormwater management pond) to confirm that all critical design vehicles will be able to effectively navigate the corner.

The proposed development is projected to generate approximately 343 total two-way trips during the weekday a.m. peak hour (86 inbound and 257 outbound), and 442 total two-way trips during the weekday p.m. peak hour (276 inbound and 166 outbound).

As per the results of the intersection capacity analysis, the site generated traffic is not expected to result in any capacity, delay, or queuing concerns at the study area intersections as issues are mainly the result of background growth and other proposed developments within the area. The majority of study area intersections are projected to operate with an overall intersection LOS of 'C' or better under all scenarios analyzed.

The Trafalgar Road and Sideroad 17 intersection, is forecast to operate at an LOS 'E' in the 2034 future background and LOS 'F' in 2034 future total scenarios, with certain movements operating over capacity and with considerable delay. Further review of the Trafalgar Road and Sideroad 17 intersection found that a traffic signal is warranted under the 2024 future background horizon year. An auxiliary left-turn lane is warranted at the Sideroad 17 at Eighth Line intersection for the westbound left-turn movements under the 2029 future background horizon year but should be implemented in 2024 to accommodate site generated traffic. The Town/County may consider monitoring operations at these intersections to determine if signalization or left-turn auxiliary lanes are needed to maintain an acceptable level of service in the future.

A westbound auxiliary left-turn lane is warranted at the Sideroad 17 and proposed Street C intersection under the 2024 future total horizon year and should be implemented with build out of the development.

1.0 Introduction

1.1 Study Objective

R.V. Anderson Associates Limited (RVA) was retained by Mattamy (Erin) Limited and 2779181 Ontario Inc. to complete a Traffic Impact Study (TIS) for the proposed residential subdivision development, located at 5520 and 5552 Eighth Line in the Town of Erin.

The study will include the estimation of traffic generation from the proposed development, the completion of intersection capacity analyses for the study area intersections under the existing and future conditions, and the identification of the anticipated operational impacts of the site generated traffic on the study area intersections and recommendations for mitigation measures where required.

1.2 Development Location

The proposed development will be located at 5520 and 5552 Eighth Line in the Town of Erin on the west side of Eighth Line between Sideroad 17 and Dundas Street West. Vehicular access to the property will be provided by two new local road intersections, one along Eighth Line Road (Street “E”) and one along Sideroad 17 (Street “C”).

The development is located west of “downtown” Erin. East of the development is currently an existing golf course. The lands fronting the east side of Eighth Line, south of Sideroad 17, are proposed to be redeveloped into a residential subdivision as discussed in Section 3.2.1. Lands immediately to the west, north, and south of the subject site are primarily forested areas. The location of the proposed development and its relation to the Town of Erin is shown in Figure 1-1.

1.3 Study Area

Traffic analysis was completed for the following study intersections:

- Eighth Line & Access Road (S) (Street E)
- Sideroad 17 & Access Road (N) (Street C)
- Eighth Line & Sideroad 17
- Eighth Line & Erin Heights
- Eighth Line & Dundas Street W
- Eighth Line & Wellington Road (WR) 124
- Dundas St W & Main Street (WR 124)
- Shamrock Road (WR 23) & Main Street (WR 124)
- Sideroad 17 & Trafalgar Road (WR 24)

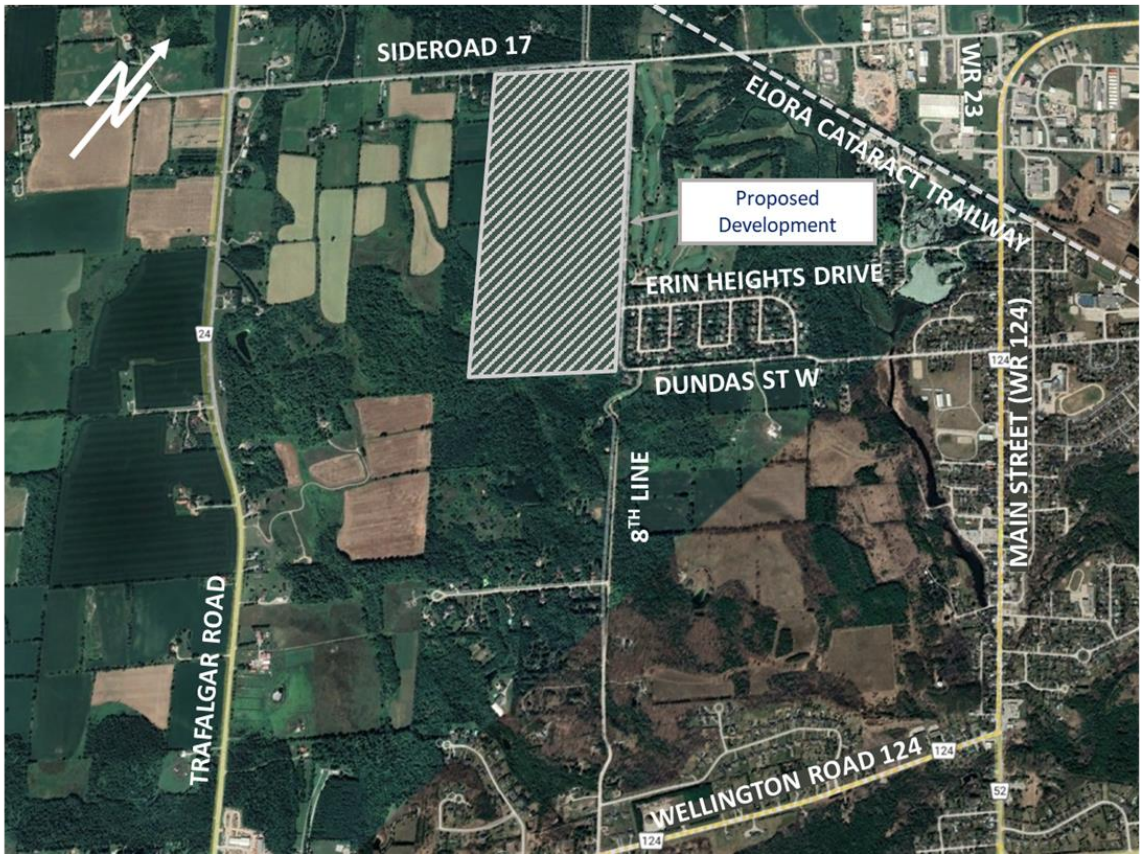


Figure 1-1 – Development Location

2.0 Existing Conditions

2.1 Existing Road Network

Eighth Line is a two-lane north-south collector roadway under the jurisdiction of the Town of Erin and has a posted speed limit of 50 km/h along the subject site's frontage. Between Dundas Street West and Delambro Drive the posted speed limit is 40 km/h and between Delambro Drive and Wellington Road 124 the posted speed limit is 60 km/h. The horizontal alignment of Eighth Line is generally straight and flat north of the Eighth Line/Dundas Street West intersection. South of Dundas Street West, Eighth Line transitions into a gravel road with notable curves in its horizonal alignment and various vertical crests until Delambro Drive, where it transitions back to a paved surface until it intersects with Wellington Road 124. It should be noted that Eighth Line also has a weight limit of 5 tonnes per axle between March 1 to May 15, and there is an existing single lane bridge with a weight limit of 15-tonnes approximately 310 meters north of the proposed Street A.

Dundas Street West is a two-lane east-west collector roadway under the jurisdiction of the Town of Erin, with a posted speed limit of 40km/h. Within the study area, Dundas Street W has a generally straight horizontal alignment with various vertical crests.

Sideroad 17 is a two-lane east-west collector roadway under the jurisdiction of the Town or Erin, with a posted speed limit of 60km/h. Within the study area, Sideroad 17 has a generally straight horizontal alignment with various vertical crests, including at the intersection of Sideroad 17 and Eighth Line.

Erin Heights Drive is a two-lane local roadway under the jurisdiction of the Town of Erin, with a posted speed limit of 40 km/h. Erin Heights Drive has a generally straight horizontal alignment and flat vertical alignment with the exception of the 90-degree bend.

Main Street (WR 124) is a two-lane north-south arterial roadway under the jurisdiction of the County of Wellington, with a posted speed limit of 40 km/h within the study area. Main Street has a generally straight horizontal alignment and flat vertical alignment with the exception of the large curve and gradual sloped roadway between Elm Park Drive and Erinville Drive.

Trafalgar Road (WR 24) is a two-lane north-south arterial roadway under the jurisdiction of the County of Wellington, with an assumed speed limit of 80km/h. Within the study area, the horizontal alignment is generally straight, and the vertical alignment has consistent slopes throughout.

Wellington Road (WR 124) is a two-lane north-south arterial roadway under the jurisdiction of the County of Wellington, with a posted speed limit of 80 km/h west of Eighth Line and 60 km/h east of Eighth Line. Within the study area, the horizontal alignment and vertical alignment is generally straight and flat respectively. Through the town of Erin Wellington Road (WR 124) is referred to as Main Street.

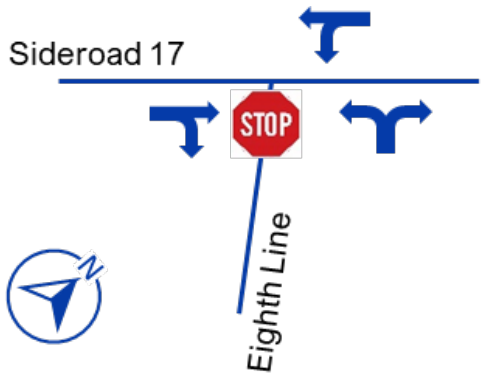
Shamrock Road (WR 23) is a two-lane north-south arterial roadway under the jurisdiction of the County of Wellington, with an assumed speed limit of 50 km/h. Shamrock Road is approximately 200 meters long and extends between Wellington Road 23 in the north and Main Street in the south. Shamrock road is flat and generally straight, with the exception of the curves to intersect Main Street and Wellington Road 23.

2.2 Existing Study Area Intersections

Eighth Line/Sideroad 17

The Eighth Line/Sideroad 17 intersection is an unsignalized, three-legged intersection with STOP control on the minor approach only (8th Line). All approaches consist of a single lane that accommodates all possible movements.

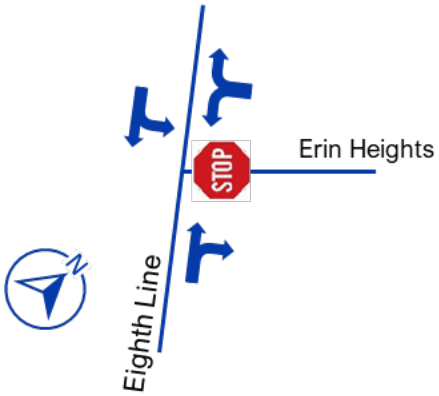
All movements are permitted at this location.



Eighth Line/Erin Heights

The Eighth Line/Erin Heights intersection is an unsignalized, three-legged intersection with STOP control on the minor approach only (Erin Heights). All approaches consist of a single lane that accommodates all possible movements.

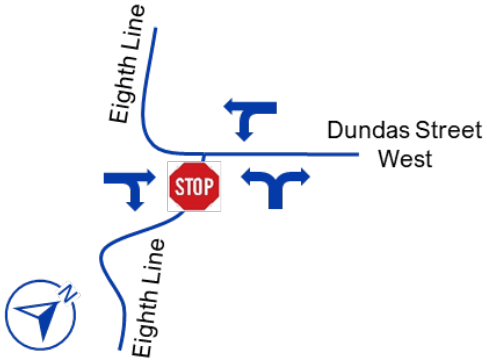
All movements are permitted at this location.



Eighth Line/Dundas Street West

The Eighth Line/Dundas Street West intersection is an unsignalized, three-legged intersection with STOP control on the minor approach only (Eighth Line). All approaches consist of a single lane that accommodates all possible movements.

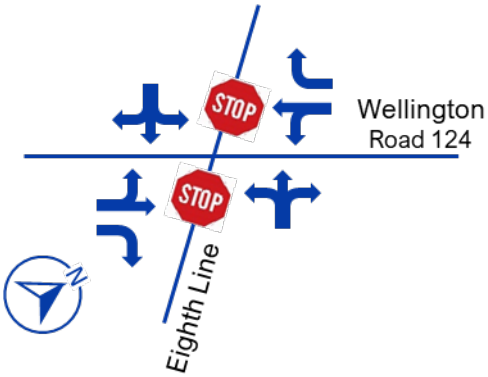
All movements are permitted at this location.



Eighth Line/Wellington Road 124

The Eighth Line/Wellington Road 124 intersection is an unsignalized, four-legged intersection with STOP control on the minor approach only (Eighth Line). The northeast and southwest approaches (Wellington Road 124) each consist of one shared through/left-turn lane and one right-turn lane. The northwest and southeast approaches (Eighth Line) each consist of a single shared lane that accommodates all possible movements.

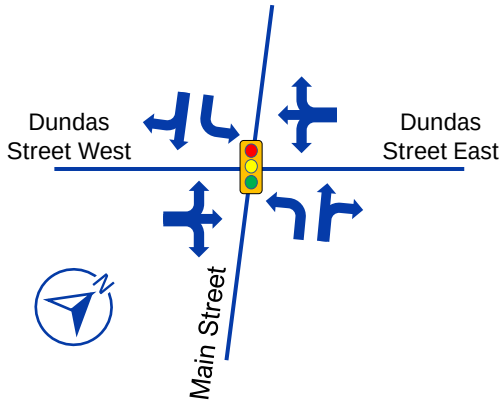
All movements are permitted at this location.



Dundas Street West/Main Street

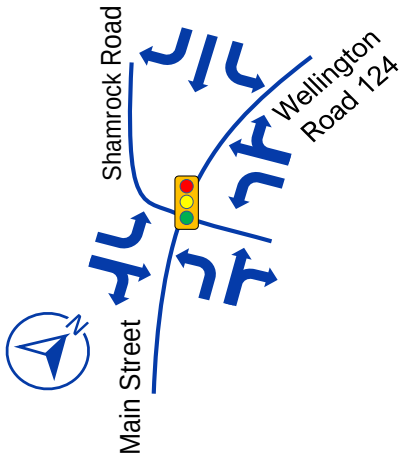
The Dundas Street West/Main intersection is a signalized four-legged intersection. The northeast and southwest approaches (Dundas Street East/West) each consist of a single shared lane that accommodates all possible movements. The northwest and southeast approaches (Main Street) each consist of one left-turn lane and one shared through/right-turn lane.

Heavy trucks are prohibited on Dundas Street East; all other movements are permitted.



Shamrock/Main Street

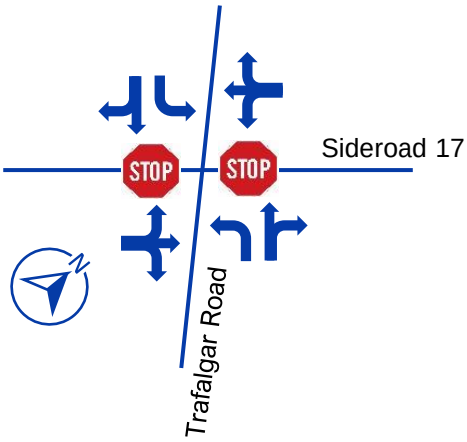
The Shamrock/Main intersection is a signalized four-legged intersection. The north approach (Main Street) consists of one left-turn lane and one shared through/right-turn lane. The south approach (Wellington Road 124) consists of one left-turn lane, one through lane and one right-turn lane. The east and west approaches each consist of one left-turn lane and one shared through/right-turn lane.



All movements are permitted at this location.

Sideroad 17/Trafalgar Road

The Sideroad 17/Trafalgar intersection in an unsignalized four-legged, intersection with STOP control on the minor approach only (Trafalgar Road). The northeast and southwest approaches (Sideroad 17) each consist of a single shared lane that accommodates all possible movements. The northwest and southeast approaches (Trafalgar Road) each consist of one shared through/left-turn lane and one right-turn lane.



All movements are permitted at this location.

2.3 Active Transportation Facilities

Sidewalks are currently provided along both sides of Main Street (WR 124), and along the southern side of Dundas Street West for approximately 390 metres where it terminates just before the bridge over the waterway. A sidewalk is also provided on the west side of Wellington Road 124 only from the intersection of Main Street for approximately 345 metres. No other roadways in this study area that have dedicated pedestrian facilities. The Elora Cataract (Trans Canada) Trailway north of the site is an existing east-west cyclist spine route.

In the County of Wellington's 2012 *Active Transportation Master Plan*, an Off-Road Spine Route is proposed just east of the site running NS parallel to Main Street. Along Wellington Road 23 and Highway 52, paved shoulders are proposed. Finally, A proposed signed route with sharrows is proposed along Main Street within the study area.

2.4 Transit Services

Wellington County is completing a Ride Well ™ pilot program. Ride Well ™ is a County wide demand based public transit service. Currently the pilot program runs from Monday to Friday, 6:00am – 7:00pm. Additionally, Denny Bus Lines Ltd provides Thursday Bus Schedule Servicing during the AM and PM peak hours to Guelph and Orangeville.

2.5 2022 Existing Traffic Data

Historical intersection turning movement count (TMC) data was provided to RVA for all study area intersections and is provided in **Appendix A.** Weekday morning and afternoon peak hour traffic data was collected in September 2021 which was during COVID-19. As directed by the Town, a 10% growth rate has been applied to the existing 2021 traffic volumes to better represent the existing 2022 intersection volumes. An analysis of the data determined the weekday morning and afternoon peak hours to be 8:00 AM to 9:00 AM and 4:00 PM t0 5:00 PM, respectively. The following Figure 2-1 depicts the assumed weekday morning and afternoon peak hour vehicular volumes.

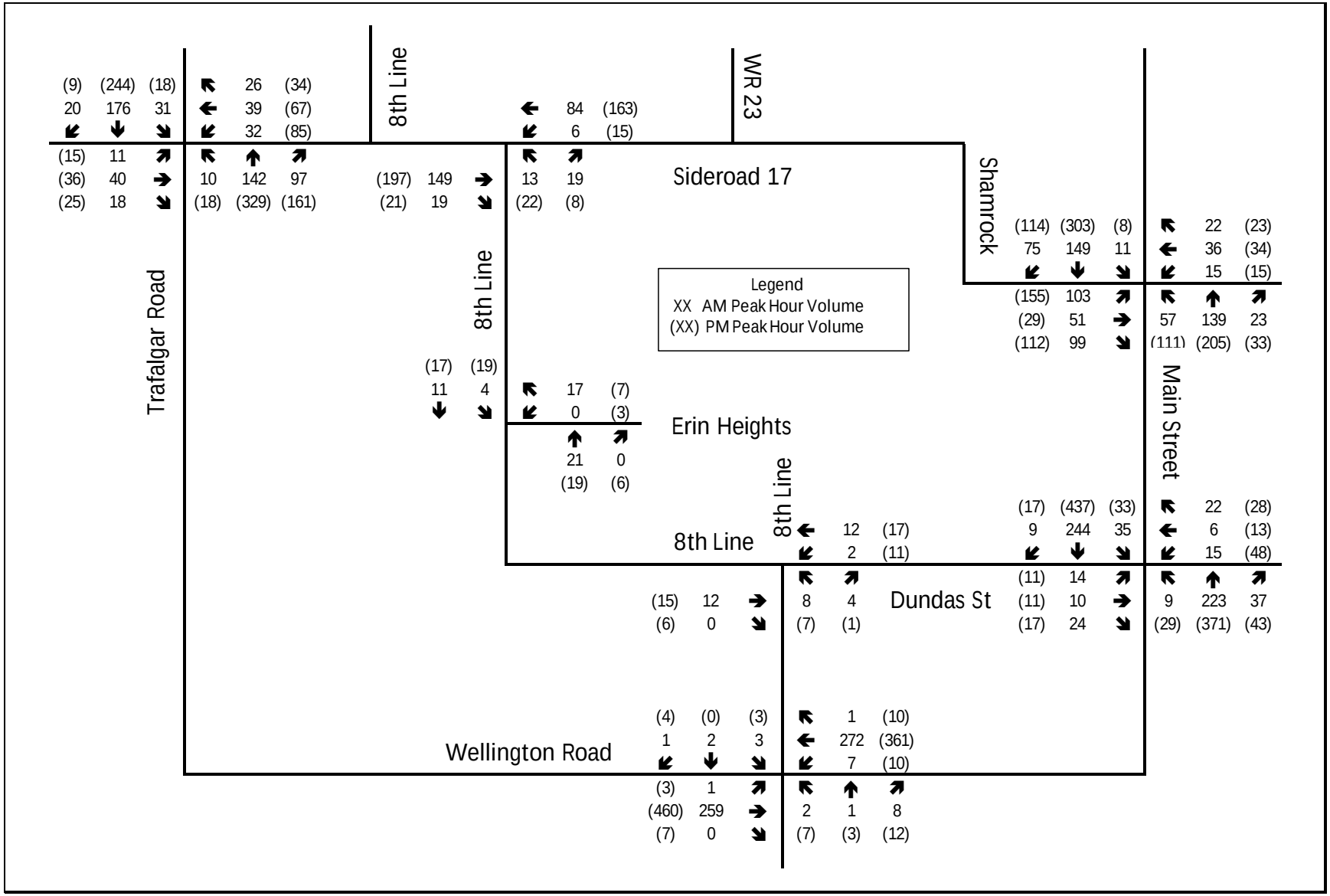


Figure 2-1 – 2022 Existing Traffic Volumes

3.0 Future Background Traffic

3.1 Study Horizon Years

For the purpose of this assessment and as discussed with the Town and County staff Based on consultation with the Town and County staff, the proposed horizon years were selected for analysis:

- **2024** – Estimated full build-out of the subject development
- **2029** – 5 years beyond full build-out
- **2034** – 10 years beyond full build-out

3.2 Future Background Development Traffic Volumes

3.2.1 Empire Residential

The proposed residential subdivision is located on the east side of Eighth Line directly across from the subject development site. The development is planned to consist of approximately 93 single family detached homes and 213 townhomes, with two proposed local road connections. Both connections are proposed to be along Eighth Line, north of the subject site. It is our understanding that the proposed background development will be constructed in a single phase, with an anticipated build-out year of 2024.

Projected site-generated traffic for the background development was estimated using appropriate trip generation rates from the 11th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Based on the location and type of development envisioned, the following Table 3-1 – Trip Generation summarizes the appropriate tripe generation rates for estimated projected site-generated traffic.

Table 3-1 – Trip Generation

LUC	Units	Peak Hours	Total Site Trips	Directional Distribution		Directional Site Trips	
				In	Out	In	Out
210 (Detached Single Family)	93	AM	70	25%	75%	18	52
		PM	93	63%	37%	59	34
215 (Attached Single Family)	213	AM	105	25%	75%	26	79
		PM	124	59%	41%	73	51

Given the nature of the development, the majority of trips generated by the site during the weekday morning and afternoon peak hours will primarily be commuter trips, the 2016 Transportation Tomorrow Survey (TTS) commuter data was reviewed to estimate the distribution of the background development's site-generated traffic. The following Table 3-2 – Empire Trip Distribution outlines the estimated trip distribution assumptions for the site generated trips, which is based on the analyzed TTS data provided in **Appendix B**.

Table 3-2 – Empire Trip Distribution

Direction	Distribution Percentages
Wellington Road 124 (S/W)	38%
Wellington Road 124 (N/E)	20%
Trafalgar Road (North)	6%
Trafalgar Road (South)	30%
Wellington Road 23 (North)	6%
Total	100%

Based on the above assumed distribution, the background development's site-generated traffic has been assigned to the study area network and is shown in the following Figure 3-1.

3.2.2 Solmar Development

The proposed residential subdivision is located immediately north of Dundas Street East and Sideroad 15. Full build-out the development is planned to consist of 667 single family detached dwellings, 212 semi detached dwellings, 342 townhomes, a senior's residence with 100 units, an affordable housing complex with 130 units, a school for 450 students, 16,415 m^2 of commercial space and 65,204 m^2 of industrial space. RVA was provided with a 2022 TIS Addendum for the revised phasing analysis which included future projected site trips and their distribution throughout study area intersections. Based this TIS addendum, it is our understanding that the proposed development will be constructed in three phases; Phase 1 is estimated to be built-out by 2024, Phase 2 by 2025 and Phase 3 by 2026. As a result, the future projected site-generated traffic for this development was taken directly from the *Traffic Impact Study Addendum by LEA Consulting Inc. dated April 2022*, and has been explicitly accounted for throughout the study area intersections for the future background 2024 and 2029 horizon years. The following Figure 3-2 depicts the future 2024 projected site-generated trips for Phase 1 and Figure 3-3 depicts the future 2029 projected site generated trips.

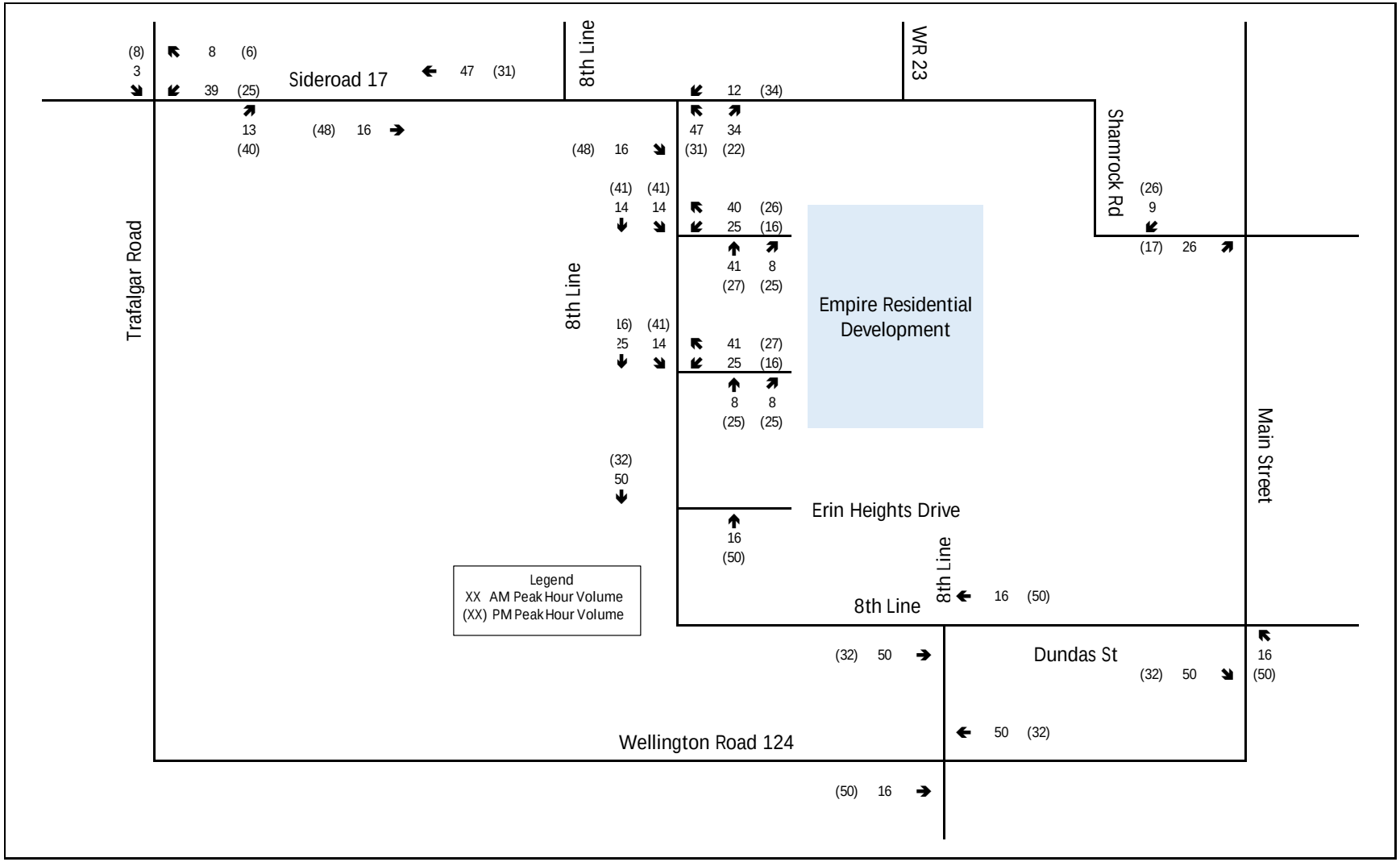


Figure 3-1 – 2024 Empire Residential Development Traffic Volumes

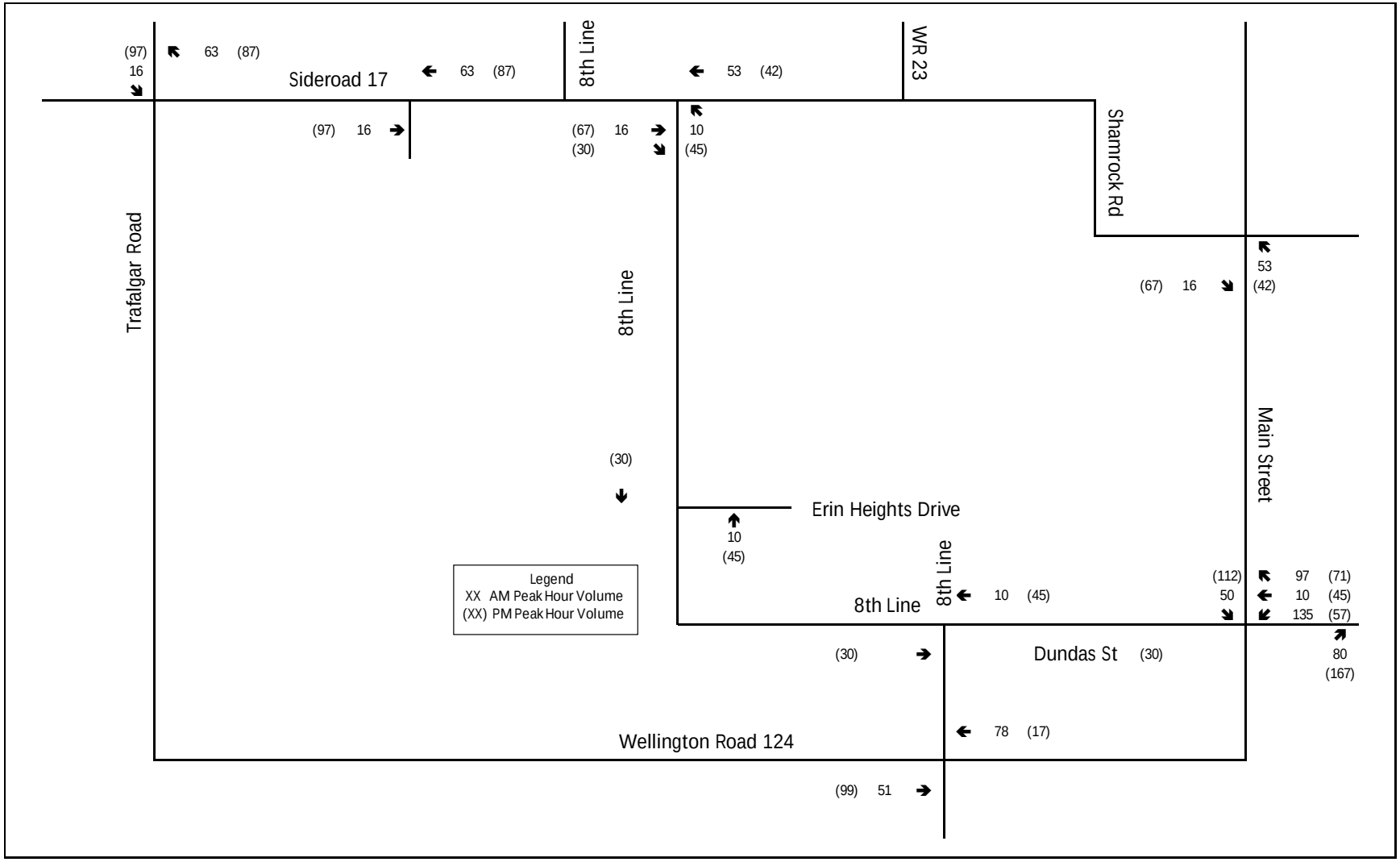


Figure 3-2 – 2024 Solmar Development Traffic Volumes

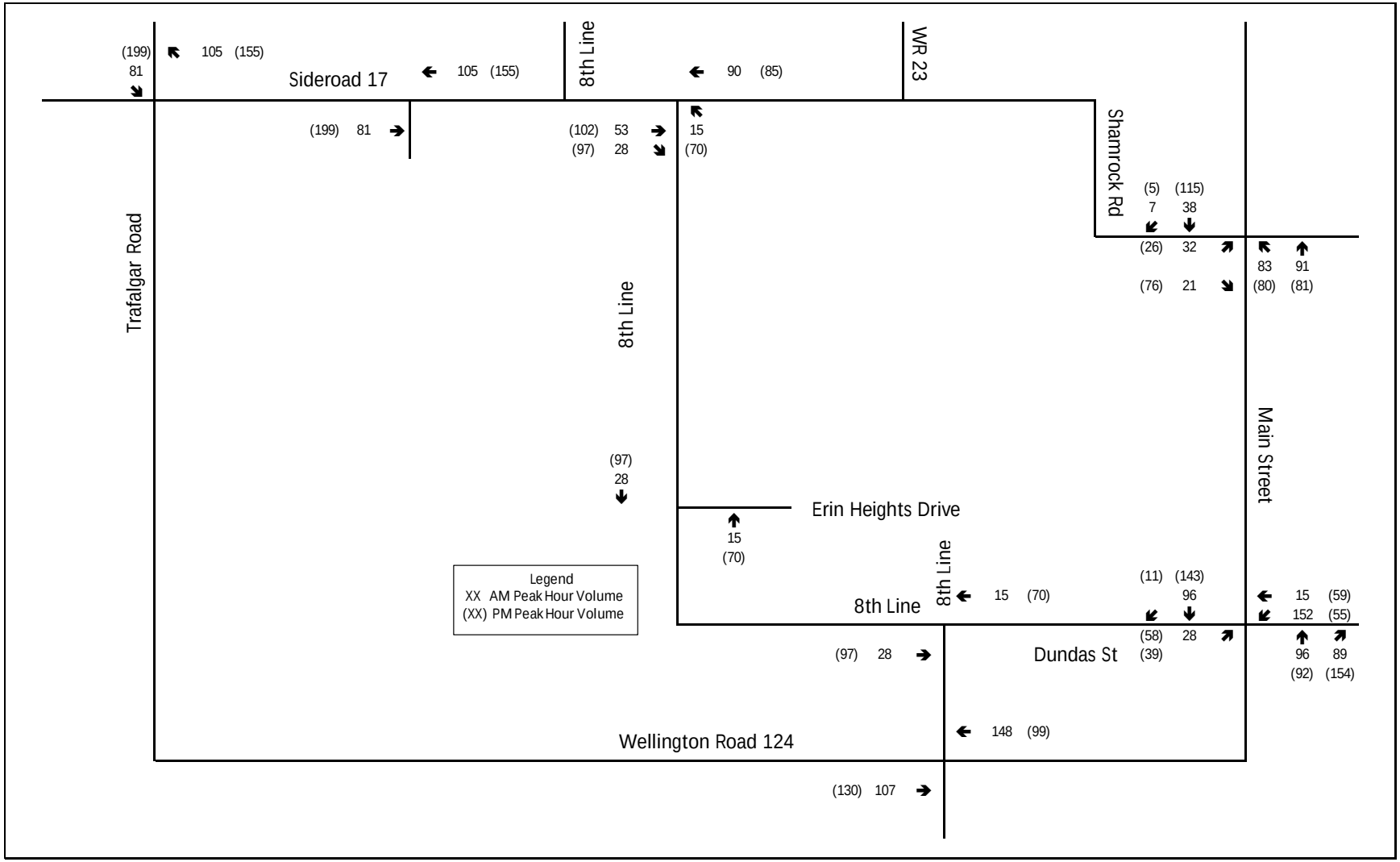


Figure 3-3 – 2026 Solmar Development Traffic Volumes

3.3 Future Background Growth Traffic Volumes

As per consultation with the Town and county staff, a 1% per annum traffic growth rate has been applied to all movements of the Existing 2022 to develop the future background 2024, 2029 and 2034 horizon years. The estimated 2024, 2029 and 2034 future background growth traffic volumes are shown in Figure 3-4**,** Figure 3-5 and Figure 3-6, respectively.

3.4 Future Background Total Traffic Volumes

The following Figure 3-7, Figure 3-8 and Figure 3-9 depict future background traffic volumes for the horizon years 2024, 2029 and 2034, respectively. These were derived by superimposing the background development site-generated traffic volumes onto future background growth traffic volumes for each respective year (e.g., summing together volumes depicted in Figure 3-1 – *Empire Residential* Site *Generated Trips* and Figure 3-2 – *Solmar Development Site Generated Trips 2024* and Figure 3-4 – *2024 Future Background Growth*, resulting in Figure 3-7 – *2024 Future Background Traffic Volumes)*

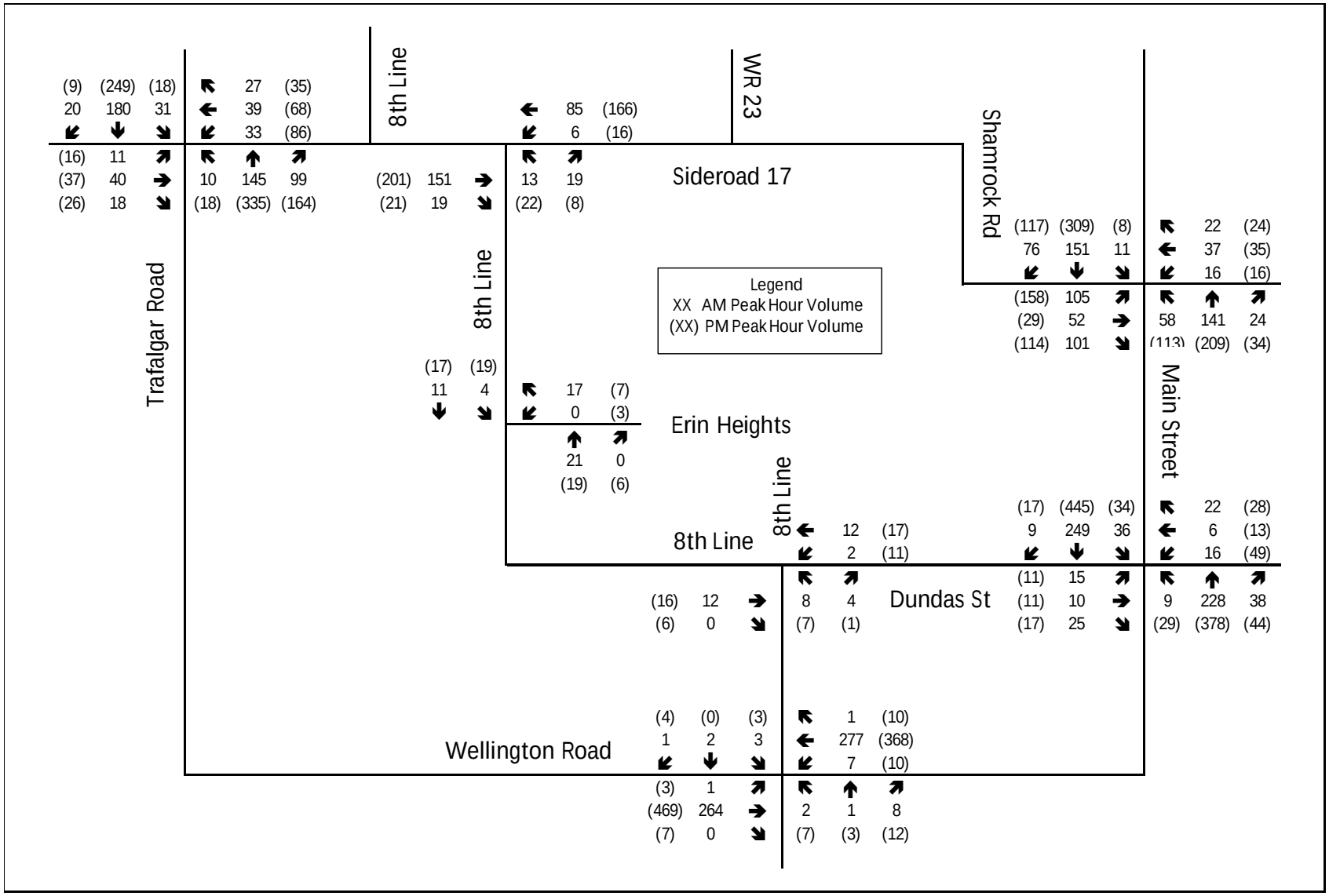


Figure 3-4 – 2024 Future Background Growth Traffic Volumes

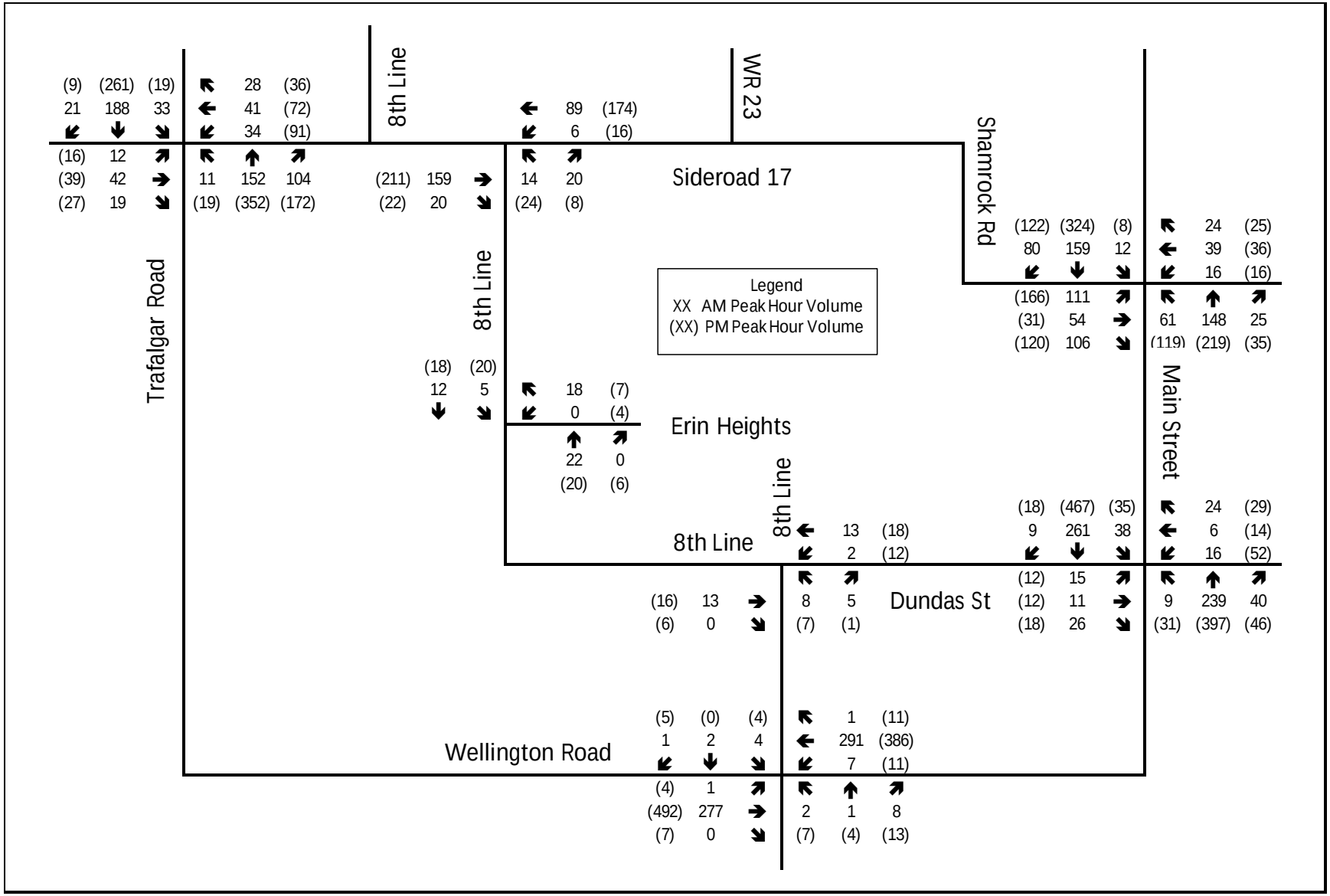


Figure 3-5 – 2029 Future Background Growth Traffic Volumes

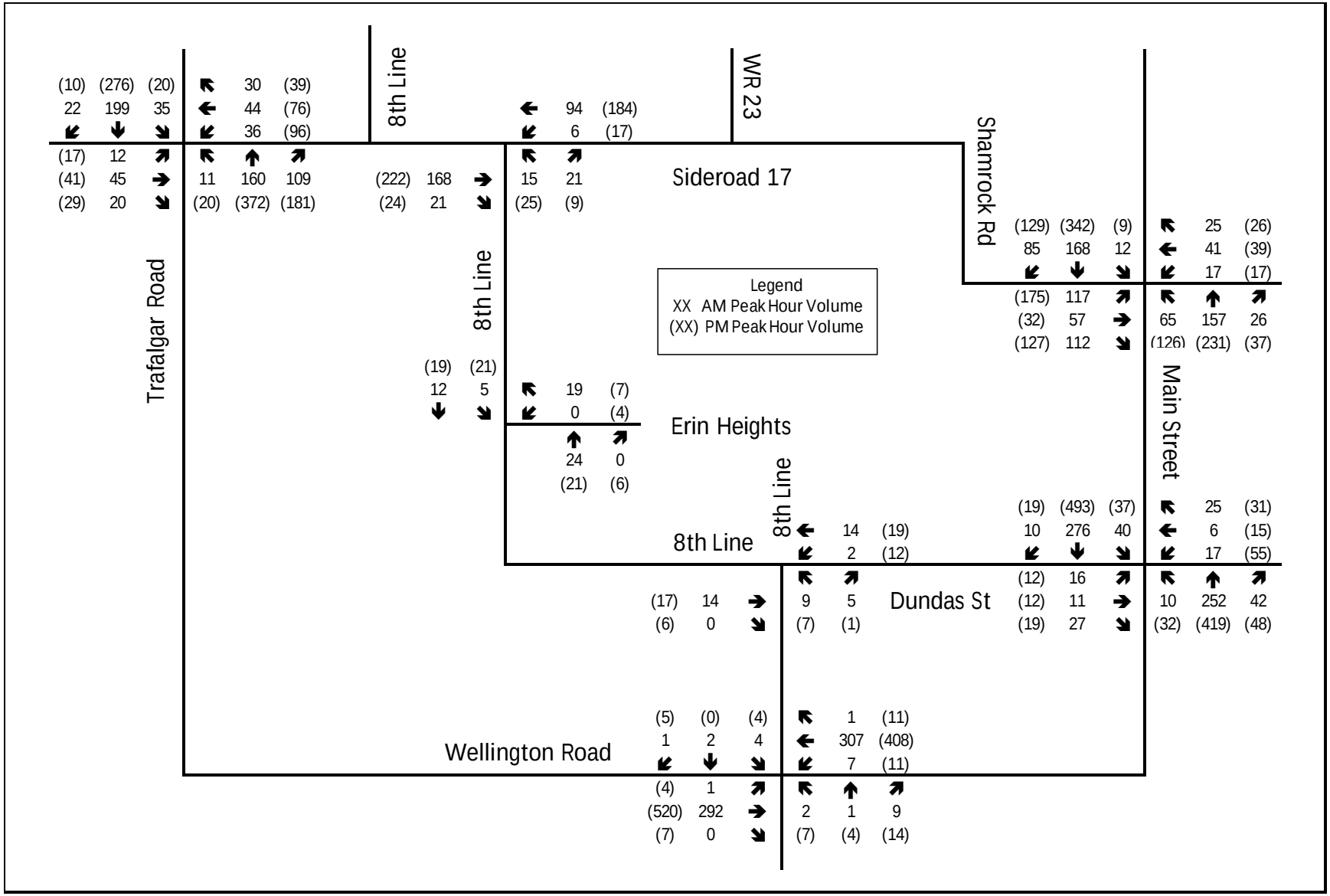


Figure 3-6 – 2034 Future Background Growth Traffic Volumes

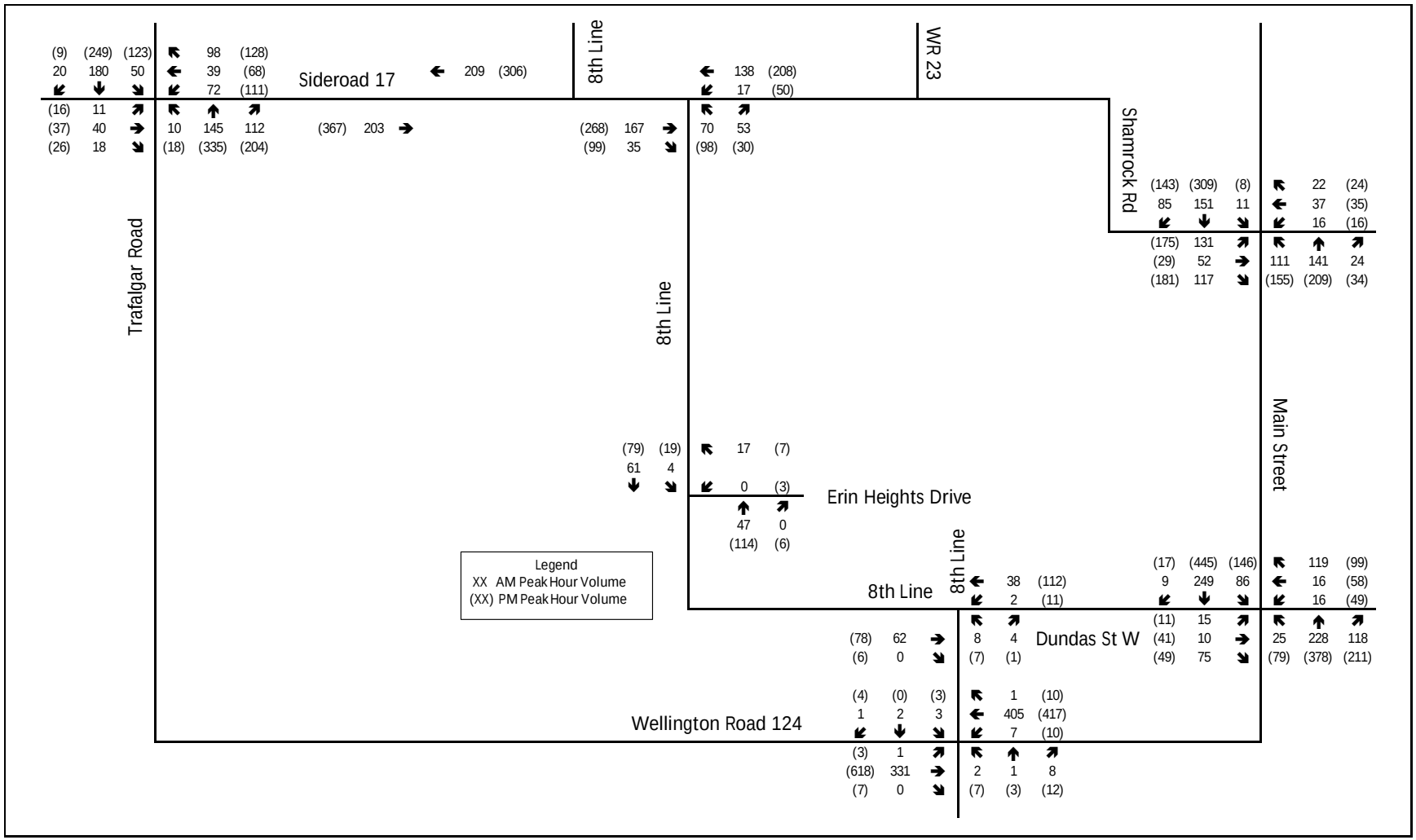


Figure 3-7 – 2024 Future Background Total Traffic Volumes

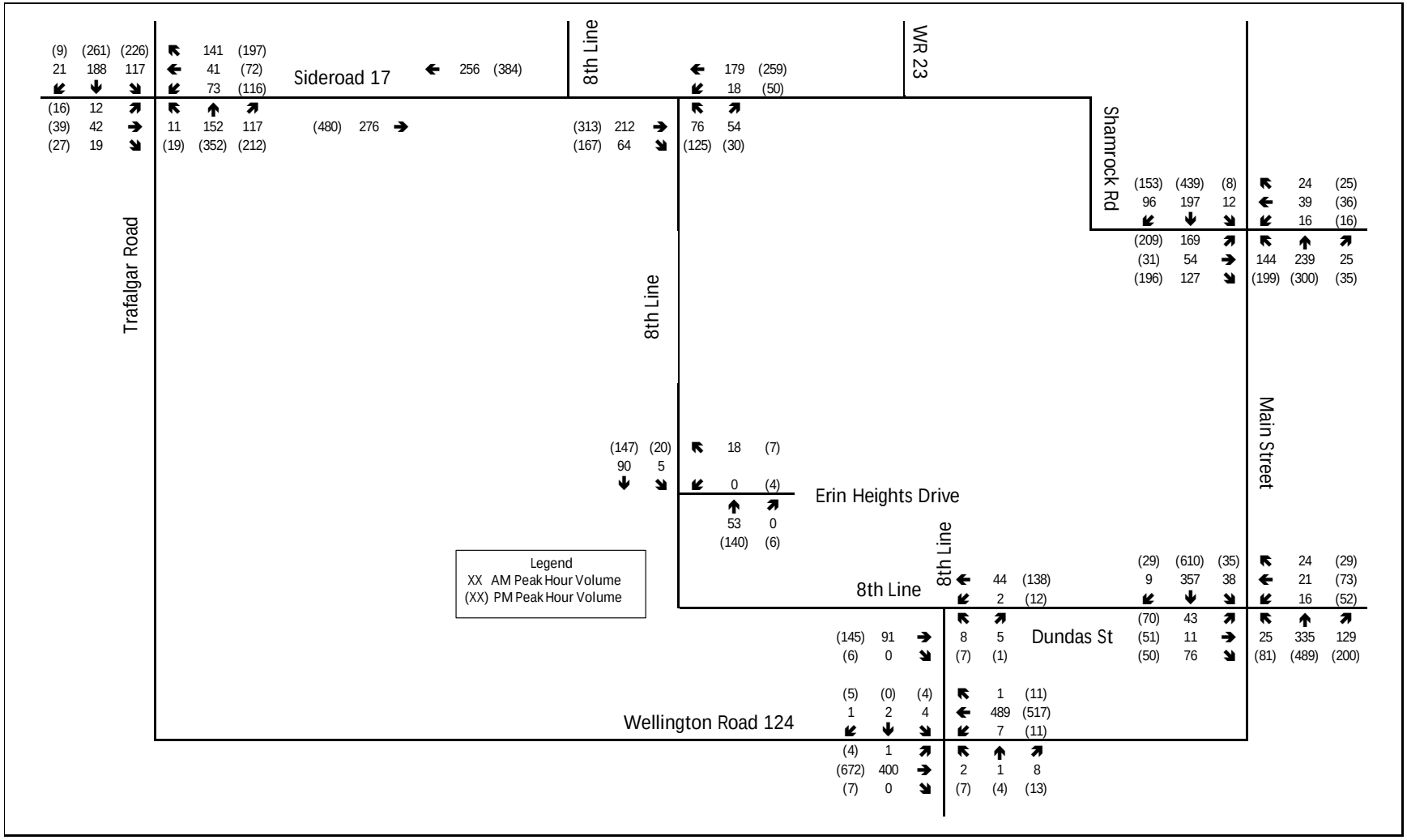


Figure 3-8 – 2029 Future Background Total Traffic Volumes

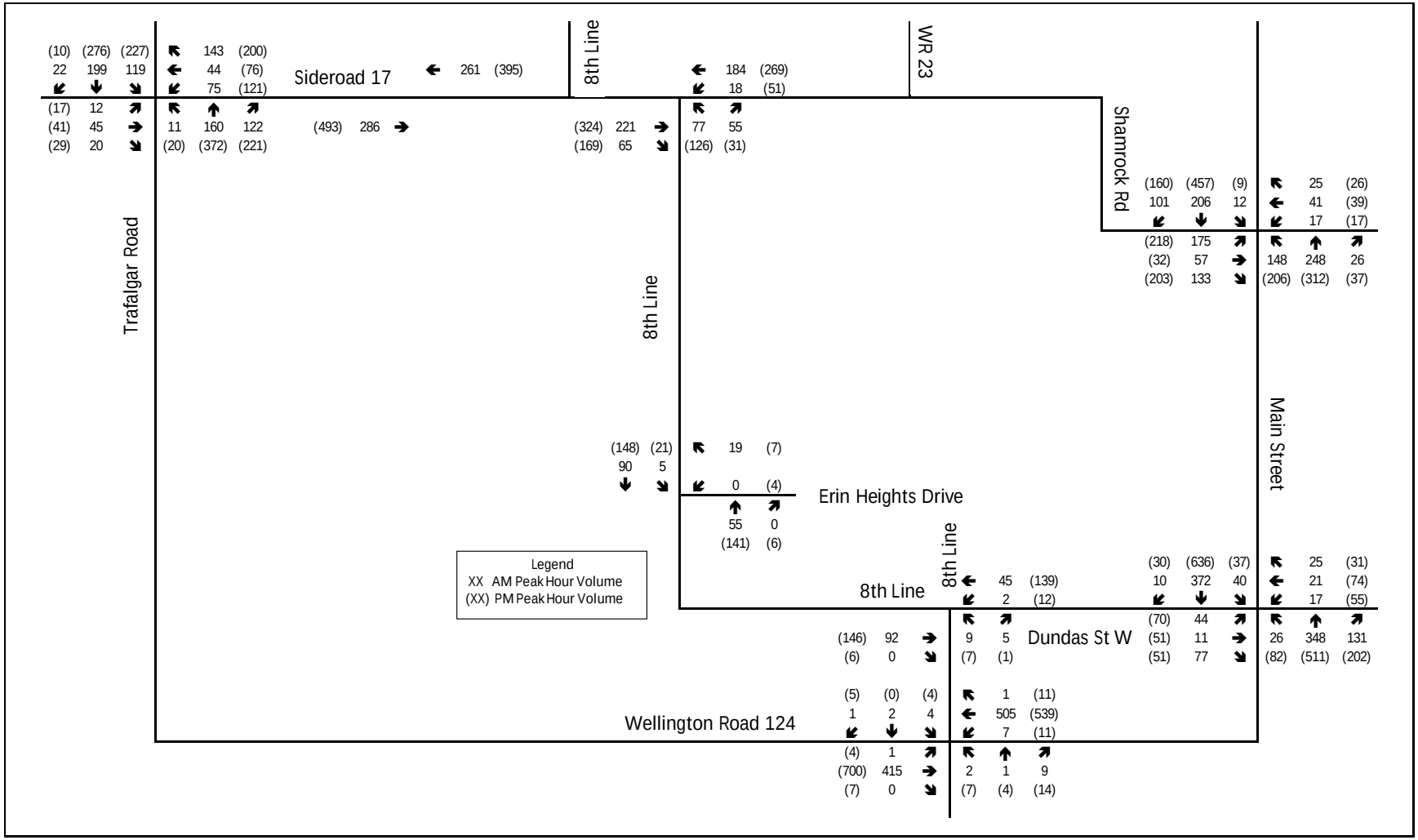


Figure 3-9 – 2034 Future Background Total Traffic Volumes

4.0 Proposed Development

4.1 Draft Plan of Subdivision

The latest Draft Plan of Subdivision indicates that the proposed development will include approximately 409 single family detached dwelling units and 121 single family attached dwelling units. The subject development can be accessed via the new proposed local roadways, which will connect to Eighth Line and Sideroad 17. The Eighth Line access (Street "E") will be a 4-legged intersection with Erin Heights Drive, with STOP control on the minor approaches. The Sideroad 17 intersection is currently planned as an unsignalized T-intersection with STOP control on the minor approach only (Street "C"). The following **Appendix C** depicts the developments Draft Plan of Subdivision.

Street "E" and Street "A" are proposed to have a 23 metre-wide-right-of-way (ROW), Street "C" is proposed to have a 20 metre-wide-right-of-way (ROW), and all other internal roads are proposed to have an 18 metre-wide-right-of-way (ROW). The proposed internal roadways compile with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads minimum requirements for a local roadway, with an overall width of 8.5 metres.

Eighth Line and Street C are approximately 110 metres apart, which complies with the TAC minimum requirements for intersection spacing along a collector roadway with a minimum separation of at least 60 metres.

A AutoTurn analysis has been completed to confirm the operations of the 90-degree bend within the internal road network along Street C as provided in **Appendix D.** Based on this analysis, it was confirmed that critical design vehicles (e.g., HSU, firetruck) will be able to navigate this bend safely and effectively. It is noted that sightlines have not been reviewed as part of this analysis and should be ensured during the design and construction of this subdivision.

Sidewalks will be provided along both sides of the roadway on all roads that have a cross section greater than 20 metres and roadways with an 18-metre cross section will have sidewalks on one side of the roadway only. Pedestrian connections are provided to all on-site/off-site public amenities.

Based on anticipated low peak hour intersection volumes internal to the subdivision, and based on the proposed local road network layout, it is proposed that all internal intersections be two-way stop-controlled intersections, with one shared lane that accommodates all possible movements, except for the Street "A" intersection with Street

"C", which is proposed to be an all-way stop. The intersection control and lane configurations are appropriate from an operational perspective, as confirmed in the capacity analysis results presented in Section 6.

4.2 Trip Generation

As previously described, the latest site plan depicts that the proposed development will consist of approximately 409 single family detached dwellings and 121 single family attached dwellings. It has been assumed that the proposed development will be constructed in a single phase, with an anticipated build-out year of 2024.

Projected site generated traffic was estimated using appropriate trip generation rates from the 11th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Based on the location and type of development envisioned, the following Table 4-1 summarizes the appropriate trip generation rates for estimating projected site-generated traffic.

Table 4-1 – ITE Peak Hour Trip Generation Rates

Land Use	ITE Land Use Code	AM Peak Hour	PM Peak Hour
Single-Family Detached Housing	ITE 210 General Urban/Suburban Vehicle Trips	$Ln(T) = 0.91Ln(X) + 0.12$	$T_A = 0.94(X)$
Single-Family Attached Housing	ITE 215 General Urban/Suburban Vehicle Trips	$T_F = 0.52(X) – 5.70$	$T_F = 0.60(X) – 3.93$

Notes: T_A *= Average Vehicle Trips*
T_F *= Vehicle Trips by Fitted Curve*
X = Per 1000 ft^2

Based on the foregoing the projected weekday morning and afternoon site-generated vehicle traffic is summarized in the following Table 4-2.

Table 4-2 – Trip Generation

LUC	Units	Peak Hours	Total Site Trips	Directional Distribution		Directional Site Trips	
				In	Out	In	Out
210 (Detached Single Family)	409	AM	286	25%	75%	72	214
		PM	373	63%	37%	235	138
215 (Attached Single Family)	121	AM	57	25%	75%	14	43
		PM	69	59%	41%	41	28
				Total	AM	86	257
					PM	276	166

As presented in **Table 4-2**, the proposed residential development is projected to generate an approximate two-way total of 343 vehicles during the a.m. peak hour (86 inbound and 257 outbound) and 442 two-way trips (276 inbound and 166 outbound) during the weekday p.m. peak hour.

4.3 Trip Distribution and Assignment

4.3.1 Trip Distribution

The projected distribution of site-generated traffic was derived based on existing travel patterns, the site's connections to/from the surrounding road network, the 2016 Transportation Tomorrow Survey (TTS) commuter data, and our local area knowledge. The following Table 4-3 outlines the estimated trip distribution assumptions for the site-generated trips and the TTS data is provided in **Appendix B**.

Table 4-3 – Mattamy Trip Distribution

Direction	Distribution Percentages
Wellington Road 124 (South)	38%
Wellington Road 124 (N/E)	20%
Trafalgar Road (North)	6%
Trafalgar Road (South)	30%
Wellington Road 23 (North)	6%
Total	100%

4.3.2 Trip Assignment

Based on the above assumed distribution, projected 'new' site-generated traffic was assigned to the study area network and is depicted in the following Figure 4-1.

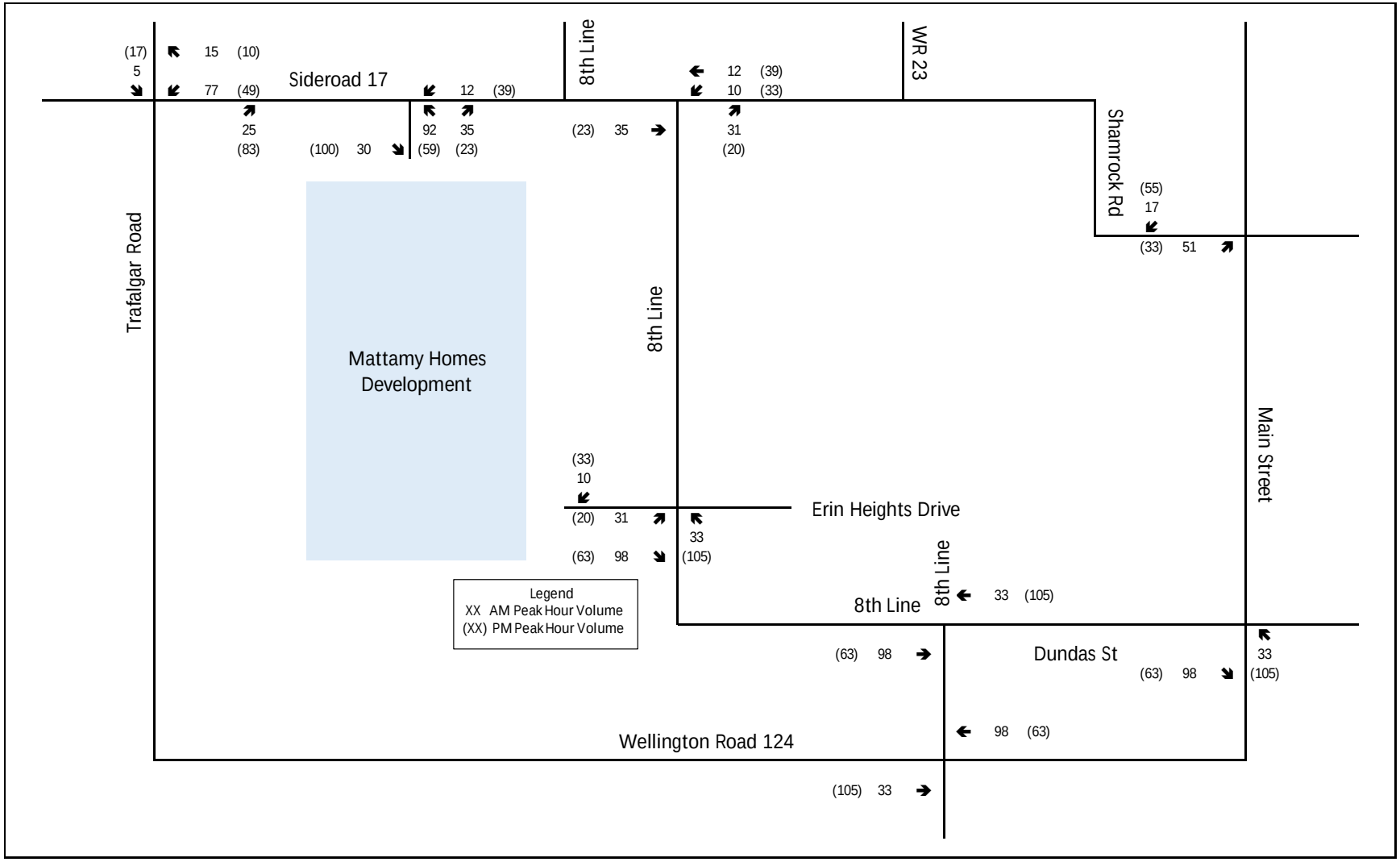


Figure 4-1 – Mattamy Residential Development Traffic Volumes

5.0 Future Total Traffic

5.1 Future Total Traffic Volumes

The following Figure 5-1, Figure 5-2 and Figure 5-3 depict future total traffic volumes for the horizon years 2024, 2029 and 2034, respectively. These were derived by superimposing the projected site generated traffic volumes onto future background growth traffic volumes for each respective year (e.g., summing together volumes depicted in Figure 3-7 – *2024 Future Background Traffic Volumes and* Figure 4-1 – *Future Site Generated Traffic Volumes,* resulting in Figure 5-1 – *2024 Future Total Traffic Volumes).*

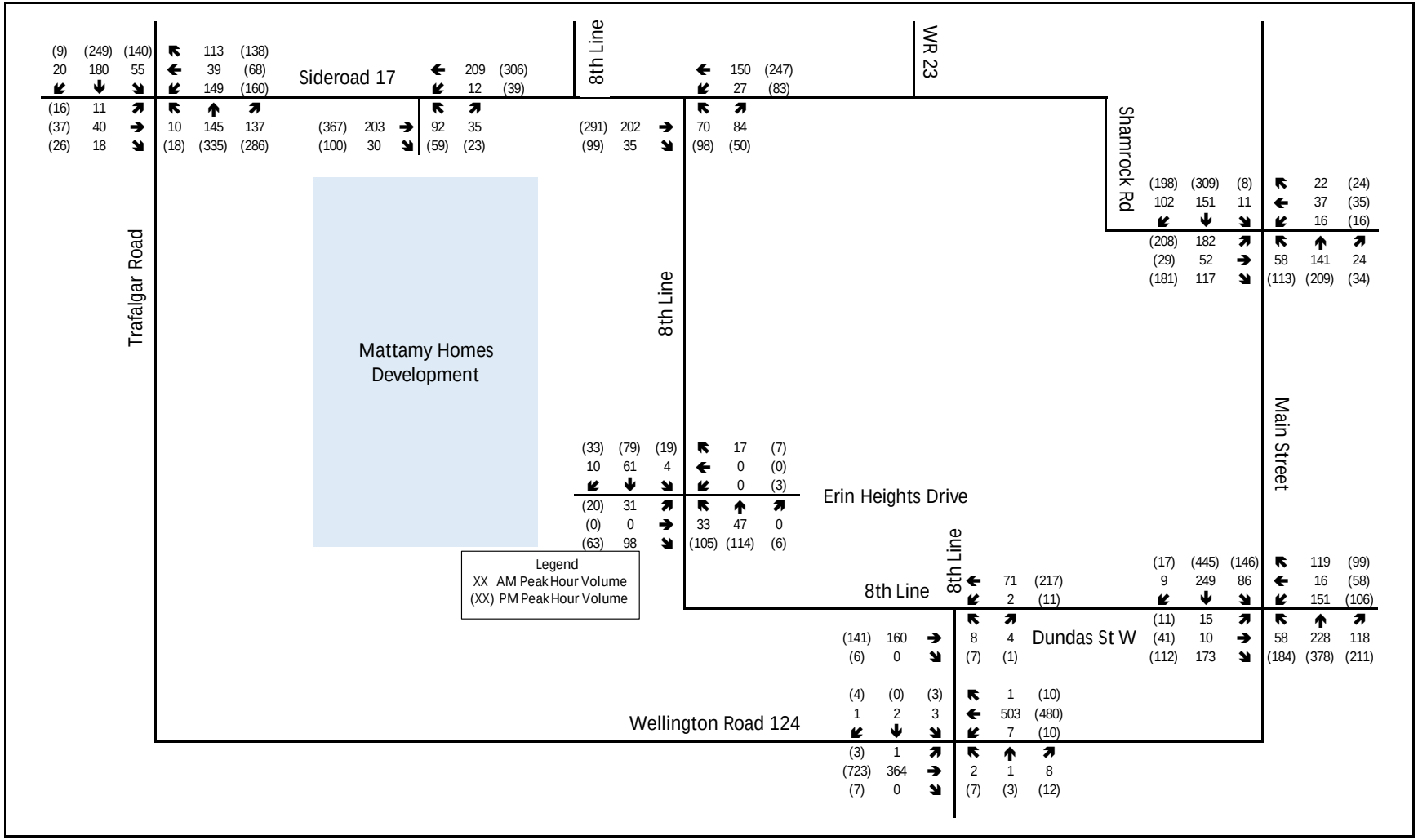


Figure 5-1 – 2024 Future Total Traffic Volumes

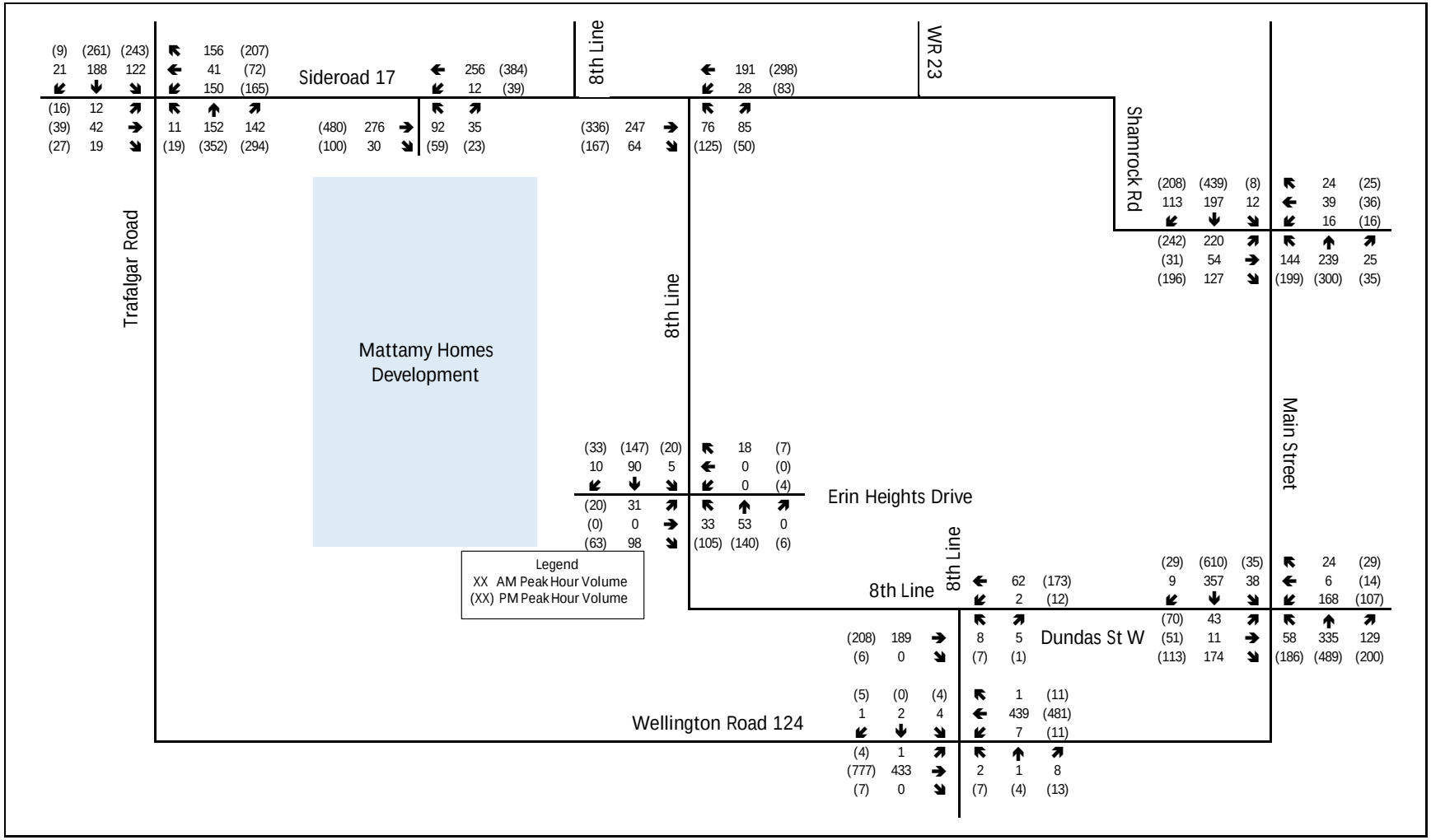


Figure 5-2 – 2029 Future Total Traffic Volumes

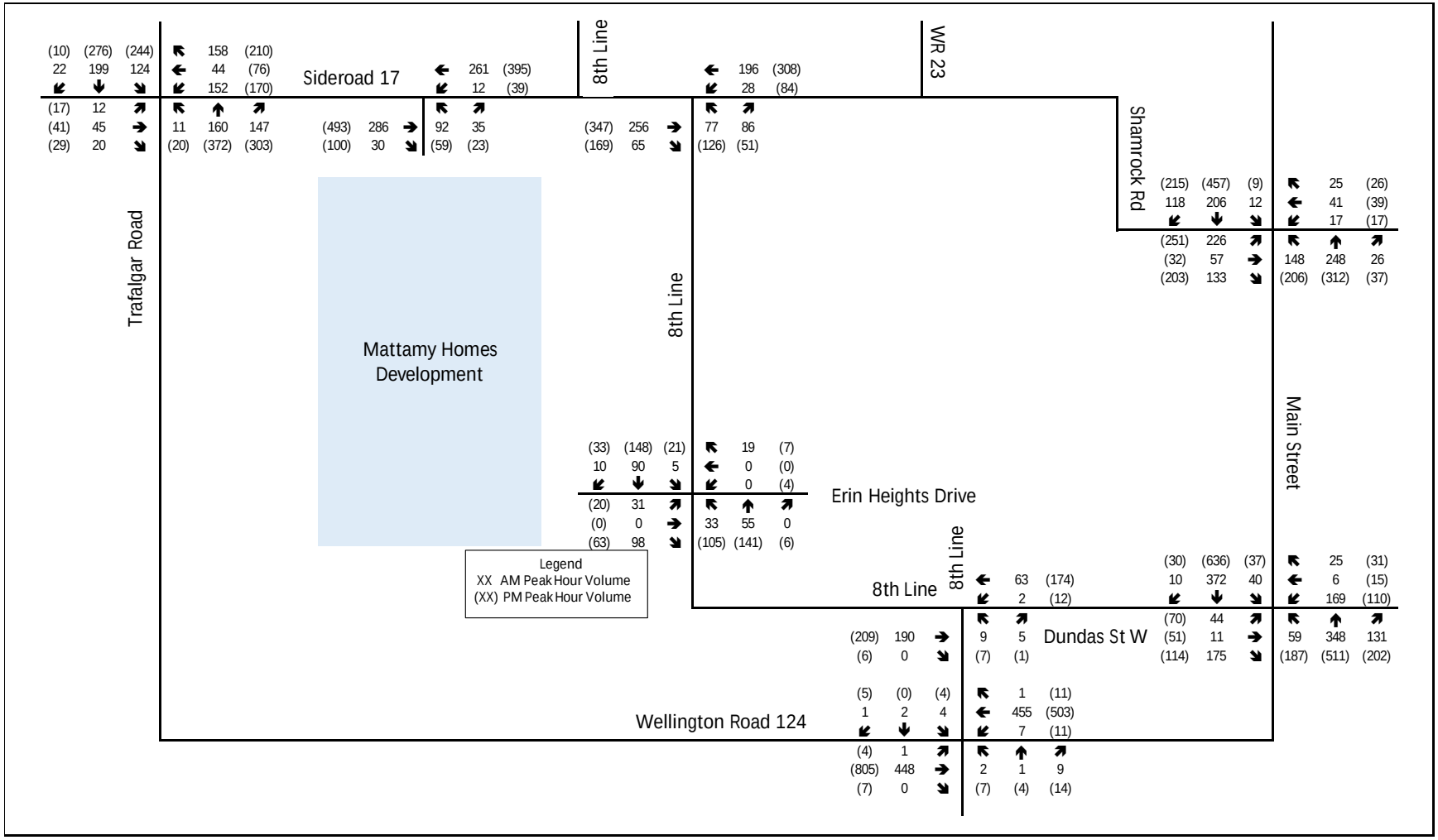


Figure 5-3 – 2034 Future Total Traffic Volumes

6.0 Intersection Operational Analysis

6.1 Intersection Operational Analysis Methodology

The industry standard Synchro macroscopic traffic analysis software was utilized to analyse the intersections for the various horizon years. Key performance measures such as Level of Service (LOS), volume-to-capacity ratio (v/c ratio), and 95th percentile queuing was reported, and are defined below:

- **Average vehicle control delay** is used to characterize LOS for the entire intersection, an approach, or movement. Delay quantifies the variations in travel time and is also a surrogate measure of driver discomfort and fuel consumption.
- **V/c ratio** quantifies the degree to which the capacity of each signal phase is utilized by a defined lane group.
- **95th percentile queue** is the queue length which is expected to be exceeded only 5% of the time; it is common practice to identify preferred storage length requirements for auxiliary turn lanes at signalized intersections based on estimated peak hour 95th percentile queueing.

Table 6-1 identifies the control delay thresholds (seconds of delay per vehicle) for each LOS based on Highway Capacity Manual (HCM 2000) methodology.

Table 6-1 – Characteristics of Level of Service at Intersections

LEVEL OF SERVICE (LOS)	CONTROL DELAY (seconds / vehicle)	
	SIGNALIZED INTERSECTION	UNSIGNALIZED INTERSECTION
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Existing signal timing plans for the signalized study area intersections were provided by the Town for use in the analysis; the signal timing plans are provided in **Appendix E**.

6.2 Intersection Operational Analysis Results

The following tables present the capacity analysis results for the study area intersections under all existing and future conditions scenarios. Detailed Highway Capacity Manual (HCM 2000) output reports from the Synchro software are provided in **Appendix F**. The results of the analysis can be summarized as follows:

Table 6-2 – Operational Analysis Results – Eighth Line & Street E/ Erin Heights Drive

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2022 Existing	WBLR	0.02	A	<1 veh	0.01	A	<1 veh
	SBLT	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Background	WBLR	0.02	A	<1 veh	0.02	A	<1 veh
	SBLT	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Background	WBLR	0.02	A	<1 veh	0.02	B	<1 veh
	SBLT	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2034 Future Background	WBLR	0.02	A	<1 veh	0.02	B	<1 veh
	SBLT	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Total	EBLTR	0.16	A	<1 veh	0.18	B	<1 veh
	WBLTR	0.02	A	<1 veh	0.03	B	<1 veh
	NBLTR	0.02	A	<1 veh	0.10	A	<1 veh
	SBLTR	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Total	EBLTR	0.16	A	<1 veh	0.21	B	1 veh
	WBLTR	0.02	A	<1 veh	0.04	B	<1 veh
	NBLTR	0.02	A	<1 veh	0.11	A	<1 veh
	SBLTR	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-
2034 Future Total	EBLTR	0.16	A	<1 veh	0.21	B	1 veh
	WBLTR	0.02	A	<1 veh	0.04	B	<1 veh
	NBLTR	0.02	A	<1 veh	0.11	A	<1 veh
	SBLTR	0.00	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	A	-

As shown in Table 6-2, the proposed intersection is projected to operate similar to existing conditions with an overall LOS ‘A’ during weekday a.m. and p.m. peak hours, even with the additional leg of the intersection. All other movements are projected to operate with a LOS ‘B’ or better during both peak hours with reserve capacity. In terms of 95th percentile queues they are estimated to be no longer then 1 vehicle in length during any of the horizon years.

Table 6-3 – Operational Analysis Results – Eighth Line & Sideroad 17

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2022 Existing	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.04	A	<1 veh	0.05	B	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Background	WBLT	0.01	A	<1 veh	0.04	A	<1 veh
	NBLR	0.19	B	<1 veh	0.30	C	9
	Overall	-	A	-	-	A	-
2029 Future Background	WBLT	0.02	A	<1 veh	0.05	A	<1 veh
	NBLR	0.23	B	<1 veh	0.44	C	17
	Overall	-	A	-	-	B	-
2034 Future Background	WBLT	0.02	A	<1 veh	0.05	A	<1 veh
	NBLR	0.24	B	7	0.46	C	18
	Overall	-	A	-	-	B	-
2024 Future Total	WBLT	0.02	A	<1 veh	0.08	A	<1 veh
	NBLR	0.25	B	8	0.39	C	14
	Overall	-	A	-	-	B	-
2029 Future Total	WBLT	0.02	A	<1 veh	0.08	A	<1 veh
	NBLR	0.30	B	10	0.58	D	26
	Overall	-	A	-	-	C	-
2034 Future Total	WBLT	0.02	A	<1 veh	0.09	A	<1 veh
	NBLR	0.31	B	10	0.60	D	28
	Overall	-	A	-	-	C	-

As shown in Table 6-3, the study area intersection is projected to operate well with an overall LOS ‘A’ during weekday a.m. and LOS ‘C’ during the p.m. peak hours into the 2034 horizon year. With regard to individual movements, they are projected to operate with a LOS ‘D’ or better during both peak hours with reserve capacity. In terms of 95th percentile queues, the longest queue length during the 2034 horizon year is the northbound movement, which is estimated to be no longer than 28 metres and is not anticipated to cause any queuing issues.

Table 6-4 – Operational Analysis Results – Eighth Line & Dundas Street W

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2022 Existing	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.01	A	<1 veh	0.01	A	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Background	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	A	<1 veh	0.01	A	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Background	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	A	<1 veh	0.01	A	<1 veh
	Overall	-	A	-	-	A	-
2034 Future Background	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	A	<1 veh	0.01	B	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Total	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	A	<1 veh	0.02	B	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Total	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	B	<1 veh	0.02	B	<1 veh
	Overall	-	A	-	-	A	-
2034 Future Total	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLR	0.02	B	<1 veh	0.02	B	<1 veh
	Overall	-	A	-	-	A	-

As shown in Table 6-4, the study area intersection is projected to operate well with an overall LOS ‘A’ during weekday a.m. and p.m. peak hours into the 2034 horizon year. With regard to individual movements, they are projected to operate with a LOS ‘B’ or better during both peak hours and with reserve capacity. 95th percentile queues are estimated to be no longer then 1 vehicle in length during any horizon year.

Table 6-5 – Operational Analysis Results – Eighth Line & Wellington Road 124

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2022 Existing	EBLT	0.00	A	<1 veh	0.00	A	<1 veh
	WBLT	0.00	A	<1 veh	0.01	A	<1 veh
	NBLTR	0.02	B	<1 veh	0.07	C	<1 veh
	SBLTR	0.01	B	<1 veh	0.02	B	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Background	EBLT	0.00	A	<1 veh	0.00	A	<1 veh
	WBLT	0.01	A	<1 veh	0.01	A	<1 veh
	NBLTR	0.02	B	<1 veh	0.10	C	<1 veh
	SBLTR	0.02	C	<1 veh	0.03	C	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Background	EBLT	0.00	A	<1 veh	0.00	A	<1 veh
	WBLT	0.01	A	<1 veh	0.02	A	<1 veh
	NBLTR	0.03	B	<1 veh	0.14	D	<1 veh
	SBLTR	0.03	C	<1 veh	0.06	C	<1 veh
	Overall	-	A	-	-	A	-
2034 Future Background	EBLT	0.00	A	<1 veh	0.01	A	<1 veh
	WBLT	0.01	A	<1 veh	0.02	A	<1 veh
	NBLTR	0.03	B	<1 veh	0.16	D	<1 veh
	SBLTR	0.03	C	<1 veh	0.06	D	<1 veh
	Overall	-	A	-	-	A	-
2024 Future Total	EBLT	0.00	A	<1 veh	0.00	A	<1 veh
	WBLT	0.01	A	<1 veh	0.01	A	<1 veh
	NBLTR	0.03	B	<1 veh	0.13	D	<1 veh
	SBLTR	0.02	C	<1 veh	0.04	C	<1 veh
	Overall	-	A	-	-	A	-
2029 Future Total	EBLT	0.00	A	<1 veh	0.00	A	<1 veh
	WBLT	0.01	A	<1 veh	0.02	A	<1 veh
	NBLTR	0.03	B	<1 veh	0.16	D	<1 veh
	SBLTR	0.03	C	<1 veh	0.07	D	<1 veh
	Overall	-	A	-	-	B	-
2034 Future Total	EBLT	0.00	A	<1 veh	0.01	A	<1 veh
	WBLT	0.01	A	<1 veh	0.02	A	<1 veh
	NBLTR	0.03	B	<1 veh	0.18	D	<1 veh
	SBLTR	0.03	C	<1 veh	0.07	D	<1 veh
	Overall	-	A	-	-	B	-

As shown in Table 6-5, the study area intersection is projected to operate well with an overall LOS ‘A’ during weekday a.m. and LOS ‘B’ during weekday p.m. peak hours into the 2034 horizon year. Regarding individual movements, they are projected to operate with a LOS ‘D’ or better during both peak hours with reserve capacity. 95th percentile queues are estimated to be no longer then 1 vehicle in length during any horizon year.

Table 6-6 – Operational Analysis Results – Trafalgar Road (WR 24) & Sideroad 17

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2022 Existing	EBLTR	0.14	B	<1 veh	0.23	C	<1 veh
	WBLTR	0.19	B	<1 veh	0.56	D	25
	NBLT	0.01	A	<1 veh	0.01	A	<1 veh
	SBLT	0.03	A	<1 veh	0.02	A	<1 veh
	Overall	-	A	-	-	B	-
2024 Future Background	EBLTR	0.16	B	<1 veh	0.42	E	14
	WBLTR	0.39	C	14	1.19	F	111
	NBLT	0.01	A	<1 veh	0.01	A	<1 veh
	SBLT	0.04	A	<1 veh	0.13	A	<1 veh
	Overall	-	A	-	-	C	-
2029 Future Background	EBLTR	0.23	C	<1 veh	0.88	F	38
	WBLTR	0.62	C	32	2.24	F	248
	NBLT	0.02	A	<1 veh	0.02	A	<1 veh
	SBLT	0.10	A	<1 veh	0.25	A	<1 veh
	Overall	-	B	-	-	E	-
2034 Future Background	EBLTR	0.24	C	<1 veh	1.08	F	48
	WBLTR	0.59	C	28	2.60	F	277
	NBLT	0.01	A	<1 veh	0.02	A	<1 veh
	SBLT	0.10	A	<1 veh	0.25	A	8
	Overall	-	B	-	-	E	-
2024 Future Total	EBLTR	0.17	B	<1 veh	0.49	E	18
	WBLTR	0.61	C	32	1.67	F	191
	NBLT	0.01	A	<1 veh	0.01	A	<1 veh
	SBLT	0.05	A	<1 veh	0.16	A	<1 veh
	Overall	-	B	-	-	D	-
2029 Future Total	EBLTR	0.23	C	7	1.09	F	47
	WBLTR	0.85	E	364	3.37	F (ERR)	ERR
	NBLT	0.01	A	<1 veh	0.02	A	<1 veh
	SBLT	0.11	A	<1 veh	0.29	A	<1 veh
	Overall	-	B	-	-	E	-
2034 Future Total	EBLTR	0.26	C	8	1.36	F	58
	WBLTR	0.91	F	75	4.01	F (ERR)	ERR
	NBLT	0.01	A	<1 veh	0.02	A	<1 veh
	SBLT	0.11	A	<1 veh	0.30	A	9
	Overall	-	B	-	-	F	-

As shown in Table 6-6, the study area intersection is projected to operate well in the morning peak hour with an overall LOS ‘B” into the 2034 future total horizon year.

During the p.m. peak hour, results indicate that the intersection is projected to operate with an overall LOS “E” during the 2034 future background horizon year as a result of the background growth and other proposed developments. Certain movements are operating

over capacity and delays of LOS "F". With the subject site's generated traffic, the intersection is projected to operate at an overall LOS 'F' during the 2034 horizon year.

Based on the intersection operational results, a signal warrant has been completed for this intersection. The results are presented in Section 8.0.

Table 6-7 – Operational Analysis Results – Main Street (WR 124) & Dundas Street W

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			EXISTING STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
2022 Existing	EBLTR	0.28	C	9	0.14	B	7	
	WBLTR	0.25	C	8	0.42	C	14	
	NBL	0.01	A	<1 veh	0.05	A	<1 veh	35m
	NBTR	0.25	A	21	0.40	A	39	
	SBL	0.05	A	<1 veh	0.06	A	<1 veh	40m
	SBTR	0.26	A	21	0.43	A	44	
	Overall	0.26	A	-	0.43	A	-	-
2024 Future Background	EBLTR	0.17	B	11	0.18	B	16	
	WBLTR	0.24	B	14	0.48	B	32	
	NBL	0.04	A	<1 veh	0.17	A	11	35m
	NBTR	0.38	A	31	0.65	A	74	
	SBL	0.17	A	< 1 veh	0.43	A	23	40m
	SBTR	0.30	A	25	0.50	A	54	
	Overall	0.35	A	-	0.60	B	-	-
2029 Future Background	EBLTR	0.32	B	17	0.58	C	30	
	WBLTR	0.19	B	11	0.55	C	29	
	NBL	0.05	A	< 1 veh	0.23	A	12	35m
	NBTR	0.51	A	49	0.70	B	100	
	SBL	0.09	A	< 1 veh	0.11	A	< 1 veh	40m
	SBTR	0.42	A	39	0.64	A	88	
	Overall	0.47	A	-	0.67	B	-	-
2034 Future Background	EBLTR	0.33	B	18	0.49	C	31	
	WBLTR	0.20	B	12	0.47	C	30	
	NBL	0.05	A	< 1 veh	0.27	A	13	35m
	NBTR	0.52	A	51	0.75	B	113	
	SBL	0.09	A	< 1 veh	0.14	A	7	40m
	SBTR	0.44	A	40	0.69	B	95	
	Overall	0.48	A	-	0.68	B	-	-
2024 Future Total	EBLTR	0.18	B	14	0.19	B	17	
	WBLTR	0.71	C	50	0.62	C	46	
	NBL	0.13	A	12	0.45	B	34	35m
	NBTR	0.47	B	53	0.67	B	94	
	SBL	0.22	A	17	0.48	B	31	40m
	SBTR	0.38	B	42	0.53	B	69	
	Overall	0.57	B	-	0.66	B	-	-

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			EXISTING STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
2029 Future Total	EBLTR	0.26	B	20	0.58	C	37	
	WBLTR	0.70	C	45	0.59	C	30	
	NBL	0.14	A	12	0.57	B	45	35m
	NBTR	0.61	B	78	0.71	B	115	
	SBL	0.12	A	9	0.12	A	7	40m
	SBTR	0.51	B	61	0.65	B	96	
	Overall	0.64	B	-	0.68	B	-	-
2034 Future Total	EBLTR	0.26	B	20	0.58	C	37	
	WBLTR	0.71	C	46	0.62	C	32	
	NBL	0.15	A	12	0.60	B	49	35m
	NBTR	0.63	B	82	0.73	B	136	
	SBL	0.13	A	9	0.14	A	8	40m
	SBTR	0.53	B	64	0.67	B	106	
	Overall	0.66	B	-	0.70	B	-	-

As shown in Table 6-7, the study area intersection is projected to continue operating similar to existing conditions with an overall LOS 'B' during weekday a.m. and p.m. peak hours. All other movements are also projected to continue operating similar to existing conditions with a LOS 'C' or better during both peak hours. In terms of 95th percentile queues, the northbound left movement is forecast to operate with queues above the storage length during the 2029 and 2034 horizon years.

Table 6-8 – Operational Analysis Results – Main Street & Shamrock Road

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			EXISTING STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
2022 Existing	EBL	0.49	C	24	0.57	C	33	15m
	EBTR	0.25	C	17	0.16	B	15	
	WBL	0.07	B	<1 veh	0.06	B	<1 veh	10m
	WBTR	0.13	C	11	0.11	B	11	
	NBL	0.10	A	1 veh	0.20	A	< 1 veh	38m
	NBTR	0.18	A	17	0.26	A	28	
	SBL	0.02	A	<1 veh	0.01	A	<1 veh	50m
	SBT	0.18	A	17	0.32	A	37	
	SBR	0.06	A	<1 veh	0.08	A	<1 veh	50m
	Overall	0.26	B	-	0.39	B	-	-
2024 Future Background	EBL	0.57	C	29	0.62	C	37	15m
	EBTR	0.25	C	18	0.20	B	17	
	WBL	0.07	B	<1 veh	0.07	B	<1 veh	10m
	WBTR	0.13	B	11	0.11	B	11	

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			EXISTING STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
	NBL	0.20	A	16	0.28	A	23	38m
	NBTR	0.19	A	20	0.27	A	29	
	SBL	0.02	A	<1 veh	0.01	A	<1 veh	50m
	SBT	0.19	A	20	0.33	A	39	
	SBR	0.06	A	<1 veh	0.10	A	7	50m
	Overall	0.30	B	-	0.41	B	-	-
2029 Future Background	EBL	0.68	C	38	0.70	C	44	15m
	EBTR	0.25	B	18	0.21	B	18	
	WBL	0.07	B	<1 veh	0.07	B	<1 veh	10m
	WBTR	0.12	B	12	0.10	B	11	
	NBL	0.28	A	21	0.45	A	34	38m
	NBTR	0.32	A	34	0.38	A	43	
	SBL	0.02	A	<1 veh	0.02	A	<1 veh	50m
	SBT	0.26	A	26	0.48	A	60	
	SBR	0.07	A	<1 veh	0.10	A	8	50m
	Overall	0.43	B	-	0.43	B	-	-
2029 Future Background	EBL	0.69	C	39	0.72	C	46	15m
	EBTR	0.26	B	19	0.21	B	18	
	WBL	0.07	B	< 1 veh	0.07	B	< 1 veh	10m
	WBTR	0.13	B	12	0.11	B	12	
	NBL	0.29	A	23	0.49	A	38	38m
	NBTR	0.33	A	36	0.40	A	46	
	SBL	0.02	A	< 1 veh	0.02	A	< 1 veh	50m
	SBT	0.27	A	29	0.50	A	65	
	SBR	0.08	A	< 1 veh	0.11	A	8	50m
	Overall	0.44	B	-	0.57	B	-	-
2024 Future Total	EBL	0.70	C	40	0.69	C	44	15m
	EBTR	0.23	B	18	0.19	B	17	
	WBL	0.06	B	<1 veh	0.06	B	< 1 veh	10m
	WBTR	0.11	B	11	0.10	B	11	
	NBL	0.11	A	10	0.21	A	17	38m
	NBTR	0.20	A	21	0.27	A	30	
	SBL	0.02	A	<1 veh	0.01	A	<1 veh	50m
	SBT	0.20	A	21	0.34	A	41	
	SBR	0.08	A	< 1 veh	0.13	A	9	50m
	Overall	0.35	B	-	0.44	B	-	-
2029 Future Total	EBL	0.79	C	52	0.76	C	52	15m
	EBTR	0.23	B	18	0.20	B	17	
	WBL	0.06	B	<1 veh	0.06	B	< 1 veh	10m
	WBTR	0.11	B	12	0.10	B	11	
	NBL	0.29	A	22	0.47	B	36	38m
	NBTR	0.33	A	35	0.39	A	44	
	SBL	0.02	A	<1 veh	0.02	A	<1 veh	50m

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			EXISTING STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
	SBT	0.27	A	27	0.49	A	61	
	SBR	0.09	A	< 1 veh	0.14	A	9	50m
	Overall	0.48	B	-	0.57	B	-	-
2034 Future Total	EBL	0.80	D	56	0.78	C	60	15m
	EBTR	0.24	B	19	0.21	B	18	
	WBL	0.06	B	< 1 veh	0.06	B	< 1 veh	10m
	WBTR	0.11	B	12	0.10	B	12	
	NBL	0.30	A	23	0.51	B	3	38m
	NBTR	0.35	A	36	0.41	A	46	
	SBL	0.02	A	< 1 veh	0.02	A	< 1 veh	50m
	SBT	0.28	A	28	0.51	B	65	
	SBR	0.09	A	< 1 veh	0.14	A	9	50m
	Overall	0.50	B	-	0.60	B	-	-

As shown in Table 6-8, the study area intersection is projected to continue operating similar to existing conditions with an overall LOS 'B' or better during weekday a.m. and p.m. peak hours. All other movements are also projected to continue operating similar to existing conditions with a LOS 'D' or better during both peak hours. The 95th percentile queue for the eastbound left-turn lane is exceeding the provided storage length under existing conditions and will continue operating as such under the ultimate horizon years.

Table 6-9 – Operational Analysis Results – Street 'C' & Sideroad 17

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
2024 Future Total	NBLR	0.23	B	7	0.25	C	7
	WBLT	0.01	A	<1 veh	0.04	A	<1 veh
	Overall	-	A	-	-	B	-
2029 Future Total	NBLR	0.27	B	8	0.32	C	10
	WBLT	0.01	A	<1 veh	0.04	A	<1 veh
	Overall	-	A	-	-	B	-
2034 Future Total	NBLR	0.28	C	9	0.33	D	11
	WBLT	0.01	A	< 1 veh	0.04	A	< 1 veh
	Overall	-	A	-	-	C	-

As shown in Table 6-9, the proposed site access intersection is projected to operate with an overall LOS 'A' during the weekday a.m. peak hour and LOS 'B' during p.m. peak hour. All other movements at the intersection are projected to operate with a LOS 'D' or better during both peak hours with reserve capacity. The longest 95th percentile queue length occurred in the westbound direction during the 2034 horizon year, which is estimated to be no longer than 11 metres and is not anticipated to cause any queuing issues.

7.0 Left-Turn Lane Warrants

Ontario Ministry of Transportation (MTO) left-turn lane warrants were completed for the proposed site driveways along with the Trafalgar Road and Sideroad 17 intersection. Warrants were completed using volume projections previously illustrated in Figure 3-7. The following presents the results of the warrant analysis. All MTO left-turn lane warrants sheets are provided in **Appendix G**.

Trafalgar Road & Sideroad 17

Left-turn lanes are warranted for the north and southbound directions as a result of the background traffic in 2024, 2029 and 2034. The following are the auxiliary lanes lengths warranted at the intersection in the 2034 future background horizon year as a result of the background growth and development volumes:

- Northbound left-turn lane with at least 25 metres of storage
- Southbound left-turn lane with at least 50 metres of storage

With the addition of the site generated traffic, the left turn lane warrants similar lengths for the left turn lanes.

Storage lengths for both the northbound and southbound left turn lanes are to be confirmed through the operation analysis.

Sideroad 17 & Eighth Line

Left-turn lanes are warranted in the westbound direction as a result of the background traffic in 2034. In this scenario, the intersection volumes warrant a 15-metre westbound left turn lane as a result of the background traffic.

With the addition of the site generated traffic, the intersection continues to warrant a left turn lane. In the 2034 horizon year, a 25-metre left turn lane is warranted.

Sideroad 17 & Street “C”

A 15-metre westbound left-turn lane is warranted in the 2024, 2029, and 2034 horizon years in the future total scenario. This lane should be implemented by the build out year to support the subject site generated traffic.

Eighth Line & Street “E” / Erin Heights Drive

Based on this analysis, northbound or southbound left turn lanes are not warranted at the Eighth Line intersection with Street “E” and Erin Heights Drive.

8.0 Signal Warrants

An MTO signal warrant analysis was completed for all unsignalized study area intersections, using the projected future total 2034 traffic volumes. Traffic signals are not warranted at any of the study area intersections except for the Trafalgar Road and Sideroad 17 intersection. Traffic signal control is warranted at this intersection under the 2024 future background horizon year due to future background developments as shown in Table 8-2. MTO Signal Warrant Sheets are provided in **Appendix H**.

Table 8-1 – Signal Warrant Analysis Results

	COMPLIANCE % (WARRANT 1 / WARRANT 2)				RESULTS
INTERSECTION	2024 FB	2034 FB	2024 FT	2034 FT	
Trafalgar Road / Sideroad 17	110% / 76%	135% / 92%	125% / 83%	149% / 99%	Warranted in 2024 FB
Sideroad 17 / Street 'C'	-	-	-	21% / 51%	No
Sideroad 17 / Eighth Line	-	-	-	33% / 51%	No
Eighth Line / Street 'E'	-	-	-	31% / 19%	No
Eighth Line / Dundas Street West	-	-	-	2% / 5%	No
Eighth Line / Wellington Road 124	-	-	-	12% / 10%	No

Table 8-2 presents the operational analysis results for the Trafalgar Road and Sideroad 17 intersections under the 2034 future total traffic scenario, assuming traffic signal control and left-turn lanes have been implemented.

Detailed Synchro output data for 2034 future total traffic conditions with mitigative measures is provided in **Appendix I**.

Table 8-2 - Trafalgar Road (WR 24) & Sideroad 17 (FT 2034) with Mitigative Measures

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			PROPOSED STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
2034 Future Total with Mitigative Measures	EBL	0.03	B	4	0.05	B	6	15m
	EBTR	0.08	B	10	0.11	B	13	
	WBL	0.31	B	25	0.38	B	36	40m
	WBTR	0.19	B	15	0.44	B	29	
	NBL	0.03	B	3	0.04	B	5	15m
	NBT	0.25	B	25	0.51	B	56	
	NBR	0.10	B	9	0.39	B	12	
	SBL	0.31	B	22	0.71	C	52	55m

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			PROPOSED STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
	SBT	0.31	B	30	0.38	B	40	
	SBR	0.01	B	<1 veh	0.02	B	<1 veh	15m
	Overall	0.30	B	-	0.56	B	-	-

As shown in **Table 8-1**, the intersection of Trafalgar Road and Sideroad 17 is projected to operate with an overall LOS 'B' or better during weekday a.m. and p.m. peak hours. All other movements are projected to operate with a LOS 'C' or better during both peak hours.

9.0 Summary of Findings

The findings of the traffic impact study can be summarized as follows:

- The proposed residential development is projected to generate approximately 343 total two-way trips during the weekday a.m. peak hour (86 inbound and 257 outbound), and 442 total two-way trips during the weekday p.m. peak hour (276 inbound and 166 outbound);
- The proposed internal road network layout of the subject development is considered acceptable per TAC geometric design guidelines. An AutoTurn Analysis was conducted for the 90-degree bend on Street 'C' (adjacent to the stormwater management pond) to confirm that all critical design vehicles will be able to effectively navigate the corner.
- As per the results of the intersection capacity analysis, the site generated traffic is not expected to be the result in any capacity, delay, or queuing concerns at the study area intersections as this is a result of background growth and other area developments.
- Study area intersections are projected to operate with an overall intersection LOS of 'C' or better under all scenarios (Future Background 2024, 2029, and 2034 and Total Projected 2024, 2029, and 2034) except for the Trafalgar Road and Sideroad 17 intersection, which is forecast to operate at an LOS 'E' in the 2034 future background and LOS 'F' in 2034 future total scenarios, with certain movements operating over capacity and with considerable delay.
- Auxiliary left-turn lanes are warranted at the Trafalgar Road and Sideroad 17 intersection for both the northbound and southbound left-turn movements under the 2024 future background horizon year. A traffic signal is also warranted at the intersection under the 2024 future background horizon year.

- An auxiliary left-turn lane is warranted at the Sideroad 17 and Street ‘C’ intersection for the westbound left-turn movements under the 2024 future total horizon year.
- An auxiliary left-turn lane is warranted at the Sideroad 17 and Eighth Line. intersection for the westbound left-turn movements under the 2034 future background horizon year but should be implemented in 2024 to accommodate site generated traffic.

10.0 Recommendations

A 15-metre auxiliary left-turn lane is warranted at the Sideroad 17 and Street ‘C’ intersection for the westbound left-turn movements under the 2024 future total horizon year. There are no additional geometric improvements recommended at the study area intersections based on the addition of site generated traffic.

The Town/County may consider monitoring operations at the intersection of Trafalgar Road at Sideroad 17 and Wellington Road 124 at Eighth Line to determine if signalization or auxiliary left-turn lanes are needed to maintain an acceptable level of service in the future. However, these improvements are not warranted as a result of the site generated traffic.

APPENDIX A

TMC Data

Eighth Line @ Dundas St W

Morning Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000003
Intersection: Dundas St W & Eighth Line
TFR File #: 3
Count date: 1-Sep-2021

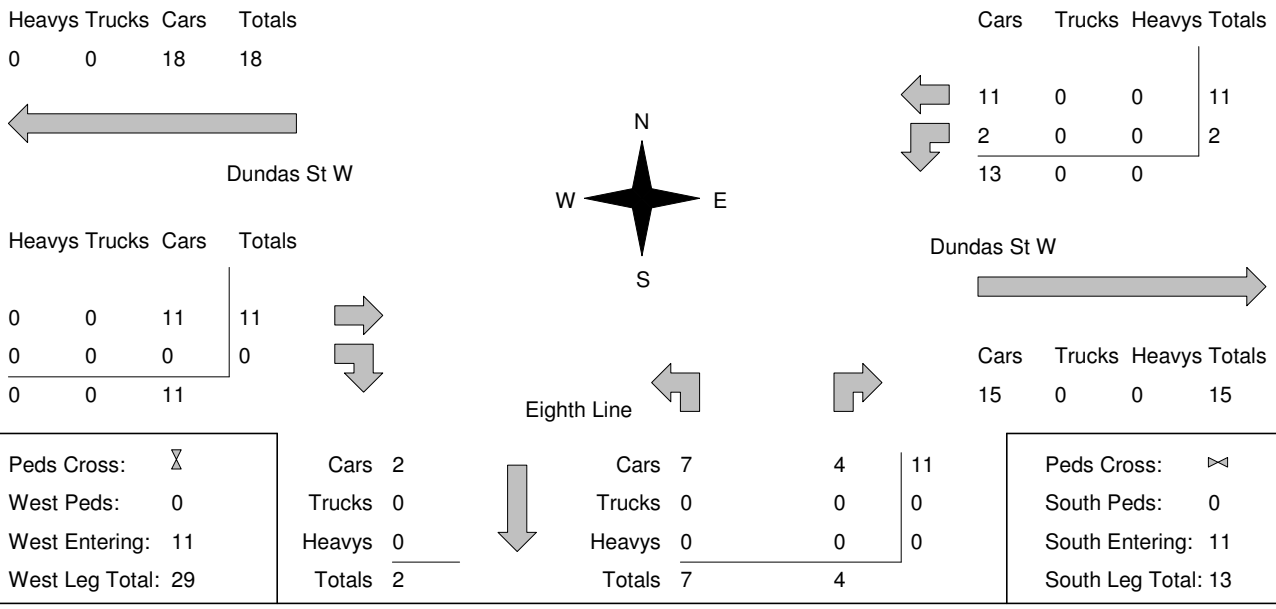
Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Dundas St W runs W/E

East Leg Total: 28
East Entering: 13
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 11
West Leg Total: 29

Cars 2
Trucks 0
Heavys 0
Totals 2

Cars 7 4 11
Trucks 0 0 0
Heavys 0 0 0
Totals 7 4

Peds Cross:
South Peds: 0
South Entering: 11
South Leg Total: 13

Comments

Eighth Line @ Dundas St W

Afternoon Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000003
Intersection: Dundas St W & Eighth Line
TFR File #: 3
Count date: 1-Sep-2021

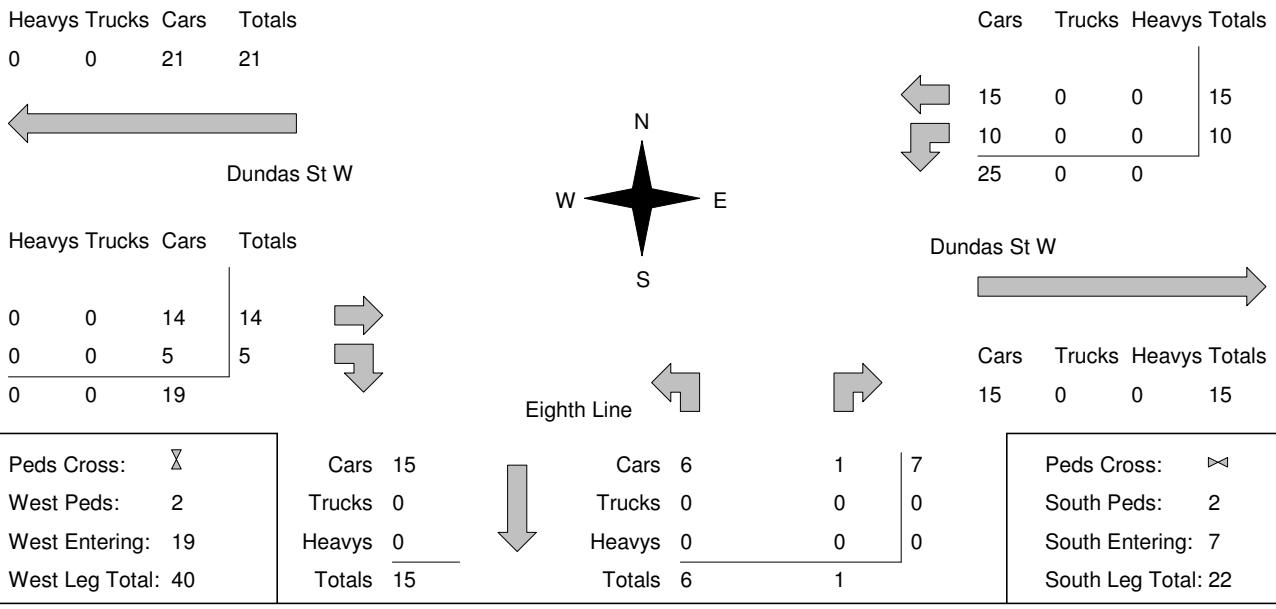
Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Dundas St W runs W/E

East Leg Total: 40
East Entering: 25
East Peds: 2
Peds Cross:



Peds Cross:
West Peds: 2
West Entering: 19
West Leg Total: 40

Cars 15
Trucks 0
Heavys 0
Totals 15

Cars 6 1 7
Trucks 0 0 0
Heavys 0 0 0
Totals 6 1

Peds Cross:
South Peds: 2
South Entering: 7
South Leg Total: 22

Comments

Eighth Line @ Dundas St W

Total Count Diagram

Municipality: Wellington
Site #: 0000000003
Intersection: Dundas St W & Eighth Line
TFR File #: 3
Count date: 1-Sep-2021

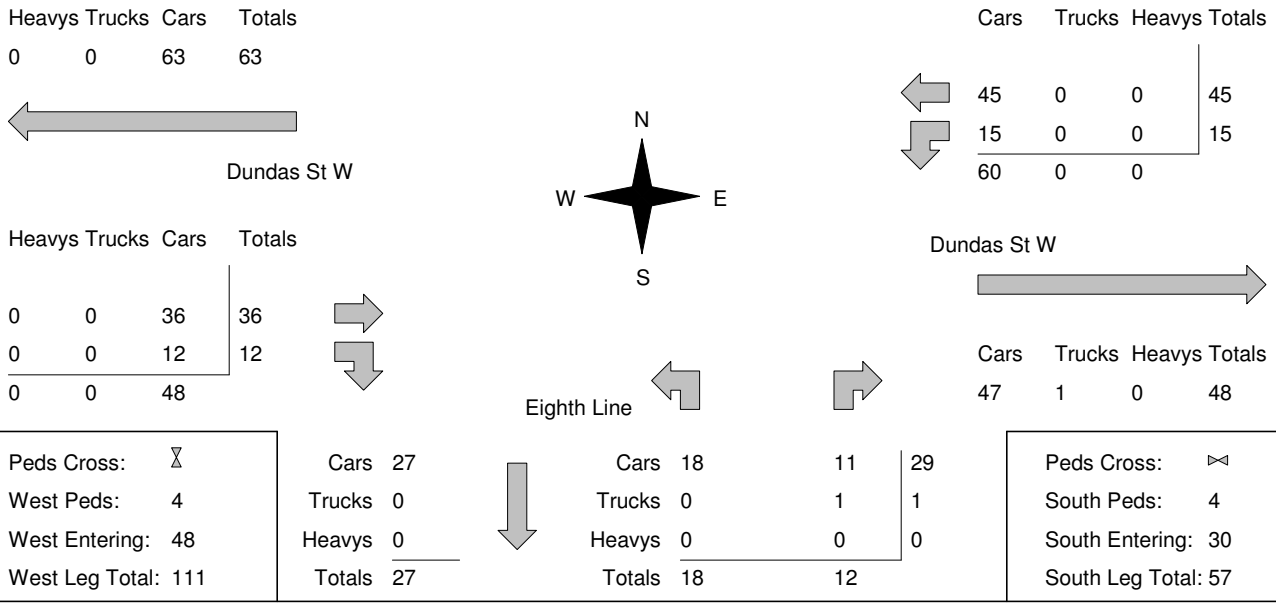
Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Dundas St W runs W/E

East Leg Total: 108
East Entering: 60
East Peds: 2
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 4
West Entering: 48
West Leg Total: 111

Cars 27
Trucks 0
Heavys 0
Totals 27

Cars 18 11 29
Trucks 0 1 1
Heavys 0 0 0
Totals 18 12

Peds Cross: ⋈
South Peds: 4
South Entering: 30
South Leg Total: 57

Comments

Eighth Line @ Erin Heights Dr

Morning Peak Diagram

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

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

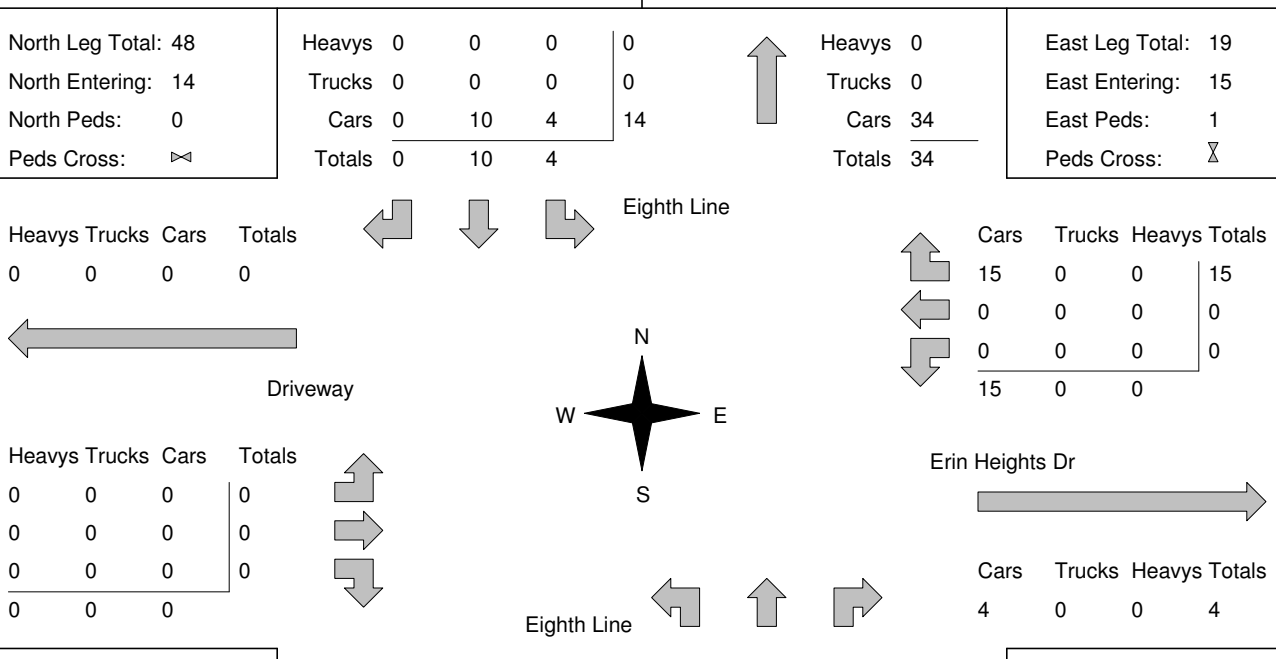
Municipality: Wellington
Site #: 0000000002
Intersection: Eighth Line & Erin Heights Dr
TFR File #: 2
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Eighth Line runs N/S



Comments

Eighth Line @ Erin Heights Dr

Afternoon Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000002
Intersection: Eighth Line & Erin Heights Dr
TFR File #: 2
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Eighth Line runs N/S

North Leg Total:	55			
North Entering:	32			
North Peds:	0			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	0	15	17	32
Totals	0	15	17	
Heavys	0			
Trucks	0			
Cars	23			
Totals	23			
East Leg Total:	31			
East Entering:	9			
East Peds:	1			
Peds Cross:	⧖			

Eighth Line

Heavys	Trucks	Cars	Totals
0	0	0	0

Cars	Trucks	Heavys	Totals
6	0	0	6
0	0	0	0
3	0	0	3
9	0	0	

Driveway

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

Erin Heights Dr

Cars	Trucks	Heavys	Totals
22	0	0	22

Eighth Line

Peds Cross:	⧖			
West Peds:	0			
West Entering:	0			
West Leg Total:	0			
Cars	18			
Trucks	0			
Heavys	0			
Totals	18			
Cars	0	17	5	22
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	0	17	5	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	22			
South Leg Total:	40			

Comments

Eighth Line @ Erin Heights Dr

Total Count Diagram

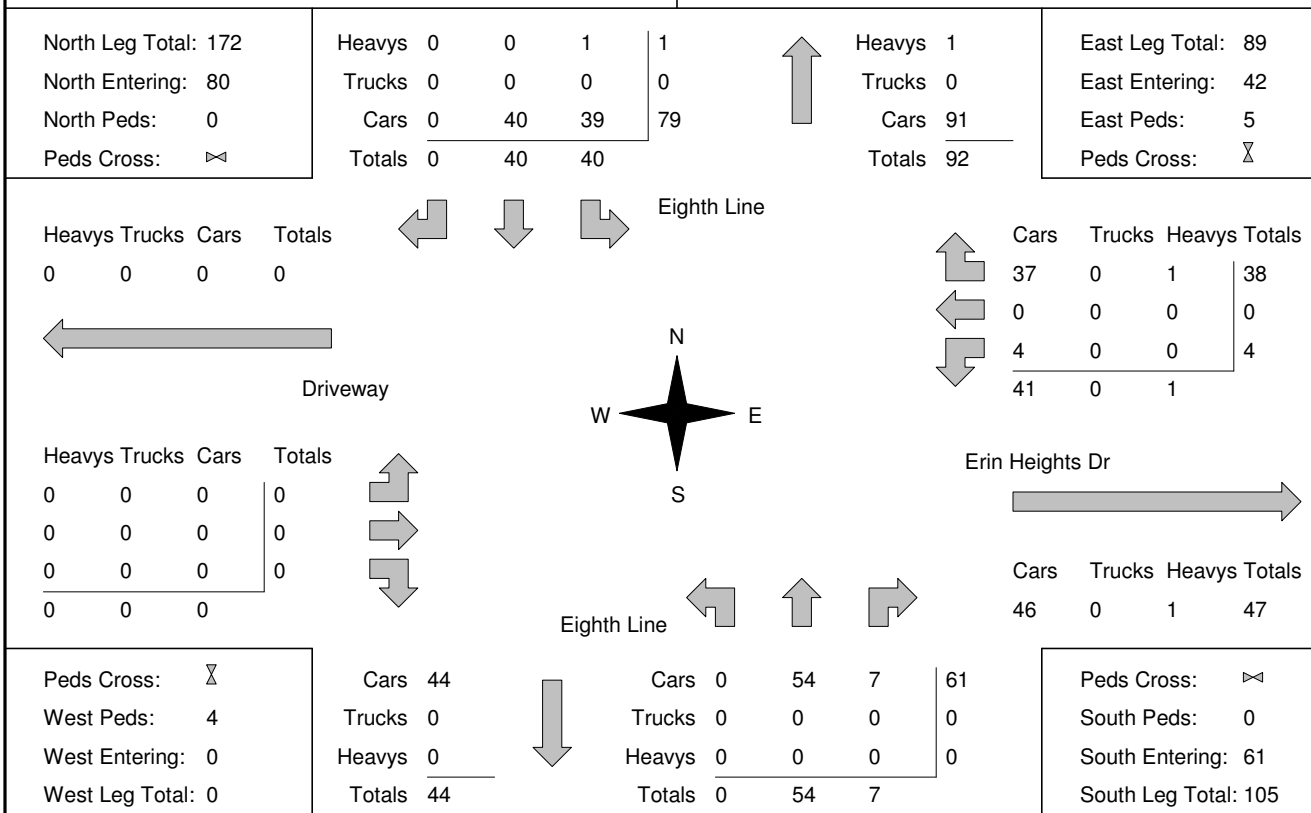
Municipality: Wellington
Site #: 0000000002
Intersection: Eighth Line & Erin Heights Dr
TFR File #: 2
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Eighth Line runs N/S



Comments

Eighth Line @ Sideroad 17

Morning Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000001
Intersection: Sideroad 17 & Eighth Line
TFR File #: 1
Count date: 1-Sep-2021

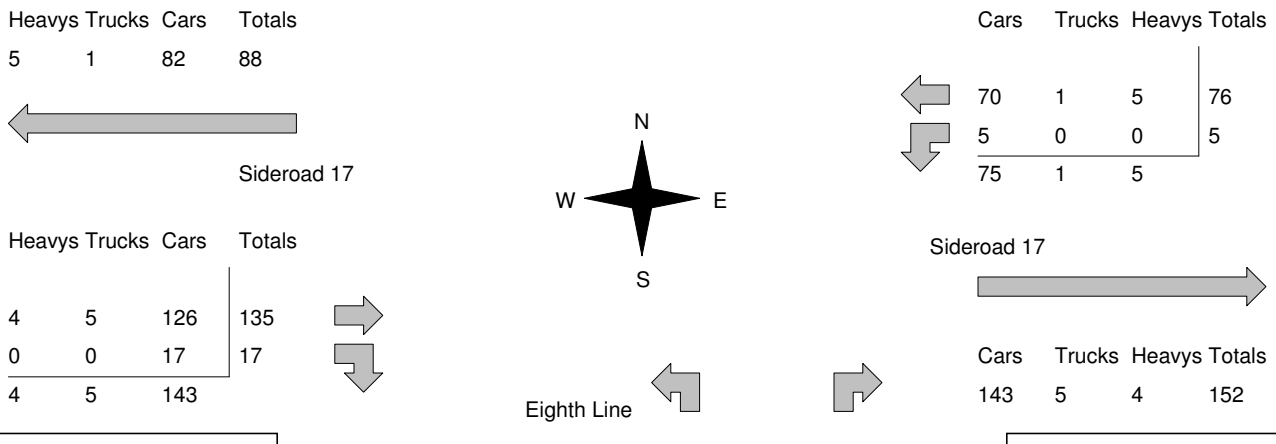
Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Sideroad 17 runs W/E

East Leg Total: 233
East Entering: 81
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 152
West Leg Total: 240

Cars 22
Trucks 0
Heavys 0
Totals 22

Cars 12 17 29
Trucks 0 0 0
Heavys 0 0 0
Totals 12 17

Peds Cross:
South Peds: 0
South Entering: 29
South Leg Total: 51

Comments

Eighth Line @ Sideroad 17

Afternoon Peak Diagram

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

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Wellington
Site #: 0000000001
Intersection: Sideroad 17 & Eighth Line
TFR File #: 1
Count date: 1-Sep-2021

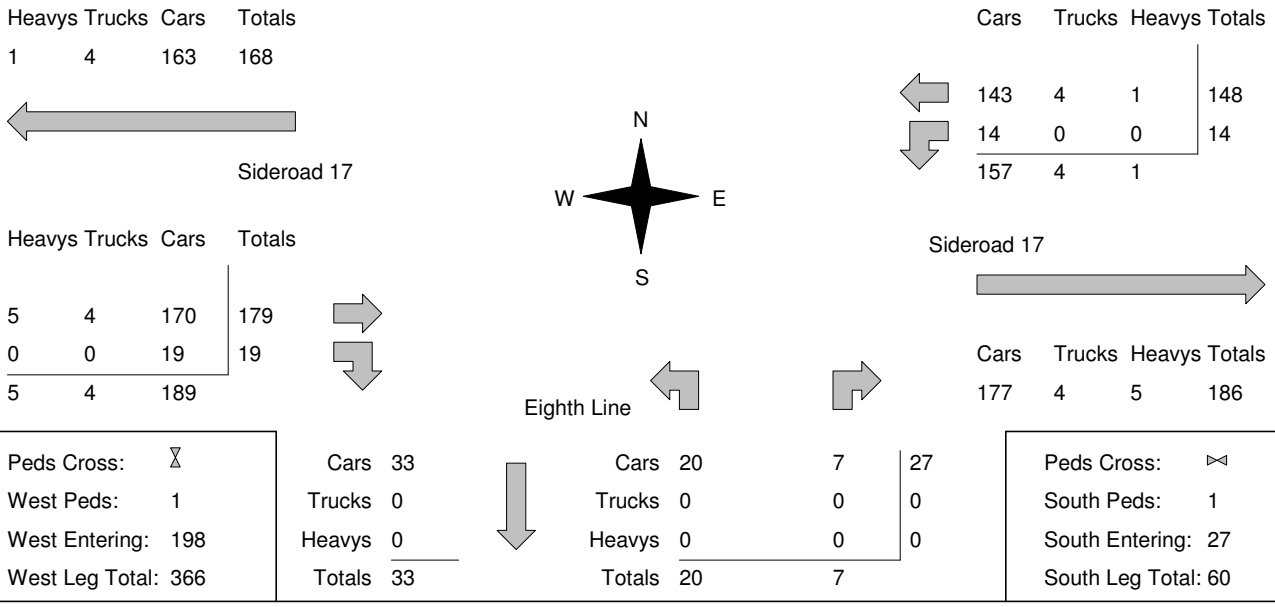
Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Sideroad 17 runs W/E

East Leg Total: 348
East Entering: 162
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 198
West Leg Total: 366

Peds Cross: ⋈
South Peds: 1
South Entering: 27
South Leg Total: 60

Comments

Eighth Line @ Sideroad 17

Total Count Diagram

Municipality: Wellington
Site #: 0000000001
Intersection: Sideroad 17 & Eighth Line
TFR File #: 1
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Sideroad 17 runs W/E

East Leg Total: 1053
East Entering: 425
East Peds: 0
Peds Cross: ⧖

Heavys	Trucks	Cars	Totals
12	6	429	447

Sideroad 17

Heavys	Trucks	Cars	Totals
14	13	563	590
1	0	67	68
15	13	630	

	Cars	Trucks	Heavys	Totals
	378	6	11	395
	30	0	0	30
	408	6	11	

Sideroad 17

Cars	Trucks	Heavys	Totals
601	13	14	628

Eighth Line

Peds Cross: ⧖
West Peds: 1
West Entering: 658
West Leg Total: 1105

Cars	97
Trucks	0
Heavys	1
Totals	98

Cars	51	38	89
Trucks	0	0	0
Heavys	1	0	1
Totals	52	38	

Peds Cross: ⋈
South Peds: 2
South Entering: 90
South Leg Total: 188

Comments

Eighth Line @ Wellington Rd 124

Morning Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000007
Intersection: Wellington Rd 124 & Eighth Line
TFR File #: 7
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Wellington Rd 124 runs W/E

North Leg Total: 9
North Entering: 6
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	1	2	3	6
Totals	1	2	3	

Heavys	0
Trucks	0
Cars	3
Totals	3

East Leg Total: 499
East Entering: 254
East Peds: 0
Peds Cross: ⧖

Eighth Line

Heavys	Trucks	Cars	Totals
16	3	231	250

	Cars	Trucks	Heavys	Totals
	1	0	0	1
	228	3	16	247
	6	0	0	6
	235	3	16	

Wellington Rd 124

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	1	1
24	3	208	235
0	0	0	0
24	3	209	

Wellington Rd 124

	Cars	Trucks	Heavys	Totals
	218	3	24	245

Eighth Line

Peds Cross: ⧖
West Peds: 2
West Entering: 236
West Leg Total: 486

Cars	8
Trucks	0
Heavys	0
Totals	8

Cars	2	1	7	10
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	2	1	7	

Peds Cross: ⋈
South Peds: 0
South Entering: 10
South Leg Total: 18

Comments

Eighth Line @ Wellington Rd 124

Afternoon Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000007
Intersection: Wellington Rd 124 & Eighth Line
TFR File #: 7
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Wellington Rd 124 runs W/E

North Leg Total:	22			
North Entering:	7			
North Peds:	0			
Peds Cross:	⋈			

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	4	0	3	7
Totals	4	0	3	

Heavys	0
Trucks	0
Cars	15
Totals	15

East Leg Total:	778
East Entering:	346
East Peds:	0
Peds Cross:	⧖

Eighth Line

Heavys	Trucks	Cars	Totals
26	3	309	338

Cars	Trucks	Heavys	Totals
9	0	0	9
299	3	26	328
9	0	0	9
317	3	26	

Wellington Rd 124

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	3	3
25	6	387	418
0	0	6	6
25	6	396	

Wellington Rd 124

Cars	Trucks	Heavys	Totals
400	6	26	432

Eighth Line

Peds Cross:	⧖		
West Peds:	0		
West Entering:	427		
West Leg Total:	765		

Cars	15			
Trucks	0			
Heavys	0			
Totals	15			

Cars	6	3	10	19
Trucks	0	0	0	0
Heavys	0	0	1	1
Totals	6	3	11	

Peds Cross:	⋈
South Peds:	0
South Entering:	20
South Leg Total:	35

Comments

Eighth Line @ Wellington Rd 124

Total Count Diagram

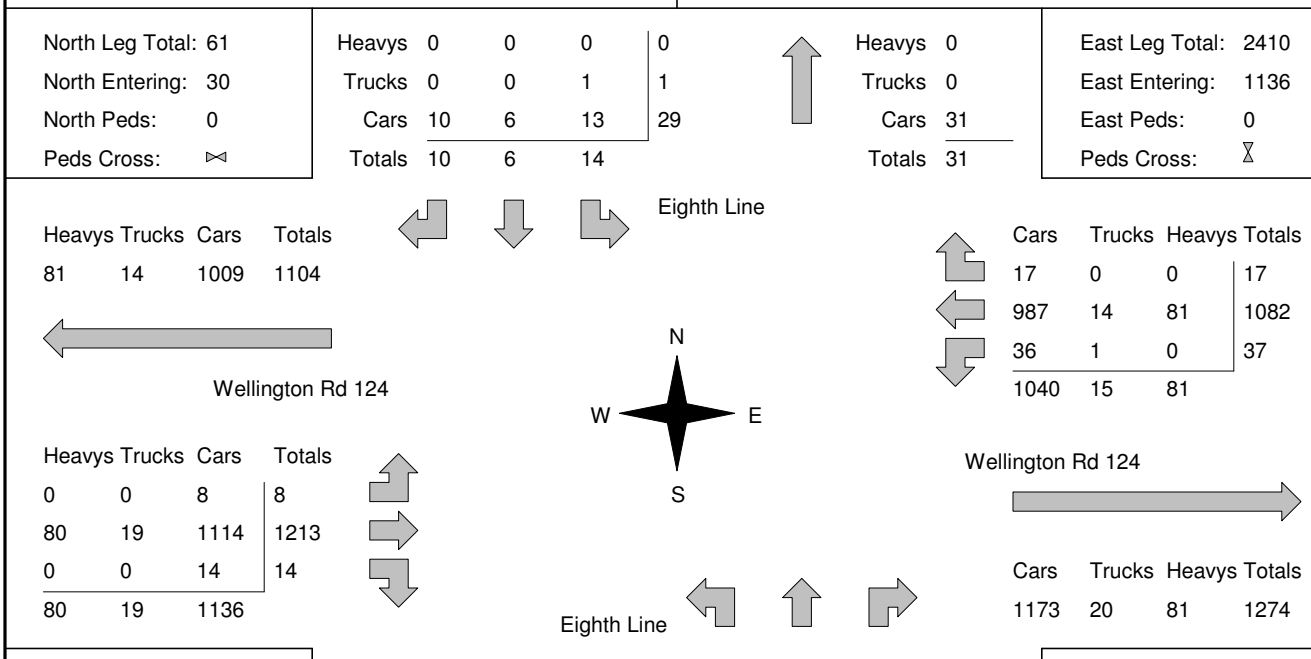
Municipality: Wellington
Site #: 0000000007
Intersection: Wellington Rd 124 & Eighth Line
TFR File #: 7
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Wellington Rd 124 runs W/E



Comments

Main St @ Dundas St

Morning Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000004
Intersection: Main St & Dundas St
TFR File #: 4
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S

North Leg Total:	498			
North Entering:	262			
North Peds:	0			
Peds Cross:	⋈			
Heavys	1	23	0	24
Trucks	0	5	0	5
Cars	7	194	32	233
Totals	8	222	32	
Heavys	13			
Trucks	2			
Cars	221			
Totals	236			
East Leg Total:	114			
East Entering:	39			
East Peds:	4			
Peds Cross:	⧖			

Main St

Heavys	Trucks	Cars	Totals
1	0	20	21

Dundas St W

Heavys	Trucks	Cars	Totals
0	0	13	13
0	0	9	9
0	0	22	22
0	0	44	

Cars	Trucks	Heavys	Totals
19	0	1	20
5	0	0	5
14	0	0	14
38	0	1	

N
W E
S

Dundas St E

Cars	Trucks	Heavys	Totals
73	1	1	75

Main St

Peds Cross:	⧖			
West Peds:	1			
West Entering:	44			
West Leg Total:	65			
Cars	230			
Trucks	5			
Heavys	23			
Totals	258			
Cars	8	189	32	229
Trucks	0	2	1	3
Heavys	0	12	1	13
Totals	8	203	34	
Peds Cross:	⋈			
South Peds:	3			
South Entering:	245			
South Leg Total:	503			

Comments

Main St @ Dundas St

Afternoon Peak Diagram

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

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

Municipality: Wellington
Site #: 0000000004
Intersection: Main St & Dundas St
TFR File #: 4
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S

North Leg Total: 814
North Entering: 442
North Peds: 0
Peds Cross: ⋈

Heavys	0	19	0	19
Trucks	0	3	0	3
Cars	15	375	30	420
Totals	15	397	30	

Heavys	23
Trucks	5
Cars	344
Totals	372

East Leg Total: 160
East Entering: 81
East Peds: 4
Peds Cross: ⧖

Main St

Heavys	Trucks	Cars	Totals
0	0	53	53

Dundas St W

Heavys	Trucks	Cars	Totals
0	0	10	10
0	0	10	10
0	0	15	15
0	0	35	

Cars	Trucks	Heavys	Totals
25	0	0	25
12	0	0	12
43	1	0	44
80	1	0	

N
W E
S

Dundas St E

Cars	Trucks	Heavys	Totals
79	0	0	79

Main St

Peds Cross: ⧖
West Peds: 7
West Entering: 35
West Leg Total: 88

Cars	433			
Trucks	4			
Heavys	19			
Totals	456			

Cars	26	309	39	374
Trucks	0	5	0	5
Heavys	0	23	0	23
Totals	26	337	39	

Peds Cross: ⋈
South Peds: 7
South Entering: 402
South Leg Total: 858

Comments

Main St @ Dundas St

Total Count Diagram

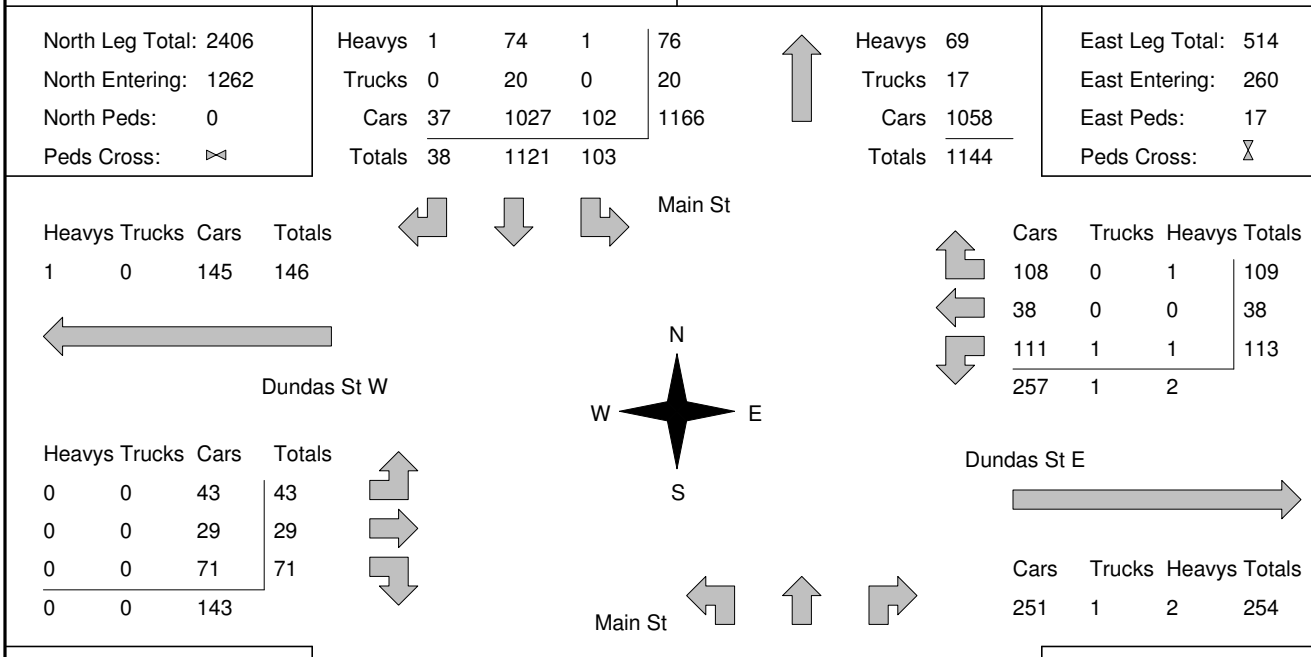
Municipality: Wellington
Site #: 0000000004
Intersection: Main St & Dundas St
TFR File #: 4
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S



Comments

Main St @ Shamrock Rd

Morning Peak Diagram

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

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

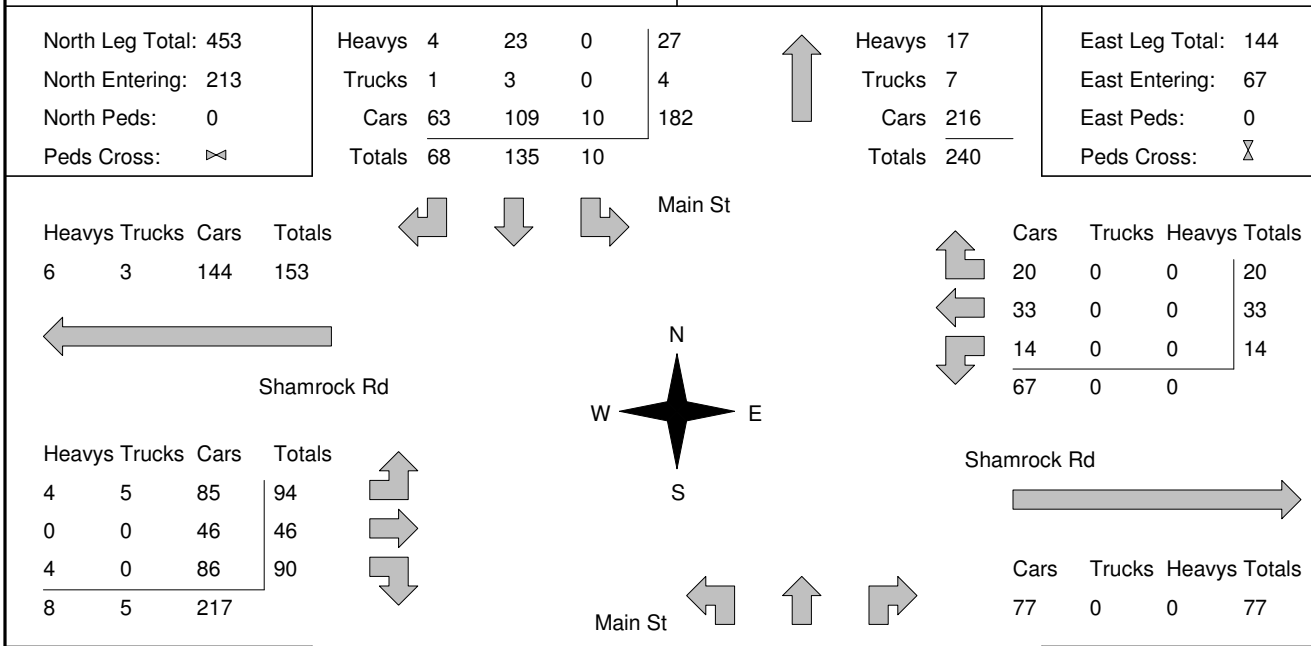
Municipality: Wellington
Site #: 0000000005
Intersection: Main St & Shamrock Rd
TFR File #: 5
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S



Comments

Main St @ Shamrock Rd

Afternoon Peak Diagram

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

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

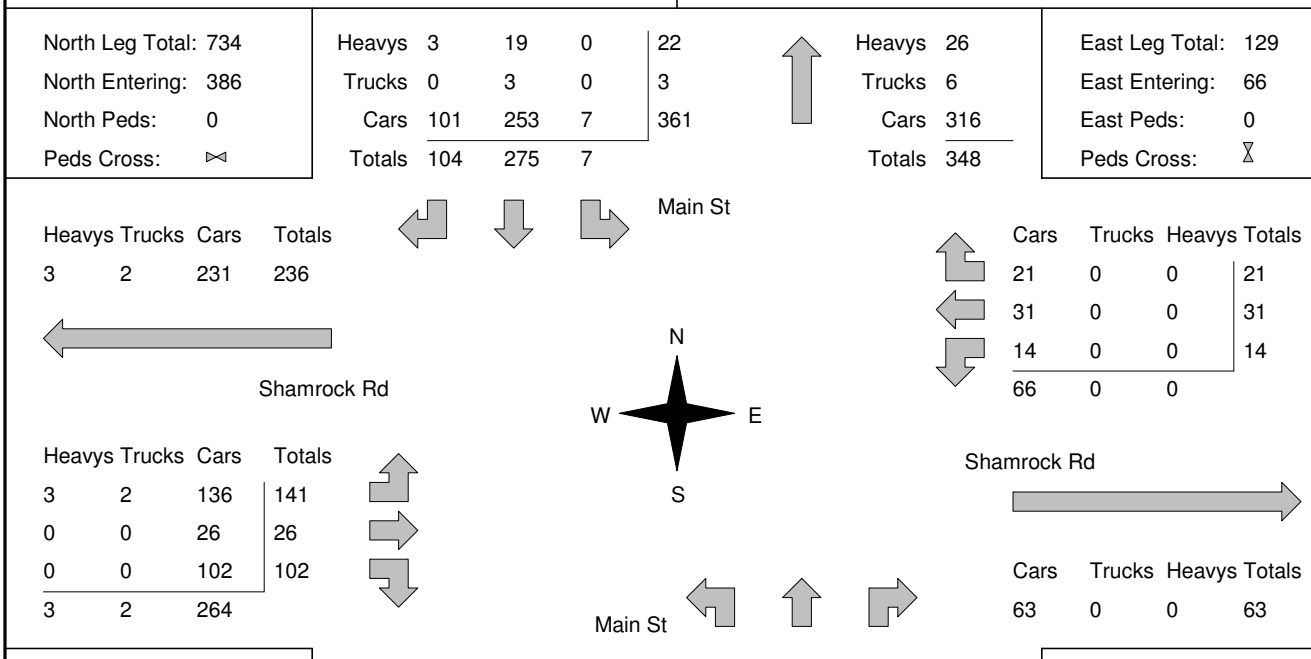
Municipality: Wellington
Site #: 0000000005
Intersection: Main St & Shamrock Rd
TFR File #: 5
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S



Comments

Main St @ Shamrock Rd

Total Count Diagram

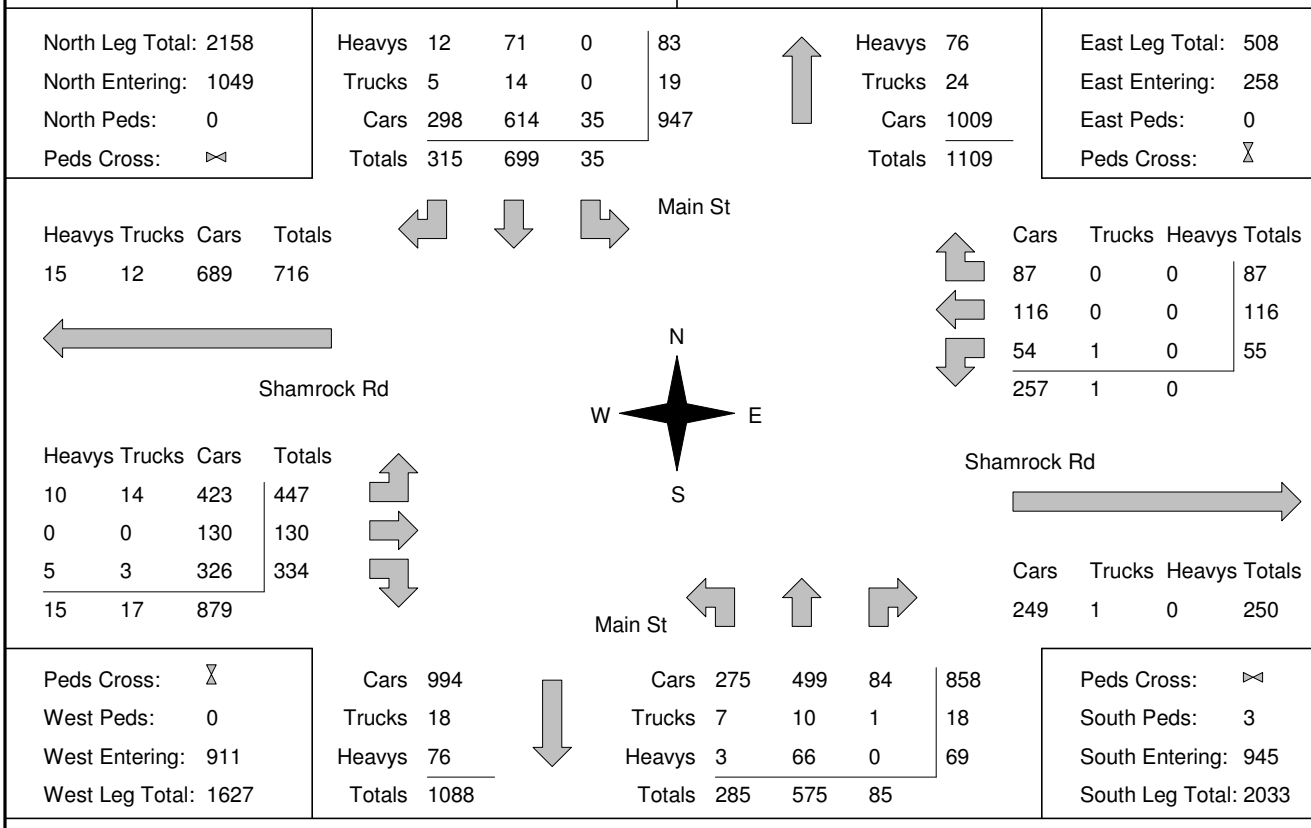
Municipality: Wellington
Site #: 0000000005
Intersection: Main St & Shamrock Rd
TFR File #: 5
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Main St runs N/S



Comments

Trafalgar Rd @ Sideroad 17

Morning Peak Diagram

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

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

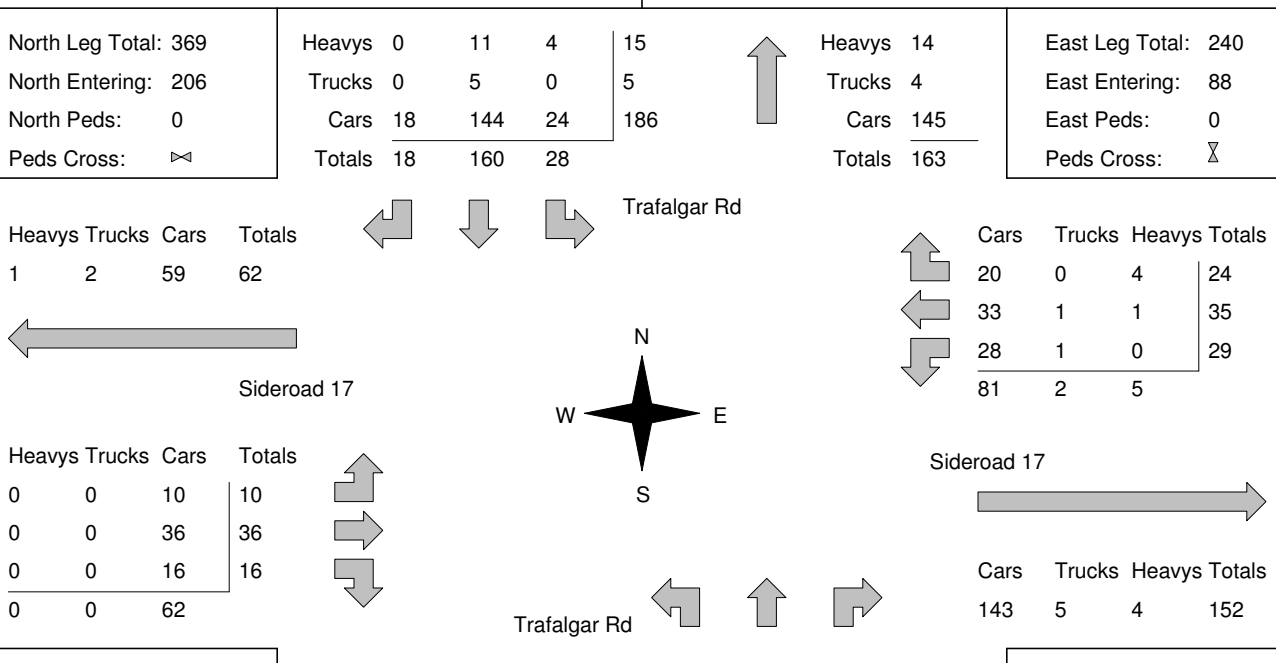
Municipality: Wellington
Site #: 0000000006
Intersection: Trafalgar Rd & Sideroad 17
TFR File #: 6
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Sideroad 17

Afternoon Peak Diagram

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

One Hour Peak
From: 16:30:00
To: 17:30:00

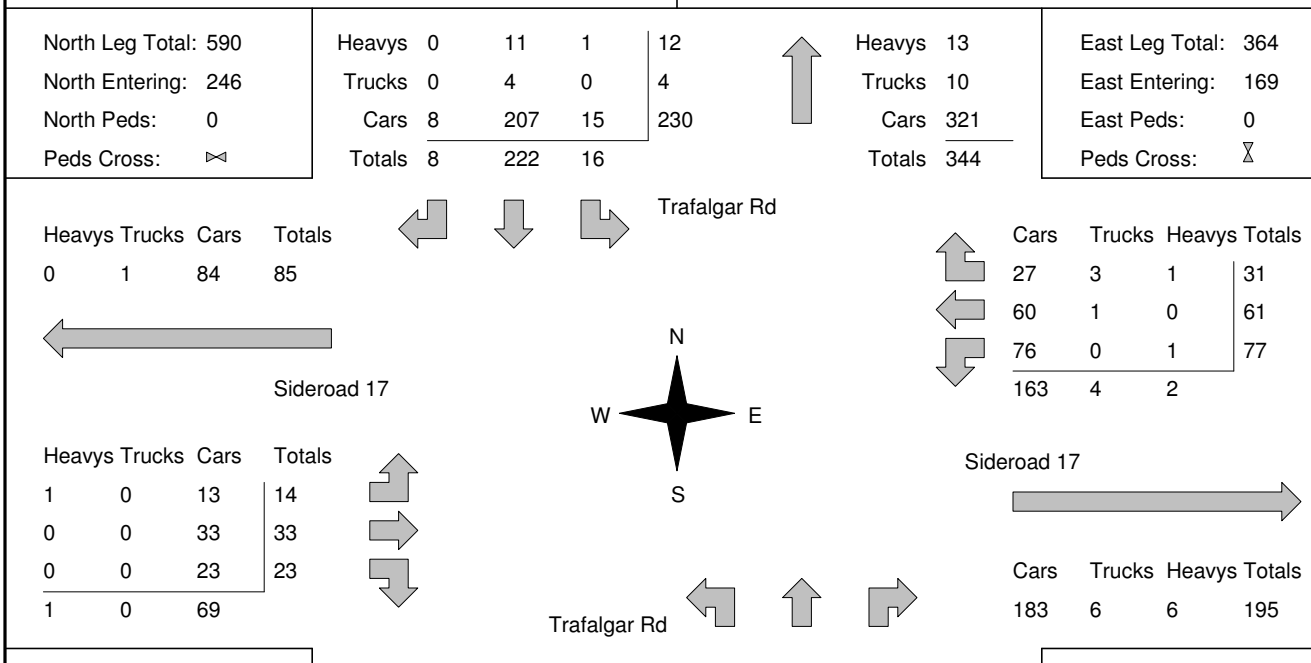
Municipality: Wellington
Site #: 0000000006
Intersection: Trafalgar Rd & Sideroad 17
TFR File #: 6
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Trafalgar Rd runs N/S



Comments

Trafalgar Rd @ Sideroad 17

Total Count Diagram

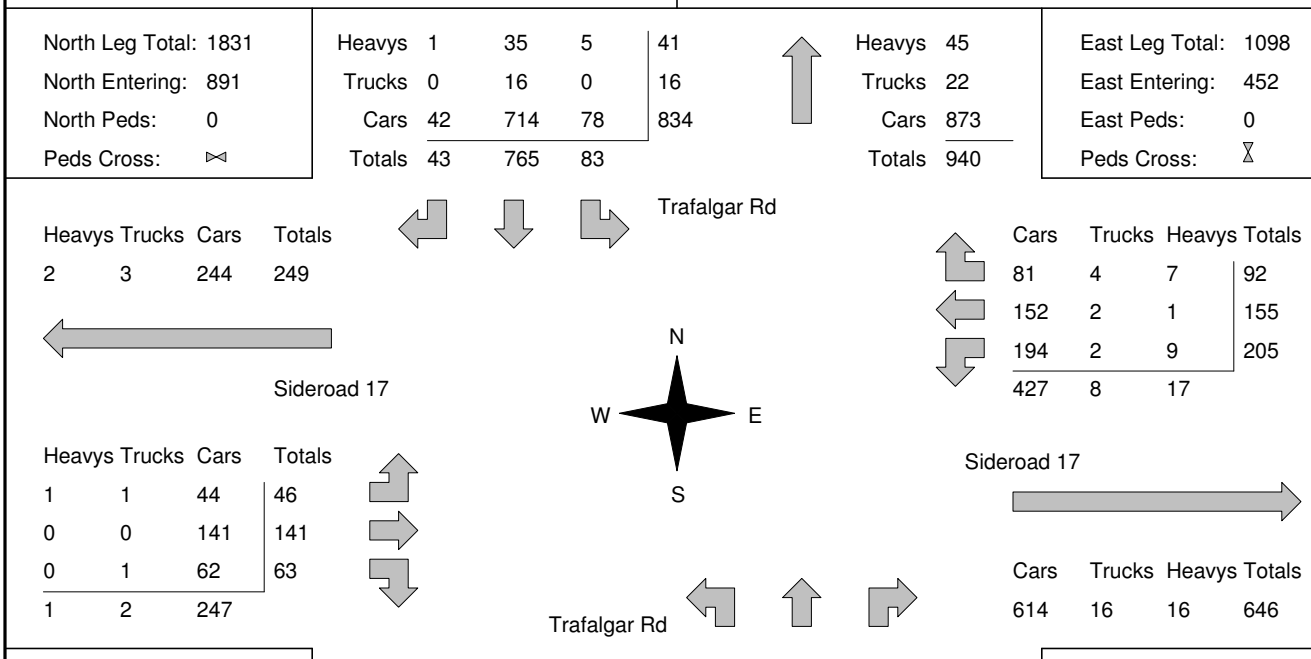
Municipality: Wellington
Site #: 0000000006
Intersection: Trafalgar Rd & Sideroad 17
TFR File #: 6
Count date: 1-Sep-2021

Weather conditions:
Clear/Dry

Person(s) who counted:
Cam

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

Major Road: Trafalgar Rd runs N/S



Comments

APPENDIX B

Transportation Tomorrow Survey

Mon Feb 28 2022 11:17:01 GMT-0500 (Eastern Standard Time) - Run Time: 1160ms

Cross Tabulation Query Form - Person - 2016 v1.1

Row: Planning district of household - pd_hhld
Column: Regional municipality of employment - region_emp

RowG:(79)
ColG:
TblG:

Filters:
No Filters

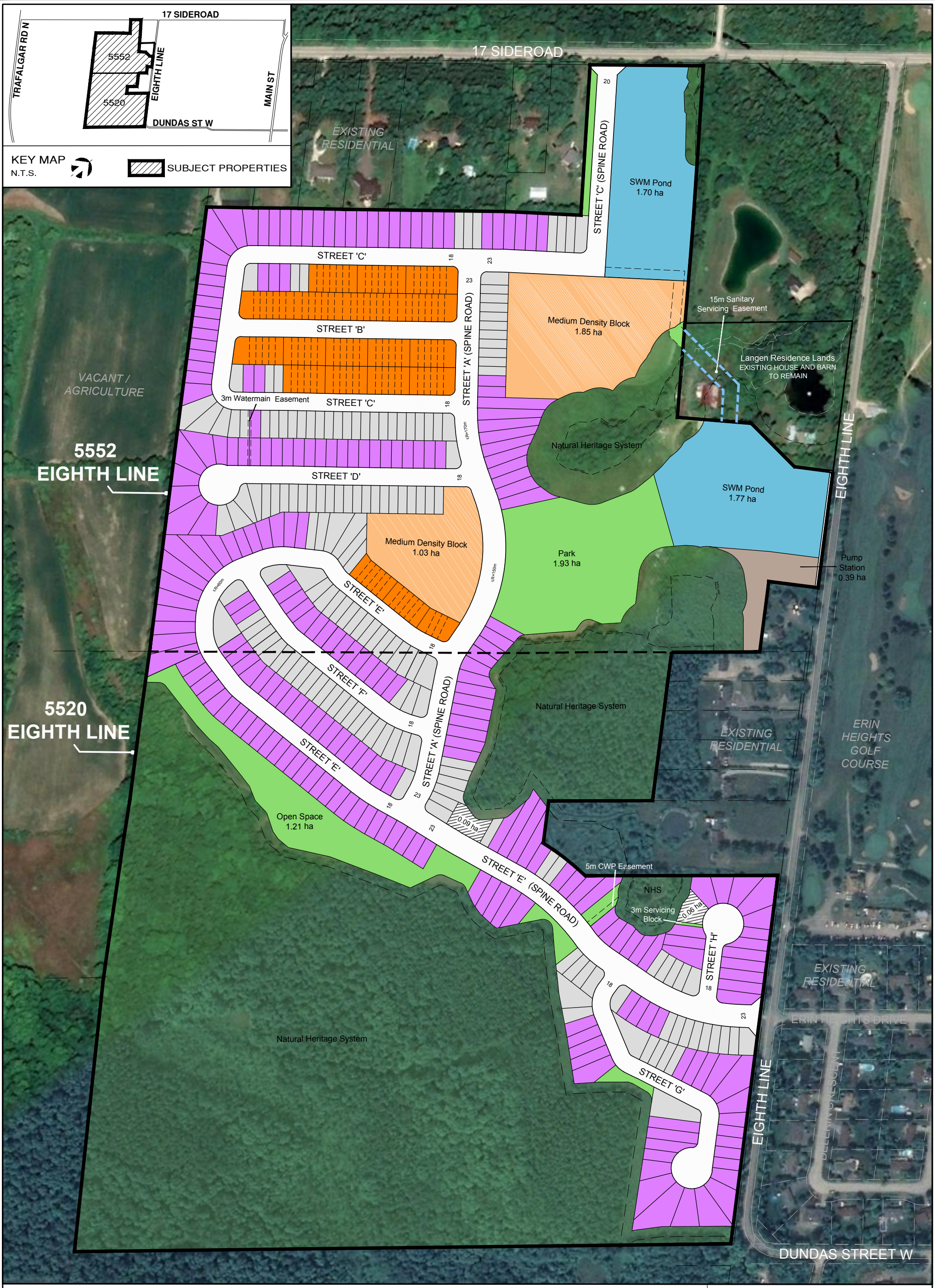
Persons 2016
Table:

	Toronto	York	Peel	Halton	Hamilton	Waterloo	Guelph	Wellington	Orangeville	Simcoe	Dufferin	
1	614	21	1844	721	34	202	152	1708	96	113	71	5576
	11%	0%	33%	13%	1%	4%	3%	31%	2%	2%	1%	100%

ROUTES	
124 NW	20%
Trafalgar S	19%
124 SE	11%
Trefalgar N	5%
HWY 23N	6%
HWY 52 S	38%
	100%

APPENDIX C

Draft Site Plan



ERIN
5552 EIGHTH LINE &
5520 EIGHTH LINE

Composite Lotted Plan

Unit Type	Unit Count (±) 5552	5520	Total	% Overall	Singles
30' Singles	101	62	163	31	40
36' Singles	114	132	246	46	60
21' Townhouses	121	0	121	23	-
Total	336	194	530	100	100

External land sale

mattamyHOMES
COSCORP INC.

SCALE 1:3500

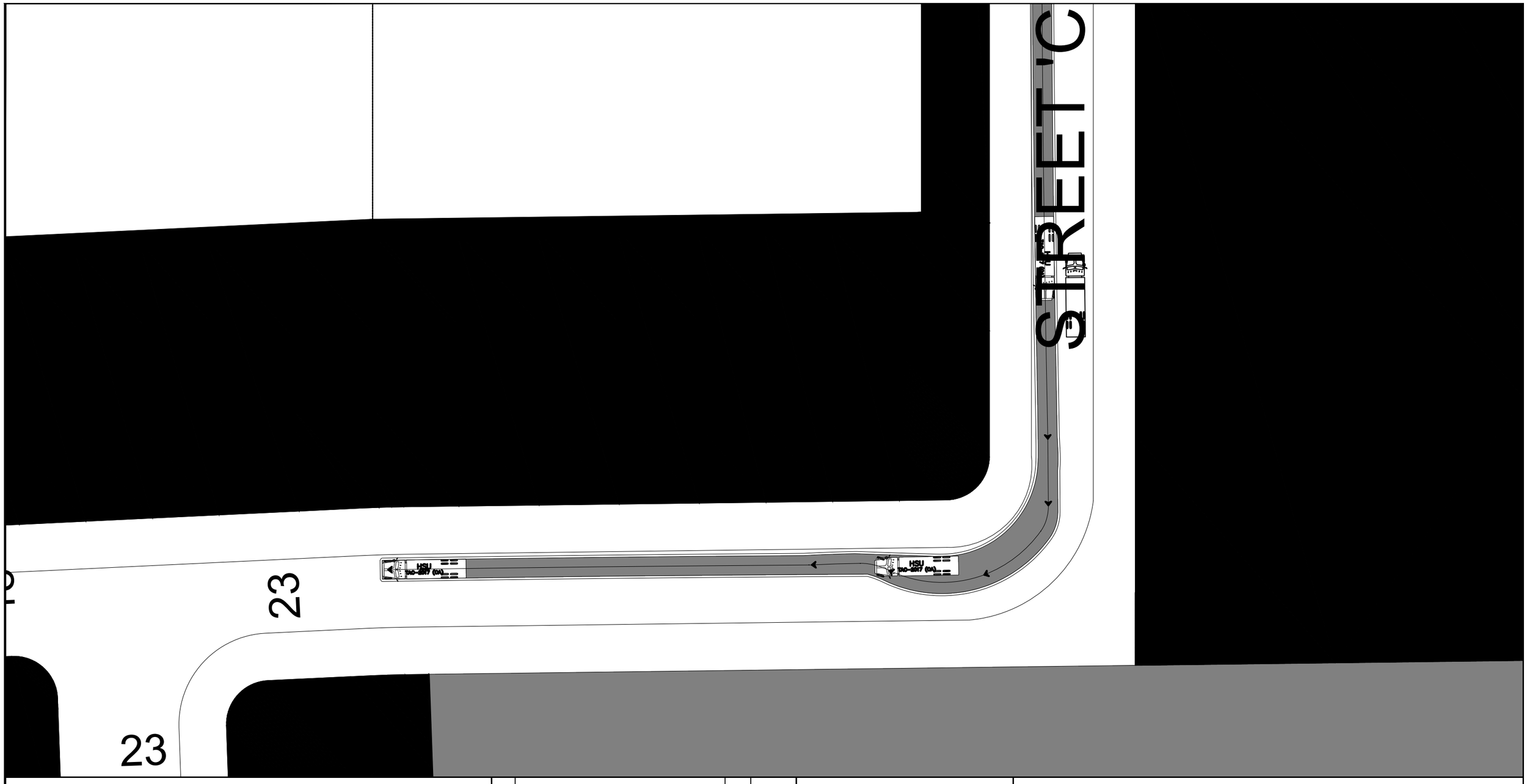
August 21, 2023

KORSIAK Urban Planning

S:\Korsiak & Company\MATTAMY\Erin\Lotted Plan\2023-08\Erin - Lotted Plan - Aug 21 23_kc.dwg

APPENDIX D

Swept Path Analysis



No.	Description	By	YY.MM.DD
A	ZONING BYLAW AMENDMENT	MD	2023-09

MATTAMY (ERIN) LIMITED AND 2779181 ONTARIO INC.

R.V. ANDERSON ASSOCIATES LIMITED
Innovative solutions for complex challenges

55220 & 5552 Eighth Line Residential Development
Traffic Impact Study

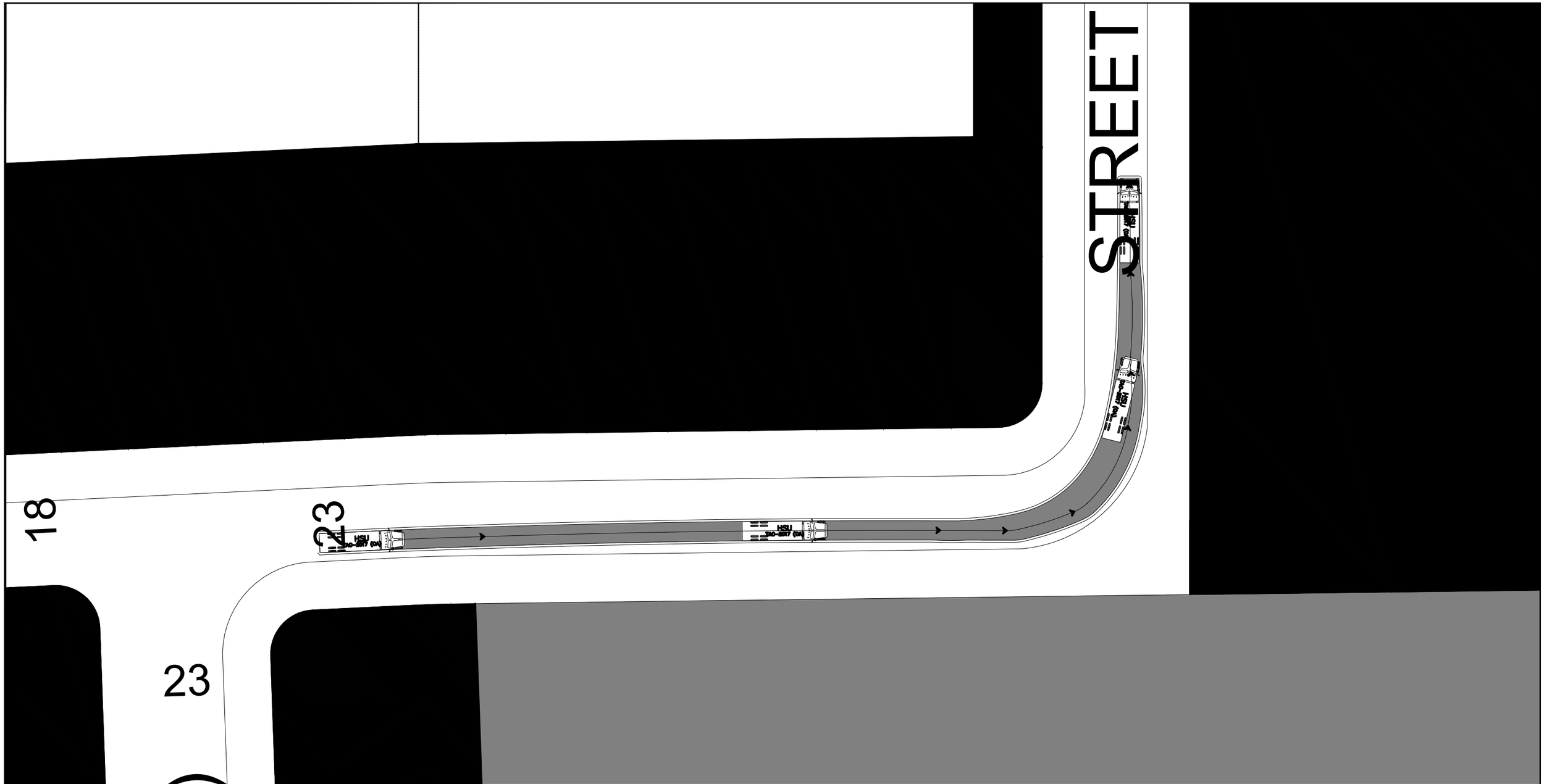
Project No:	215876	Designed	
Date:	Sep-2023	Checked	MD
Scale:	1:500	Drawn	PH

Swept Path Analysis
HSU (1)

DWG NO.

REV. -

File R:\2021\215876 - Mattamy-Erin Traffic Impact Study\08 Design\11 Traffic\Autoturn\215876 AUTOTURN ANALYSIS.dwg
Plot: Sep. 2023, - 11:54:53 AM



No.	Description	By	YY.MM.DD
A	ZONING BYLAW AMENDMENT	MD	2023-09

MATTAMY (ERIN) LIMITED AND 2779181 ONTARIO INC.

R.V. ANDERSON ASSOCIATES LIMITED
Innovative solutions for complex challenges

55220 & 5552 Eighth Line Residential Development
Traffic Impact Study

Project No:	215876	Designed	
Date:	Sep-2023	Checked	MD
Scale:	1:500	Drawn	PH

Swept Path Analysis
HSU (2)

DWG NO.

REV. -

File: R:\2021\215876 - Mattamy-Erin Traffic Impact Study\08 Design\11 Traffic\Autoturn\215876 AUTOTURN ANALYSIS.dwg
Plot: Sep. 2023 - 11:54:54 AM

APPENDIX E

Signal Timing Plans

Wellington County 24-36 - 124 & 23

Configuration Phase Sequence Page 1

Phase Ring (MM)1-1-1

Phase															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2

Hardware Alternate Sequence Enable: No

Phase Ring Sequence

Sequence	Ring	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Barrier Mode	B		B		B		B		B							
1	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
1	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
2	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
2	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
3	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
3	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
4	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
4	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
5	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
5	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
6	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
6	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
7	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
7	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
8	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
8	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
9	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
9	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
10	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
10	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
11	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
11	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
12	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
12	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
13	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
13	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
14	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
14	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
15	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
15	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
16	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
16	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0

Phase Compatibility (MM)1-1-2

Phase 1	Phase 2
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase Direction Descriptions

Phase	Description

Overlap Direction Descriptions

Overlap	Description

Administration (MM)1-7-1
Enable CRC Check: No
CRC: 0000
Request Download Program Data: No
Enable Automatic Backup to Datakey: No

Wellington County 24-36 - 124 & 23

Configuration **Phase Sequence Page 2**

In Use(MM)1-2

Phases In Use
2
4
6
8

Exclusive Ped(MM)1-2

Phase

Backup Prevent(MM)1-1-3

Phase	Timing Phase	Backup

Simultaneous Gap(MM)1-1-4

Phase	Must Gap with Phase

Disable(MM)1-1-4

Phase

Load Switch Assignments (MMU Channel) (MM)1-3

Phase	Overlap	Type	Dim				Auto		Flash Together
			R	Y	G	D	R	Y	
1	1	V				+	Yes		
2	2	V				+	Yes		Yes
3	3	V				+	Yes		
4	4	V				+	Yes		Yes
5	5	V				-	Yes		
6	6	V				-	Yes		Yes
7	7	V				-	Yes		
8	8	V				-	Yes		Yes
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	Yes		
14	2	O				-	Yes		Yes
15	3	O				+	Yes		
16	4	O				-	Yes		Yes

Wellington County 24-36 - 124 & 23

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

Bus Interface Terminal/Facilities

BIU	Term and Facility Enable	Detector Rack Enable
1	Yes	Yes
2	Yes	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes
MMU To CU SDLC External Start: Enabled
Diagonstics (Test Fixture) Enable: No

Secondary To Secondary Addressing

ID	Term and Facility Enable	Detector Rack Enable
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Secondary To Secondary Addressing MMU: No
Secondary To Secondary Addressing Diagonstics: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM)1-4-3
Enable Color Check: Yes

Color Check Enable

MMU Channel	Green	Yellow	Red
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes	Yes
4	Yes	Yes	Yes
5	Yes	Yes	Yes
6	Yes	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes
9	Yes	Yes	Yes
10	Yes	Yes	Yes
11	Yes	Yes	Yes
12	Yes	Yes	Yes

Wellington County 24-36 - 124 & 23

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP:	10.70.10.51
Subnet Mask:	255.255.255.0
Default Gateway IP:	10.70.10.1
Server IP:	10.70.10.1

NTCIP Parameters (MM)1-5-5

Backup Time:	0
UDP Port:	501
Ethernet Priority:	1
Port 2 Priority:	4
Port 3A Priority:	2
Port 3B Priority:	3

Note for 2070: Port 2 is C50S, Port 3A is C21S, and Port 3B is C22S

Port Configuration (MM)1-5-2 to 1-5-4

Port	Protocol	Enable	Data Rate	Data Parity Stop	Modem Setup String	User String	Comm Port Address	System Detector 9-1	Telemetry Response Delay	Duplex Half/Full	Flow Control	AB3418 NTCIP Group Address	AB3418 NTCIP Single Flag Enable	RTS to CTS Delay	RTS Turn Off Delay	Droupout Time	Early RTS	FSK Hardware	Rail Road	Rail Road Line	ATCS Group	Wayside Device	ATCS Device	Wayside SubNode	ATCS SubNode
2	NTCIP	Yes	9600	8 N 1	None		1	0	0.0	Half	No	0	No	0.0	0.0	10	No	Yes	0	0	0	0	0	0	0
3A	NTCIP	No	19.2K	8 N 1	None		0	0	0.0	Full	Yes	0	No	0.0	0.0	10	No	Yes	0	0	0	0	0	0	0
3B	ECPIP	No	1200	8 N 1	None		0	0	0.9	Full	Yes	0	No	14.0	2.0	10	No	Yes	0	0	0	0	0	0	0

ECPIP Parameters (MM)1-5-6

Controller Address:	0
Expanded System Detector Address:	0

Local System Detector

Local System Detector	Number

Wellington County 24-36 - 124 & 23

Configuration **Logging/Display**

Enable Event Logs (MM)1-6-1

Critical RFE's:	Yes
3 Critical RFE's in 24 Hours:	Yes
MMU Flash Faults:	Yes
Local Flash Faults:	Yes
Non-Critical RFE's (Det/Test):	Yes
Detector Errors:	Yes
Coordination Errors:	Yes
Controller Download:	Yes
Preempt:	Yes
TSP:	Yes
Power On/Off:	Yes
Low Battery:	Yes
Access:	Yes
Data Change:	Yes

Alarm Logs (MM)1-6-1

Enabled: 12345678910111213141516

Display Options (MM)1-7-2

Key Click Enable:	Yes
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic

Wellington County 24-36 - 124 & 23

Logic Processor Page 1

Statement Control (MM)1-8-1

LP	Statement Control

Wellington County 24-36 - 124 & 23

Logic Processor Page 2

Logic Statements (MM)1-8-2

Wellington County 24-36 - 124 & 23

Controller Timing Plan (MM)2-1
Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	35	5	10	5	35	5	10	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	16	0	10	0	16	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	19	0	10	0	19	0	10	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	3.0	5.0	3.0	5.0	3.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	0	35	20	35	0	35	20	35	35	35	35	35	35	35	35
Max 2	40	0	40	0	40	0	40	0	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.2	3.0	4.2	3.0	4.2	3.0	4.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.7	1.0	2.2	1.0	2.7	1.0	2.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Controller Overlaps
Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Modifier	Ped Protect	Not Overlap	Lag X Phase	Lag 2 Phase	Flash Green

PPLT FYA

Overlap	Protected Phase	Permissive Phase	Flash Arrow Output	Flash Arrow Channel	FYA Delay	FYA Clearance	Special Function Disable

Guaranteed Minimum Time Data (MM) 2-4
Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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Controller **Pedestrian Overlaps**
Pedestrian Overlaps (MM) 2-3

Included Phase	Ped Overlap

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	R
6	R

Overlap
A
B
C
D

Flash > Mon: Yes
Flash Time: 0
All Red: 0
Power Start Sequence: 1

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon: Yes
Exit Flash Interval: W
Minimum Auto Flash: 8
Minimumin Recall: No
Cycle Through Phase: No

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Controller Options
Controller Options (MM)2-6-1

Phase	Flashing Green Phase	Guaranteed Passage	Non Act 1	Non Act 2	Dual Entry	Conditional Service	Conditional Reservice	Ped Reservice	Rest In Walk	Flashing Walk	Ped Clear Yellow	Ped Clear Red	IGRN + Veh Ext
2	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No
4	No	No	No	No	Yes	No	No	No	No	No	No	No	No
6	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No
8	No	No	No	No	Yes	No	No	No	No	No	No	No	No

Ped Clear Protect: Off Red Revert: 2.0

Act Pre-Time (MM)2-7
Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Pre-Timed Phase

Phase Recall Options (MM)2-8

Plan	Phase	Lock Detector	Vehicle Recall	Ped Recall	Max Recall	Soft Recall	No Rest	AI Calc
1	2	No	Yes	Yes	No	No	No	No
1	6	No	Yes	Yes	No	No	No	No
1	9	Yes	No	No	No	No	No	No
1	10	Yes	No	No	No	No	No	No
1	11	Yes	No	No	No	No	No	No
1	12	Yes	No	No	No	No	No	No
1	13	Yes	No	No	No	No	No	No
1	14	Yes	No	No	No	No	No	No
1	15	Yes	No	No	No	No	No	No
1	16	Yes	No	No	No	No	No	No
2	1	Yes	No	No	No	No	No	No
2	2	Yes	No	No	No	No	No	No
2	3	Yes	No	No	No	No	No	No
2	4	Yes	No	No	No	No	No	No
2	5	Yes	No	No	No	No	No	No
2	6	Yes	No	No	No	No	No	No
2	7	Yes	No	No	No	No	No	No
2	8	Yes	No	No	No	No	No	No
2	9	Yes	No	No	No	No	No	No
2	10	Yes	No	No	No	No	No	No
2	11	Yes	No	No	No	No	No	No
2	12	Yes	No	No	No	No	No	No
2	13	Yes	No	No	No	No	No	No
2	14	Yes	No	No	No	No	No	No
2	15	Yes	No	No	No	No	No	No
2	16	Yes	No	No	No	No	No	No
3	1	Yes	No	No	No	No	No	No
3	2	Yes	No	No	No	No	No	No
3	3	Yes	No	No	No	No	No	No
3	4	Yes	No	No	No	No	No	No
3	5	Yes	No	No	No	No	No	No
3	6	Yes	No	No	No	No	No	No
3	7	Yes	No	No	No	No	No	No
3	8	Yes	No	No	No	No	No	No
3	9	Yes	No	No	No	No	No	No
3	10	Yes	No	No	No	No	No	No
3	11	Yes	No	No	No	No	No	No
3	12	Yes	No	No	No	No	No	No
3	13	Yes	No	No	No	No	No	No
3	14	Yes	No	No	No	No	No	No
3	15	Yes	No	No	No	No	No	No
3	16	Yes	No	No	No	No	No	No
4	1	Yes	No	No	No	No	No	No
4	2	Yes	No	No	No	No	No	No
4	3	Yes	No	No	No	No	No	No
4	4	Yes	No	No	No	No	No	No
4	5	Yes	No	No	No	No	No	No
4	6	Yes	No	No	No	No	No	No
4	7	Yes	No	No	No	No	No	No
4	8	Yes	No	No	No	No	No	No
4	9	Yes	No	No	No	No	No	No
4	10	Yes	No	No	No	No	No	No
4	11	Yes	No	No	No	No	No	No
4	12	Yes	No	No	No	No	No	No
4	13	Yes	No	No	No	No	No	No
4	14	Yes	No	No	No	No	No	No
4	15	Yes	No	No	No	No	No	No
4	16	Yes	No	No	No	No	No	No

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Coordination Options

Coordination Options (MM)3-1

Manual Pattern:	Auto
ECPI Coord:	Yes
System Source:	TBC
System Format:	STD
Splits In:	Seconds
Offsets In:	Seconds
Transition:	Smooth
Max Select:	MAXINH
Dwell/Add Time:	0
Dly Coord Wz-Lz:	No
Force Off:	Float
Offset Reference:	Lead
Use Ped Time:	Yes
Ped Recall:	No
Ped Resv:	No
Local Zero Ovrd:	No
Fo Add Ini Green:	No
Re-sync Count:	0
Multisync:	No

Split Demand (MM)3-5

Demand 1	Demand 2
Phase	Phase

Demand	Detector	Call Time	Cycle Count

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	Min Green

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Coordination Pattern Data

Pattern Data (MM)3-2

Pattern	Split Pattern	TS2	Cycle	Std(COS)	Offset Value	Splits In	Offsets In	Actuated Coord

Pattern	Timing Plan	Actuated Walk Rest	Sequence	Phase Reservice	Action Plan	XArt Pattern	Vehicle Perm 1	Vehicle Perm 2	Vehicle Perm 3

Pattern	Ring Split Ext 1	Ring Split Ext 2	Ring Split Ext 3	Ring Split Ext 4	Split Demand Pattern 1	Split Demand Pattern 2	Ring Displ 2	Ring Displ 3	Ring Displ 4

Split Preference Phases

Pattern	Phase	Preference 1	Preference 2

Special Functions

Pattern	Function	Output

Split Pattern Data (MM)3-3

Coord Phases

Split Pattern	Phase	Split

Split/Modes

Split Pattern	Mode	Phase														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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Preemptor **Preempt Plan (MM)4-1**

Preempt Phases

Preempt	Phase	Track Clear Veh	Dwell Veh	Dwell Ped	Cycling Veh	Cycling Ped	Exit Phase	Exit Calls	Special Function

Preempt Overlaps

Preempt	Overlap	Track Clear	Enable Trailing	Dwell Overlap	Cycling Overlap

Preempt	Enable	Preempt Override	Interlock Enable	Detector Lock	Delay	Inhibit	Override Flash	Duration	CLR > GRN
1	No	Yes	No	Yes	0	0	No	0	No
2	No	Yes	No	Yes	0	0	No	0	No
3	No	Yes	No	Yes	0	0	No	0	No
4	No	Yes	No	Yes	0	0	No	0	No
5	No	Yes	No	Yes	0	0	No	0	No
6	No	Yes	No	Yes	0	0	No	0	No
7	No	Yes	No	Yes	0	0	No	0	No
8	No	Yes	No	Yes	0	0	No	0	No
9	No	Yes	No	Yes	0	0	No	0	No
10	No	Yes	No	Yes	0	0	No	0	No

Preempt	Term Overlap Asap	PC Through Yellow	Terminate Phase	Ped Dark	Track Clearance Re-service	Dwell Flash	Linked Pmt	Flash Exit Color	Preempt To Coord	Fault Type
1	No	No	No	No	No	Off	0	Red	No	Hard
2	No	No	No	No	No	Off	0	Green	No	Hard
3	No	No	No	No	No	Off	0	Green	No	Hard
4	No	No	No	No	No	Off	0	Green	No	Hard
5	No	No	No	No	No	Off	0	Green	No	Hard
6	No	No	No	No	No	Off	0	Green	No	Hard
7	No	No	No	No	No	Off	0	Green	No	Hard
8	No	No	No	No	No	Off	0	Green	No	Hard
9	No	No	No	No	No	Off	0	Green	No	Hard
10	No	No	No	No	No	Off	0	Green	No	Hard

Preempt	Exit Timing Plan	Reservice	Free During Pmt Ring 1	Free During Pmt Ring 2	Free During Pmt Ring 3	Free During Pmt Ring 4
1	0	0	No	No	No	No
2	0	0	No	No	No	No
3	0	0	No	No	No	No
4	0	0	No	No	No	No
5	0	0	No	No	No	No
6	0	0	No	No	No	No
7	0	0	No	No	No	No
8	0	0	No	No	No	No
9	0	0	No	No	No	No
10	0	0	No	No	No	No

Preempt	Entrance Walk	Entrance Ped Clear	Entrance Min Green	Entrance Yellow	Entrance Red	Track Clear Min Green	Gate Down Ext Green	Gate Down Max Green	Track Clear Yellow	Track Clear Red
1	0	255	5	4.0	1.0	0	0	0	4.0	1.0
2	0	255	5	4.0	1.0	0	0	0	4.0	1.0
3	0	255	5	4.0	1.0	0	0	0	4.0	1.0
4	0	255	5	4.0	1.0	0	0	0	4.0	1.0
5	0	255	5	4.0	1.0	0	0	0	4.0	1.0
6	0	255	5	4.0	1.0	0	0	0	4.0	1.0
7	0	255	5	4.0	1.0	0	0	0	4.0	1.0
8	0	255	5	4.0	1.0	0	0	0	4.0	1.0
9	0	255	5	4.0	1.0	0	0	0	4.0	1.0
10	0	255	5	4.0	1.0	0	0	0	4.0	1.0

Preempt	Min Dwell Time	Extend Preempt Input Time	Max Preempt Call Time	Exit Yellow Time	Exit Red Time	Preempt Active Out	Preempt Active Dwell	Other Priority Preempt	Non-Priority Preempt
1	0	0.0	0	4.0	1.0	On	No	Off	Off
2	0	0.0	0	4.0	1.0	On	No	Off	Off
3	0	0.0	0	4.0	1.0	On	No	Off	Off
4	0	0.0	0	4.0	1.0	On	No	Off	Off
5	0	0.0	0	4.0	1.0	On	No	Off	Off
6	0	0.0	0	4.0	1.0	On	No	Off	Off
7	0	0.0	0	4.0	1.0	On	No	Off	Off
8	0	0.0	0	4.0	1.0	On	No	Off	Off
9	0	0.0	0	4.0	1.0	On	No	Off	Off
10	0	0.0	0	4.0	1.0	On	No	Off	Off

Preemptor **Preempt Filtering**
Enable Preempt Filtering and TSP/SCP
(MM)4-2

Input	Solid	Pulsing
3	Preemption -3	Preemption -7
4	Preemption -4	Preemption -8
5	Preemption -5	Preemption -9
6	Preemption -6	Preemption -10

Wellington County 24-36 - 124 & 23

Time Base **Clock/Calendar**
Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Wellington County 24-36 - 124 & 23

Time Base Action Plan
Action Plan (MM)5-2

Plan	Pattern	Veh Det Plan	Flash	Red Rest	Controller Seq	Timing Plan	System Override	Detector Log	Veh Det Diag Plan	Ped Det Diag Plan	Dimming Enable

Action Plan Phases

Plan	Phase	Ped Rcl	Walk 2	Vex 2	Veh Rcl	Max Rcl	Max 2	Max 3	CS Inhibit	Omit

Acion Plan Special Functions

Plan	Function

Action Plan Auxiliary Functions

Plan	Function

Logic Statement Control

Plan	LP	Statement Control

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Time Base Day Plan/Schedule
Day Plan (MM)5-3

Plan	Event	Action Plan	Start Time

Schedule (MM)5-4

Schedule Number	Day Plan Number	Months	Days of Week	Days of Month

Wellington County 24-36 - 124 & 23

Time Base Exceptions
Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
1	FLOAT	0	0	0	0
2	FLOAT	0	0	0	0
3	FLOAT	0	0	0	0
4	FLOAT	0	0	0	0
5	FLOAT	0	0	0	0
6	FLOAT	0	0	0	0
7	FLOAT	0	0	0	0
8	FLOAT	0	0	0	0
9	FLOAT	0	0	0	0
10	FLOAT	0	0	0	0
11	FLOAT	0	0	0	0
12	FLOAT	0	0	0	0
13	FLOAT	0	0	0	0
14	FLOAT	0	0	0	0
15	FLOAT	0	0	0	0
16	FLOAT	0	0	0	0
17	FLOAT	0	0	0	0
18	FLOAT	0	0	0	0
19	FLOAT	0	0	0	0
20	FLOAT	0	0	0	0
21	FLOAT	0	0	0	0
22	FLOAT	0	0	0	0
23	FLOAT	0	0	0	0
24	FLOAT	0	0	0	0
25	FLOAT	0	0	0	0
26	FLOAT	0	0	0	0
27	FLOAT	0	0	0	0
28	FLOAT	0	0	0	0
29	FLOAT	0	0	0	0
30	FLOAT	0	0	0	0
31	FLOAT	0	0	0	0
32	FLOAT	0	0	0	0
33	FLOAT	0	0	0	0
34	FLOAT	0	0	0	0
35	FLOAT	0	0	0	0
36	FLOAT	0	0	0	0

Wellington County 24-36 - 124 & 23

Detectors

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Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called	Type
4	4	4	N
4	8	8	G

Vehicle Detector Setup (MM)6-2 continued

Detector Number	ECPI	TS2 Detector	Detector Description
1	N-NTCIP	Yes	
2	N-NTCIP	Yes	
3	N-NTCIP	Yes	
4	N-NTCIP	Yes	
5	N-NTCIP	Yes	
6	N-NTCIP	Yes	
7	N-NTCIP	Yes	
8	G-GREEN EXT	Yes	
9	N-NTCIP	Yes	
10	N-NTCIP	Yes	
11	N-NTCIP	Yes	
12	N-NTCIP	Yes	
13	N-NTCIP	Yes	
14	N-NTCIP	Yes	
15	N-NTCIP	Yes	
16	N-NTCIP	Yes	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	
63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Vehicle Plan	Assigned Phase	Switch Phase	Extend Time/Passage Time	Delay Time	Queue Limit/Disconnect Time	Added Option	Call Option	NTCIP Occupancy	NTCIP Volume	ECPI Log	Lock In	Ext Option
1	1	1	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
1	2	1	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
1	3	1	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
1	4	1	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
2	1	2	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
2	2	2	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
2	3	2	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
2	4	2	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
3	1	4	0	0.0	10.0	0	No	Yes	No	No	No	None	Passage
3	2	4	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
3	3	3	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
3	4	3	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
4	1	4	0	0.0	10.0	0	No	Yes	No	No	No	None	Passage
4	2	4	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
4	3	4	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
4	4	4	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
5	1	5	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
5	2	5	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
5	3	5	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
5	4	5	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
6	1	6	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage

6	2	6	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
6	3	6	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
6	4	6	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
7	1	7	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
7	2	7	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
7	3	7	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
7	4	7	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
8	1	8	0	0.0	4.0	0	No	Yes	No	No	No	None	Passage
8	2	8	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
8	3	8	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
8	4	8	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
9	1	9	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
9	2	9	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
9	3	9	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
9	4	9	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
10	1	10	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
10	2	10	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
10	3	10	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
10	4	10	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
11	1	11	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
11	2	11	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
11	3	11	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
11	4	11	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
12	1	12	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
12	2	12	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
12	3	12	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
12	4	12	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
13	1	13	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
13	2	13	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
13	3	13	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
13	4	13	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
14	1	14	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
14	2	14	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
14	3	14	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
14	4	14	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
15	1	15	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
15	2	15	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
15	3	15	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
15	4	15	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
16	1	16	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
16	2	16	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
16	3	16	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage
16	4	16	0	0.0	0.0	0	No	Yes	No	No	No	None	Passage

Ped Detector Options (MM)6-3

Phase Ped Detector (NTCIP)

Local Ped Detector	Number
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Local System Detector

Local System Detector	Number

Wellington County 24-36 - 124 & 23

Detectors

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Log - Speed Detector Setup (MM)6-5
NTCIP Log Period: 0 ECPI Log Period: TBAP Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0
1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0

1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0
2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0
3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0

	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0
4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0

	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-7

Plan	Detector	Counts	Act	Pres	Multiplier

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Configuration

Controller Sequence Priority

	1	2	3	4	5	6	7	8	9	10	11	12
Ring 1 Phases . .	1	2	3	4	9	10	0	0	0	0	0	0
Ring 2 Phases . .	5	6	7	8	11	12	0	0	0	0	0	0

Phase

	1	2	3	4	5	6	7	8	9	10	11	12
In Use.		X		X		X		X				
Exclusive Ped . . .												
Direction												

Overlap

	A	B	C	D
Direction . . .				

Load Switch Channel/Driver Group Assign (Info Only):

Load Switch (MMU) Channel	Signal Driver Phase/ Ovlap	Group Ped
1	1	.
2	2	.
3	3	.
4	4	.
5	5	.
6	6	.
7	7	.
8	8	.
9	2	X
10	4	X
11	6	X
12	8	X
13	A	.
14	B	.
15	C	.
16	D	.

Configuration Continued

```
                Enable BIU: 1  2  3  4  5  6  7  8
Terminal/Facilities. . . . . .  .  .  .  .  .  .  .
Detector Rack. . . . . .  .  .  .  .  .  .  .  .

Type 2 Runs as Type 1. . .  .
MMU Disable. . . . . .  X
Diagnostic Enable. . . . .  .
Peer-Peer Comm Enable. . .  .

                             1    2    3    4    5    6    7    8    9   10
Peer To Peer Addresses . . 255  255  255  255  255  255  255  255  255  255
```

Port 2:

```
Port 2 Protocol . . . . . Terminal
Port 2 Enable . . . . . YES
AB3418 Address. . . . . 0
AB3418 Group Address. . . . . 0
AB3418 Response Delay . . . . . 0
AB3418 Single Flag Enable . . . NO
AB3418 Drop-Out Time. . . . . 0
AB3418 TOD SF Select. . . . . 0
Data Rate . . . . . 1200 bps
Data, Parity, Stop. . . . . 8, 0, 1
```

Port 3:

```
Port 3 Protocol . . . . . Telemetry
Port 3 Enable . . . . . YES
Telemetry Address . . . . . 1
System Detector 9-16 Address. . 0
Telemetry Response Delay. . . . 8700
AB3418 Address. . . . . 0
AB3418 Group Address. . . . . 0
AB3418 Response Delay . . . . . 0
AB3418 Single Flag Enable . . . NO
AB3418 Drop-Out Time. . . . . 0
AB3418 TOD SF Select. . . . . 0
Duplex. . . . . Full
Data Rate . . . . . 1200 bps
Data, Parity, Stop. . . . . 8, 0, 1
```

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Configuration Continued

Event Enabling		Alarm Enabling	
Critical RFE'S (MMU/TF)	X	ALARM 1	X
Non-Critical RFE'S (DET/TEST)	X	ALARM 2	.
Detector Errors	X	ALARM 3	.
Coordination Errors	X	ALARM 4	.
MMU Flash Faults.	X	ALARM 5	.
Local Flash Faults.	X	ALARM 6	.
Preempt	X	ALARM 7	.
Power On/Off.	X	ALARM 8	.
Low Battery	X	ALARM 9	.
		ALARM 10.	.
		ALARM 11.	.
		ALARM 12.	.
		ALARM 13.	.
		ALARM 14.	.
		ALARM 15.	.
		ALARM 16.	.

Supervisor Access Code. . . ****
Data Change Access Code . . ****

MMU Compatibility Program (Info Only)

Channel Is Allowed to Time With Channel

	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
3	.	.	.	.	.	.	.	.	.	.	.	.	.		
4	.	.	.	.	.	.	.	.	.	.	.	.			
5	.	.	.	.	.	.	.	.	.	.	.				
6	.	.	.	.	.	.	.	.	.	.					
7	.	.	.	.	.	.	.	.	.						
8	.	.	.	.	.	.	.	.							
9	.	.	.	.	.	.	.								
10	.	.	.	.	.	.									
11	.	.	.	.	.										
12	.	.	.	.											
13	.	.	.												
14	.	.													
15	.														

Version Info:

Software Assy.	Part No.	Version
Boot	27831	2.83
Program	45561	7.9
Application		. 3
Help	27891	6.33
Configuration	27918	C000

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By-Phase Timing Data

	Phase											
Direction	1	2	3	4	5	6	7	8	9	10	11	12
Minimum Green	1	24	5	8	5	24	5	8	5	5	5	5
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10
Ped Clearance	0	8	0	8	0	8	0	8	0	16	0	16
Veh Extension	5.0	5.0	5.0	3.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	35	35	35	26	35	35	35	26	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	5.5	3.0	4.0	3.0	5.5	3.0	4.0	3.0	3.0	3.0	3.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	30	30	30	30	30	30	30	30	30	30	30	30
Time B4 Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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No-Serve Phases

	Phase Cannot Serve With Phase										
Phase	12	11	10	9	8	7	6	5	4	3	2
1	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	
3	.	.	.	.	.	.	.	.	.		
4	.	.	.	.	.	.	.	.			
5	.	.	.	.	.	.	.				
6	.	.	.	.	.	.					
7	.	.	.	.	.						
8	.	.	.	.							
9	.	.	.								
10	.	.									
11	.										

Ped Carryover

Ped Start Phase	Carry Over Phase
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0

Vehicle/Ped Phase as Overlap

Ped Ovlap Phase	Ped Phase As Overlap Consists of Ped Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.

Veh Ovlap Phase	Veh Phase As Overlap Consists of Veh Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
1	X	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.
12	.	.	.	.	.	.	.	.	.	.	.	X

Overlap Data

Overlap A	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.	.	.	.	.	.	.	.	.	.	.	.	.
Protected	.	.	.	.	.	.	.	.	.	.	.	.
Permitted	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lag.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lead	.	.	.	.	.	.	.	.	.	.	.	.
Spare	.	.	.	.	.	.	.	.	.	.	.	.
Advance Green Timer	.	.	.	0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap B	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.	.	.	.	.	.	.	.	.	.	.	.	.
Protected	.	.	.	.	.	.	.	.	.	.	.	.
Permitted	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lag.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lead	.	.	.	.	.	.	.	.	.	.	.	.
Spare	.	.	.	.	.	.	.	.	.	.	.	.
Advance Green Timer	.	.	.	0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap C	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.	.	.	.	.	.	.	.	.	.	.	.	.
Protected	.	.	.	.	.	.	.	.	.	.	.	.
Permitted	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lag.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lead	.	.	.	.	.	.	.	.	.	.	.	.
Spare	.	.	.	.	.	.	.	.	.	.	.	.
Advance Green Timer	.	.	.	0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap D	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.	.	.	.	.	.	.	.	.	.	.	.	.
Protected	.	.	.	.	.	.	.	.	.	.	.	.
Permitted	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lag.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Lead	.	.	.	.	.	.	.	.	.	.	.	.
Spare	.	.	.	.	.	.	.	.	.	.	.	.
Advance Green Timer	.	.	.	0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Power Start, Remote Flash

	Phase																	
	1	2	3	4	5	6	7	8	9	10	11	12	Overlap					
													A		B		C	D
Power Start		X				X												
External Start		X				X												
Into Remote Flash		X				X												
Exit Remote Flash		X				X												
Remote Flash Yellow																		
Flash Together		X		X		X		X		X		X			X			X

Initialization Interval:

Power Start	Yellow
External Start	Yellow

Power Start All Red Time	0
Power Start Flash Time	0

Remote Flash Options:

Out of Flash Yellow	NO
Out of Flash All Red	NO
Minimum Recall	NO
Alternate Flash	NO
Flash Thru Load Switches	NO
Cycle Through Phases	NO

Option Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Guaranteed Passage												
Call To NonActuated 1		X				X						
Call To NonActuated 2				X				X				
Dual Entry		X		X		X		X		X		X
Conditional Service	X		X		X		X		X		X	
Conditional Reservice												
Actuated Rest in Walk		X				X						
Flashing Walk												

Enable Programmable Options

Dual Entry	ON	Backup Protection Group 1	OFF
Conditional Service	OFF	Backup Protection Group 2	OFF
Ped Clearance Protection	OFF	Backup Protection Group 3	OFF
Special Preempt Overlap Flash	OFF	Simultaneous Gap Group 1	OFF
Cond Service Det Cross Switch	OFF	Simultaneous Gap Group 2	OFF
Lock Detectors in Red Only	OFF	Simultaneous Gap Group 3	OFF

Five Section Left Turn Control

Phases:	5-2	7-4	1-6	3-8	11-10	9-12
Left Turn Head						

Recall Data, Dimming

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Locking Detector. . . .	.	.	.	.	.	.	.	.	.	.	.	.
Vehicle Recall.	.	X	.	.	.	X	.	.	.	.	.	.
Pedestrian Recall . . .	.	X	.	.	.	X	.	.	.	.	.	.
Recall To Max	.	.	.	.	.	.	.	.	.	.	.	.
Soft Recall	.	.	.	.	.	.	.	.	.	.	.	.
Don't Rest Here	.	.	.	.	.	.	.	.	.	.	.	.
Ped Dark if No Call . .	.	.	.	.	.	.	.	.	.	.	.	.

Dimming:

	Load Switch															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green/Walk. . . .	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Yellow/Ped Clear.	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Red/Don't Walk. .	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

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Detector Type/Timers

Det.	Locking Memory	Log Enable	Timers Extend	Delay	Don't Reset Extend	Type
1	NO	NO	0.0	0	.	0 - Normal
2	NO	NO	0.0	0	.	0 - Normal
3	NO	NO	0.0	0	.	0 - Normal
4	NO	NO	0.0	0	.	0 - Normal
5	NO	NO	0.0	0	.	0 - Normal
6	NO	NO	0.0	0	.	0 - Normal
7	NO	NO	0.0	0	.	0 - Normal
8	NO	NO	0.0	0	.	0 - Normal
9	NO	NO	0.0	0	.	0 - Normal
10	NO	NO	0.0	0	.	0 - Normal
11	NO	NO	0.0	0	.	0 - Normal
12	NO	NO	0.0	0	.	0 - Normal
13	NO	NO	0.0	0	.	0 - Normal
14	NO	NO	0.0	0	.	0 - Normal
15	NO	NO	0.0	0	.	0 - Normal
16	NO	NO	0.0	0	.	0 - Normal
17	NO	NO	0.0	0	.	0 - Normal
18	NO	NO	0.0	0	.	0 - Normal
19	NO	NO	0.0	0	.	0 - Normal
20	NO	NO	0.0	0	.	0 - Normal
21	NO	NO	0.0	0	.	0 - Normal
22	NO	NO	0.0	0	.	0 - Normal
23	NO	NO	0.0	0	.	0 - Normal
24	NO	NO	0.0	0	.	0 - Normal
25	NO	NO	0.0	0	.	0 - Normal
26	NO	NO	0.0	0	.	0 - Normal
27	NO	NO	0.0	0	.	0 - Normal
28	NO	NO	0.0	0	.	0 - Normal
29	NO	NO	0.0	0	.	0 - Normal
30	NO	NO	0.0	0	.	0 - Normal
31	NO	NO	0.0	0	.	0 - Normal
32	NO	NO	0.0	0	.	0 - Normal

Detector Names

Det 1: Detector 1	Det 17: Detector 17
Det 2: Detector 2	Det 18: Detector 18
Det 3: Detector 3	Det 19: Detector 19
Det 4: Detector 4	Det 20: Detector 20
Det 5: Detector 5	Det 21: Detector 21
Det 6: Detector 6	Det 22: Detector 22
Det 7: Detector 7	Det 23: Detector 23
Det 8: Detector 8	Det 24: Detector 24
Det 9: Detector 9	Det 25: Detector 25
Det 10: Detector 10	Det 26: Detector 26
Det 11: Detector 11	Det 27: Detector 27
Det 12: Detector 12	Det 28: Detector 28
Det 13: Detector 13	Det 29: Detector 29
Det 14: Detector 14	Det 30: Detector 30
Det 15: Detector 15	Det 31: Detector 31
Det 16: Detector 16	Det 32: Detector 32

Detector Type/Timers

33	NO	NO	0.0	0	.	0 - Normal
34	NO	NO	0.0	0	.	0 - Normal
35	NO	NO	0.0	0	.	0 - Normal
36	NO	NO	0.0	0	.	0 - Normal
37	NO	NO	0.0	0	.	0 - Normal
38	NO	NO	0.0	0	.	0 - Normal
39	NO	NO	0.0	0	.	0 - Normal
40	NO	NO	0.0	0	.	0 - Normal
41	NO	NO	0.0	0	.	0 - Normal
42	NO	NO	0.0	0	.	0 - Normal
43	NO	NO	0.0	0	.	0 - Normal
44	NO	NO	0.0	0	.	0 - Normal
45	NO	NO	0.0	0	.	0 - Normal
46	NO	NO	0.0	0	.	0 - Normal
47	NO	NO	0.0	0	.	0 - Normal
48	NO	NO	0.0	0	.	0 - Normal
49	NO	NO	0.0	0	.	0 - Normal
50	NO	NO	0.0	0	.	0 - Normal
51	NO	NO	0.0	0	.	0 - Normal
52	NO	NO	0.0	0	.	0 - Normal
53	NO	NO	0.0	0	.	0 - Normal
54	NO	NO	0.0	0	.	0 - Normal
55	NO	NO	0.0	0	.	0 - Normal
56	NO	NO	0.0	0	.	0 - Normal
57	NO	NO	0.0	0	.	0 - Normal
58	NO	NO	0.0	0	.	0 - Normal
59	NO	NO	0.0	0	.	0 - Normal
60	NO	NO	0.0	0	.	0 - Normal
61	NO	NO	0.0	0	.	0 - Normal
62	NO	NO	0.0	0	.	0 - Normal
63	NO	NO	0.0	0	.	0 - Normal
64	NO	NO	0.0	0	.	0 - Normal

Detector Names

Det 33: Detector 33	Det 49: Detector 49
Det 34: Detector 34	Det 50: Detector 50
Det 35: Detector 35	Det 51: Detector 51
Det 36: Detector 36	Det 52: Detector 52
Det 37: Detector 37	Det 53: Detector 53
Det 38: Detector 38	Det 54: Detector 54
Det 39: Detector 39	Det 55: Detector 55
Det 40: Detector 40	Det 56: Detector 56
Det 41: Detector 41	Det 57: Detector 57
Det 42: Detector 42	Det 58: Detector 58
Det 43: Detector 43	Det 59: Detector 59
Det 44: Detector 44	Det 60: Detector 60
Det 45: Detector 45	Det 61: Detector 61
Det 46: Detector 46	Det 62: Detector 62
Det 47: Detector 47	Det 63: Detector 63
Det 48: Detector 48	Det 64: Detector 64

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Detector Phase Assignment

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.	X	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	X	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.
12	.	.	.	.	.	.	.	.	.	.	.	X
13	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.	.	.	.	.	.

Detector Cross Switching

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.	.	.	.	.	.

Detector Cross Switching

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
33	.	.	.	.	.	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.	.	.	.	.	.
35	.	.	.	.	.	.	.	.	.	.	.	.
36	.	.	.	.	.	.	.	.	.	.	.	.
37	.	.	.	.	.	.	.	.	.	.	.	.
38	.	.	.	.	.	.	.	.	.	.	.	.
39	.	.	.	.	.	.	.	.	.	.	.	.
40	.	.	.	.	.	.	.	.	.	.	.	.
41	.	.	.	.	.	.	.	.	.	.	.	.
42	.	.	.	.	.	.	.	.	.	.	.	.
43	.	.	.	.	.	.	.	.	.	.	.	.
44	.	.	.	.	.	.	.	.	.	.	.	.
45	.	.	.	.	.	.	.	.	.	.	.	.
46	.	.	.	.	.	.	.	.	.	.	.	.
47	.	.	.	.	.	.	.	.	.	.	.	.
48	.	.	.	.	.	.	.	.	.	.	.	.
49	.	.	.	.	.	.	.	.	.	.	.	.
50	.	.	.	.	.	.	.	.	.	.	.	.
51	.	.	.	.	.	.	.	.	.	.	.	.
52	.	.	.	.	.	.	.	.	.	.	.	.
53	.	.	.	.	.	.	.	.	.	.	.	.
54	.	.	.	.	.	.	.	.	.	.	.	.
55	.	.	.	.	.	.	.	.	.	.	.	.
56	.	.	.	.	.	.	.	.	.	.	.	.
57	.	.	.	.	.	.	.	.	.	.	.	.
58	.	.	.	.	.	.	.	.	.	.	.	.
59	.	.	.	.	.	.	.	.	.	.	.	.
60	.	.	.	.	.	.	.	.	.	.	.	.
61	.	.	.	.	.	.	.	.	.	.	.	.
62	.	.	.	.	.	.	.	.	.	.	.	.
63	.	.	.	.	.	.	.	.	.	.	.	.
64	.	.	.	.	.	.	.	.	.	.	.	.

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Ped/SD Local Assign,Log Interval

	Phase Ped Detector											
	1	2	3	4	5	6	7	8	9	10	11	12
Is Ped Detector No. . . .	1	2	3	4	5	6	7	8	9	10	11	12

	*Local System Detector No.															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Is Local Detector No. . .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Detector Log Interval . . 5

*NOTE: System master designations cross referenced to local system detector numbers are:

- SDA1 = 1 & 9
- SDA2 = 2 & 10
- SDB1 = 3 & 11
- SDB2 = 4 & 12
- SDC1 = 5 & 13
- SDC2 = 6 & 14
- SDD1 = 7 & 15
- SDD2 = 8 & 16

Diagnostic Plans/Fail Action

	Detector															
Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Detector															
Plan	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect
3 = Detector Fail Max Tiime from By-Phase Timing Data

Diagnostic Plans/Fail Action

	Detector															
Plan	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Detector															
Plan	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect
3 = Detector Fail Max Tiime from By-Phase Timing Data

Ped Diagnostic Plans

Plan		1	2	3	4	5	6	7	8	9	10	11	12
1	Diagnostic	0	1	0	1	0	1	0	1	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
2	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
3	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
4	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
5	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
6	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
7	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
8	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1

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Detector Diagnostic Intervals

Diagnostic Number	*No-Activity Diagnostic Interval	*Max Presence Diagnostic Interval	Erratic Counts
1	1	1	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
32	0	0	0

*NOTE: Scaling is specified in each detector diagnostic plan.

Wellington county 12 -24 124 & Dundas Erin 7/4/2013 6:24

Speed Detectors

	Local Speed Detector							
One Detector Speed:	1	2	3	4	5	6	7	8
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Vehicle Length	0	0	0	0	0	0	0	0
Loop Length.	0	0	0	0	0	0	0	0
Two Detector Speed:								
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Speed Trap Length.	0	0	0	0	0	0	0	0

	Local Speed Detector							
One Detector Speed:	9	10	11	12	13	14	15	16
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Vehicle Length	0	0	0	0	0	0	0	0
Loop Length.	0	0	0	0	0	0	0	0
Two Detector Speed:								
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Speed Trap Length.	0	0	0	0	0	0	0	0

Units. . . . . Inches

NOTE: Speed Detector 1 = STA, Speed Detector 2 = STB

Wellington county 12 -24 124 & Dundas Erin 7/4/2013 6:24

Coordinator Manual Command and Options

Manual Enable . . . . . Pattern 0

Split Units . . . . . Percent OffsetUnits . . . . . Percent
Interconnect Format . PLAN Interconnect Source . TLM
Transition. . . . . SMOOTH Dwell Period. 0
Resync Count. 0

Actuated Coord Phase . . . . Actuated Walk Rest . . . .
Inhibit Max Timing . . . . . Max 2 Select . . . . . .
Floating Force Off . . . . . Multisync. . . . . .

Split Demand:	Call	Time	Cyc Count	Phase 1	2	3	4	5	6	7	8	9	10	11	12
Demand 1 . .		0	0	.	.	.	.	.	.	.	.	.	.	.	.
Demand 2 . .		0	0	.	.	.	.	.	.	.	.	.	.	.	.

	Phase 1	2	3	4	5	6	7	8	9	10	11	12
Auto Permissive Min Green .	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F
Free Alternate Sequence . .	.	.	.	.	.	.

Coordination Patterns

Preemptors

Preemptor 1

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Preemptor 2

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green
Linked Preemptor 0

Preemptors

Preemptor 3

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Preemptor 4

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Preemptors

Preemptor 5

Active	Det Lock.	Ped Dark . . . . .
Priority Preemption.	Yel-Red To Grn. . .	Ped Active . . . . .
Outputs Only During Hold . . .	Flash All Outputs .	Zero Ped Clr Time. .
Terminate Overlap ASAP	Terminate Phases. .	Ped Clr Thru Yel . .
Don't Override Flash	Duration Time. . . 0	
Flash During Hold.	Delay Time 0	
No CVM in Flash.	Inhibit Time . . . 0	
Fast Flash Grn on Hold Phase. .	Min Ped Clear. . . 0	
Enable Max Time.	Max Time 0	
	Exit Max 0	
	Min Hold Time. . . 0	
	Hold Delay Time. . 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold.		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Preemptor 6

Active	Det Lock.	Ped Dark . . . . .
Priority Preemption.	Yel-Red To Grn. . .	Ped Active . . . . .
Outputs Only During Hold . . .	Flash All Outputs .	Zero Ped Clr Time. .
Terminate Overlap ASAP	Terminate Phases. .	Ped Clr Thru Yel . .
Don't Override Flash	Duration Time. . . 0	
Flash During Hold.	Delay Time 0	
No CVM in Flash.	Inhibit Time . . . 0	
Fast Flash Grn on Hold Phase. .	Min Ped Clear. . . 0	
Enable Max Time.	Max Time 0	
	Exit Max 0	
	Min Hold Time. . . 0	
	Hold Delay Time. . 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold.		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Bus Preemptors

	Bus Preemptor 1	2	3	4
Preemptor Active	.	.	.	.
Detector Lock	.	.	.	.
Maximum Time	0	0	0	0
Reservice Time	0	0	0	0
Delay Time	0	0	0	0
Inhibit Time	0	0	0	0
Entrance Green	0	0	0	0
Entrance Ped Clearance	0	0	0	0
Entrance Yellow	0.0	0.0	0.0	0.0
Entrance Red	0.0	0.0	0.0	0.0
Minimum Hold Time	0	0	0	0

	Hold Phases 1	2	3	4	5	6	7	8	9	10	11	12
Preemptor 1	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 2	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 3	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 4	.	.	.	.	.	.	.	.	.	.	.	.

NIC/TOD Clock/Calendar

Manual NIC Program Step 0

Manual TOD Program Step 0

NIC Resync Time 0000

Sync Reference is . . . . . Reference Time

Week 1 Begins on 1st Sunday . . . . . NO If NO, then week containing Jan. 1

Disable Daylight Savings Time . . . . . NO

Daylight Savings
Begins Last Sunday in March . . . . . NO If NO, then Second Sunday as per 2007 DST Law

Wellington county 12 -24 124 & Dundas Erin 7/4/2013 6:24

TOD Weekly/Yearly

Weekly Program Numbers

	1	2	3	4	5	6	7	8	9	10	
Sunday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Monday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Tuesday. . .	1	1	1	1	1	1	1	1	1	1	Program No.
Wednesday. .	1	1	1	1	1	1	1	1	1	1	Program No.
Thursday . .	1	1	1	1	1	1	1	1	1	1	Program No.
Friday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Saturday . .	1	1	1	1	1	1	1	1	1	1	Program No.

Week of Year

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Holiday Programs

Holiday	Type	Month	Day of Week/ Day of Month	Week of Year/ Year	Program
1	Fixed	0	0	0	0
2	Fixed	0	0	0	0
3	Fixed	0	0	0	0
4	Fixed	0	0	0	0
5	Fixed	0	0	0	0
6	Fixed	0	0	0	0
7	Fixed	0	0	0	0
8	Fixed	0	0	0	0
9	Fixed	0	0	0	0
10	Fixed	0	0	0	0
11	Fixed	0	0	0	0
12	Fixed	0	0	0	0
13	Fixed	0	0	0	0
14	Fixed	0	0	0	0
15	Fixed	0	0	0	0
16	Fixed	0	0	0	0
17	Fixed	0	0	0	0
18	Fixed	0	0	0	0
19	Fixed	0	0	0	0
20	Fixed	0	0	0	0
21	Fixed	0	0	0	0
22	Fixed	0	0	0	0
23	Fixed	0	0	0	0
24	Fixed	0	0	0	0
25	Fixed	0	0	0	0
26	Fixed	0	0	0	0
27	Fixed	0	0	0	0
28	Fixed	0	0	0	0
29	Fixed	0	0	0	0
30	Fixed	0	0	0	0
31	Fixed	0	0	0	0
32	Fixed	0	0	0	0
33	Fixed	0	0	0	0
34	Fixed	0	0	0	0
35	Fixed	0	0	0	0
36	Fixed	0	0	0	0

NIC Program Steps

Step	Program	Step Begins	Pattern	Override

TOD Program Steps

APPENDIX F

Synchro Software Output Reports

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	149	19	6	84	13	19
Future Volume (Veh/h)	149	19	6	84	13	19
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)	162	21	7	91	14	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			183		278	172
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			183		278	172
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	98
cM capacity (veh/h)			1404		713	876

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	183	98	35
Volume Left	0	7	14
Volume Right	21	0	21
cSH	1700	1404	803
Volume to Capacity	0.11	0.00	0.04
Queue Length 95th (m)	0.0	0.1	1.0
Control Delay (s)	0.0	0.6	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	9.7
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	49	10	293	39	284
v/c Ratio	0.17	0.15	0.01	0.21	0.04	0.21
Control Delay	11.3	11.3	4.7	4.1	4.4	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	11.3	4.7	4.1	4.4	4.3
Queue Length 50th (m)	1.0	0.9	0.0	0.0	0.0	0.0
Queue Length 95th (m)	8.4	7.8	1.7	20.9	4.2	21.3
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	986	984	1022	1597	1013	1536
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	0.05	0.05	0.01	0.18	0.04	0.18

Intersection Summary

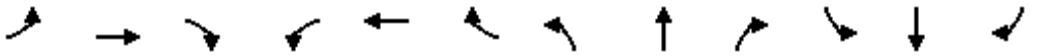
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	10	24	15	6	22	9	223	37	35	244	9
Future Volume (vph)	14	10	24	15	6	22	9	223	37	35	244	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.93		1.00	0.98		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1765			1728		1825	1759		1825	1691	
Flt Permitted		0.88			0.90		0.59	1.00		0.58	1.00	
Satd. Flow (perm)		1581			1579		1125	1759		1116	1691	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	16	11	27	17	7	25	10	251	42	39	274	10
RTOR Reduction (vph)	0	25	0	0	23	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	29	0	0	26	0	10	288	0	39	283	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		3.0			3.0		30.1	30.1		30.1	30.1	
Effective Green, g (s)		3.0			3.0		30.1	30.1		30.1	30.1	
Actuated g/C Ratio		0.06			0.06		0.65	0.65		0.65	0.65	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		101			101		726	1136		720	1092	
v/s Ratio Prot								0.16			c0.17	
v/s Ratio Perm		c0.02			0.02		0.01			0.03		
v/c Ratio		0.28			0.25		0.01	0.25		0.05	0.26	
Uniform Delay, d1		20.8			20.7		2.9	3.5		3.0	3.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.6			1.3		0.0	0.2		0.1	0.3	
Delay (s)		22.3			22.1		3.0	3.7		3.1	3.8	
Level of Service		C			C		A	A		A	A	
Approach Delay (s)		22.3			22.1			3.7			3.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	46.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	12	0	2	12	8	4
Future Volume (Veh/h)	12	0	2	12	8	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	15	0	2	15	10	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			15		34	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			15		34	15
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1616		983	1070

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	15	17	15
Volume Left	0	2	10
Volume Right	0	0	5
cSH	1700	1616	1011
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.9	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.9	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



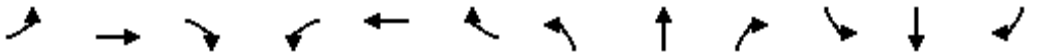
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	40	18	32	39	26	10	142	97	31	176	20
Future Volume (Veh/h)	11	40	18	32	39	26	10	142	97	31	176	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	11	42	19	33	41	27	10	148	101	32	183	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	462	516	183	455	436	148	204			249		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	462	516	183	455	436	148	204			249		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	98	91	98	93	92	97	99			97		
cM capacity (veh/h)	454	450	865	455	491	861	1316			1250		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	101	158	101	215	21
Volume Left	11	33	10	0	32	0
Volume Right	19	27	0	101	0	21
cSH	516	539	1316	1700	1250	1700
Volume to Capacity	0.14	0.19	0.01	0.06	0.03	0.01
Queue Length 95th (m)	3.7	5.2	0.2	0.0	0.6	0.0
Control Delay (s)	13.1	13.2	0.6	0.0	1.4	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	13.1	13.2	0.3		1.3	
Approach LOS	B	B				

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	39.0%	ICU Level of Service		A
Analysis Period (min)	15			

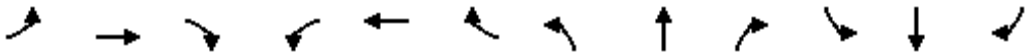
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	120	174	17	68	66	189	13	173	87
v/c Ratio	0.49	0.41	0.07	0.18	0.10	0.19	0.02	0.18	0.09
Control Delay	28.5	11.4	19.7	14.8	6.8	6.5	6.5	7.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	11.4	19.7	14.8	6.8	6.5	6.5	7.1	2.2
Queue Length 50th (m)	11.9	5.5	1.5	3.8	2.7	7.3	0.5	7.5	0.0
Queue Length 95th (m)	23.6	17.4	5.4	11.4	8.2	17.5	2.6	17.5	4.6
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	413	635	412	618	669	997	713	936	922
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.27	0.04	0.11	0.10	0.19	0.02	0.18	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	51	99	15	36	22	57	139	23	11	149	75
Future Volume (vph)	103	51	99	15	36	22	57	139	23	11	149	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1686		1825	1811		1690	1705		1825	1614	1526
Flt Permitted	0.71	1.00		0.65	1.00		0.65	1.00		0.64	1.00	1.00
Satd. Flow (perm)	1245	1686		1244	1811		1153	1705		1227	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	120	59	115	17	42	26	66	162	27	13	173	87
RTOR Reduction (vph)	0	92	0	0	21	0	0	8	0	0	0	36
Lane Group Flow (vph)	120	82	0	17	47	0	66	181	0	13	173	51
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	12.0	12.0		12.0	12.0		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	12.0	12.0		12.0	12.0		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.58	0.58		0.58	0.58	0.58
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	334		247	359		670	990		713	937	886
v/s Ratio Prot		0.05			0.03			0.11			c0.11	
v/s Ratio Perm	c0.10			0.01			0.06			0.01		0.03
v/c Ratio	0.49	0.25		0.07	0.13		0.10	0.18		0.02	0.18	0.06
Uniform Delay, d1	21.5	20.4		19.7	19.9		5.6	5.9		5.4	5.9	5.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.4		0.1	0.2		0.1	0.1		0.0	0.1	0.0
Delay (s)	23.0	20.8		19.8	20.1		5.7	6.0		5.4	6.0	5.5
Level of Service	C	C		B	C		A	A		A	A	A
Approach Delay (s)		21.7			20.0			5.9			5.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	13.3
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	259	0	7	272	1	2	1	8	3	2	1
Future Volume (Veh/h)	1	259	0	7	272	1	2	1	8	3	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	276	0	7	289	1	2	1	9	3	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	290			276			583	582	276	590	581	289
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290			276			583	582	276	590	581	289
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	99	100	100
cM capacity (veh/h)	1283			1299			423	425	768	414	425	755

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	277	0	296	1	12	6
Volume Left	1	0	7	0	2	3
Volume Right	0	0	0	1	9	1
cSH	1283	1700	1299	1700	638	452
Volume to Capacity	0.00	0.00	0.01	0.00	0.02	0.01
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.4	0.3
Control Delay (s)	0.0	0.0	0.2	0.0	10.8	13.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.0		0.2		10.8	13.1
Approach LOS					B	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	17	21	0	4	11
Future Volume (Veh/h)	0	17	21	0	4	11
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	18	23	0	4	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	43	23			23	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43	23			23	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	971	1060			1605	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	23	16
Volume Left	0	0	4
Volume Right	18	0	0
cSH	1060	1700	1605
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (m)	0.4	0.0	0.1
Control Delay (s)	8.5	0.0	1.8
Lane LOS	A		A
Approach Delay (s)	8.5	0.0	1.8
Approach LOS	A		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	14.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	197	21	15	163	22	8
Future Volume (Veh/h)	197	21	15	163	22	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	210	22	16	173	23	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			232		426	221
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			232		426	221
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	99
cM capacity (veh/h)			1348		582	824

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	232	189	32
Volume Left	0	16	23
Volume Right	22	0	9
cSH	1700	1348	634
Volume to Capacity	0.14	0.01	0.05
Queue Length 95th (m)	0.0	0.3	1.2
Control Delay (s)	0.0	0.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	93	30	431	34	473
v/c Ratio	0.13	0.31	0.04	0.34	0.05	0.37
Control Delay	12.5	15.2	6.0	6.7	6.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	15.2	6.0	6.7	6.0	7.0
Queue Length 50th (m)	1.5	4.5	1.0	18.0	1.2	20.8
Queue Length 95th (m)	7.4	14.1	4.1	39.2	4.6	44.3
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	910	856	774	1447	806	1480
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	0.04	0.11	0.04	0.30	0.04	0.32

Intersection Summary

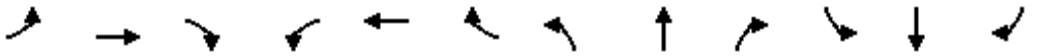
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	11	17	48	13	28	29	371	43	33	437	17
Future Volume (vph)	11	11	17	48	13	28	29	371	43	33	437	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.96		1.00	0.98		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1780			1773		1825	1765		1825	1806	
Flt Permitted		0.88			0.81		0.49	1.00		0.51	1.00	
Satd. Flow (perm)		1579			1475		946	1765		983	1806	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	11	18	50	14	29	30	386	45	34	455	18
RTOR Reduction (vph)	0	16	0	0	26	0	0	4	0	0	2	0
Lane Group Flow (vph)	0	24	0	0	67	0	30	427	0	34	471	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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)		5.3			5.3		29.4	29.4		29.4	29.4	
Effective Green, g (s)		5.3			5.3		29.4	29.4		29.4	29.4	
Actuated g/C Ratio		0.11			0.11		0.61	0.61		0.61	0.61	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		173			162		577	1076		599	1101	
v/s Ratio Prot								0.24			c0.26	
v/s Ratio Perm		0.02			c0.05		0.03			0.03		
v/c Ratio		0.14			0.41		0.05	0.40		0.06	0.43	
Uniform Delay, d1		19.4			20.0		3.8	4.8		3.8	5.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			1.7		0.1	0.5		0.1	0.6	
Delay (s)		19.8			21.7		3.9	5.3		3.9	5.5	
Level of Service		B			C		A	A		A	A	
Approach Delay (s)		19.8			21.7			5.2			5.4	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	15	6	11	17	7	1
Future Volume (Veh/h)	15	6	11	17	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	18	7	13	20	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			25		68	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			25		68	22
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1603		935	1062

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	25	33	9
Volume Left	0	13	8
Volume Right	7	0	1
cSH	1700	1603	947
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (m)	0.0	0.2	0.2
Control Delay (s)	0.0	2.9	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	2.9	8.8
Approach LOS			A

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	18.2%	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)	15	36	25	85	67	34	18	329	161	18	244	9
Future Volume (Veh/h)	15	36	25	85	67	34	18	329	161	18	244	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	38	26	89	71	36	19	346	169	19	257	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	750	848	257	724	688	346	266			515		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	750	848	257	724	688	346	266			515		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	94	87	97	69	80	95	99			98		
cM capacity (veh/h)	251	291	787	291	357	673	1310			1030		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	80	196	365	169	276	9
Volume Left	16	89	19	0	19	0
Volume Right	26	36	0	169	0	9
cSH	352	351	1310	1700	1030	1700
Volume to Capacity	0.23	0.56	0.01	0.10	0.02	0.01
Queue Length 95th (m)	6.5	24.7	0.3	0.0	0.4	0.0
Control Delay (s)	18.2	27.5	0.5	0.0	0.8	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	18.2	27.5	0.4		0.7	
Approach LOS	C	D				

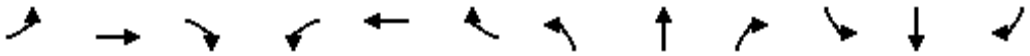
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	55.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	165	150	16	60	118	253	9	322	121
v/c Ratio	0.58	0.33	0.06	0.15	0.20	0.27	0.01	0.32	0.13
Control Delay	30.0	8.5	18.9	13.7	8.5	7.9	7.4	8.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	8.5	18.9	13.7	8.5	7.9	7.4	8.9	2.2
Queue Length 50th (m)	16.8	2.8	1.5	3.3	5.6	11.6	0.4	16.6	0.0
Queue Length 95th (m)	32.8	14.5	5.4	10.9	15.9	28.1	2.4	37.4	6.5
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	430	629	412	602	605	953	657	1010	952
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.24	0.04	0.10	0.20	0.27	0.01	0.32	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	29	112	15	34	23	111	205	33	8	303	114
Future Volume (vph)	155	29	112	15	34	23	111	205	33	8	303	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1692		1825	1806		1789	1666		1825	1779	1585
Flt Permitted	0.72	1.00		0.66	1.00		0.57	1.00		0.60	1.00	1.00
Satd. Flow (perm)	1326	1692		1271	1806		1065	1666		1157	1779	1585
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)	165	31	119	16	36	24	118	218	35	9	322	121
RTOR Reduction (vph)	0	93	0	0	19	0	0	7	0	0	0	52
Lane Group Flow (vph)	165	57	0	16	41	0	118	246	0	9	322	69
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	13.4	13.4		13.4	13.4		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	13.4	13.4		13.4	13.4		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.57	0.57		0.57	0.57	0.57
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	287	366		275	391		604	946		657	1010	900
v/s Ratio Prot		0.03			0.02			0.15			c0.18	
v/s Ratio Perm	c0.12			0.01			0.11			0.01		0.04
v/c Ratio	0.57	0.16		0.06	0.11		0.20	0.26		0.01	0.32	0.08
Uniform Delay, d1	21.7	19.6		19.2	19.4		6.5	6.8		5.8	7.0	6.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.2		0.1	0.1		0.2	0.1		0.0	0.2	0.0
Delay (s)	24.4	19.8		19.3	19.5		6.6	6.9		5.8	7.2	6.1
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		22.2			19.5			6.8			6.9	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	13.3
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	460	7	10	361	10	7	3	12	3	0	4
Future Volume (Veh/h)	3	460	7	10	361	10	7	3	12	3	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	529	8	11	415	11	8	3	14	3	0	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	426			537			977	983	529	988	980	415
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426			537			977	983	529	988	980	415
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			96	99	97	99	100	99
cM capacity (veh/h)	1144			1041			228	247	554	218	248	642

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	532	8	426	11	25	8
Volume Left	3	0	11	0	8	3
Volume Right	0	8	0	11	14	5
cSH	1144	1700	1041	1700	345	371
Volume to Capacity	0.00	0.00	0.01	0.01	0.07	0.02
Queue Length 95th (m)	0.1	0.0	0.2	0.0	1.8	0.5
Control Delay (s)	0.1	0.0	0.3	0.0	16.3	14.9
Lane LOS	A		A		C	B
Approach Delay (s)	0.1		0.3		16.3	14.9
Approach LOS					C	B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	7	19	6	19	17
Future Volume (Veh/h)	3	7	19	6	19	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	10	26	8	26	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	106	30			34	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	106	30			34	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			98	
cM capacity (veh/h)	882	1050			1591	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	34	50
Volume Left	4	0	26
Volume Right	10	8	0
cSH	996	1700	1591
Volume to Capacity	0.01	0.02	0.02
Queue Length 95th (m)	0.3	0.0	0.4
Control Delay (s)	8.7	0.0	3.9
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	3.9
Approach LOS	A		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	167	35	17	138	70	53
Future Volume (Veh/h)	167	35	17	138	70	53
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)	182	38	18	150	76	58
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			220		387	201
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			220		387	201
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	93
cM capacity (veh/h)			1361		612	845

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	220	168	134
Volume Left	0	18	76
Volume Right	38	0	58
cSH	1700	1361	695
Volume to Capacity	0.13	0.01	0.19
Queue Length 95th (m)	0.0	0.3	5.4
Control Delay (s)	0.0	0.9	11.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	11.4
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	112	170	28	389	97	290
v/c Ratio	0.30	0.41	0.04	0.36	0.15	0.28
Control Delay	9.2	9.2	6.0	7.0	6.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	9.2	6.0	7.0	6.9	7.1
Queue Length 50th (m)	1.9	2.5	1.0	14.0	3.5	11.4
Queue Length 95th (m)	11.0	13.7	3.8	31.0	10.1	24.7
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	972	988	869	1339	794	1316
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	0.12	0.17	0.03	0.29	0.12	0.22

Intersection Summary

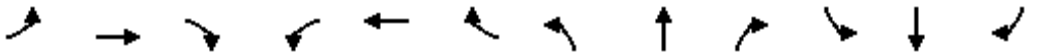
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	10	75	16	16	119	25	228	118	86	249	9
Future Volume (vph)	15	10	75	16	16	119	25	228	118	86	249	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.89		1.00	0.95		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714			1699		1825	1709		1825	1691	
Flt Permitted		0.94			0.95		0.58	1.00		0.53	1.00	
Satd. Flow (perm)		1621			1614		1119	1709		1022	1691	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	17	11	84	18	18	134	28	256	133	97	280	10
RTOR Reduction (vph)	0	72	0	0	115	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	40	0	0	55	0	28	369	0	97	289	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		6.7			6.7		26.2	26.2		26.2	26.2	
Effective Green, g (s)		6.7			6.7		26.2	26.2		26.2	26.2	
Actuated g/C Ratio		0.14			0.14		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		234			233		631	964		577	954	
v/s Ratio Prot								c0.22			0.17	
v/s Ratio Perm		0.02			c0.03		0.03			0.09		
v/c Ratio		0.17			0.24		0.04	0.38		0.17	0.30	
Uniform Delay, d1		17.4			17.6		4.5	5.6		4.9	5.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.5		0.1	0.5		0.3	0.4	
Delay (s)		17.8			18.1		4.6	6.1		5.1	5.7	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		17.8			18.1			6.0			5.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	62	0	2	38	8	4
Future Volume (Veh/h)	62	0	2	38	8	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	78	0	2	48	10	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			78		130	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			78		130	78
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1533		868	988

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	78	50	15
Volume Left	0	2	10
Volume Right	0	0	5
cSH	1700	1533	905
Volume to Capacity	0.05	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.3	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.0
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.6%	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)	11	40	18	72	39	98	10	145	112	50	180	20
Future Volume (Veh/h)	11	40	18	72	39	98	10	145	112	50	180	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	11	42	19	75	41	102	10	151	117	52	188	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	586	580	188	503	484	151	209			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	586	580	188	503	484	151	209			268		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	97	90	98	82	91	88	99			96		
cM capacity (veh/h)	336	407	859	414	453	857	1310			1229		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	218	161	117	240	21
Volume Left	11	75	10	0	52	0
Volume Right	19	102	0	117	0	21
cSH	456	558	1310	1700	1229	1700
Volume to Capacity	0.16	0.39	0.01	0.07	0.04	0.01
Queue Length 95th (m)	4.2	14.0	0.2	0.0	1.0	0.0
Control Delay (s)	14.4	15.5	0.5	0.0	2.0	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.4	15.5	0.3		1.9	
Approach LOS	B	C				

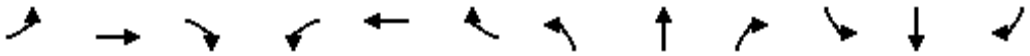
Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	49.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	196	19	69	129	192	13	176	99
v/c Ratio	0.57	0.42	0.07	0.17	0.20	0.20	0.02	0.19	0.11
Control Delay	30.4	10.3	19.2	14.3	8.4	7.2	7.3	7.9	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	10.3	19.2	14.3	8.4	7.2	7.3	7.9	2.4
Queue Length 50th (m)	15.5	5.6	1.7	3.9	6.1	8.1	0.6	8.3	0.0
Queue Length 95th (m)	29.1	17.7	5.7	11.4	16.0	19.6	2.8	19.7	5.3
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	424	661	415	635	653	977	696	918	910
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.30	0.05	0.11	0.20	0.20	0.02	0.19	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	52	117	16	37	22	111	141	24	11	151	85
Future Volume (vph)	131	52	117	16	37	22	111	141	24	11	151	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1675		1825	1813		1690	1704		1825	1614	1526
Flt Permitted	0.71	1.00		0.63	1.00		0.65	1.00		0.64	1.00	1.00
Satd. Flow (perm)	1244	1675		1219	1813		1149	1704		1223	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	152	60	136	19	43	26	129	164	28	13	176	99
RTOR Reduction (vph)	0	107	0	0	20	0	0	8	0	0	0	43
Lane Group Flow (vph)	152	89	0	19	49	0	129	184	0	13	176	56
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	13.2	13.2		13.2	13.2		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	13.2	13.2		13.2	13.2		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.57	0.57		0.57	0.57	0.57
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	266	358		261	388		654	970		696	919	869
v/s Ratio Prot		0.05			0.03			0.11			0.11	
v/s Ratio Perm	c0.12			0.02			c0.11			0.01		0.04
v/c Ratio	0.57	0.25		0.07	0.13		0.20	0.19		0.02	0.19	0.06
Uniform Delay, d1	21.7	20.1		19.3	19.5		6.4	6.4		5.8	6.4	5.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.4		0.1	0.1		0.1	0.1		0.0	0.1	0.0
Delay (s)	24.6	20.5		19.4	19.7		6.6	6.5		5.8	6.5	6.0
Level of Service	C	C		B	B		A	A		A	A	A
Approach Delay (s)		22.3			19.6			6.5			6.3	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	13.3
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	331	0	7	405	1	2	1	8	3	2	1
Future Volume (Veh/h)	1	331	0	7	405	1	2	1	8	3	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	352	0	7	431	1	2	1	9	3	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	432			352			801	800	352	808	799	431
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432			352			801	800	352	808	799	431
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	99	99	100
cM capacity (veh/h)	1138			1218			302	318	696	295	319	629

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	353	0	438	1	12	6
Volume Left	1	0	7	0	2	3
Volume Right	0	0	0	1	9	1
cSH	1138	1700	1218	1700	529	333
Volume to Capacity	0.00	0.00	0.01	0.00	0.02	0.02
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.5	0.4
Control Delay (s)	0.0	0.0	0.2	0.0	12.0	16.0
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		12.0	16.0
Approach LOS					B	C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	36.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	17	47	0	4	61
Future Volume (Veh/h)	0	17	47	0	4	61
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	18	51	0	4	66
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	125	51			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125	51			51	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	872	1023			1568	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	51	70
Volume Left	0	0	4
Volume Right	18	0	0
cSH	1023	1700	1568
Volume to Capacity	0.02	0.03	0.00
Queue Length 95th (m)	0.4	0.0	0.1
Control Delay (s)	8.6	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.6	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	268	99	50	208	98	30
Future Volume (Veh/h)	268	99	50	208	98	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	285	105	53	221	104	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			390		664	338
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			390		664	338
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		75	95
cM capacity (veh/h)			1180		409	709

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	390	274	136
Volume Left	0	53	104
Volume Right	105	0	32
cSH	1700	1180	454
Volume to Capacity	0.23	0.04	0.30
Queue Length 95th (m)	0.0	1.1	9.4
Control Delay (s)	0.0	1.9	16.3
Lane LOS		A	C
Approach Delay (s)	0.0	1.9	16.3
Approach LOS			C

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	214	82	614	152	482
v/c Ratio	0.26	0.55	0.18	0.66	0.43	0.51
Control Delay	12.6	19.1	8.2	12.7	12.9	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	19.1	8.2	12.7	12.9	10.6
Queue Length 50th (m)	3.7	10.6	3.4	31.9	7.4	24.5
Queue Length 95th (m)	15.5	31.8	10.9	73.8	23.2	54.2
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	898	841	609	1202	462	1240
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	0.12	0.25	0.13	0.51	0.33	0.39

Intersection Summary

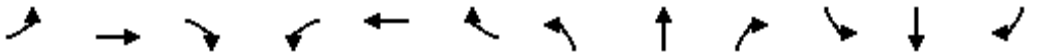
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	41	49	49	58	99	79	378	211	146	445	17
Future Volume (vph)	11	41	49	49	58	99	79	378	211	146	445	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.94		1.00	0.95		1.00	0.99	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786			1767		1825	1729		1825	1806	
Flt Permitted		0.95			0.89		0.46	1.00		0.35	1.00	
Satd. Flow (perm)		1712			1585		889	1729		674	1806	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	43	51	51	60	103	82	394	220	152	464	18
RTOR Reduction (vph)	0	40	0	0	54	0	0	24	0	0	2	0
Lane Group Flow (vph)	0	65	0	0	160	0	82	590	0	152	480	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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		27.3	27.3		27.3	27.3	
Effective Green, g (s)		10.9			10.9		27.3	27.3		27.3	27.3	
Actuated g/C Ratio		0.21			0.21		0.53	0.53		0.53	0.53	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		360			334		469	912		355	953	
v/s Ratio Prot								c0.34			0.27	
v/s Ratio Perm		0.04			c0.10		0.09			0.23		
v/c Ratio		0.18			0.48		0.17	0.65		0.43	0.50	
Uniform Delay, d1		16.7			17.9		6.3	8.7		7.4	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			1.1		0.4	2.2		1.7	0.9	
Delay (s)		17.0			19.0		6.7	10.9		9.2	8.7	
Level of Service		B			B		A	B		A	A	
Approach Delay (s)		17.0			19.0			10.4			8.8	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	78	6	11	112	7	1
Future Volume (Veh/h)	78	6	11	112	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	92	7	13	132	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			99		254	96
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		254	96
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1507		733	967

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	99	145	9
Volume Left	0	13	8
Volume Right	7	0	1
cSH	1700	1507	753
Volume to Capacity	0.06	0.01	0.01
Queue Length 95th (m)	0.0	0.2	0.3
Control Delay (s)	0.0	0.7	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.7	9.8
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



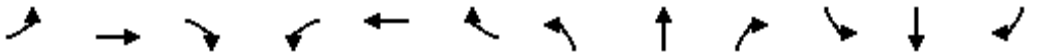
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	37	26	111	68	123	18	335	204	123	249	9
Future Volume (Veh/h)	16	37	26	111	68	123	18	335	204	123	249	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	39	27	117	72	129	19	353	215	129	262	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1076	1126	262	958	920	353	271			568		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1076	1126	262	958	920	353	271			568		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	84	78	97	31	69	81	99			87		
cM capacity (veh/h)	106	177	782	171	232	667	1304			985		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	318	372	215	391	9
Volume Left	17	117	19	0	129	0
Volume Right	27	129	0	215	0	9
cSH	200	267	1304	1700	985	1700
Volume to Capacity	0.42	1.19	0.01	0.13	0.13	0.01
Queue Length 95th (m)	14.4	110.5	0.3	0.0	3.4	0.0
Control Delay (s)	35.3	156.2	0.5	0.0	4.0	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	35.3	156.2	0.3		3.9	
Approach LOS	E	F				

Intersection Summary				
Average Delay	39.2			
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			

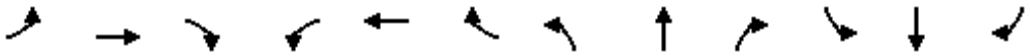
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	186	224	17	63	165	258	9	329	152
v/c Ratio	0.62	0.42	0.06	0.15	0.28	0.27	0.01	0.33	0.16
Control Delay	31.0	7.5	18.6	13.2	9.9	8.5	7.9	9.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	7.5	18.6	13.2	9.9	8.5	7.9	9.5	2.2
Queue Length 50th (m)	19.3	2.8	1.5	3.4	8.7	12.6	0.4	18.0	0.0
Queue Length 95th (m)	36.6	16.7	5.6	11.0	23.3	30.1	2.5	40.5	7.5
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	443	689	385	621	591	939	644	995	953
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.33	0.04	0.10	0.28	0.27	0.01	0.33	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	29	181	16	35	24	155	209	34	8	309	143
Future Volume (vph)	175	29	181	16	35	24	155	209	34	8	309	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1673		1825	1802		1789	1666		1825	1779	1585
Flt Permitted	0.72	1.00		0.60	1.00		0.56	1.00		0.60	1.00	1.00
Satd. Flow (perm)	1322	1673		1148	1802		1058	1666		1152	1779	1585
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)	186	31	193	17	37	26	165	222	36	9	329	152
RTOR Reduction (vph)	0	149	0	0	20	0	0	7	0	0	0	67
Lane Group Flow (vph)	186	75	0	17	43	0	165	251	0	9	329	85
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	14.3	14.3		14.3	14.3		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	14.3	14.3		14.3	14.3		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.56	0.56		0.56	0.56	0.56
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	301	381		261	410		592	932		644	995	887
v/s Ratio Prot		0.04			0.02			0.15			c0.18	
v/s Ratio Perm	c0.14			0.01			0.16			0.01		0.05
v/c Ratio	0.62	0.20		0.07	0.10		0.28	0.27		0.01	0.33	0.10
Uniform Delay, d1	21.7	19.6		19.0	19.1		7.2	7.2		6.1	7.5	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	0.3		0.1	0.1		0.3	0.2		0.0	0.2	0.0
Delay (s)	25.5	19.8		19.1	19.3		7.5	7.3		6.1	7.7	6.5
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		22.4			19.2			7.4			7.3	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	13.3
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	618	7	10	417	10	7	3	12	3	0	4
Future Volume (Veh/h)	3	618	7	10	417	10	7	3	12	3	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	710	8	11	479	11	8	3	14	3	0	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	490			718			1222	1228	710	1232	1225	479
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	490			718			1222	1228	710	1232	1225	479
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			95	98	97	98	100	99
cM capacity (veh/h)	1084			892			155	177	437	147	178	591

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	713	8	490	11	25	8
Volume Left	3	0	11	0	8	3
Volume Right	0	8	0	11	14	5
cSH	1084	1700	892	1700	248	277
Volume to Capacity	0.00	0.00	0.01	0.01	0.10	0.03
Queue Length 95th (m)	0.1	0.0	0.3	0.0	2.5	0.7
Control Delay (s)	0.1	0.0	0.4	0.0	21.1	18.4
Lane LOS	A		A		C	C
Approach Delay (s)	0.1		0.3		21.1	18.4
Approach LOS					C	C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	7	114	6	19	79
Future Volume (Veh/h)	3	7	114	6	19	79
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	10	158	8	26	110
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	324	162			166	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324	162			166	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	662	888			1424	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	166	136
Volume Left	4	0	26
Volume Right	10	8	0
cSH	809	1700	1424
Volume to Capacity	0.02	0.10	0.02
Queue Length 95th (m)	0.4	0.0	0.4
Control Delay (s)	9.5	0.0	1.6
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	1.6
Approach LOS	A		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	202	35	27	150	70	84
Future Volume (Veh/h)	202	35	27	150	70	84
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)	220	38	29	163	76	91
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			258		460	239
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			258		460	239
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		86	89
cM capacity (veh/h)			1318		551	805

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	258	192	167
Volume Left	0	29	76
Volume Right	38	0	91
cSH	1700	1318	665
Volume to Capacity	0.15	0.02	0.25
Queue Length 95th (m)	0.0	0.5	7.5
Control Delay (s)	0.0	1.3	12.2
Lane LOS		A	B
Approach Delay (s)	0.0	1.3	12.2
Approach LOS			B

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	222	322	65	389	97	290
v/c Ratio	0.35	0.74	0.13	0.49	0.22	0.38
Control Delay	5.2	25.1	11.8	13.3	13.0	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	25.1	11.8	13.3	13.0	13.4
Queue Length 50th (m)	1.9	22.8	3.6	22.2	5.6	18.0
Queue Length 95th (m)	13.7	49.8	11.6	52.5	16.8	41.7
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	867	648	710	1103	625	1077
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	0.50	0.09	0.35	0.16	0.27

Intersection Summary

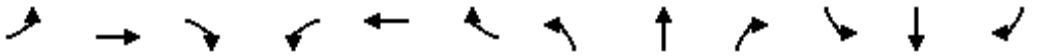
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	10	173	151	16	119	58	228	118	86	249	9
Future Volume (vph)	15	10	173	151	16	119	58	228	118	86	249	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.88			0.94		1.00	0.95		1.00	0.99	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1688			1721		1825	1709		1825	1691	
Flt Permitted		0.96			0.74		0.58	1.00		0.51	1.00	
Satd. Flow (perm)		1620			1313		1119	1709		984	1691	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	17	11	194	170	18	134	65	256	133	97	280	10
RTOR Reduction (vph)	0	134	0	0	37	0	0	26	0	0	2	0
Lane Group Flow (vph)	0	88	0	0	285	0	65	363	0	97	288	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		17.1			17.1		25.1	25.1		25.1	25.1	
Effective Green, g (s)		17.1			17.1		25.1	25.1		25.1	25.1	
Actuated g/C Ratio		0.31			0.31		0.45	0.45		0.45	0.45	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		497			403		504	770		443	762	
v/s Ratio Prot								c0.21			0.17	
v/s Ratio Perm		0.05			c0.22		0.06			0.10		
v/c Ratio		0.18			0.71		0.13	0.47		0.22	0.38	
Uniform Delay, d1		14.1			17.1		8.9	10.7		9.3	10.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			5.6		0.2	1.0		0.5	0.7	
Delay (s)		14.3			22.7		9.2	11.6		9.8	10.8	
Level of Service		B			C		A	B		A	B	
Approach Delay (s)		14.3			22.7			11.3			10.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	0	2	71	8	4
Future Volume (Veh/h)	160	0	2	71	8	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	200	0	2	89	10	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			200		293	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		293	200
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	99
cM capacity (veh/h)			1384		701	846

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	200	91	15
Volume Left	0	2	10
Volume Right	0	0	5
cSH	1700	1384	744
Volume to Capacity	0.12	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.5
Control Delay (s)	0.0	0.2	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	18.4%	ICU Level of Service	A
Analysis Period (min)	15		



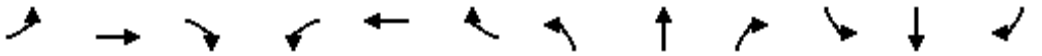
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	40	18	149	39	113	10	145	137	55	180	20
Future Volume (Veh/h)	11	40	18	149	39	113	10	145	137	55	180	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	11	42	19	155	41	118	10	151	143	57	188	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	612	616	188	513	494	151	209			294		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	612	616	188	513	494	151	209			294		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	96	89	98	62	91	86	99			95		
cM capacity (veh/h)	314	386	859	404	445	857	1310			1202		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	314	161	143	245	21
Volume Left	11	155	10	0	57	0
Volume Right	19	118	0	143	0	21
cSH	434	512	1310	1700	1202	1700
Volume to Capacity	0.17	0.61	0.01	0.08	0.05	0.01
Queue Length 95th (m)	4.5	31.0	0.2	0.0	1.1	0.0
Control Delay (s)	14.9	22.5	0.5	0.0	2.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.9	22.5	0.3		2.1	
Approach LOS	B	C				

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			

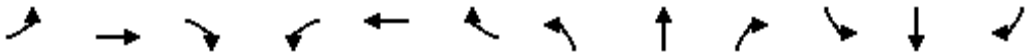
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	212	196	19	69	67	192	13	176	119
v/c Ratio	0.70	0.38	0.06	0.15	0.11	0.20	0.02	0.20	0.13
Control Delay	35.1	9.4	18.2	13.5	8.8	8.2	8.3	9.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	9.4	18.2	13.5	8.8	8.2	8.3	9.1	2.5
Queue Length 50th (m)	22.9	5.6	1.7	3.9	3.5	9.5	0.7	9.7	0.0
Queue Length 95th (m)	40.4	17.5	5.7	11.3	9.6	20.7	3.0	20.7	6.0
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	408	642	400	613	629	942	671	884	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.31	0.05	0.11	0.11	0.20	0.02	0.20	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	52	117	16	37	22	58	141	24	11	151	102
Future Volume (vph)	182	52	117	16	37	22	58	141	24	11	151	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1675		1825	1813		1690	1704		1825	1614	1526
Flt Permitted	0.71	1.00		0.63	1.00		0.65	1.00		0.64	1.00	1.00
Satd. Flow (perm)	1244	1675		1219	1813		1149	1704		1223	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	212	60	136	19	43	26	67	164	28	13	176	119
RTOR Reduction (vph)	0	103	0	0	20	0	0	8	0	0	0	54
Lane Group Flow (vph)	212	93	0	19	49	0	67	184	0	13	176	65
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.6	15.6		15.6	15.6		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.6	15.6		15.6	15.6		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	303	408		297	441		630	934		670	885	836
v/s Ratio Prot		0.06			0.03			0.11			c0.11	
v/s Ratio Perm	c0.17			0.02			0.06			0.01		0.04
v/c Ratio	0.70	0.23		0.06	0.11		0.11	0.20		0.02	0.20	0.08
Uniform Delay, d1	22.1	19.4		18.6	18.8		6.9	7.3		6.6	7.3	6.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.9	0.3		0.1	0.1		0.1	0.1		0.0	0.1	0.0
Delay (s)	29.0	19.7		18.7	18.9		7.0	7.4		6.6	7.4	6.9
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		24.5			18.9			7.3			7.2	
Approach LOS		C			B			A			A	

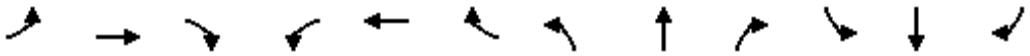
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	364	0	7	503	1	2	1	8	3	2	1
Future Volume (Veh/h)	1	364	0	7	503	1	2	1	8	3	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	387	0	7	535	1	2	1	9	3	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	536			387			940	939	387	948	938	535
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536			387			940	939	387	948	938	535
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	99	99	100
cM capacity (veh/h)	1042			1183			243	264	665	238	265	549

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	388	0	542	1	12	6
Volume Left	1	0	7	0	2	3
Volume Right	0	0	0	1	9	1
cSH	1042	1700	1183	1700	470	273
Volume to Capacity	0.00	0.00	0.01	0.00	0.03	0.02
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.6	0.5
Control Delay (s)	0.0	0.0	0.2	0.0	12.9	18.5
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		12.9	18.5
Approach LOS					B	C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	42.1%	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)	31	0	98	0	0	17	33	47	0	4	61	10
Future Volume (Veh/h)	31	0	98	0	0	17	33	47	0	4	61	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	0	107	0	0	18	36	51	0	4	66	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	220	202	72	310	208	51	77			51		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	202	72	310	208	51	77			51		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	89	100	100	98	98			100		
cM capacity (veh/h)	712	679	996	566	674	1023	1535			1568		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	18	87	81
Volume Left	34	0	36	4
Volume Right	107	18	0	11
cSH	909	1023	1535	1568
Volume to Capacity	0.16	0.02	0.02	0.00
Queue Length 95th (m)	4.2	0.4	0.5	0.1
Control Delay (s)	9.7	8.6	3.2	0.4
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	8.6	3.2	0.4
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	203	30	12	209	92	35
Future Volume (Veh/h)	203	30	12	209	92	35
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)	221	33	13	227	100	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			254		490	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			254		490	238
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		81	95
cM capacity (veh/h)			1323		535	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	254	240	138
Volume Left	0	13	100
Volume Right	33	0	38
cSH	1700	1323	590
Volume to Capacity	0.15	0.01	0.23
Queue Length 95th (m)	0.0	0.2	6.9
Control Delay (s)	0.0	0.5	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	13.0
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	291	99	83	247	98	50
Future Volume (Veh/h)	291	99	83	247	98	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	310	105	88	263	104	53
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			415		802	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			415		802	362
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		68	92
cM capacity (veh/h)			1155		329	687

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	415	351	157
Volume Left	0	88	104
Volume Right	105	0	53
cSH	1700	1155	399
Volume to Capacity	0.24	0.08	0.39
Queue Length 95th (m)	0.0	1.9	13.9
Control Delay (s)	0.0	2.7	19.7
Lane LOS		A	C
Approach Delay (s)	0.0	2.7	19.7
Approach LOS			C

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	171	273	192	614	152	482
v/c Ratio	0.33	0.66	0.45	0.69	0.48	0.53
Control Delay	8.9	24.4	14.9	15.8	17.5	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	24.4	14.9	15.8	17.5	13.2
Queue Length 50th (m)	4.0	19.2	11.6	39.7	9.4	30.4
Queue Length 95th (m)	17.4	46.0	33.7	93.6	30.6	68.9
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	850	720	532	1106	393	1137
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	0.20	0.38	0.36	0.56	0.39	0.42

Intersection Summary

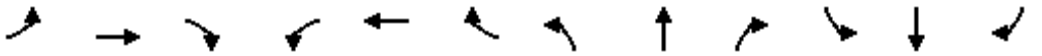
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	41	112	106	58	99	184	378	211	146	445	17
Future Volume (vph)	11	41	112	106	58	99	184	378	211	146	445	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.95		1.00	0.95		1.00	0.99	
Flt Protected		1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1773		1825	1729		1825	1806	
Flt Permitted		0.97			0.82		0.44	1.00		0.33	1.00	
Satd. Flow (perm)		1686			1491		846	1729		625	1806	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	43	117	110	60	103	192	394	220	152	464	18
RTOR Reduction (vph)	0	87	0	0	33	0	0	25	0	0	2	0
Lane Group Flow (vph)	0	84	0	0	240	0	192	589	0	152	480	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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)		14.7			14.7		28.8	28.8		28.8	28.8	
Effective Green, g (s)		14.7			14.7		28.8	28.8		28.8	28.8	
Actuated g/C Ratio		0.26			0.26		0.51	0.51		0.51	0.51	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		434			384		427	873		315	912	
v/s Ratio Prot								c0.34			0.27	
v/s Ratio Perm		0.05			c0.16		0.23			0.24		
v/c Ratio		0.19			0.62		0.45	0.67		0.48	0.53	
Uniform Delay, d1		16.5			18.7		9.0	10.6		9.2	9.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			3.1		1.6	2.7		2.4	1.0	
Delay (s)		16.7			21.9		10.6	13.3		11.7	10.6	
Level of Service		B			C		B	B		B	B	
Approach Delay (s)		16.7			21.9			12.6			10.8	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	141	6	11	217	7	1
Future Volume (Veh/h)	141	6	11	217	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	166	7	13	255	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			173		450	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			173		450	170
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1416		565	880

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	173	268	9
Volume Left	0	13	8
Volume Right	7	0	1
cSH	1700	1416	588
Volume to Capacity	0.10	0.01	0.02
Queue Length 95th (m)	0.0	0.2	0.4
Control Delay (s)	0.0	0.4	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	11.2
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		



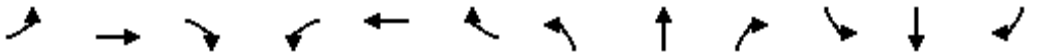
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	37	26	160	68	138	18	335	286	140	249	9
Future Volume (Veh/h)	16	37	26	160	68	138	18	335	286	140	249	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	39	27	168	72	145	19	353	301	147	262	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1128	1248	262	994	956	353	271			654		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1128	1248	262	994	956	353	271			654		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	81	73	97	0	66	78	99			84		
cM capacity (veh/h)	90	145	782	150	213	667	1304			914		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	385	372	301	409	9
Volume Left	17	168	19	0	147	0
Volume Right	27	145	0	301	0	9
cSH	168	230	1304	1700	914	1700
Volume to Capacity	0.49	1.67	0.01	0.18	0.16	0.01
Queue Length 95th (m)	18.2	190.9	0.3	0.0	4.3	0.0
Control Delay (s)	45.7	358.5	0.5	0.0	4.7	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	45.7	358.5	0.3		4.6	
Approach LOS	E	F				

Intersection Summary				
Average Delay	92.3			
Intersection Capacity Utilization	77.0%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	224	17	63	120	258	9	329	211
v/c Ratio	0.69	0.41	0.06	0.14	0.21	0.28	0.01	0.34	0.22
Control Delay	34.0	7.1	18.3	12.9	9.7	9.0	8.2	10.0	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	7.1	18.3	12.9	9.7	9.0	8.2	10.0	2.2
Queue Length 50th (m)	23.7	2.8	1.5	3.4	6.6	13.7	0.4	19.6	0.0
Queue Length 95th (m)	43.7	16.7	5.6	11.0	17.1	30.1	2.5	40.5	8.8
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	436	681	379	611	581	923	633	977	965
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.33	0.04	0.10	0.21	0.28	0.01	0.34	0.22

Intersection Summary



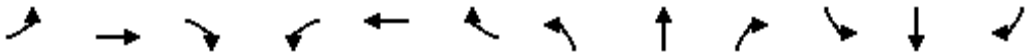
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	29	181	16	35	24	113	209	34	8	309	198
Future Volume (vph)	208	29	181	16	35	24	113	209	34	8	309	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1673		1825	1802		1789	1666		1825	1779	1585
Flt Permitted	0.72	1.00		0.60	1.00		0.56	1.00		0.60	1.00	1.00
Satd. Flow (perm)	1322	1673		1151	1802		1058	1666		1152	1779	1585
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)	221	31	193	17	37	26	120	222	36	9	329	211
RTOR Reduction (vph)	0	146	0	0	20	0	0	8	0	0	0	95
Lane Group Flow (vph)	221	78	0	17	43	0	120	250	0	9	329	116
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.4	15.4		15.4	15.4		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.4	15.4		15.4	15.4		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	403		277	434		582	916		633	978	871
v/s Ratio Prot		0.05			0.02			0.15			c0.18	
v/s Ratio Perm	c0.17			0.01			0.11			0.01		0.07
v/c Ratio	0.69	0.19		0.06	0.10		0.21	0.27		0.01	0.34	0.13
Uniform Delay, d1	22.0	19.3		18.6	18.8		7.3	7.6		6.5	7.9	7.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.2		0.1	0.1		0.2	0.2		0.0	0.2	0.1
Delay (s)	28.4	19.5		18.7	18.9		7.5	7.8		6.5	8.1	7.0
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		23.9			18.9			7.7			7.7	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.3
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	723	7	10	480	10	7	3	12	3	0	4
Future Volume (Veh/h)	3	723	7	10	480	10	7	3	12	3	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	831	8	11	552	11	8	3	14	3	0	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	563			839			1416	1422	831	1426	1419	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563			839			1416	1422	831	1426	1419	552
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	98	96	97	100	99
cM capacity (veh/h)	1019			804			113	135	373	107	136	537

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	834	8	563	11	25	8
Volume Left	3	0	11	0	8	3
Volume Right	0	8	0	11	14	5
cSH	1019	1700	804	1700	192	214
Volume to Capacity	0.00	0.00	0.01	0.01	0.13	0.04
Queue Length 95th (m)	0.1	0.0	0.3	0.0	3.3	0.9
Control Delay (s)	0.1	0.0	0.4	0.0	26.5	22.5
Lane LOS	A		A		D	C
Approach Delay (s)	0.1		0.4		26.5	22.5
Approach LOS					D	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	54.9%	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)	20	0	63	3	0	7	105	114	6	19	79	33
Future Volume (Veh/h)	20	0	63	3	0	7	105	114	6	19	79	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	28	0	88	4	0	10	146	158	8	26	110	46
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	649	643	133	727	662	162	156			166		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	649	643	133	727	662	162	156			166		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	90	99	100	99	90			98		
cM capacity (veh/h)	347	348	922	281	339	888	1436			1424		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	14	312	182
Volume Left	28	4	146	26
Volume Right	88	10	8	46
cSH	658	550	1436	1424
Volume to Capacity	0.18	0.03	0.10	0.02
Queue Length 95th (m)	4.8	0.6	2.6	0.4
Control Delay (s)	11.6	11.7	4.1	1.2
Lane LOS	B	B	A	A
Approach Delay (s)	11.6	11.7	4.1	1.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	31.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	367	100	39	306	59	23
Future Volume (Veh/h)	367	100	39	306	59	23
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)	399	109	42	333	64	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			508		870	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			508		870	454
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		79	96
cM capacity (veh/h)			1067		312	611

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	508	375	89
Volume Left	0	42	64
Volume Right	109	0	25
cSH	1700	1067	361
Volume to Capacity	0.30	0.04	0.25
Queue Length 95th (m)	0.0	0.9	7.2
Control Delay (s)	0.0	1.3	18.2
Lane LOS		A	C
Approach Delay (s)	0.0	1.3	18.2
Approach LOS			C

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

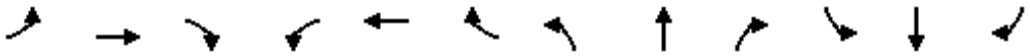
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	212	64	18	179	76	54
Future Volume (Veh/h)	212	64	18	179	76	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	230	70	20	195	83	59
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			300		500	265
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			300		500	265
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		84	92
cM capacity (veh/h)			1273		526	779

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	300	215	142
Volume Left	0	20	83
Volume Right	70	0	59
cSH	1700	1273	608
Volume to Capacity	0.18	0.02	0.23
Queue Length 95th (m)	0.0	0.4	6.8
Control Delay (s)	0.0	0.9	12.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	12.7
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	145	69	28	521	43	411
v/c Ratio	0.41	0.21	0.05	0.48	0.08	0.39
Control Delay	12.6	13.5	6.1	8.6	6.4	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	13.5	6.1	8.6	6.4	8.1
Queue Length 50th (m)	4.2	2.9	0.9	22.1	1.5	17.7
Queue Length 95th (m)	16.6	11.3	3.9	49.2	5.5	38.6
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	873	896	786	1362	686	1329
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	0.17	0.08	0.04	0.38	0.06	0.31

Intersection Summary



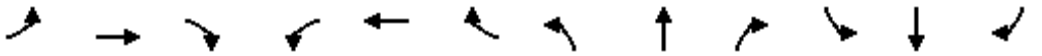
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	11	76	16	21	24	25	335	129	38	357	9
Future Volume (vph)	43	11	76	16	21	24	25	335	129	38	357	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1740			1773		1825	1725		1825	1694	
Flt Permitted		0.86			0.90		0.52	1.00		0.45	1.00	
Satd. Flow (perm)		1526			1618		1001	1725		874	1694	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	48	12	85	18	24	27	28	376	145	43	401	10
RTOR Reduction (vph)	0	72	0	0	23	0	0	15	0	0	1	0
Lane Group Flow (vph)	0	73	0	0	46	0	28	506	0	43	410	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		7.3			7.3		28.2	28.2		28.2	28.2	
Effective Green, g (s)		7.3			7.3		28.2	28.2		28.2	28.2	
Actuated g/C Ratio		0.15			0.15		0.58	0.58		0.58	0.58	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		227			241		576	992		502	974	
v/s Ratio Prot								c0.29			0.24	
v/s Ratio Perm		c0.05			0.03		0.03			0.05		
v/c Ratio		0.32			0.19		0.05	0.51		0.09	0.42	
Uniform Delay, d1		18.6			18.3		4.5	6.2		4.6	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			0.4		0.1	0.9		0.2	0.6	
Delay (s)		19.5			18.7		4.6	7.1		4.8	6.4	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		19.5			18.7			7.0			6.3	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	91	0	2	44	8	5
Future Volume (Veh/h)	91	0	2	44	8	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	114	0	2	55	10	6
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			114		173	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			114		173	114
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	99
cM capacity (veh/h)			1488		821	944

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	114	57	16
Volume Left	0	2	10
Volume Right	0	0	6
cSH	1700	1488	863
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.3	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		



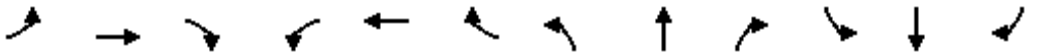
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	42	19	73	41	197	11	152	117	117	188	21
Future Volume (Veh/h)	12	42	19	73	41	197	11	152	117	117	188	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	12	44	20	76	43	205	11	158	122	122	196	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	846	742	196	662	642	158	218			280		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	846	742	196	662	642	158	218			280		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	93	86	98	75	88	76	99			90		
cM capacity (veh/h)	179	309	850	299	345	850	1300			1217		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	76	324	169	122	318	22
Volume Left	12	76	11	0	122	0
Volume Right	20	205	0	122	0	22
cSH	326	523	1300	1700	1217	1700
Volume to Capacity	0.23	0.62	0.01	0.07	0.10	0.01
Queue Length 95th (m)	6.7	31.8	0.2	0.0	2.5	0.0
Control Delay (s)	19.4	22.5	0.6	0.0	3.8	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	19.4	22.5	0.3		3.5	
Approach LOS	C	C				

Intersection Summary				
Average Delay	9.7			
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
Analysis Period (min)	15			

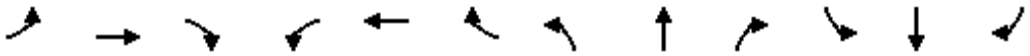
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	197	211	19	73	167	307	14	229	112
v/c Ratio	0.67	0.41	0.07	0.16	0.28	0.32	0.02	0.26	0.13
Control Delay	33.7	9.5	18.4	13.5	10.2	9.5	8.2	9.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	9.5	18.4	13.5	10.2	9.5	8.2	9.3	2.5
Queue Length 50th (m)	21.0	5.9	1.7	4.1	9.3	16.9	0.7	12.6	0.0
Queue Length 95th (m)	37.2	18.1	5.7	11.7	21.9	34.7	3.1	26.9	5.9
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	410	652	397	618	605	949	608	891	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.32	0.05	0.12	0.28	0.32	0.02	0.26	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	54	127	16	39	24	144	239	25	12	197	96
Future Volume (vph)	169	54	127	16	39	24	144	239	25	12	197	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1672		1825	1811		1690	1708		1825	1614	1526
Flt Permitted	0.71	1.00		0.62	1.00		0.62	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1239	1672		1200	1811		1095	1708		1101	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	197	63	148	19	45	28	167	278	29	14	229	112
RTOR Reduction (vph)	0	113	0	0	21	0	0	5	0	0	0	50
Lane Group Flow (vph)	197	98	0	19	52	0	167	302	0	14	229	62
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.1	15.1		15.1	15.1		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.1	15.1		15.1	15.1		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	294	397		285	430		605	944		608	892	843
v/s Ratio Prot		0.06			0.03			c0.18			0.14	
v/s Ratio Perm	c0.16			0.02			0.15			0.01		0.04
v/c Ratio	0.67	0.25		0.07	0.12		0.28	0.32		0.02	0.26	0.07
Uniform Delay, d1	21.9	19.6		18.7	19.0		7.5	7.7		6.4	7.4	6.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	0.3		0.1	0.1		0.2	0.2		0.0	0.2	0.0
Delay (s)	27.8	19.9		18.8	19.1		7.7	7.9		6.4	7.6	6.7
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		23.7			19.1			7.9			7.2	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	13.3
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	400	0	7	489	1	2	1	8	4	2	1
Future Volume (Veh/h)	1	400	0	7	489	1	2	1	8	4	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	426	0	7	520	1	2	1	9	4	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	521			426			964	963	426	972	962	520
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521			426			964	963	426	972	962	520
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	98	99	100
cM capacity (veh/h)	1056			1144			234	256	633	229	256	560

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	427	0	527	1	12	7
Volume Left	1	0	7	0	2	4
Volume Right	0	0	0	1	9	1
cSH	1056	1700	1144	1700	450	258
Volume to Capacity	0.00	0.00	0.01	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.6	0.6
Control Delay (s)	0.0	0.0	0.2	0.0	13.2	19.3
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		13.2	19.3
Approach LOS					B	C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	18	53	0	5	90
Future Volume (Veh/h)	0	18	53	0	5	90
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	20	58	0	5	98
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	166	58			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166	58			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	827	1014			1559	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	58	103
Volume Left	0	0	5
Volume Right	20	0	0
cSH	1014	1700	1559
Volume to Capacity	0.02	0.03	0.00
Queue Length 95th (m)	0.5	0.0	0.1
Control Delay (s)	8.6	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.6	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	313	167	50	259	125	30
Future Volume (Veh/h)	313	167	50	259	125	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	333	178	53	276	133	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			511		804	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			511		804	422
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		61	95
cM capacity (veh/h)			1065		337	636

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	511	329	165
Volume Left	0	53	133
Volume Right	178	0	32
cSH	1700	1065	371
Volume to Capacity	0.30	0.05	0.44
Queue Length 95th (m)	0.0	1.2	16.8
Control Delay (s)	0.0	1.8	22.2
Lane LOS		A	C
Approach Delay (s)	0.0	1.8	22.2
Approach LOS			C

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	178	160	84	717	36	665
v/c Ratio	0.48	0.44	0.20	0.64	0.10	0.58
Control Delay	21.7	22.3	8.9	12.6	7.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	22.3	8.9	12.6	7.7	11.5
Queue Length 50th (m)	13.2	12.8	3.8	44.6	1.5	41.0
Queue Length 95th (m)	30.4	28.9	12.4	99.5	6.1	87.9
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	843	853	448	1219	397	1255
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.19	0.19	0.59	0.09	0.53

Intersection Summary

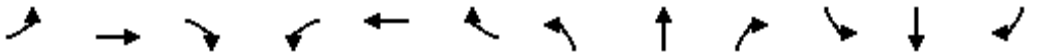
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	51	50	52	73	29	81	489	200	35	610	29
Future Volume (vph)	70	51	50	52	73	29	81	489	200	35	610	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1808			1829		1825	1739		1825	1805	
Flt Permitted		0.84			0.85		0.34	1.00		0.30	1.00	
Satd. Flow (perm)		1555			1586		646	1739		573	1805	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	53	52	54	76	30	84	509	208	36	635	30
RTOR Reduction (vph)	0	26	0	0	14	0	0	16	0	0	2	0
Lane Group Flow (vph)	0	152	0	0	146	0	84	701	0	36	663	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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)		9.0			9.0		30.8	30.8		30.8	30.8	
Effective Green, g (s)		9.0			9.0		30.8	30.8		30.8	30.8	
Actuated g/C Ratio		0.17			0.17		0.58	0.58		0.58	0.58	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		262			267		373	1004		331	1043	
v/s Ratio Prot								c0.40			0.37	
v/s Ratio Perm		c0.10			0.09		0.13			0.06		
v/c Ratio		0.58			0.55		0.23	0.70		0.11	0.64	
Uniform Delay, d1		20.4			20.3		5.5	8.0		5.1	7.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.3			2.3		0.6	2.7		0.3	1.8	
Delay (s)		23.7			22.6		6.1	10.7		5.4	9.3	
Level of Service		C			C		A	B		A	A	
Approach Delay (s)		23.7			22.6			10.2			9.1	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	145	6	12	138	7	1
Future Volume (Veh/h)	145	6	12	138	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	171	7	14	162	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			178		364	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		364	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1410		633	874

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	178	176	9
Volume Left	0	14	8
Volume Right	7	0	1
cSH	1700	1410	653
Volume to Capacity	0.10	0.01	0.01
Queue Length 95th (m)	0.0	0.2	0.3
Control Delay (s)	0.0	0.7	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		



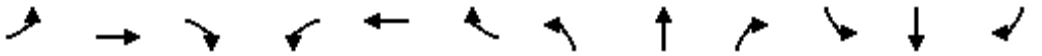
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	39	27	116	72	197	19	352	212	226	261	9
Future Volume (Veh/h)	16	39	27	116	72	197	19	352	212	226	261	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	41	28	122	76	207	20	371	223	238	275	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1407	1385	275	1210	1171	371	284			594		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1407	1385	275	1210	1171	371	284			594		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	54	62	96	0	47	68	98			75		
cM capacity (veh/h)	37	107	769	88	143	651	1290			963		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	86	405	391	223	513	9
Volume Left	17	122	20	0	238	0
Volume Right	28	207	0	223	0	9
cSH	98	181	1290	1700	963	1700
Volume to Capacity	0.88	2.24	0.02	0.13	0.25	0.01
Queue Length 95th (m)	38.0	248.1	0.4	0.0	7.4	0.0
Control Delay (s)	139.0	615.1	0.5	0.0	6.2	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	139.0	615.1	0.3		6.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	162.5			
Intersection Capacity Utilization	84.8%	ICU Level of Service		E
Analysis Period (min)	15			

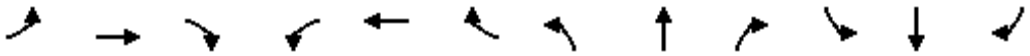
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	222	242	17	65	212	356	9	467	163
v/c Ratio	0.69	0.43	0.06	0.14	0.46	0.39	0.02	0.48	0.17
Control Delay	34.0	7.2	18.4	12.9	13.9	10.4	8.2	11.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	7.2	18.4	12.9	13.9	10.4	8.2	11.8	2.2
Queue Length 50th (m)	23.8	3.0	1.5	3.5	13.7	21.1	0.4	30.8	0.0
Queue Length 95th (m)	44.1	17.4	5.6	11.3	35.1	44.2	2.6	61.4	7.8
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	435	690	357	611	465	920	574	976	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.35	0.05	0.11	0.46	0.39	0.02	0.48	0.17

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	31	196	16	36	25	199	300	35	8	439	153
Future Volume (vph)	209	31	196	16	36	25	199	300	35	8	439	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1672		1825	1801		1789	1667		1825	1779	1585
Flt Permitted	0.71	1.00		0.56	1.00		0.45	1.00		0.55	1.00	1.00
Satd. Flow (perm)	1320	1672		1085	1801		848	1667		1047	1779	1585
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)	222	33	209	17	38	27	212	319	37	9	467	163
RTOR Reduction (vph)	0	158	0	0	20	0	0	5	0	0	0	73
Lane Group Flow (vph)	222	84	0	17	45	0	212	351	0	9	467	90
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.5	15.5		15.5	15.5		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.5	15.5		15.5	15.5		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	320	405		263	436		465	915		575	977	870
v/s Ratio Prot		0.05			0.02			0.21			c0.26	
v/s Ratio Perm	c0.17			0.02			0.25			0.01		0.06
v/c Ratio	0.69	0.21		0.06	0.10		0.46	0.38		0.02	0.48	0.10
Uniform Delay, d1	22.0	19.3		18.6	18.8		8.7	8.2		6.5	8.8	6.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3		0.1	0.1		0.7	0.3		0.0	0.4	0.1
Delay (s)	28.4	19.6		18.7	18.9		9.4	8.5		6.6	9.2	6.9
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		23.8			18.9			8.8			8.6	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	13.3
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	672	7	11	489	11	7	4	13	4	0	5
Future Volume (Veh/h)	4	672	7	11	489	11	7	4	13	4	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	772	8	13	562	13	8	5	15	5	0	6
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	575			780			1376	1383	772	1388	1378	562
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	575			780			1376	1383	772	1388	1378	562
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			93	96	96	96	100	99
cM capacity (veh/h)	1008			846			120	142	403	112	143	530

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	777	8	575	13	28	11
Volume Left	5	0	13	0	8	5
Volume Right	0	8	0	13	15	6
cSH	1008	1700	846	1700	202	197
Volume to Capacity	0.00	0.00	0.02	0.01	0.14	0.06
Queue Length 95th (m)	0.1	0.0	0.4	0.0	3.6	1.3
Control Delay (s)	0.1	0.0	0.4	0.0	25.7	24.4
Lane LOS	A		A		D	C
Approach Delay (s)	0.1		0.4		25.7	24.4
Approach LOS					D	C

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	52.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	7	140	6	20	147
Future Volume (Veh/h)	4	7	140	6	20	147
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	10	194	8	28	204
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	458	198			202	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458	198			202	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	553	848			1382	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	202	232
Volume Left	6	0	28
Volume Right	10	8	0
cSH	707	1700	1382
Volume to Capacity	0.02	0.12	0.02
Queue Length 95th (m)	0.5	0.0	0.5
Control Delay (s)	10.2	0.0	1.1
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	1.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	247	64	28	191	76	85
Future Volume (Veh/h)	247	64	28	191	76	85
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)	268	70	30	208	83	92
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			338		571	303
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			338		571	303
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		82	88
cM capacity (veh/h)			1232		474	741

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	338	238	175
Volume Left	0	30	83
Volume Right	70	0	92
cSH	1700	1232	585
Volume to Capacity	0.20	0.02	0.30
Queue Length 95th (m)	0.0	0.6	9.5
Control Delay (s)	0.0	1.2	13.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	13.8
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	256	223	65	521	43	411
v/c Ratio	0.44	0.71	0.15	0.62	0.12	0.51
Control Delay	7.6	31.2	11.3	15.7	11.4	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	31.2	11.3	15.7	11.4	14.5
Queue Length 50th (m)	4.1	17.7	3.5	34.5	2.3	27.3
Queue Length 95th (m)	20.1	45.3	11.6	77.7	8.7	60.9
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	826	502	591	1087	465	1055
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	0.44	0.11	0.48	0.09	0.39

Intersection Summary

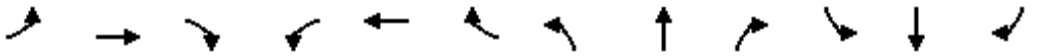
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	11	174	168	6	24	58	335	129	38	357	9
Future Volume (vph)	43	11	174	168	6	24	58	335	129	38	357	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1739		1825	1725		1825	1694	
Flt Permitted		0.90			0.59		0.49	1.00		0.39	1.00	
Satd. Flow (perm)		1557			1076		950	1725		748	1694	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	48	12	196	189	7	27	65	376	145	43	401	10
RTOR Reduction (vph)	0	139	0	0	7	0	0	18	0	0	1	0
Lane Group Flow (vph)	0	117	0	0	216	0	65	503	0	43	410	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		16.6			16.6		27.4	27.4		27.4	27.4	
Effective Green, g (s)		16.6			16.6		27.4	27.4		27.4	27.4	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.48	0.48	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		449			310		452	822		356	807	
v/s Ratio Prot								c0.29			0.24	
v/s Ratio Perm		0.07			c0.20		0.07			0.06		
v/c Ratio		0.26			0.70		0.14	0.61		0.12	0.51	
Uniform Delay, d1		15.7			18.2		8.5	11.1		8.4	10.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			6.7		0.3	2.0		0.3	1.1	
Delay (s)		16.0			24.9		8.8	13.1		8.7	11.4	
Level of Service		B			C		A	B		A	B	
Approach Delay (s)		16.0			24.9			12.6			11.2	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	189	0	2	62	8	5
Future Volume (Veh/h)	189	0	2	62	8	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	236	0	2	78	10	6
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			236		318	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			236		318	236
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	99
cM capacity (veh/h)			1343		678	808

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	236	80	16
Volume Left	0	2	10
Volume Right	0	0	6
cSH	1700	1343	722
Volume to Capacity	0.14	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.5
Control Delay (s)	0.0	0.2	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	19.9%	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)	12	42	19	150	41	156	11	152	142	122	188	21
Future Volume (Veh/h)	12	42	19	150	41	156	11	152	142	122	188	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	12	44	20	156	43	162	11	158	148	127	196	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	814	778	196	672	652	158	218			306		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	814	778	196	672	652	158	218			306		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	94	85	98	46	87	81	99			89		
cM capacity (veh/h)	200	292	850	291	338	850	1300			1190		

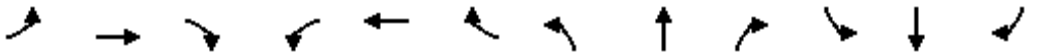
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	76	361	169	148	323	22
Volume Left	12	156	11	0	127	0
Volume Right	20	162	0	148	0	22
cSH	325	423	1300	1700	1190	1700
Volume to Capacity	0.23	0.85	0.01	0.09	0.11	0.01
Queue Length 95th (m)	6.8	63.9	0.2	0.0	2.7	0.0
Control Delay (s)	19.4	46.7	0.6	0.0	3.9	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	19.4	46.7	0.3		3.7	
Approach LOS	C	E				

Intersection Summary				
Average Delay	17.9			
Intersection Capacity Utilization	61.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	256	211	19	73	167	307	14	229	131
v/c Ratio	0.79	0.39	0.06	0.15	0.29	0.33	0.02	0.27	0.15
Control Delay	40.9	9.0	17.9	13.1	11.1	10.4	8.8	10.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	9.0	17.9	13.1	11.1	10.4	8.8	10.2	2.5
Queue Length 50th (m)	28.8	5.9	1.7	4.1	11.0	20.0	0.8	14.9	0.0
Queue Length 95th (m)	#51.5	18.1	5.7	11.7	21.9	34.7	3.1	26.9	6.4
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	397	636	384	599	585	918	588	862	876
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.33	0.05	0.12	0.29	0.33	0.02	0.27	0.15

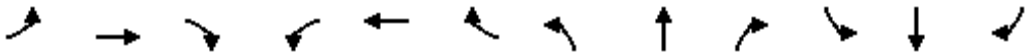
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	54	127	16	39	24	144	239	25	12	197	113
Future Volume (vph)	220	54	127	16	39	24	144	239	25	12	197	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1672		1825	1811		1690	1708		1825	1614	1526
Flt Permitted	0.71	1.00		0.62	1.00		0.62	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1239	1672		1201	1811		1095	1708		1101	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	256	63	148	19	45	28	167	278	29	14	229	131
RTOR Reduction (vph)	0	109	0	0	21	0	0	5	0	0	0	61
Lane Group Flow (vph)	256	102	0	19	52	0	167	302	0	14	229	70
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	17.3	17.3		17.3	17.3		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	17.3	17.3		17.3	17.3		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.53	0.53		0.53	0.53	0.53
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	326	440		316	476		585	912		588	862	815
v/s Ratio Prot		0.06			0.03			c0.18			0.14	
v/s Ratio Perm	c0.21			0.02			0.15			0.01		0.05
v/c Ratio	0.79	0.23		0.06	0.11		0.29	0.33		0.02	0.27	0.09
Uniform Delay, d1	22.5	19.0		18.1	18.4		8.4	8.7		7.2	8.3	7.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.7	0.3		0.1	0.1		0.3	0.2		0.0	0.2	0.0
Delay (s)	34.2	19.3		18.2	18.5		8.7	8.9		7.2	8.5	7.5
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		27.5			18.4			8.8			8.1	
Approach LOS		C			B			A			A	

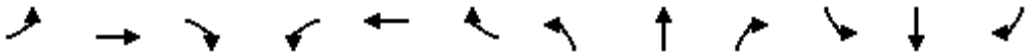
Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	13.3
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	433	0	7	439	1	2	1	8	4	2	1
Future Volume (Veh/h)	1	433	0	7	439	1	2	1	8	4	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	461	0	7	467	1	2	1	9	4	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	468			461			946	945	461	954	944	467
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	468			461			946	945	461	954	944	467
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	98	99	100
cM capacity (veh/h)	1104			1111			240	262	605	235	262	600

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	462	0	474	1	12	7
Volume Left	1	0	7	0	2	4
Volume Right	0	0	0	1	9	1
cSH	1104	1700	1111	1700	444	266
Volume to Capacity	0.00	0.00	0.01	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.6	0.6
Control Delay (s)	0.0	0.0	0.2	0.0	13.3	18.9
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		13.3	18.9
Approach LOS					B	C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	0	98	0	0	18	33	53	0	5	90	10
Future Volume (Veh/h)	31	0	98	0	0	18	33	53	0	5	90	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	0	107	0	0	20	36	58	0	5	98	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	264	244	104	350	249	58	109			58		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	264	244	104	350	249	58	109			58		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	89	100	100	98	98			100		
cM capacity (veh/h)	666	644	957	529	639	1014	1494			1559		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	20	94	114
Volume Left	34	0	36	5
Volume Right	107	20	0	11
cSH	865	1014	1494	1559
Volume to Capacity	0.16	0.02	0.02	0.00
Queue Length 95th (m)	4.4	0.5	0.6	0.1
Control Delay (s)	10.0	8.6	3.0	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	10.0	8.6	3.0	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	32.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	276	30	12	256	92	35
Future Volume (Veh/h)	276	30	12	256	92	35
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)	300	33	13	278	100	38
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			333		620	316
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			333		620	316
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		78	95
cM capacity (veh/h)			1238		450	729

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	333	291	138
Volume Left	0	13	100
Volume Right	33	0	38
cSH	1700	1238	503
Volume to Capacity	0.20	0.01	0.27
Queue Length 95th (m)	0.0	0.2	8.4
Control Delay (s)	0.0	0.4	14.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	14.8
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	336	167	83	298	125	50
Future Volume (Veh/h)	336	167	83	298	125	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	357	178	88	317	133	53
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			535		939	446
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			535		939	446
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		51	91
cM capacity (veh/h)			1043		271	617

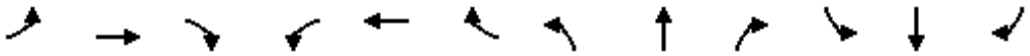
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	535	405	186
Volume Left	0	88	133
Volume Right	178	0	53
cSH	1700	1043	322
Volume to Capacity	0.31	0.08	0.58
Queue Length 95th (m)	0.0	2.1	26.0
Control Delay (s)	0.0	2.6	30.4
Lane LOS		A	D
Approach Delay (s)	0.0	2.6	30.4
Approach LOS			D

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	244	156	194	717	36	665
v/c Ratio	0.64	0.62	0.57	0.72	0.12	0.65
Control Delay	23.4	30.4	18.3	15.6	8.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	30.4	18.3	15.6	8.7	13.8
Queue Length 50th (m)	17.6	14.1	12.0	47.6	1.6	43.7
Queue Length 95th (m)	36.9	30.1	#45.3	#114.8	6.7	96.1
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	718	505	357	1034	314	1059
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	0.34	0.31	0.54	0.69	0.11	0.63

Intersection Summary

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



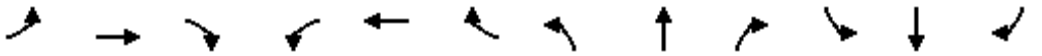
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	51	113	107	14	29	186	489	200	35	610	29
Future Volume (vph)	70	51	113	107	14	29	186	489	200	35	610	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1769			1782		1825	1739		1825	1805	
Flt Permitted		0.87			0.62		0.32	1.00		0.28	1.00	
Satd. Flow (perm)		1558			1139		609	1739		536	1805	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	53	118	111	15	30	194	509	208	36	635	30
RTOR Reduction (vph)	0	55	0	0	14	0	0	16	0	0	2	0
Lane Group Flow (vph)	0	189	0	0	142	0	194	701	0	36	663	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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)		12.7			12.7		34.0	34.0		34.0	34.0	
Effective Green, g (s)		12.7			12.7		34.0	34.0		34.0	34.0	
Actuated g/C Ratio		0.21			0.21		0.56	0.56		0.56	0.56	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		328			240		343	982		302	1019	
v/s Ratio Prot								c0.40			0.37	
v/s Ratio Perm		0.12			c0.12		0.32			0.07		
v/c Ratio		0.58			0.59		0.57	0.71		0.12	0.65	
Uniform Delay, d1		21.3			21.4		8.4	9.6		6.1	9.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			3.9		3.5	3.1		0.4	2.0	
Delay (s)		23.8			25.3		11.9	12.6		6.5	11.0	
Level of Service		C			C		B	B		A	B	
Approach Delay (s)		23.8			25.3			12.5			10.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	208	6	12	173	7	1
Future Volume (Veh/h)	208	6	12	173	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	245	7	14	204	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			252		480	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			252		480	248
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1325		542	795

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	252	218	9
Volume Left	0	14	8
Volume Right	7	0	1
cSH	1700	1325	562
Volume to Capacity	0.15	0.01	0.02
Queue Length 95th (m)	0.0	0.2	0.4
Control Delay (s)	0.0	0.6	11.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	11.5
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	39	27	165	72	207	19	352	294	243	261	9
Future Volume (Veh/h)	16	39	27	165	72	207	19	352	294	243	261	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	17	41	28	174	76	218	20	371	309	256	275	9
Pedestrians								3				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1454	1507	278	1250	1207	371	284			680		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1454	1507	278	1250	1207	371	284			680		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	42	52	96	0	41	67	98			71		
cM capacity (veh/h)	30	86	763	71	129	651	1290			894		

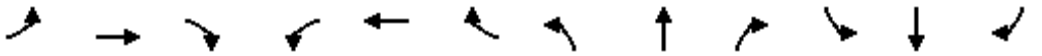
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	86	468	391	309	531	9
Volume Left	17	174	20	0	256	0
Volume Right	28	218	0	309	0	9
cSH	79	139	1290	1700	894	1700
Volume to Capacity	1.09	3.37	0.02	0.18	0.29	0.01
Queue Length 95th (m)	46.7	Err	0.4	0.0	9.0	0.0
Control Delay (s)	222.2	Err	0.5	0.0	7.0	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	222.2	Err	0.3		6.9	
Approach LOS	F	F				

Intersection Summary				
Average Delay	2621.3			
Intersection Capacity Utilization	89.0%	ICU Level of Service	E	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	257	242	17	65	212	356	9	467	221
v/c Ratio	0.76	0.42	0.06	0.14	0.47	0.39	0.02	0.49	0.23
Control Delay	37.8	6.9	18.1	12.6	14.9	11.0	8.6	12.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	6.9	18.1	12.6	14.9	11.0	8.6	12.5	2.2
Queue Length 50th (m)	28.5	3.0	1.5	3.5	15.1	23.0	0.5	33.6	0.0
Queue Length 95th (m)	#51.9	17.4	5.6	11.3	35.5	44.2	2.6	61.4	8.9
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	427	682	353	601	451	904	559	959	956
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.35	0.05	0.11	0.47	0.39	0.02	0.49	0.23

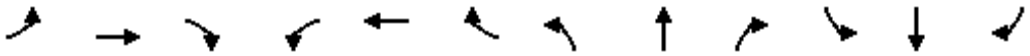
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	31	196	16	36	25	199	300	35	8	439	208
Future Volume (vph)	242	31	196	16	36	25	199	300	35	8	439	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1672		1825	1801		1789	1667		1825	1779	1585
Flt Permitted	0.71	1.00		0.57	1.00		0.44	1.00		0.54	1.00	1.00
Satd. Flow (perm)	1320	1672		1091	1801		836	1667		1038	1779	1585
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)	257	33	209	17	38	27	212	319	37	9	467	221
RTOR Reduction (vph)	0	155	0	0	20	0	0	6	0	0	0	102
Lane Group Flow (vph)	257	87	0	17	45	0	212	350	0	9	467	119
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.7	16.7		16.7	16.7		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	16.7	16.7		16.7	16.7		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.54	0.54		0.54	0.54	0.54
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	338	428		279	462		450	898		559	959	854
v/s Ratio Prot		0.05			0.02			0.21			c0.26	
v/s Ratio Perm	c0.19			0.02			0.25			0.01		0.08
v/c Ratio	0.76	0.20		0.06	0.10		0.47	0.39		0.02	0.49	0.14
Uniform Delay, d1	22.4	19.0		18.3	18.5		9.3	8.8		7.0	9.4	7.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.7	0.2		0.1	0.1		0.8	0.3		0.0	0.4	0.1
Delay (s)	32.0	19.2		18.4	18.5		10.0	9.0		7.0	9.8	7.5
Level of Service	C	B		B	B		B	A		A	A	A
Approach Delay (s)		25.8			18.5			9.4			9.0	
Approach LOS		C			B			A			A	

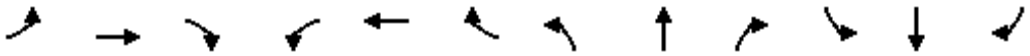
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	13.3
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	777	7	11	481	11	7	4	13	4	0	5
Future Volume (Veh/h)	4	777	7	11	481	11	7	4	13	4	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	893	8	13	553	13	8	5	15	5	0	6
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	566			901			1488	1495	893	1500	1490	553
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	566			901			1488	1495	893	1500	1490	553
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			92	96	96	95	100	99
cM capacity (veh/h)	1016			763			101	121	343	92	122	537

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	898	8	566	13	28	11
Volume Left	5	0	13	0	8	5
Volume Right	0	8	0	13	15	6
cSH	1016	1700	763	1700	170	169
Volume to Capacity	0.00	0.00	0.02	0.01	0.16	0.07
Queue Length 95th (m)	0.1	0.0	0.4	0.0	4.3	1.6
Control Delay (s)	0.1	0.0	0.5	0.0	30.3	27.8
Lane LOS	A		A		D	D
Approach Delay (s)	0.1		0.5		30.3	27.8
Approach LOS					D	D

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	63	4	0	7	105	140	6	20	147	33
Future Volume (Veh/h)	20	0	63	4	0	7	105	140	6	20	147	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	28	0	88	6	0	10	146	194	8	28	204	46
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	783	777	227	861	796	198	250			202		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	783	777	227	861	796	198	250			202		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	89	97	100	99	89			98		
cM capacity (veh/h)	280	288	817	224	281	848	1327			1382		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	16	348	278
Volume Left	28	6	146	28
Volume Right	88	10	8	46
cSH	558	414	1327	1382
Volume to Capacity	0.21	0.04	0.11	0.02
Queue Length 95th (m)	5.9	0.9	2.8	0.5
Control Delay (s)	13.1	14.0	4.0	0.9
Lane LOS	B	B	A	A
Approach Delay (s)	13.1	14.0	4.0	0.9
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	480	100	39	384	59	23
Future Volume (Veh/h)	480	100	39	384	59	23
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)	522	109	42	417	64	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			631		1078	576
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			631		1078	576
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		73	95
cM capacity (veh/h)			961		234	520

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	631	459	89
Volume Left	0	42	64
Volume Right	109	0	25
cSH	1700	961	277
Volume to Capacity	0.37	0.04	0.32
Queue Length 95th (m)	0.0	1.0	10.2
Control Delay (s)	0.0	1.3	24.1
Lane LOS		A	C
Approach Delay (s)	0.0	1.3	24.1
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	221	65	18	184	77	55
Future Volume (Veh/h)	221	65	18	184	77	55
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)	240	71	20	200	84	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			311		516	276
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			311		516	276
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		84	92
cM capacity (veh/h)			1261		515	768

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	311	220	144
Volume Left	0	20	84
Volume Right	71	0	60
cSH	1700	1261	597
Volume to Capacity	0.18	0.02	0.24
Queue Length 95th (m)	0.0	0.4	7.1
Control Delay (s)	0.0	0.8	12.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	12.9
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	71	29	538	45	429
v/c Ratio	0.42	0.22	0.05	0.49	0.09	0.41
Control Delay	12.9	13.9	6.0	8.7	6.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	13.9	6.0	8.7	6.4	8.2
Queue Length 50th (m)	4.2	2.9	1.0	23.4	1.6	18.7
Queue Length 95th (m)	17.5	12.0	4.0	51.3	5.7	40.4
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	867	890	769	1354	661	1321
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	0.17	0.08	0.04	0.40	0.07	0.32

Intersection Summary

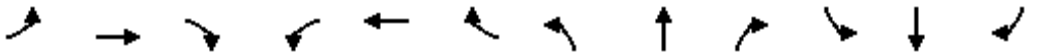
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	11	77	17	21	25	26	348	131	40	372	10
Future Volume (vph)	44	11	77	17	21	25	26	348	131	40	372	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.95		1.00	0.96		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1740			1771		1825	1726		1825	1694	
Flt Permitted		0.86			0.90		0.51	1.00		0.44	1.00	
Satd. Flow (perm)		1525			1615		985	1726		848	1694	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	49	12	87	19	24	28	29	391	147	45	418	11
RTOR Reduction (vph)	0	74	0	0	24	0	0	14	0	0	1	0
Lane Group Flow (vph)	0	74	0	0	47	0	29	524	0	45	428	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		7.3			7.3		28.6	28.6		28.6	28.6	
Effective Green, g (s)		7.3			7.3		28.6	28.6		28.6	28.6	
Actuated g/C Ratio		0.15			0.15		0.58	0.58		0.58	0.58	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		225			238		570	999		490	980	
v/s Ratio Prot								c0.30			0.25	
v/s Ratio Perm		c0.05			0.03		0.03			0.05		
v/c Ratio		0.33			0.20		0.05	0.52		0.09	0.44	
Uniform Delay, d1		18.9			18.5		4.5	6.3		4.6	5.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9			0.4		0.1	0.9		0.2	0.7	
Delay (s)		19.7			18.9		4.6	7.2		4.8	6.5	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		19.7			18.9			7.1			6.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	92	0	2	45	9	5
Future Volume (Veh/h)	92	0	2	45	9	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	115	0	2	56	11	6
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			115		175	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			115		175	115
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	99
cM capacity (veh/h)			1487		818	943

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	115	58	17
Volume Left	0	2	11
Volume Right	0	0	6
cSH	1700	1487	858
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.5
Control Delay (s)	0.0	0.3	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		



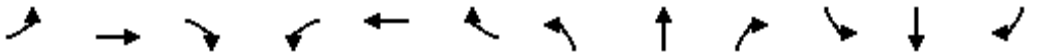
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	45	20	75	44	143	11	160	122	119	199	22
Future Volume (Veh/h)	12	45	20	75	44	143	11	160	122	119	199	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	12	47	21	78	46	149	11	167	127	124	207	23
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	816	771	207	688	667	167	230			294		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	816	771	207	688	667	167	230			294		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	94	84	97	72	86	82	99			90		
cM capacity (veh/h)	201	296	839	282	333	840	1287			1202		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	80	273	178	127	331	23
Volume Left	12	78	11	0	124	0
Volume Right	21	149	0	127	0	23
cSH	329	461	1287	1700	1202	1700
Volume to Capacity	0.24	0.59	0.01	0.07	0.10	0.01
Queue Length 95th (m)	7.1	28.6	0.2	0.0	2.6	0.0
Control Delay (s)	19.4	23.5	0.6	0.0	3.7	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	19.4	23.5	0.3		3.5	
Approach LOS	C	C				

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	58.0%	ICU Level of Service	B	
Analysis Period (min)	15			

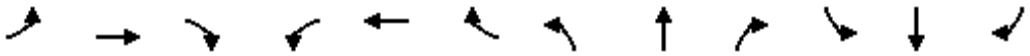
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	203	221	20	77	172	318	14	240	117
v/c Ratio	0.69	0.43	0.07	0.17	0.29	0.34	0.02	0.27	0.13
Control Delay	34.4	9.6	18.5	13.6	10.4	9.7	8.2	9.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	9.6	18.5	13.6	10.4	9.7	8.2	9.5	2.5
Queue Length 50th (m)	21.7	6.1	1.8	4.4	9.8	18.0	0.7	13.6	0.0
Queue Length 95th (m)	38.6	18.7	6.0	12.2	22.6	36.0	3.1	28.2	6.0
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	408	656	384	618	597	945	600	888	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.34	0.05	0.12	0.29	0.34	0.02	0.27	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	57	133	17	41	25	148	248	26	12	206	101
Future Volume (vph)	175	57	133	17	41	25	148	248	26	12	206	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1672		1825	1813		1690	1708		1825	1614	1526
Flt Permitted	0.71	1.00		0.61	1.00		0.61	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1235	1672		1162	1813		1084	1708		1090	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	203	66	155	20	48	29	172	288	30	14	240	117
RTOR Reduction (vph)	0	118	0	0	22	0	0	5	0	0	0	53
Lane Group Flow (vph)	203	103	0	20	55	0	172	313	0	14	240	64
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.3	15.3		15.3	15.3		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.3	15.3		15.3	15.3		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	296	401		279	435		597	941		600	889	840
v/s Ratio Prot		0.06			0.03			c0.18			0.15	
v/s Ratio Perm	c0.16			0.02			0.16			0.01		0.04
v/c Ratio	0.69	0.26		0.07	0.13		0.29	0.33		0.02	0.27	0.08
Uniform Delay, d1	22.0	19.6		18.7	19.0		7.6	7.9		6.5	7.5	6.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.3		0.1	0.1		0.3	0.2		0.0	0.2	0.0
Delay (s)	28.5	19.9		18.8	19.1		7.9	8.1		6.5	7.7	6.7
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		24.0			19.0			8.0			7.4	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	13.3
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	415	0	7	505	1	2	1	9	4	2	1
Future Volume (Veh/h)	1	415	0	7	505	1	2	1	9	4	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	441	0	7	537	1	2	1	10	4	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	538			441			996	995	441	1004	994	537
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	538			441			996	995	441	1004	994	537
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	98	99	100
cM capacity (veh/h)	1040			1130			222	245	621	217	245	548

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	442	0	544	1	13	7
Volume Left	1	0	7	0	2	4
Volume Right	0	0	0	1	10	1
cSH	1040	1700	1130	1700	445	246
Volume to Capacity	0.00	0.00	0.01	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.7	0.7
Control Delay (s)	0.0	0.0	0.2	0.0	13.3	20.0
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		13.3	20.0
Approach LOS					B	C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	42.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	19	55	0	5	90
Future Volume (Veh/h)	0	19	55	0	5	90
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	60	0	5	98
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	168	60			60	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168	60			60	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	824	1011			1556	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	60	103
Volume Left	0	0	5
Volume Right	21	0	0
cSH	1011	1700	1556
Volume to Capacity	0.02	0.04	0.00
Queue Length 95th (m)	0.5	0.0	0.1
Control Delay (s)	8.6	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.6	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	324	169	51	269	126	31
Future Volume (Veh/h)	324	169	51	269	126	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	345	180	54	286	134	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			525		829	435
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			525		829	435
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		59	95
cM capacity (veh/h)			1052		326	625

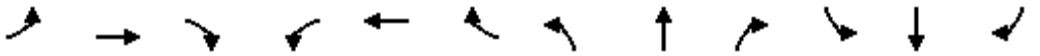
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	525	340	167
Volume Left	0	54	134
Volume Right	180	0	33
cSH	1700	1052	360
Volume to Capacity	0.31	0.05	0.46
Queue Length 95th (m)	0.0	1.2	18.0
Control Delay (s)	0.0	1.8	23.4
Lane LOS		A	C
Approach Delay (s)	0.0	1.8	23.4
Approach LOS			C

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	166	85	742	39	694
v/c Ratio	0.53	0.50	0.27	0.76	0.14	0.70
Control Delay	23.5	24.0	10.2	16.4	8.5	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	24.0	10.2	16.4	8.5	14.3
Queue Length 50th (m)	14.6	14.5	4.0	47.9	1.7	44.3
Queue Length 95th (m)	30.7	29.8	13.3	#112.5	6.7	94.6
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	736	747	359	1117	315	1145
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	0.22	0.24	0.66	0.12	0.61

Intersection Summary

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



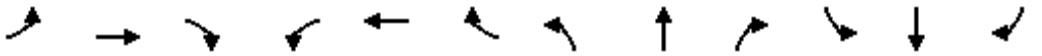
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	51	51	55	74	31	82	511	202	37	636	30
Future Volume (vph)	70	51	51	55	74	31	82	511	202	37	636	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1807			1827		1825	1740		1825	1805	
Flt Permitted		0.83			0.84		0.30	1.00		0.26	1.00	
Satd. Flow (perm)		1530			1567		567	1740		498	1805	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	53	53	57	77	32	85	532	210	39	662	31
RTOR Reduction (vph)	0	25	0	0	14	0	0	16	0	0	2	0
Lane Group Flow (vph)	0	154	0	0	152	0	85	726	0	39	692	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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		31.0	31.0		31.0	31.0	
Effective Green, g (s)		11.5			11.5		31.0	31.0		31.0	31.0	
Actuated g/C Ratio		0.21			0.21		0.55	0.55		0.55	0.55	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		314			321		313	963		275	999	
v/s Ratio Prot								c0.42			0.38	
v/s Ratio Perm		c0.10			0.10		0.15			0.08		
v/c Ratio		0.49			0.47		0.27	0.75		0.14	0.69	
Uniform Delay, d1		19.7			19.6		6.6	9.6		6.1	9.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2			1.1		1.0	4.0		0.5	2.7	
Delay (s)		20.9			20.7		7.6	13.6		6.6	11.7	
Level of Service		C			C		A	B		A	B	
Approach Delay (s)		20.9			20.7			13.0			11.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	146	6	12	139	7	1
Future Volume (Veh/h)	146	6	12	139	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	172	7	14	164	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			179		368	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			179		368	176
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1409		630	873

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	179	178	9
Volume Left	0	14	8
Volume Right	7	0	1
cSH	1700	1409	650
Volume to Capacity	0.11	0.01	0.01
Queue Length 95th (m)	0.0	0.2	0.3
Control Delay (s)	0.0	0.7	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		



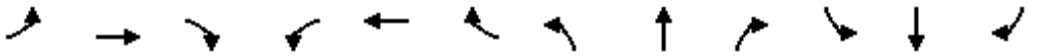
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	41	29	121	76	200	20	372	221	227	276	10
Future Volume (Veh/h)	17	41	29	121	76	200	20	372	221	227	276	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	43	31	127	80	211	21	392	233	239	291	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1454	1436	291	1256	1214	392	302			625		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1454	1436	291	1256	1214	392	302			625		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	40	56	96	0	40	67	98			75		
cM capacity (veh/h)	30	99	753	76	133	633	1270			937		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	92	418	413	233	530	11
Volume Left	18	127	21	0	239	0
Volume Right	31	211	0	233	0	11
cSH	85	161	1270	1700	937	1700
Volume to Capacity	1.08	2.60	0.02	0.14	0.25	0.01
Queue Length 95th (m)	48.0	277.1	0.4	0.0	7.7	0.0
Control Delay (s)	209.4	782.4	0.6	0.0	6.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	209.4	782.4	0.4		6.2	
Approach LOS	F	F				

Intersection Summary				
Average Delay	206.2			
Intersection Capacity Utilization	87.4%	ICU Level of Service	E	
Analysis Period (min)	15			

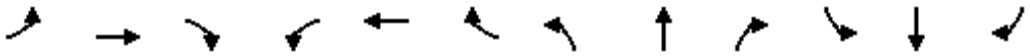
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	232	250	18	71	219	371	10	486	170
v/c Ratio	0.72	0.43	0.07	0.15	0.49	0.41	0.02	0.50	0.18
Control Delay	35.2	7.1	18.4	13.4	15.2	10.8	8.4	12.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	7.1	18.4	13.4	15.2	10.8	8.4	12.3	2.2
Queue Length 50th (m)	25.2	3.1	1.7	4.0	15.0	23.0	0.5	33.5	0.0
Queue Length 95th (m)	46.3	17.7	5.8	12.2	37.7	46.4	2.6	64.6	8.0
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	429	692	346	611	444	915	555	970	942
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.36	0.05	0.12	0.49	0.41	0.02	0.50	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	32	203	17	41	25	206	312	37	9	457	160
Future Volume (vph)	218	32	203	17	41	25	206	312	37	9	457	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1672		1825	1812		1789	1667		1825	1779	1585
Flt Permitted	0.71	1.00		0.55	1.00		0.43	1.00		0.53	1.00	1.00
Satd. Flow (perm)	1313	1672		1058	1812		814	1667		1019	1779	1585
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)	232	34	216	18	44	27	219	332	39	10	486	170
RTOR Reduction (vph)	0	163	0	0	20	0	0	5	0	0	0	77
Lane Group Flow (vph)	232	87	0	18	51	0	219	366	0	10	486	93
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	15.9	15.9		15.9	15.9		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	15.9	15.9		15.9	15.9		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.55	0.55		0.55	0.55	0.55
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	324	413		261	448		444	909		556	971	865
v/s Ratio Prot		0.05			0.03			0.22			c0.27	
v/s Ratio Perm	c0.18			0.02			0.27			0.01		0.06
v/c Ratio	0.72	0.21		0.07	0.11		0.49	0.40		0.02	0.50	0.11
Uniform Delay, d1	22.1	19.2		18.5	18.7		9.1	8.5		6.7	9.1	7.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.3	0.3		0.1	0.1		0.9	0.3		0.0	0.4	0.1
Delay (s)	29.5	19.5		18.6	18.9		9.9	8.8		6.7	9.5	7.1
Level of Service	C	B		B	B		A	A		A	A	A
Approach Delay (s)		24.3			18.8			9.2			8.9	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	13.3
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	700	7	11	539	11	7	4	14	4	0	5
Future Volume (Veh/h)	4	700	7	11	539	11	7	4	14	4	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	805	8	13	620	13	8	5	16	5	0	6
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	633			813			1467	1474	805	1480	1469	620
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	633			813			1467	1474	805	1480	1469	620
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			92	96	96	95	100	99
cM capacity (veh/h)	960			823			104	125	386	96	126	492

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	810	8	633	13	29	11
Volume Left	5	0	13	0	8	5
Volume Right	0	8	0	13	16	6
cSH	960	1700	823	1700	183	171
Volume to Capacity	0.01	0.00	0.02	0.01	0.16	0.06
Queue Length 95th (m)	0.1	0.0	0.4	0.0	4.2	1.6
Control Delay (s)	0.1	0.0	0.4	0.0	28.3	27.5
Lane LOS	A		A		D	D
Approach Delay (s)	0.1		0.4		28.3	27.5
Approach LOS					D	D

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	53.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	7	141	6	21	148
Future Volume (Veh/h)	4	7	141	6	21	148
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	6	10	196	8	29	206
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	464	200			204	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	464	200			204	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	548	846			1380	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	16	204	235
Volume Left	6	0	29
Volume Right	10	8	0
cSH	703	1700	1380
Volume to Capacity	0.02	0.12	0.02
Queue Length 95th (m)	0.5	0.0	0.5
Control Delay (s)	10.2	0.0	1.1
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	1.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

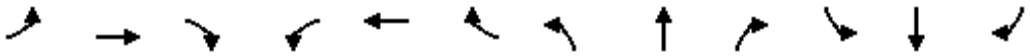
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	256	65	28	196	77	86
Future Volume (Veh/h)	256	65	28	196	77	86
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	278	71	30	213	84	93
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			349		586	314
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			349		586	314
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		82	87
cM capacity (veh/h)			1221		464	732

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	349	243	177
Volume Left	0	30	84
Volume Right	71	0	93
cSH	1700	1221	574
Volume to Capacity	0.21	0.02	0.31
Queue Length 95th (m)	0.0	0.6	9.9
Control Delay (s)	0.0	1.2	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.2	14.0
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	258	225	66	538	45	429
v/c Ratio	0.44	0.72	0.15	0.64	0.13	0.53
Control Delay	7.7	31.8	11.5	16.3	11.6	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	31.8	11.5	16.3	11.6	14.9
Queue Length 50th (m)	4.3	18.0	3.7	37.0	2.5	29.4
Queue Length 95th (m)	20.2	45.6	11.9	81.6	9.1	64.4
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	819	495	563	1076	442	1044
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	0.45	0.12	0.50	0.10	0.41

Intersection Summary



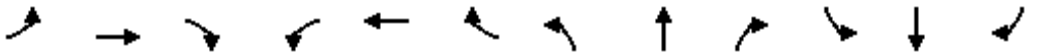
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	11	175	169	6	25	59	348	131	40	372	10
Future Volume (vph)	44	11	175	169	6	25	59	348	131	40	372	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1707			1739		1825	1726		1825	1694	
Flt Permitted		0.90			0.59		0.48	1.00		0.37	1.00	
Satd. Flow (perm)		1556			1069		915	1726		718	1694	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	49	12	197	190	7	28	66	391	147	45	418	11
RTOR Reduction (vph)	0	140	0	0	8	0	0	18	0	0	1	0
Lane Group Flow (vph)	0	118	0	0	217	0	66	520	0	45	428	0
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%	0%	7%	6%	0%	13%	13%
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)		16.8			16.8		27.9	27.9		27.9	27.9	
Effective Green, g (s)		16.8			16.8		27.9	27.9		27.9	27.9	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.48	0.48	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		449			308		438	827		344	812	
v/s Ratio Prot								c0.30			0.25	
v/s Ratio Perm		0.08			c0.20		0.07			0.06		
v/c Ratio		0.26			0.71		0.15	0.63		0.13	0.53	
Uniform Delay, d1		15.9			18.5		8.5	11.3		8.4	10.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			7.2		0.3	2.1		0.4	1.2	
Delay (s)		16.2			25.6		8.8	13.4		8.8	11.7	
Level of Service		B			C		A	B		A	B	
Approach Delay (s)		16.2			25.6			12.9			11.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	190	0	2	63	9	5
Future Volume (Veh/h)	190	0	2	63	9	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	238	0	2	79	11	6
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			238		321	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			238		321	238
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	99
cM capacity (veh/h)			1341		676	806

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	238	81	17
Volume Left	0	2	11
Volume Right	0	0	6
cSH	1700	1341	717
Volume to Capacity	0.14	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.0	0.2	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	20.0%	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)	12	45	20	152	44	158	11	160	147	124	199	22
Future Volume (Veh/h)	12	45	20	152	44	158	11	160	147	124	199	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	12	47	21	158	46	165	11	167	153	129	207	23
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	842	807	207	698	677	167	230			320		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	842	807	207	698	677	167	230			320		
tC, single (s)	7.1	6.5	6.2	7.1	6.6	6.4	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.1	3.5	2.3			2.3		
p0 queue free %	94	83	97	42	86	80	99			89		
cM capacity (veh/h)	187	280	839	274	326	840	1287			1175		

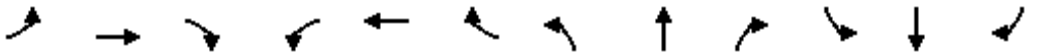
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	80	369	178	153	336	23
Volume Left	12	158	11	0	129	0
Volume Right	21	165	0	153	0	23
cSH	311	404	1287	1700	1175	1700
Volume to Capacity	0.26	0.91	0.01	0.09	0.11	0.01
Queue Length 95th (m)	7.6	74.5	0.2	0.0	2.8	0.0
Control Delay (s)	20.5	58.2	0.6	0.0	3.9	0.0
Lane LOS	C	F	A		A	
Approach Delay (s)	20.5	58.2	0.3		3.6	
Approach LOS	C	F				

Intersection Summary				
Average Delay	21.5			
Intersection Capacity Utilization	63.4%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	263	221	20	77	172	318	14	240	137
v/c Ratio	0.80	0.40	0.06	0.15	0.30	0.35	0.02	0.28	0.16
Control Delay	41.8	8.9	17.9	13.2	11.4	10.7	8.8	10.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	8.9	17.9	13.2	11.4	10.7	8.8	10.4	2.4
Queue Length 50th (m)	29.9	6.1	1.8	4.4	11.8	21.6	0.8	16.2	0.0
Queue Length 95th (m)	#56.3	18.7	6.0	12.2	22.6	36.0	3.1	28.2	6.4
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	393	638	371	597	576	912	579	857	874
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.35	0.05	0.13	0.30	0.35	0.02	0.28	0.16

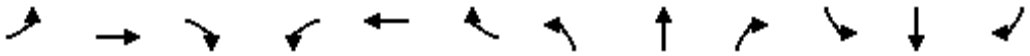
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	57	133	17	41	25	148	248	26	12	206	118
Future Volume (vph)	226	57	133	17	41	25	148	248	26	12	206	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.89		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1659	1672		1825	1813		1690	1708		1825	1614	1526
Flt Permitted	0.71	1.00		0.61	1.00		0.61	1.00		0.57	1.00	1.00
Satd. Flow (perm)	1235	1672		1166	1813		1084	1708		1090	1614	1526
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	263	66	155	20	48	29	172	288	30	14	240	137
RTOR Reduction (vph)	0	113	0	0	21	0	0	5	0	0	0	64
Lane Group Flow (vph)	263	108	0	20	56	0	172	313	0	14	240	73
Heavy Vehicles (%)	10%	0%	4%	0%	0%	0%	8%	12%	0%	0%	19%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	17.7	17.7		17.7	17.7		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	17.7	17.7		17.7	17.7		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.53	0.53		0.53	0.53	0.53
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	330	447		312	485		575	906		578	857	810
v/s Ratio Prot		0.06			0.03			c0.18			0.15	
v/s Ratio Perm	c0.21			0.02			0.16			0.01		0.05
v/c Ratio	0.80	0.24		0.06	0.11		0.30	0.35		0.02	0.28	0.09
Uniform Delay, d1	22.5	18.9		18.0	18.3		8.6	8.9		7.4	8.5	7.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.5	0.3		0.1	0.1		0.3	0.2		0.0	0.2	0.0
Delay (s)	35.1	19.2		18.1	18.4		8.9	9.1		7.4	8.7	7.7
Level of Service	D	B		B	B		A	A		A	A	A
Approach Delay (s)		27.8			18.3			9.1			8.3	
Approach LOS		C			B			A			A	

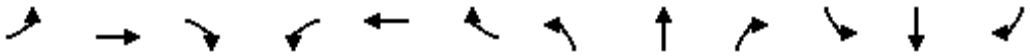
Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	13.3
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	448	0	7	455	1	2	1	9	4	2	1
Future Volume (Veh/h)	1	448	0	7	455	1	2	1	9	4	2	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	1	477	0	7	484	1	2	1	10	4	2	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	485			477			979	978	477	988	977	484
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	485			477			979	978	477	988	977	484
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	98	99	100
cM capacity (veh/h)	1088			1096			228	251	592	222	251	587

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	478	0	491	1	13	7
Volume Left	1	0	7	0	2	4
Volume Right	0	0	0	1	10	1
cSH	1088	1700	1096	1700	439	253
Volume to Capacity	0.00	0.00	0.01	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.7	0.6
Control Delay (s)	0.0	0.0	0.2	0.0	13.5	19.6
Lane LOS	A		A		B	C
Approach Delay (s)	0.0		0.2		13.5	19.6
Approach LOS					B	C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	40.3%	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)	31	0	98	0	0	19	33	55	0	5	90	10
Future Volume (Veh/h)	31	0	98	0	0	19	33	55	0	5	90	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	0	107	0	0	21	36	60	0	5	98	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	266	246	104	352	251	60	109			60		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	266	246	104	352	251	60	109			60		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	89	100	100	98	98			100		
cM capacity (veh/h)	662	642	957	527	638	1011	1494			1556		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	21	96	114
Volume Left	34	0	36	5
Volume Right	107	21	0	11
cSH	864	1011	1494	1556
Volume to Capacity	0.16	0.02	0.02	0.00
Queue Length 95th (m)	4.4	0.5	0.6	0.1
Control Delay (s)	10.0	8.6	2.9	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	10.0	8.6	2.9	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	32.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	286	30	12	261	92	35
Future Volume (Veh/h)	286	30	12	261	92	35
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)	311	33	13	284	100	38
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			344		638	328
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			344		638	328
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		77	95
cM capacity (veh/h)			1226		440	718

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	344	297	138
Volume Left	0	13	100
Volume Right	33	0	38
cSH	1700	1226	492
Volume to Capacity	0.20	0.01	0.28
Queue Length 95th (m)	0.0	0.2	8.7
Control Delay (s)	0.0	0.4	15.1
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	15.1
Approach LOS			C

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	347	169	84	308	126	51
Future Volume (Veh/h)	347	169	84	308	126	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	369	180	89	328	134	54
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			549		965	459
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			549		965	459
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		49	91
cM capacity (veh/h)			1031		261	606

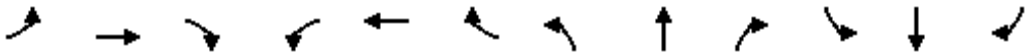
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	549	417	188
Volume Left	0	89	134
Volume Right	180	0	54
cSH	1700	1031	312
Volume to Capacity	0.32	0.09	0.60
Queue Length 95th (m)	0.0	2.1	28.0
Control Delay (s)	0.0	2.6	32.7
Lane LOS		A	D
Approach Delay (s)	0.0	2.6	32.7
Approach LOS			D

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	245	163	195	742	39	694
v/c Ratio	0.64	0.64	0.60	0.74	0.14	0.68
Control Delay	23.4	31.6	21.3	16.7	9.3	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	31.6	21.3	16.7	9.3	14.7
Queue Length 50th (m)	17.7	14.9	12.7	52.0	1.8	48.1
Queue Length 95th (m)	37.1	31.6	#49.1	#136.3	7.5	105.9
Internal Link Dist (m)	1308.1	285.1		328.5		907.9
Turn Bay Length (m)			35.0		40.0	
Base Capacity (vph)	695	487	323	1005	285	1027
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	0.35	0.33	0.60	0.74	0.14	0.68

Intersection Summary

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



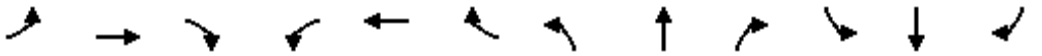
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	51	114	110	15	31	187	511	202	37	636	30
Future Volume (vph)	70	51	114	110	15	31	187	511	202	37	636	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.97		1.00	0.96		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1769			1781		1825	1740		1825	1805	
Flt Permitted		0.87			0.61		0.30	1.00		0.26	1.00	
Satd. Flow (perm)		1553			1130		569	1740		503	1805	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	53	119	115	16	32	195	532	210	39	662	31
RTOR Reduction (vph)	0	55	0	0	14	0	0	15	0	0	2	0
Lane Group Flow (vph)	0	190	0	0	149	0	195	727	0	39	692	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	8%	0%	0%	6%	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)		13.1			13.1		35.2	35.2		35.2	35.2	
Effective Green, g (s)		13.1			13.1		35.2	35.2		35.2	35.2	
Actuated g/C Ratio		0.21			0.21		0.57	0.57		0.57	0.57	
Clearance Time (s)		6.0			6.0		7.5	7.5		7.5	7.5	
Vehicle Extension (s)		3.0			3.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		329			239		324	991		286	1028	
v/s Ratio Prot								c0.42			0.38	
v/s Ratio Perm		0.12			c0.13		0.34			0.08		
v/c Ratio		0.58			0.62		0.60	0.73		0.14	0.67	
Uniform Delay, d1		21.9			22.1		8.7	9.8		6.2	9.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			5.0		4.6	3.4		0.5	2.3	
Delay (s)		24.3			27.1		13.3	13.3		6.7	11.6	
Level of Service		C			C		B	B		A	B	
Approach Delay (s)		24.3			27.1			13.3			11.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	209	6	12	174	7	1
Future Volume (Veh/h)	209	6	12	174	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	246	7	14	205	8	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			253		482	250
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			253		482	250
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1324		541	794

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	253	219	9
Volume Left	0	14	8
Volume Right	7	0	1
cSH	1700	1324	561
Volume to Capacity	0.15	0.01	0.02
Queue Length 95th (m)	0.0	0.2	0.4
Control Delay (s)	0.0	0.6	11.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	11.5
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	41	29	170	76	210	20	372	303	244	276	10
Future Volume (Veh/h)	17	41	29	170	76	210	20	372	303	244	276	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	43	31	179	80	221	21	392	319	257	291	11
Pedestrians								3				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1500	1558	294	1294	1250	392	302			711		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1500	1558	294	1294	1250	392	302			711		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	2.2			2.3		
p0 queue free %	23	45	96	0	33	65	98			70		
cM capacity (veh/h)	23	79	748	60	120	633	1270			870		

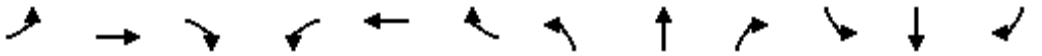
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	92	480	413	319	548	11
Volume Left	18	179	21	0	257	0
Volume Right	31	221	0	319	0	11
cSH	68	120	1270	1700	870	1700
Volume to Capacity	1.36	4.01	0.02	0.19	0.30	0.01
Queue Length 95th (m)	57.7	Err	0.4	0.0	9.4	0.0
Control Delay (s)	337.1	Err	0.6	0.0	7.1	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	337.1	Err	0.3		7.0	
Approach LOS	F	F				

Intersection Summary				
Average Delay	2595.1			
Intersection Capacity Utilization	91.6%	ICU Level of Service	F	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	267	250	18	69	219	371	10	486	229
v/c Ratio	0.78	0.42	0.06	0.14	0.51	0.41	0.02	0.51	0.24
Control Delay	39.2	6.8	18.1	12.8	16.2	11.3	8.7	13.0	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	6.8	18.1	12.8	16.2	11.3	8.7	13.0	2.2
Queue Length 50th (m)	30.0	3.1	1.7	3.8	16.6	25.2	0.6	36.8	0.0
Queue Length 95th (m)	#59.5	17.7	5.8	11.7	38.1	46.4	2.6	64.6	9.1
Internal Link Dist (m)		8.8		90.4		95.4		205.2	
Turn Bay Length (m)	15.0		7.0		35.0		50.0		50.0
Base Capacity (vph)	422	683	342	599	429	898	540	953	955
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.05	0.12	0.51	0.41	0.02	0.51	0.24

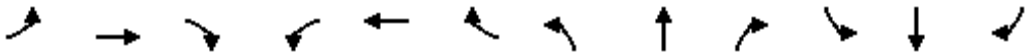
Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	32	203	17	39	26	206	312	37	9	457	215
Future Volume (vph)	251	32	203	17	39	26	206	312	37	9	457	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1755	1672		1825	1804		1789	1667		1825	1779	1585
Flt Permitted	0.71	1.00		0.55	1.00		0.43	1.00		0.53	1.00	1.00
Satd. Flow (perm)	1315	1672		1065	1804		803	1667		1009	1779	1585
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)	267	34	216	18	41	28	219	332	39	10	486	229
RTOR Reduction (vph)	0	160	0	0	21	0	0	6	0	0	0	106
Lane Group Flow (vph)	267	90	0	18	48	0	219	365	0	10	486	123
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	2%	15%	0%	0%	8%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	17.1	17.1		17.1	17.1		35.1	35.1		35.1	35.1	35.1
Effective Green, g (s)	17.1	17.1		17.1	17.1		35.1	35.1		35.1	35.1	35.1
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.54	0.54		0.54	0.54	0.54
Clearance Time (s)	6.4	6.4		6.4	6.4		6.9	6.9		6.9	6.9	6.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	343	436		278	470		430	893		540	953	849
v/s Ratio Prot		0.05			0.03			0.22			c0.27	
v/s Ratio Perm	c0.20			0.02			0.27			0.01		0.08
v/c Ratio	0.78	0.21		0.06	0.10		0.51	0.41		0.02	0.51	0.14
Uniform Delay, d1	22.4	18.9		18.2	18.4		9.7	9.0		7.1	9.7	7.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.6	0.2		0.1	0.1		1.0	0.3		0.0	0.4	0.1
Delay (s)	33.1	19.1		18.3	18.5		10.7	9.3		7.1	10.1	7.7
Level of Service	C	B		B	B		B	A		A	B	A
Approach Delay (s)		26.3			18.4			9.8			9.3	
Approach LOS		C			B			A			A	

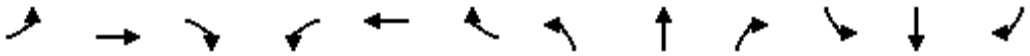
Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	13.3
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	805	7	11	503	11	7	4	14	4	0	5
Future Volume (Veh/h)	4	805	7	11	503	11	7	4	14	4	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	925	8	13	578	13	8	5	16	5	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	591			933			1545	1552	925	1558	1547	578
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	591			933			1545	1552	925	1558	1547	578
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			91	96	95	94	100	99
cM capacity (veh/h)	995			742			92	112	329	84	113	519

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	930	8	591	13	29	11
Volume Left	5	0	13	0	8	5
Volume Right	0	8	0	13	16	6
cSH	995	1700	742	1700	161	154
Volume to Capacity	0.01	0.00	0.02	0.01	0.18	0.07
Queue Length 95th (m)	0.1	0.0	0.4	0.0	4.8	1.7
Control Delay (s)	0.1	0.0	0.5	0.0	32.3	30.1
Lane LOS	A		A		D	D
Approach Delay (s)	0.1		0.5		32.3	30.1
Approach LOS					D	D

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	59.3%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	63	4	0	7	105	141	6	21	148	33
Future Volume (Veh/h)	20	0	63	4	0	7	105	141	6	21	148	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	28	0	88	6	0	10	146	196	8	29	206	46
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	789	783	229	867	802	200	252			204		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	789	783	229	867	802	200	252			204		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	89	97	100	99	89			98		
cM capacity (veh/h)	277	286	815	221	278	846	1325			1380		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	16	350	281
Volume Left	28	6	146	29
Volume Right	88	10	8	46
cSH	555	411	1325	1380
Volume to Capacity	0.21	0.04	0.11	0.02
Queue Length 95th (m)	5.9	0.9	2.8	0.5
Control Delay (s)	13.2	14.1	3.9	1.0
Lane LOS	B	B	A	A
Approach Delay (s)	13.2	14.1	3.9	1.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	40.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	493	100	39	395	59	23
Future Volume (Veh/h)	493	100	39	395	59	23
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)	536	109	42	429	64	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			645		1104	590
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			645		1104	590
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		72	95
cM capacity (veh/h)			950		225	511

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	645	471	89
Volume Left	0	42	64
Volume Right	109	0	25
cSH	1700	950	267
Volume to Capacity	0.38	0.04	0.33
Queue Length 95th (m)	0.0	1.1	10.7
Control Delay (s)	0.0	1.3	25.0
Lane LOS		A	D
Approach Delay (s)	0.0	1.3	25.0
Approach LOS			D

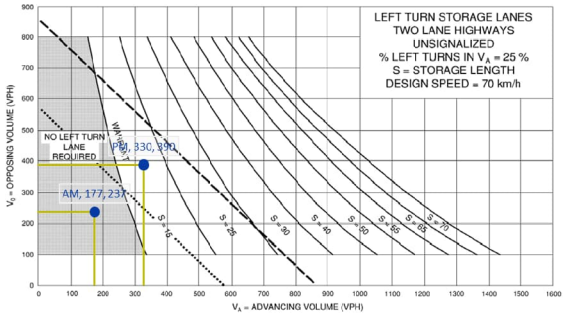
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

APPENDIX G

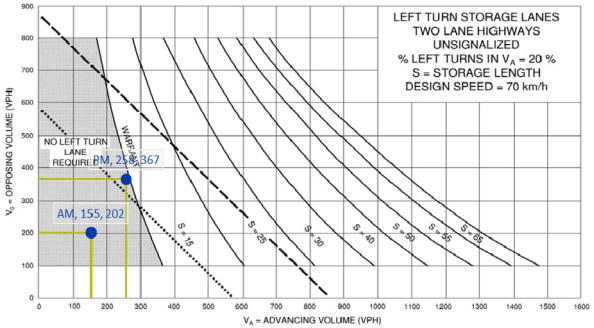
Auxiliary Left-Turn Lane Warrants

Intersection	Left-Turn Warrant	Advancing Traffic		Opposing Traffic		Left Turn Traffic		% of Left Turning		Warrant	LENGTH (m)
		AM	PM	AM	PM	AM	PM	AM	PM		
Sideroad 17 & 8th Line (FB 2024)	WBL	155	258	202	367	17	50	11%	19%	No	-
Sideroad 17 & 8th Line (FB 2034)	WBL	202	320	286	493	18	51	9%	16%	Yes	20
Sideroad 17 & 8th Line (FT 2024)	WBL	177	330	237	390	27	83	15%	25%	Yes	15
Sideroad 17 & 8th Line (FT 2034)	WBL	224	392	321	516	28	84	13%	21%	Yes	25

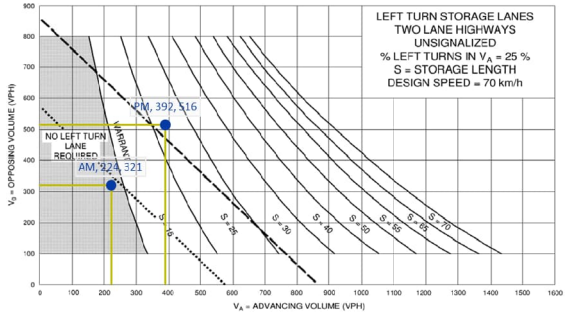
2024 FT



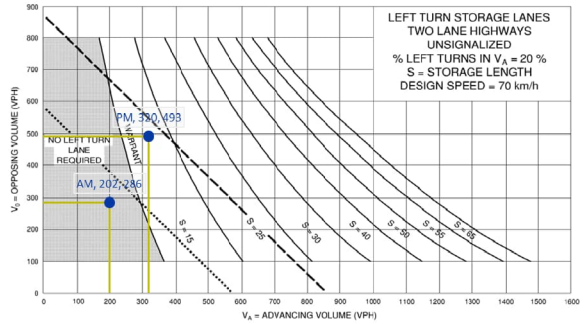
2024 FB



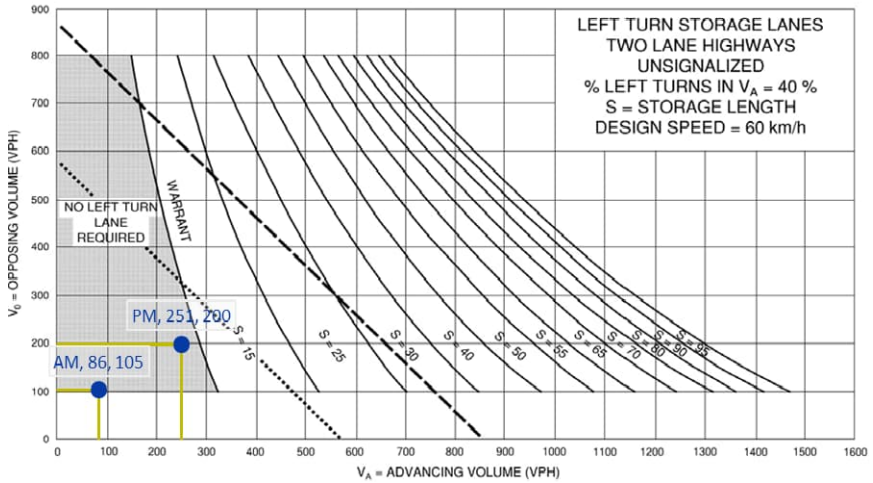
2034 FT

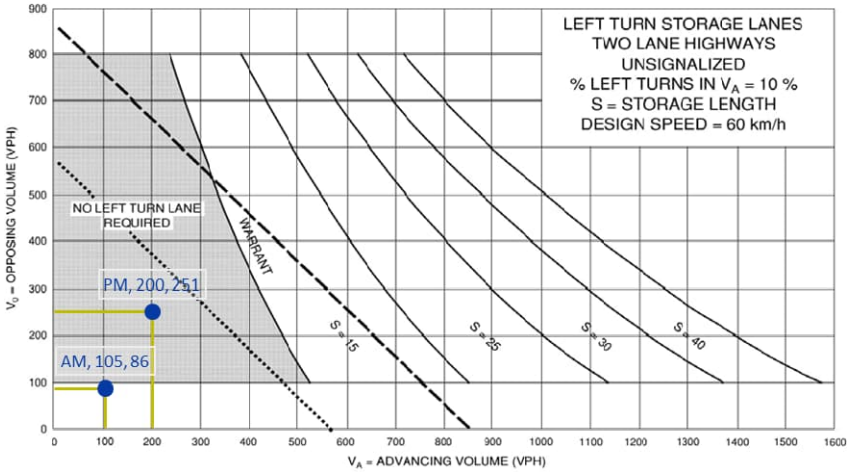


2034 FB



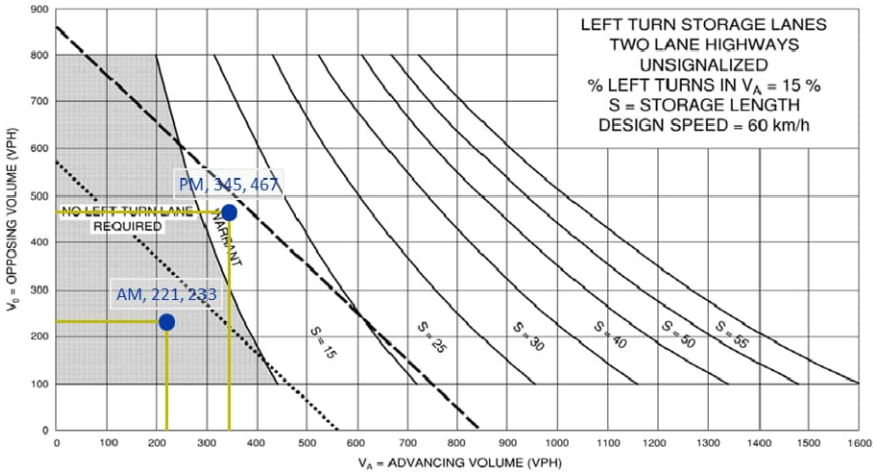
Intersection	Left-Turn Warrant	Advancing Traffic Volume (VA)		Opposing Traffic Volume (VO)		Left Turn Traffic Volume (VL)		% of Left Turning Traffic		Warrant
		AM	PM	AM	PM	AM	PM	AM	PM	
8th Line & Site Access/ Erin Heights Drive (2034 FT)	NBL	88	251	105	200	33	105	38%	42%	No
8th Line & Site Access/ Erin Heights Drive (2034 FT)	SBL	105	200	88	251	5	20	5%	10%	No



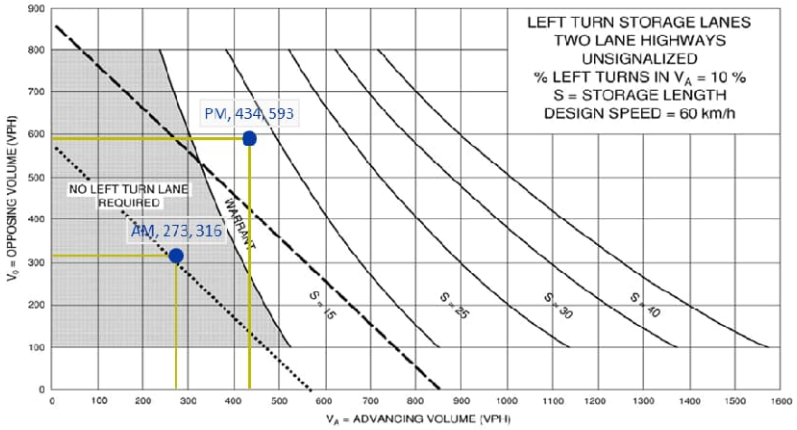


Intersection	Left-Turn Warrant	Advancing Traffic Volume (VA)		Opposing Traffic Volume (VO)		Left Turn Traffic Volume (VL)		% of Left Turning Traffic		Warrant	Length (M)
		AM	PM	AM	PM	AM	PM	AM	PM		
Sideroad 17 Site Access (FT 2024)	WBL	221	345	233	467	12	39	5%	11%	Yes	15
Sideroad 17 Site Access (FT 2034)	WBL	273	434	316	593	12	39	4%	9%	Yes	15

2024



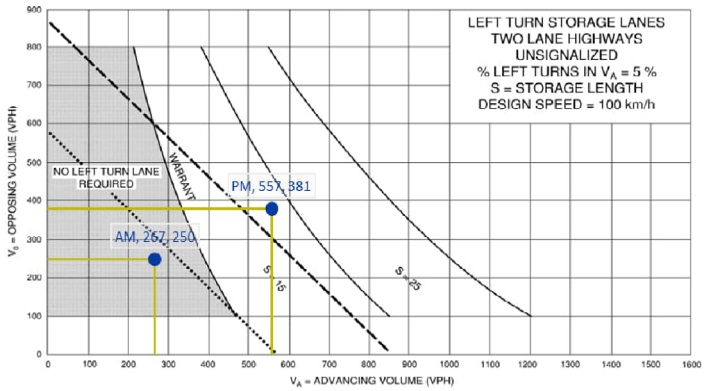
2034



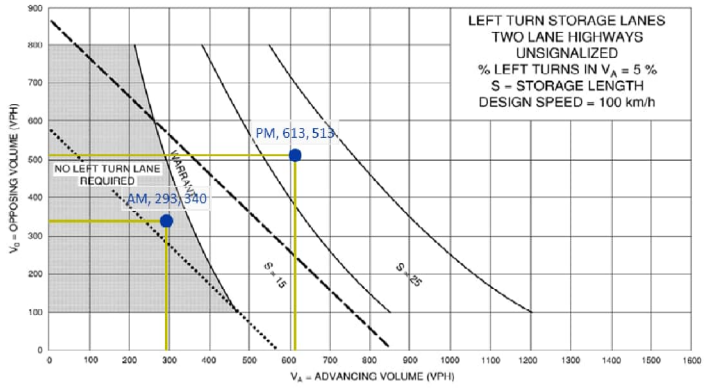
Intersection	Left-Turn Warrant	Advancing Traffic		Opposing Traffic		Left Turn Traffic		% of Left Turning		Warrant	LENGTH (m)
		AM	PM	AM	PM	AM	PM	AM	PM		
Trafalgar Road/Sideroad 17 (FB 2024)	NBL	267	557	250	381	10	18	4%	3%	Yes	15
Trafalgar Road/Sideroad 17 (FB 2034)	NBL	293	613	340	513	11	20	4%	3%	Yes	25
Trafalgar Road/Sideroad 17 (FT 2024)	NBL	292	639	255	398	10	18	3%	3%	Yes	25
Trafalgar Road/Sideroad 17 (FT 2034)	NBL	318	695	345	530	11	20	3%	3%	Yes	25
Trafalgar Road/Sideroad 17 (FB 2024)	SBL	250	381	267	557	50	123	20%	32%	Yes	30
Trafalgar Road/Sideroad 17 (FB 2034)	SBL	340	513	293	613	119	227	35%	44%	Yes	50
Trafalgar Road/Sideroad 17 (FT 2024)	SBL	255	398	292	639	55	140	22%	35%	Yes	40
Trafalgar Road/Sideroad 17 (FT 2034)	SBL	345	530	318	695	124	244	36%	46%	Yes	65

NBL

2024 FB



2034 FB



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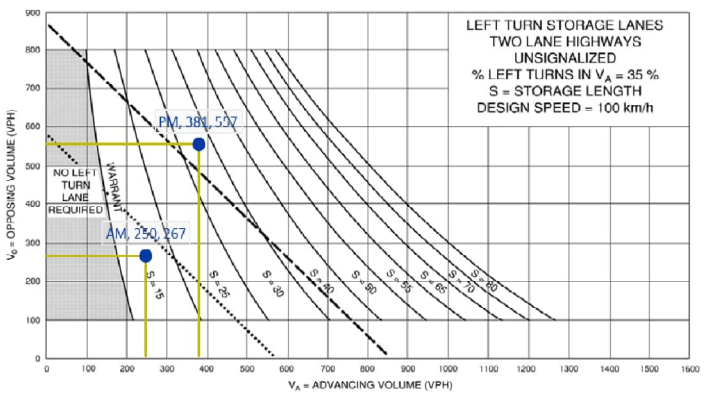
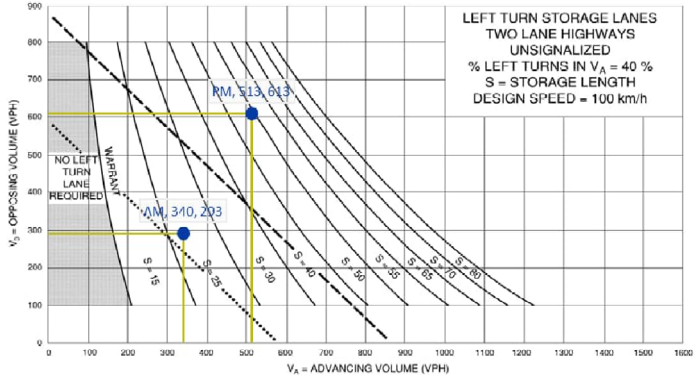
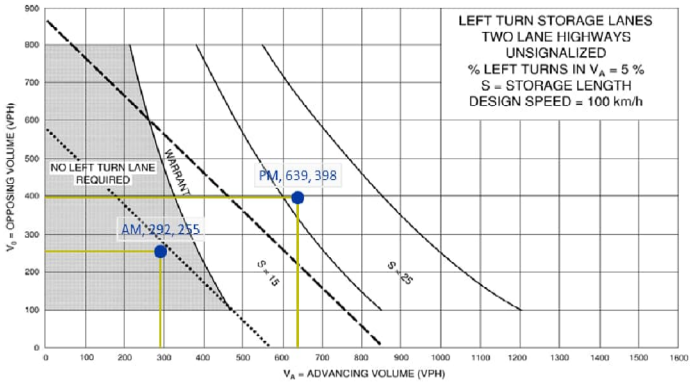
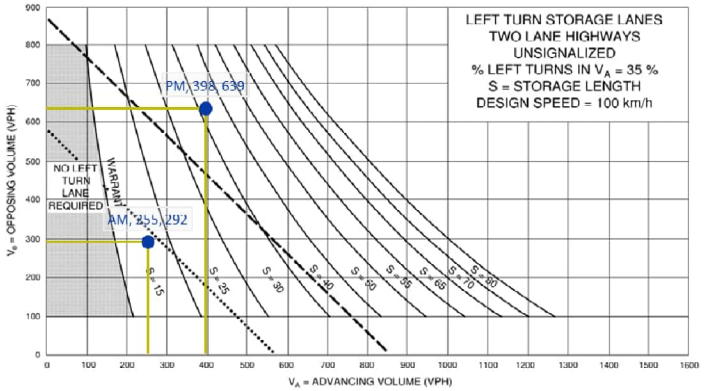


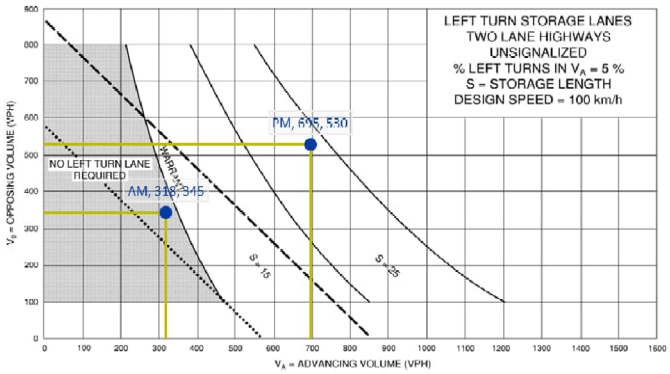


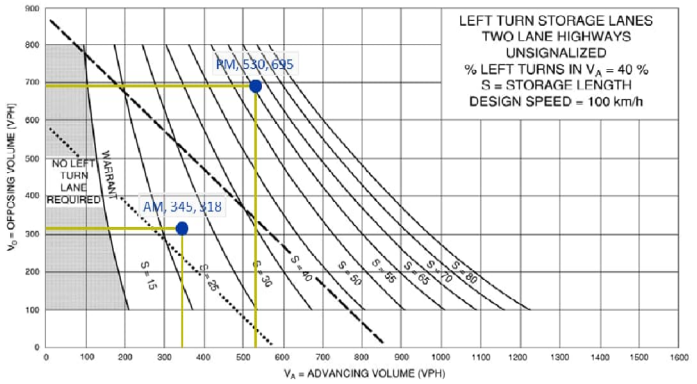
2024 FT





2034 FT





APPENDIX H

Signal Warrants

Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FB 2024

Signal Warrant		Description		Minimum Requirement for Two Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	110%	110%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	139%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	76%	76%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	160%		

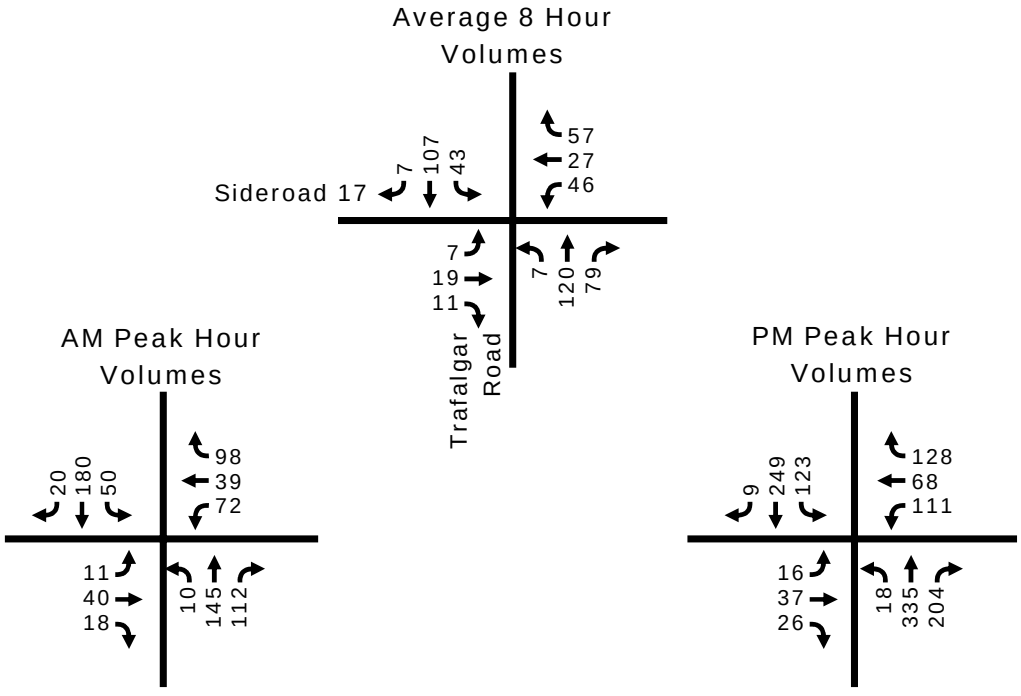
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FB 2029

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	129%	129%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	166%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	88%	88%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	164%		

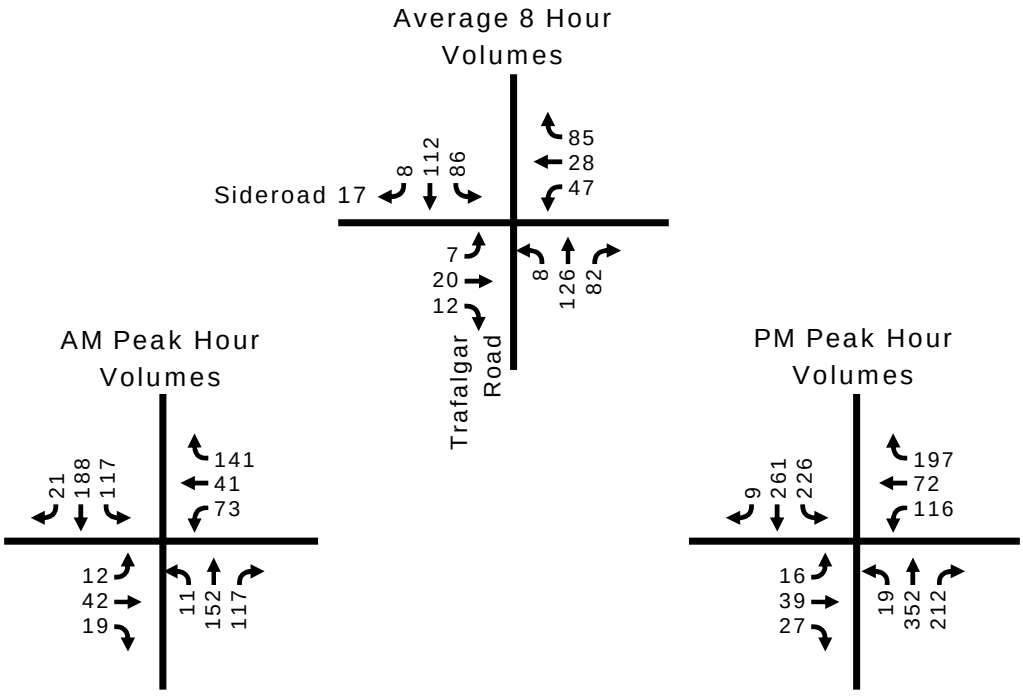
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FB 2034

Signal Warrant		Description		Minimum Requirement for Two Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	135%	135%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	172%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	92%	92%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	172%		

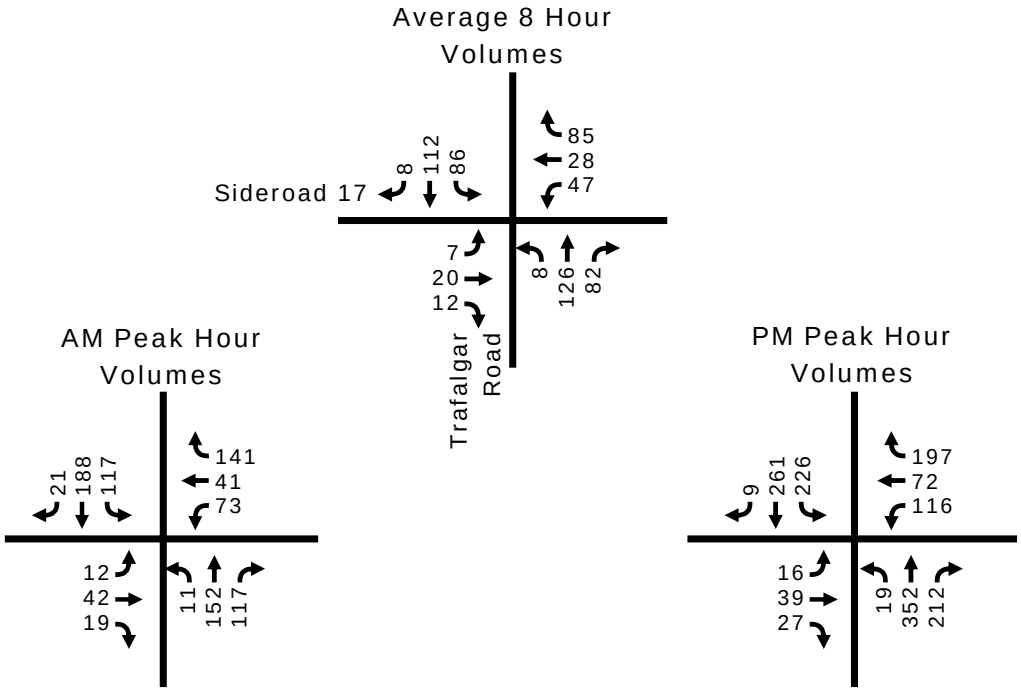
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FT 2024

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	125%	125%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	170%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	83%	83%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	222%		

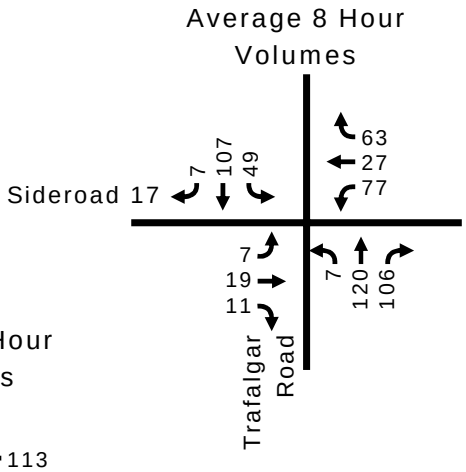
Notes

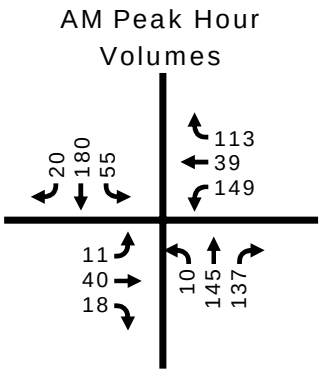
1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

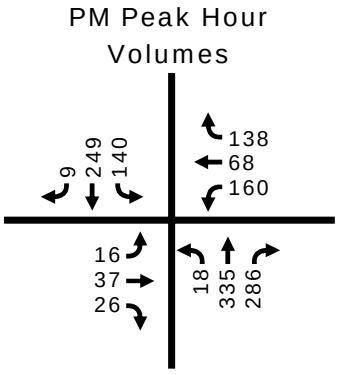
2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No







Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FT 2029

Signal Warrant		Description		Minimum Requirement for Two Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	144%	144%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	198%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	95%	95%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	228%		

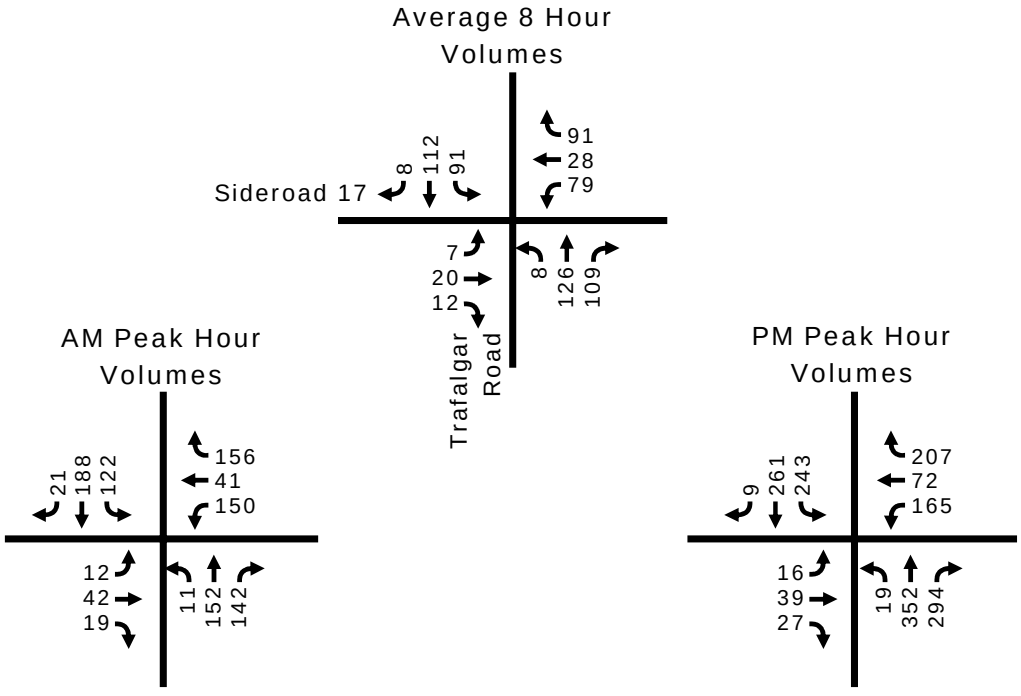
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



Trafalgar Road/Sideroad 17 - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	149%	149%	100% Yes
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	202%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	99%	99%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	234%		

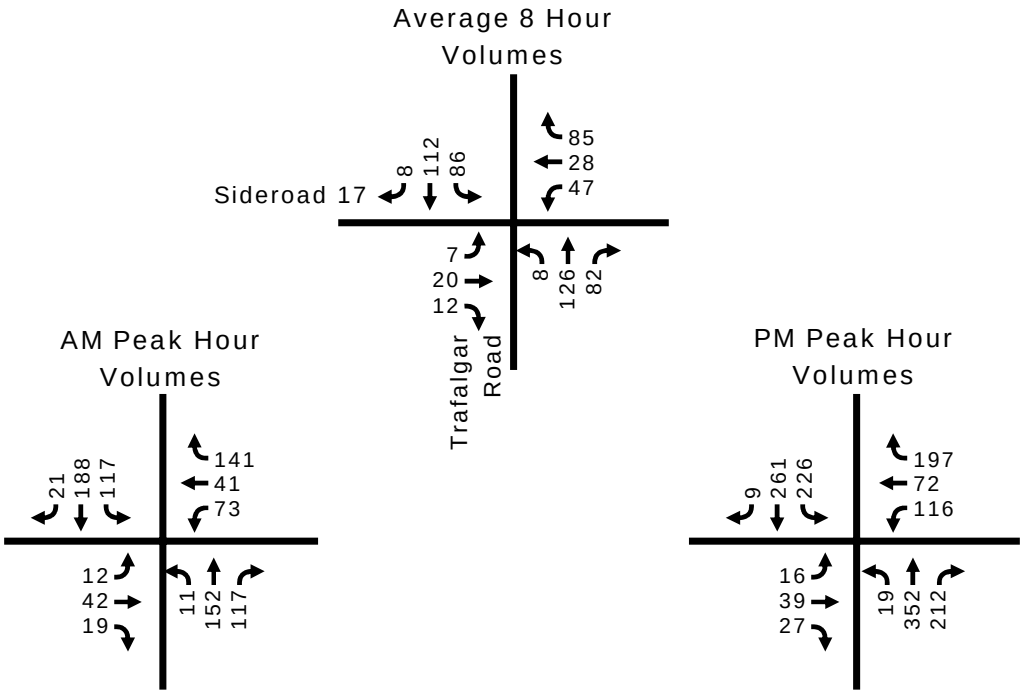
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



Sideroad 17/Mattamy Site Access - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Restricted Flow - Operating Speed Less Than 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	720	64%	21%	51% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	255	21%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	720	56%	51%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	75	51%		

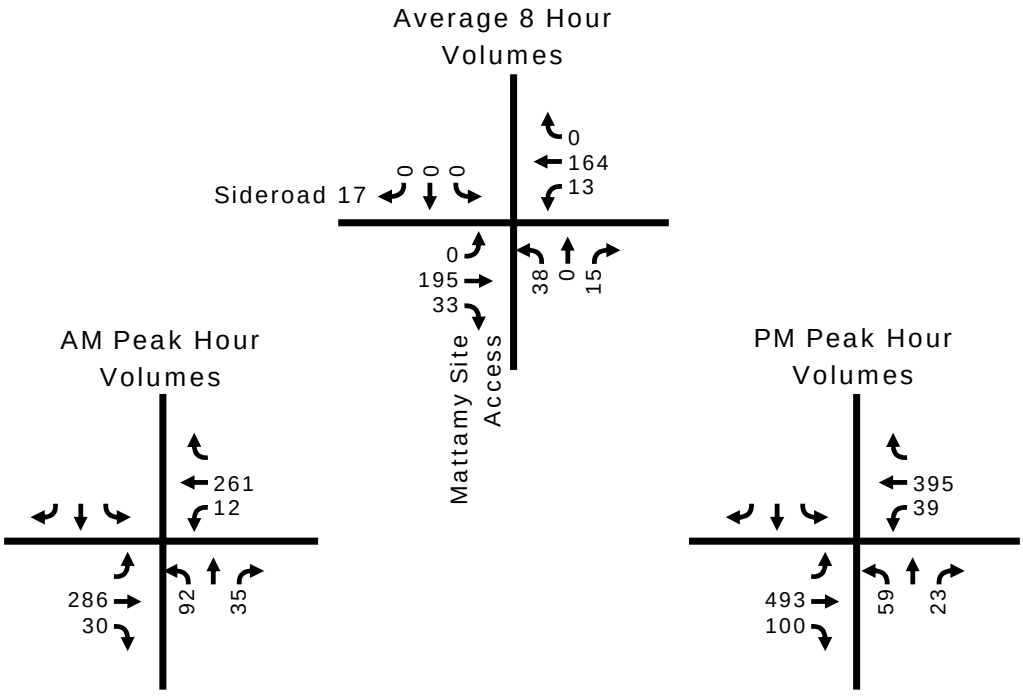
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — Yes



Sideroad 17/8th Line - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Restricted Flow - Operating Speed Less Than 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	720	62%	33%	51% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	255	33%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	720	51%	51%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	75	68%		

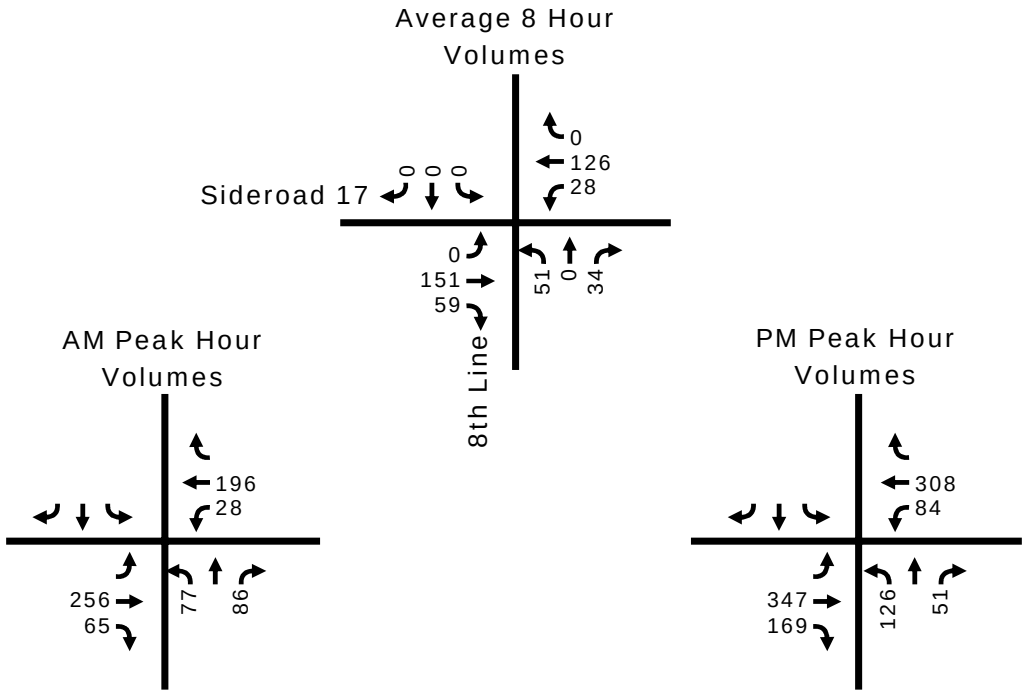
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — Yes



8th Line/Street E - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Restricted Flow - Operating Speed Less Than 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	720	31%	31%	31% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	170	36%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	720	23%	19%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	75	19%		

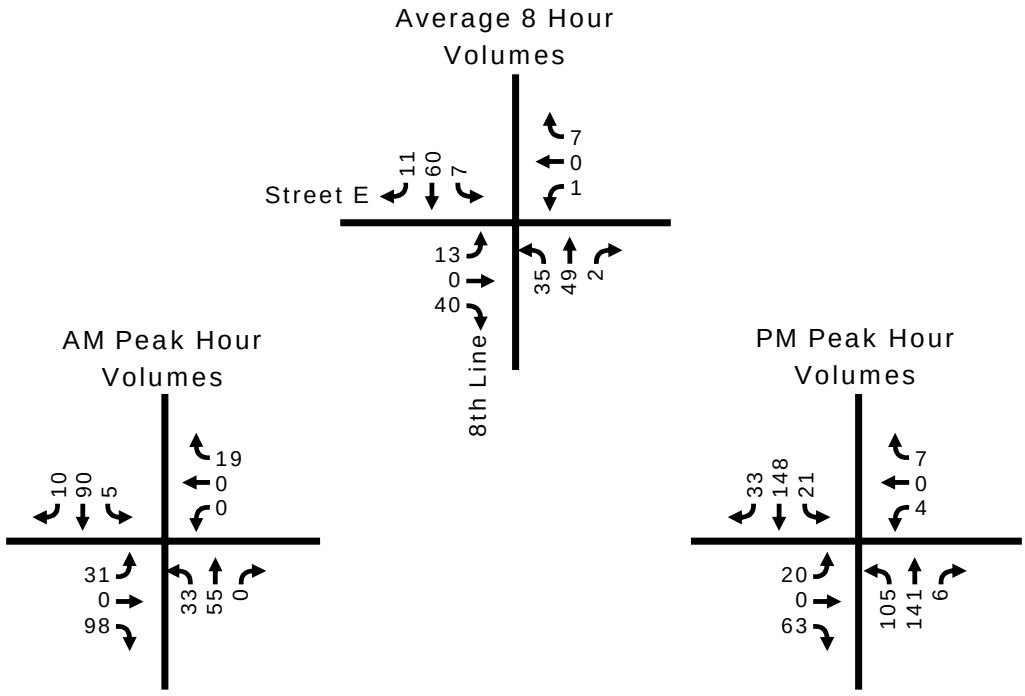
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



8th Line/Dundas Street W - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two-Lane Roadways	Compliance		
				Restricted Flow - Operating Speed Less Than 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	720	24%	2%	5% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	255	2%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	720	23%	5%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	75	5%		

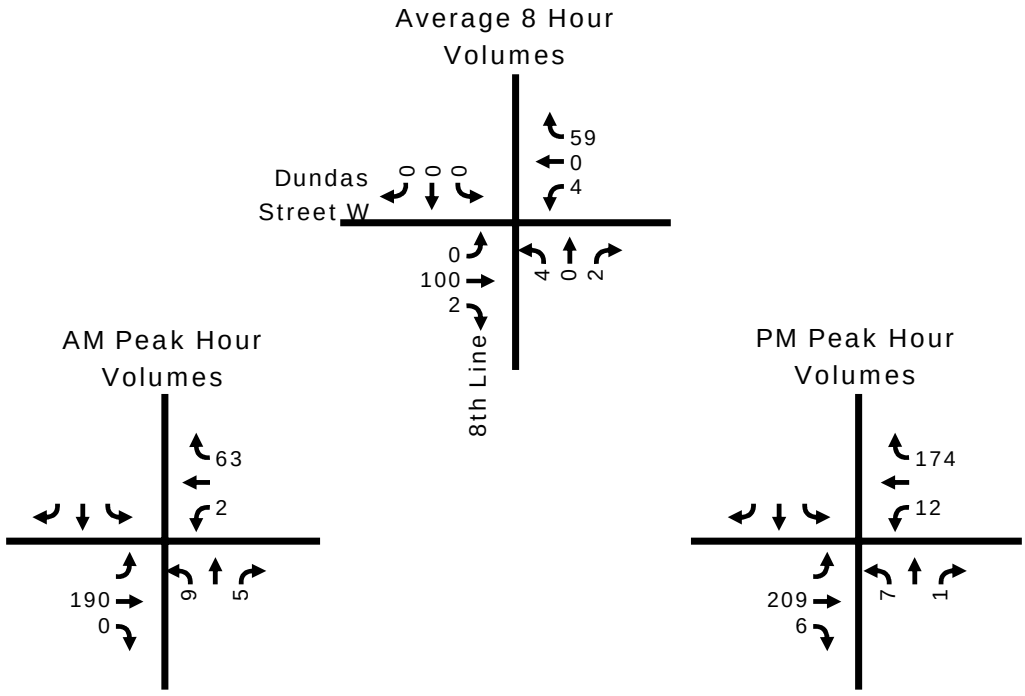
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — Yes



8th Line/Wellington Road 124 - (peak hour signal warrant) - FT 2034

Signal Warrant		Description		Minimum Requirement for Two Lane Roadways	Compliance		
				Free Flow - Operating Speed Greater Than or Equal to 70 km/h	Sectional %	Entire %	Warrant
Intersection	1. Minimum Vehicular Volume	(1) A	Vehicle Volume, All Approaches for Each of the Heaviest 8 Hours of on Average Day, and	480	120%	12%	12% No
		(4) B	Vehicle Volume, Along Minor Streets for Each of the Same 8 Hours	120	12%		
	2. Delay to Cross Traffic	(1) A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	118%	10%	
		(2) B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 Hours	50	10%		

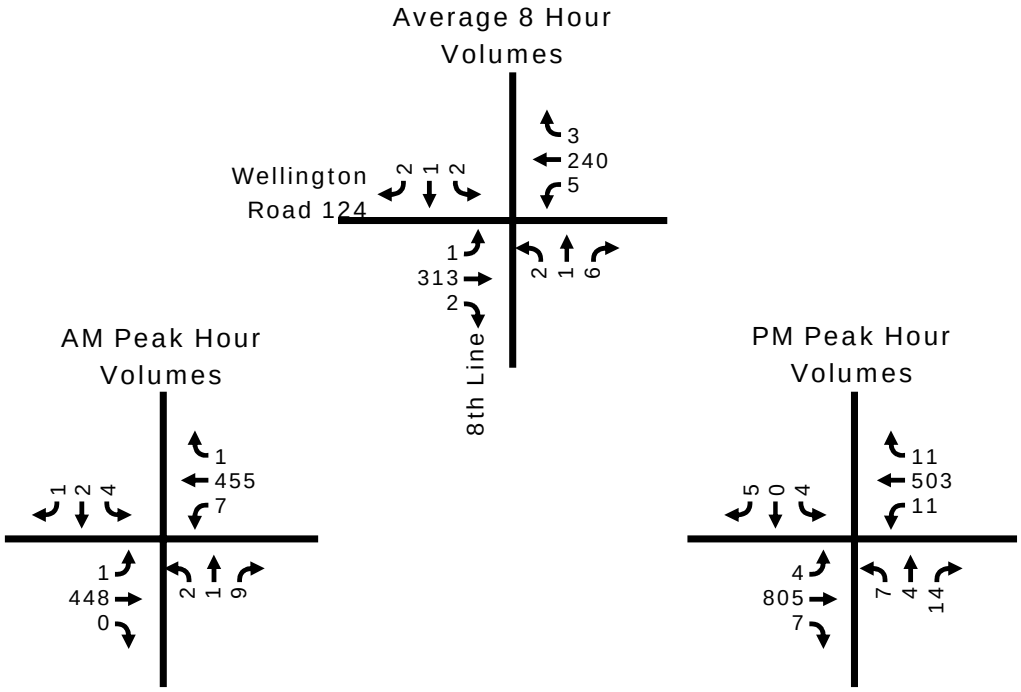
Notes

1 *Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above* — No

2 *For Definition of Crossing Volume Refer to Note 4 on the Signal Warrant Analysis Form B2.03.08*

3 *The Lowest Sectional Percentage Governs the Entire Warrant*

4 *For "T" Intersections the Warrant Values for Minor Street Should be Increased by 50% (Warrant 1B only)* — No



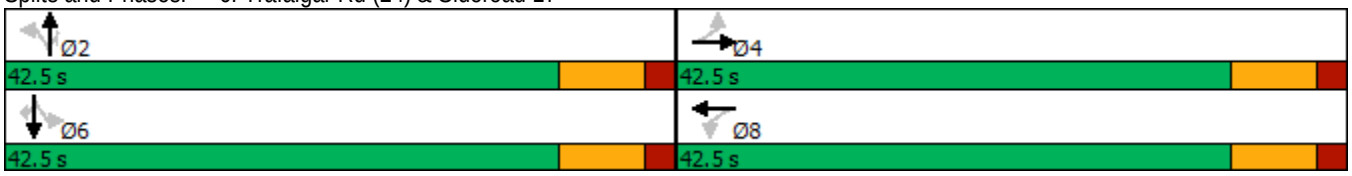
APPENDIX I

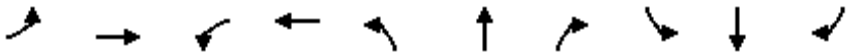
Synchro Software Output Reports with Mitigative Measures

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	12	45	152	44	11	160	147	124	199	22
Future Volume (vph)	12	45	152	44	11	160	147	124	199	22
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Minimum Split (s)	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Total Split (s)	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.03	0.10	0.31	0.32	0.03	0.25	0.22	0.31	0.31	0.03
Control Delay	12.6	10.0	15.9	5.6	12.5	14.7	3.6	16.3	15.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	10.0	15.9	5.6	12.5	14.7	3.6	16.3	15.3	1.0
LOS	B	A	B	A	B	B	A	B	B	A
Approach Delay		10.4		10.0		9.5			14.8	
Approach LOS		B		A		A			B	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 63	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

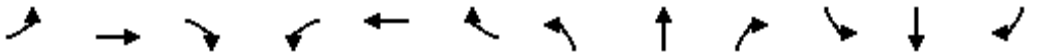
Splits and Phases: 6: Trafalgar Rd (24) & Sideroad 17





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	13	68	158	211	11	167	153	129	207	23
v/c Ratio	0.03	0.10	0.31	0.32	0.03	0.25	0.22	0.31	0.31	0.03
Control Delay	12.6	10.0	15.9	5.6	12.5	14.7	3.6	16.3	15.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	10.0	15.9	5.6	12.5	14.7	3.6	16.3	15.3	1.0
Queue Length 50th (m)	0.9	3.4	12.5	3.3	0.8	12.9	0.0	10.2	16.4	0.0
Queue Length 95th (m)	3.8	10.0	25.1	15.0	3.4	24.8	9.3	21.7	30.2	1.2
Internal Link Dist (m)		194.8		1266.2		613.3			593.1	
Turn Bay Length (m)	25.0		25.0		25.0		45.0	55.0		35.0
Base Capacity (vph)	668	1027	738	895	603	961	924	609	970	933
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.21	0.24	0.02	0.17	0.17	0.21	0.21	0.02

Intersection Summary



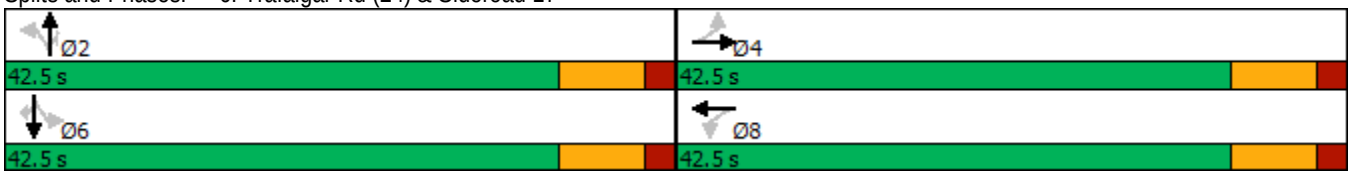
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	45	20	152	44	158	11	160	147	124	199	22
Future Volume (vph)	12	45	20	152	44	158	11	160	147	124	199	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1825	1832		1772	1480		1644	1731	1541	1601	1746	1633
Flt Permitted	0.63	1.00		0.71	1.00		0.63	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1202	1832		1329	1480		1087	1731	1541	1098	1746	1633
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	12	47	21	158	46	165	11	167	153	129	207	23
RTOR Reduction (vph)	0	13	0	0	102	0	0	0	95	0	0	14
Lane Group Flow (vph)	13	55	0	158	109	0	11	167	58	129	207	9
Heavy Vehicles (%)	0%	0%	0%	3%	6%	17%	11%	11%	6%	14%	10%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Effective Green, g (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	7.5	7.5		7.5	7.5		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	457	697		506	563		414	659	587	418	665	622
v/s Ratio Prot		0.03			0.07			0.10			c0.12	
v/s Ratio Perm	0.01			c0.12			0.01		0.04	0.12		0.01
v/c Ratio	0.03	0.08		0.31	0.19		0.03	0.25	0.10	0.31	0.31	0.01
Uniform Delay, d1	12.2	12.4		13.7	13.0		12.2	13.4	12.5	13.7	13.7	12.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0		0.4	0.2		0.0	0.2	0.1	0.4	0.3	0.0
Delay (s)	12.2	12.5		14.1	13.2		12.2	13.6	12.6	14.1	14.0	12.1
Level of Service	B	B		B	B		B	B	B	B	B	B
Approach Delay (s)		12.5			13.6			13.1			13.9	
Approach LOS		B			B			B			B	

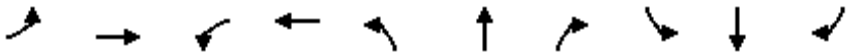
Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	17	41	170	76	20	372	303	244	276	10
Future Volume (vph)	17	41	170	76	20	372	303	244	276	10
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	4	4	8	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Minimum Split (s)	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Total Split (s)	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	24.1	24.1	24.1	24.1	29.1	29.1	29.1	29.1	29.1	29.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.05	0.11	0.38	0.44	0.04	0.51	0.39	0.71	0.38	0.02
Control Delay	17.4	11.7	20.8	9.2	11.1	16.7	3.0	28.1	14.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	11.7	20.8	9.2	11.1	16.7	3.0	28.1	14.8	0.0
LOS	B	B	C	A	B	B	A	C	B	A
Approach Delay		12.8		13.5		10.6			20.6	
Approach LOS		B		B		B			C	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 68.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

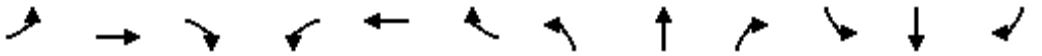
Splits and Phases: 6: Trafalgar Rd (24) & Sideroad 17





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	74	179	301	21	392	319	257	291	11
v/c Ratio	0.05	0.11	0.38	0.44	0.04	0.51	0.39	0.71	0.38	0.02
Control Delay	17.4	11.7	20.8	9.2	11.1	16.7	3.0	28.1	14.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	11.7	20.8	9.2	11.1	16.7	3.0	28.1	14.8	0.0
Queue Length 50th (m)	1.5	3.5	16.5	8.7	1.5	34.9	0.0	25.7	24.2	0.0
Queue Length 95th (m)	5.9	12.5	36.0	29.3	5.0	56.2	11.9	51.9	40.4	0.0
Internal Link Dist (m)		194.8		1266.2		613.3			593.1	
Turn Bay Length (m)	25.0		25.0		25.0		45.0	55.0		35.0
Base Capacity (vph)	503	941	689	896	574	932	933	437	923	868
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.26	0.34	0.04	0.42	0.34	0.59	0.32	0.01

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	41	29	170	76	210	20	372	303	244	276	10
Future Volume (vph)	17	41	29	170	76	210	20	372	303	244	276	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		7.5	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1706	1800		1798	1553		1825	1812	1512	1722	1795	1633
Flt Permitted	0.54	1.00		0.71	1.00		0.58	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	977	1800		1341	1553		1116	1812	1512	849	1795	1633
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	43	31	179	80	221	21	392	319	257	291	11
RTOR Reduction (vph)	0	20	0	0	129	0	0	0	183	0	0	6
Lane Group Flow (vph)	18	54	0	179	172	0	21	392	136	257	291	5
Confl. Peds. (#/hr)				3								
Heavy Vehicles (%)	7%	0%	0%	1%	2%	13%	0%	6%	8%	6%	7%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.1	24.1		24.1	24.1		29.1	29.1	29.1	29.1	29.1	29.1
Effective Green, g (s)	24.1	24.1		24.1	24.1		29.1	29.1	29.1	29.1	29.1	29.1
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.43	0.43	0.43	0.43	0.43	0.43
Clearance Time (s)	7.5	7.5		7.5	7.5		7.5	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	636		473	548		476	773	645	362	765	696
v/s Ratio Prot		0.03			0.11			0.22			0.16	
v/s Ratio Perm	0.02			c0.13			0.02		0.09	c0.30		0.00
v/c Ratio	0.05	0.08		0.38	0.31		0.04	0.51	0.21	0.71	0.38	0.01
Uniform Delay, d1	14.5	14.7		16.5	16.0		11.4	14.3	12.3	16.1	13.4	11.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1		0.5	0.3		0.0	0.5	0.2	6.3	0.3	0.0
Delay (s)	14.6	14.8		17.0	16.4		11.5	14.8	12.5	22.3	13.7	11.2
Level of Service	B	B		B	B		B	B	B	C	B	B
Approach Delay (s)		14.7			16.6			13.7			17.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group